



EXPIRES: 12/31/24

TUX PROJECT TRANSPORTATION IMPACT ANALYSIS

To
City of Tualatin

For
Lam Research

Dated
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Project Number
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EXECUTIVE SUMMARY

1. Three new buildings are proposed at the southwest corner of the Lam campus in Tualatin, Oregon, developed in two phases.
2. Phase 1 includes an approximately 147,000-square-foot (SF) laboratory facility (Building X), 164,000 SF office building (Building T), 55,000 SF utility building (Building U), and 283 additional parking spaces.
3. Phase 2 includes expansion of the laboratory area in Building X to 205,000 SF and 551 parking spaces.
4. At full occupancy of both Phases, the proposed campus expansion is estimated to generate an additional 244 AM peak hour, 233 PM peak hour, and 2036 daily trips.
5. A safety review, capacity analysis, and queuing analysis was conducted for all City intersections within a 1/4-mile of the project site, all ODOT facilities anticipated to be impacted by 50 or more peak hour trips, and intersections of concern as noted by ODOT or the City.
6. No study area intersections were found to have a crash rate higher than 1.0 for the five-year crash data from 2018 through 2022, nor were significant patterns found that could be addressed by improvements to the intersections.
7. All but two public street intersections are projected to meet City of Tualatin and ODOT mobility standards with the proposed TUX project. The intersection of SW Tualatin Road with SW 115th Avenue will fall below standards with the addition of site trips on the southern approach. SW Hazelbrook Road/OR 99W will have long delays in the PM peak hour for vehicles turning right onto OR 99W.
8. Queuing for all study area intersections is currently estimated to be accommodated by existing storage areas except for intersections along OR 99W at the new site access on SW Tualatin Road.
9. Based on a review of safety, capacity, and queuing, the following mitigation measures are recommended:
 - Install a traffic signal at the site access on SW Tualatin Road opposite SW 115th Avenue with Phase 1. The signal can operate with a common green phase for the driveway and SW 115th Avenue.
 - Provide separate left and right turn lanes on the driveway approach to SW Tualatin Road opposite SW 115th Avenue.
 - Stripe left turn lanes on SW Tualatin Road where a center left turn lane is currently provided.
 - Coordinate left turn movements from OR 99W to SW Tualatin Road at the intersections with SW 124th Avenue. This will minimize the queue lengths and delays for southbound left turns on SW 124th Avenue and avoid potential spill back to OR 99W.
 - Trim vegetation at the site access locations as needed to provide the recommended intersection sight distances.

I. INTRODUCTION

This Transportation Impact Analysis (TIA) has been prepared in support of an Architectural Review for the proposed TUX laboratory and office buildings at the Lam Research campus in Tualatin, Oregon. Figure 1 in Appendix A presents a vicinity map indicating the project location.

Project Description

An approximately 205,000 SF laboratory facility (Building X), 164,000 SF office building (Building T), and 55,000 SF utility building (Building U) are proposed in the southwest corner of the Lam campus. These buildings, referred to as TUX, will be occupied by up to 600 new employees. Much of this space is currently used as surface parking, which will be relocated to the north section of the campus. The net increase in parking is anticipated to be 430 spaces. The buildout year for the laboratory facility is assumed to be 2027 for Phase 1 and 2030 for Phase 2, as summarized below.

Phase 1 – 2027 Occupancy for up to 360 employees:

- Building T (office)
- Building X (147 thousand square feet (KSF) of lab)
- Building U (utility building)
- Expand north parking lot (new + replaced parking)
- New employee access to SW Tualatin Road opposite SW 115th Avenue

Phase 2 – 2030 occupancy for an additional 240 employees:

- Building X (lab expansion to 205 KSF)
- New parking lot at northwest corner of campus

The west access to SW Leveton Drive at the southwest corner of the site will be relocated to the east and repurposed as a truck access for deliveries to the existing and proposed buildings.

The parking areas along the north side of the campus will be expanded to offset the loss of the southwest lot and to accommodate additional need with the TUX project. The permanent access to the expanded employee parking lots is proposed at SW Tualatin Road opposite SW 115th Avenue. This access is currently used by JAE and a gated emergency access is provided to Lam. With the proposal, the driveway would primarily be used as access for Lam employees and will continue to provide access to JAE. The Phase 1 and Phase 2 site plans are presented in Figures 2A and 2B.

Scope of Analysis

This TIA has been prepared in accordance with the City of Tualatin Traffic Study Requirements (updated March 16, 2022), Tualatin Development Code (TDC) Section 74.440, and the Oregon Department of Transportation's (ODOT) Analysis Procedures Manual (APM) Version 2. This study includes a summary of existing traffic conditions, crash review, proposed trip generation, and an analysis of intersection operations, sight distance, queuing, and signal and turn-lane warrants.

Appendix B includes the scoping documents including a TIS scoping letter dated June 20, 2024, email requests from City of Tualatin and ODOT staff adding intersections, and Incomplete Notice dated July 24,

2024. Based upon these documents and discussions with City staff, the study area intersections were confirmed.

Study Area

The City’s Traffic Study Requirements document requires all intersections within a 1/4-mile radius of the project site be included as part of the study area. Washington County requires analysis for all intersections where project trips will exceed 10% of the existing average daily traffic (ADT). No Washington County intersections were found to meet this threshold. In general, ODOT intersections impacted with 50 or more site peak hour trips or with specific concerns were included in the study area.

These public intersections are included in the study area:

- SW Leveton Drive/SW 118th Avenue
- SW Leveton Drive/SW 108th Avenue
- SW Tualatin Road/SW Teton Avenue
- SW Tualatin Road/SW 108th Avenue
- SW Tualatin Road/SW 112th Avenue
- SW Tualatin Road/SW 115th Avenue
- SW 124th Avenue/SW Leveton Road
- SW 124th Avenue/SW Tualatin Road
- SW 124th Avenue/OR 99W
- SW Herman Road/SW 108th Avenue
- SW Hazelbrook Road/SW 115th Avenue
- SW Hazelbrook Road/OR 99W
- SW Herman Road/SW Teton Avenue
- OR 99W/SW Fischer Road
- OR 99W/SW Durham Road

The following site driveways will also be studied (includes those opposite public streets listed above):

- SW Leveton Drive/West Access (to be relocated east)
- SW Leveton Drive/Center Access
- SW Leveton Drive/East Access
- SW 108th Avenue/Center Access (approved with Building G)
- SW 108th Avenue/South Access (approved with Building G)
- SW Tualatin Road/SW 115th Avenue

All study area intersections are located within City of Tualatin jurisdiction or are along OR 99W, an ODOT facility.

Analysis Scenarios

This TIA addresses AM and PM peak hour conditions for the following scenarios:

- 2024 Seasonally Adjusted Existing Volumes
- 2027 Pre-Development without the project
- 2027 Post-Development with Phase 1
- 2030 Post-Development with Phase 2

II. EXISTING CONDITIONS

The existing conditions analysis is based on a current year 2024 inventory of transportation facilities and traffic data.

Site Conditions

The project site is in Tualatin, Oregon within the Portland metropolitan area. The site is approximately 75.95 acres and consists of tax lot 100 of Washington County tax map 2S1 22BA, lot 100 of map 2S1 22AB, and lots 500 and 800 of map 2S1 22AA. The site is part of the City’s Manufacturing Park (MP) Planning District. The Novellus Industrial Master Plan (IMP) was approved in 2001 as a four-phase development consisting of 1,440,000 SF. The proposed site plan for both phases of the TUX project, along with the entire campus, is presented in Figure 2.

Vehicular Transportation Facilities

Figure 3 presents existing lane configurations and traffic control devices for all study area intersections. Table 1 below summarizes roadway characteristics within the study area.

TABLE 1 – ROADWAY CHARACTERISTICS						
Roadway	Functional Classification	Posted Speed	Travel Lanes	Bike Lanes	On-Street Parking	Sidewalks
OR 99W (Pacific Highway W)	Major Arterial/ (Urban Principal Arterial)	45/55 mph	4	Yes	None	Intermittent
SW 124th Avenue	Major Arterial	45 mph	4/5	Yes	None	Yes
SW Tualatin Road	Major Collector	35 mph	3	Yes	None	Yes
SW Leveton Drive	Minor Arterial	35 mph	2	Yes	None	Yes
SW 108th Avenue	Minor Collector (north of SW Leveton Drive)	35 mph	2	Yes	None	Yes
SW Herman Road	Minor Arterial	35 mph	2	Yes	None	Yes
SW Teton Avenue	Minor Arterial	35 mph	2	Yes	None	Yes
SW 115th Avenue	Minor Collector	35 mph	2	No	None	Yes
SW Hazelbrook Road	Minor Collector	35 mph	2	No	None	South side

Pedestrian and Bicycle Facilities

The study area has nearly complete bicycle and pedestrian networks. Clearly marked bike lanes are provided on all study area roadways. Curb-tight sidewalks are provided on SW 108th Avenue and SW Tualatin Road, as well as some segments of the north side of SW Herman Road. Separated sidewalks are provided on all other study roadways and segments.

Transit Facilities

The study area is served by TriMet Bus Lines 94 and 97 with stops on OR 99W (Pacific Highway W) and SW Tualatin Road. The Tualatin Shuttle Blue Line has two stops on SW Leveton Drive just south of the site and a stop on SW Tualatin Road east of SW Teton Avenue. Transit maps and bus schedules are provided in Appendix C for reference.

Existing Traffic Counts

Initial traffic counts were collected on Tuesday, April 23, 2024, from 7 AM to 9 AM and 4 PM to 6 PM and most study area intersections. As the study area was expanded based on City and ODOT comments, additional counts were conducted:

- SW Tualatin Road/SW 112th Avenue on May 14, 2024, from 7 AM to 10 AM and from 4 PM to 6 PM.
- OR 99W/SW Hazelbrook Road and SW Hazelbrook Road/SW 115th Avenue on June 11, 2024, from 7 AM to 9 AM and 2 PM to 6 PM.
- SW Teton Avenue/SW Herman Road on July 9, 2024, from 7 AM to 9 AM and from 4 PM to 6 PM.
- All intersections along OR 99W and SW 124th Avenue/SW Tualatin Road were counted on September 12, 2024, from 7 AM to 9 AM and 3 PM to 6 PM in order to provide consent volumes between intersections.

A summary of all intersection turning movement counts collected in 2024 is presented in Figure 4.

Per ODOT standards, a system peak hour was selected for the OR 99W intersections in the AM and PM. The system peak hour chosen for the highway intersections is 8 AM to 9 AM and 4:45 PM to 5:45 PM, consistent with the peak of site trips. The actual system peak of the Highway is closer to 7:15 AM and 3:30 PM, but site volumes are much less at these times. The current campus driveway counts during the peak hours of the site (8-9 AM, 4:45-5:45 PM) are 371 and 378, respectively, compared to only 289 and 211 during the highway system peak. A summary of the driveway volumes during these peak hours of the site is included in Appendix D.

Seasonal Adjustment

OR 99W is a state facility which requires a seasonal adjustment as specified in the APM. There is no seasonal adjustment data available for this location as there is no nearby Automatic Traffic Recorder (ATR). Therefore, a seasonal adjustment of 1.01 derived from data presented in ODOT's 2022 Seasonal Trend Table for the "Commuter" trend was applied to 2024 existing through volumes on OR 99W. The 2022 seasonally adjusted traffic volumes are presented in Figure 5. The seasonal adjustment calculation is provided in Appendix E for reference.

Crash Analysis

Historical crash data reported for the study area intersections were evaluated to identify patterns that might indicate a safety concern. Crash data for the 5-year period of 2018 through 2022 were obtained from ODOT's online crash data system and used to review crash patterns and estimate intersection crash rates.

The crash evaluation is summarized in Table 2. The raw crash data are provided in Appendix F.

TABLE 2 – INTERSECTION CRASH RATES								
Intersection (Traffic Control Type)	Year					Total Crashes	ADT	Crash Rate
	2018	2019	2020	2021	2022			
OR 99W/ SW 124th(Signalized)	3	4	1	4	3	15	48,400	0.17
SW Tualatin/ SW 124th (Signalized)	1	3	1	4	5	14	26,900	0.29
SW Tualatin/ SW 115th (TWSC)	1	0	0	0	0	1	15,500	0.04
SW Tualatin/ SW 112th (TWSC)	0	0	0	0	0	0	14,700	0.00
SW Tualatin/ SW 108th (TWSC)	0	0	1	1	1	3	15,300	0.13
SW Leveton/ SW 124th (Signalized)	1	4	1	0	1	7	15,700	0.24
SW Leveton/ SW 118th (AWSC)	0	0	0	0	0	0	4,200	0.00
SW Leveton/ Center Site Access (TWSC)	0	0	0	0	2	2	3,500	0.31
SW Leveton/ SW 108th (TWSC)	0	0	0	0	0	0	3,200	0.00
SW Herman/ SW 108th (Signalized)	0	0	1	0	0	1	11,700	0.05
SW Tualatin/ SW Teton (TWSC)	1	2	0	0	0	3	16,300	0.10
SW Hazelbrook/SW 115th (TWSC)	0	0	0	0	0	0	5,000	0.00
SW Hazelbrook/OR 99W (TWSC)	1	1	1	0	2	5	38,513	0.07
SW Herman/ SW Teton (Signalized)	0	1	0	1	1	3	19,700	0.11
OR 99W/ SW Fischer (Signalized)	1	6	1	3	5	16	50,000	0.17
OR 99W/ SW Durham (Signalized)	9	4	4	6	4	27	49,400	0.30

Crash Data Summary

All study area intersections had low crash rates, and no fatal crashes have occurred at the study area intersections within the study period.

One crash involving a pedestrian occurred at the intersection of SW Tualatin Road and SW 124th Avenue in 2019, resulting in a possible injury (Injury C). The most common crash type at this intersection is turning movement crashes; however, the crash volume is not high enough to warrant further investigation, and all left turn movements already have protected turning phases.

One crash involving a bicyclist occurred at the center Lam site access in 2022, resulting in a suspected serious injury (Injury A) to the cyclist. The crash was caused by a failure to yield.

One crash involving a pedestrian occurred at the intersection of OR 99W and SW Durham Road at the crosswalk, resulting in a suspected minor injury (Injury B), caused by a driver's failure to yield. Two crashes involving pedestrians occurred at the intersection of OR 99W and SW Fischer Road at the crosswalk, resulting in a possible and suspected minor injury (Injury C and B), caused by a failure to yield and/or disregard for the traffic control.

At the intersection of OR 99W and SW 124th Avenue, the intersection with the highest crash volume, rear-end crashes were the most common crash type. These are largely due to inattention, and none resulted in serious injury being reported.

Intersection Crash Rates

Intersection crash rates were calculated as a measure of the number of crashes occurring per one million entering vehicles (MEV) per year. The intersection crash rate is calculated by dividing the average number of crashes per year by the MEV per year. An average daily traffic (ADT) volume was estimated by dividing the PM peak hour volume at each intersection by a peak-to-daily factor, or k-factor, of 0.09 obtained from ODOT's 2022 traffic flow data on OR 99W just west of SW 124th Avenue.

All intersections have crash rates below 1.0/MEV. Additionally, none of the study area intersections appear on either the ODOT or Washington County Safety Priority Index System (SPIS) list. Therefore, no further analysis is recommended.

III. PRE-DEVELOPMENT CONDITIONS

The pre-development conditions reflect build-out year conditions without the proposed development. This scenario includes existing year 2024 traffic volumes, a seasonal adjustment to traffic on OR 99W, a background growth to year 2027 and 2030, and in-process trips from nearby approved developments. The pre-development traffic without project trips will indicate if traffic issues are present before the addition of the proposed development.

Planned Transportation Improvements

The City of Tualatin Capital Improvement Plan 2024-2028 (CIP) was reviewed for any planned transportation improvements in the area that may affect capacity. SW Herman Road will be improved near the site; however, none of these improvements will affect any of the study area intersections.

SW Tualatin-Sherwood Road is currently under construction for a widening project, but this project is not in the study area and does not appear to have had a significant effect on existing volumes at study area roadways and intersections.

The City of Tualatin has planned for a future traffic signal at the intersection of SW Tualatin Road with SW 115th Avenue, but no funding or schedule has been determined.

To our knowledge, no mitigations or improvements have been required for development of the in-process projects at any study area intersections included in this analysis.

Background Traffic Growth

Background traffic growth was applied to adjusted year 2024 traffic volumes to forecast future traffic demand. A linear 1% annual growth rate over three years was applied to year 2024 traffic volumes to estimate 2027 background traffic volumes. This growth adjustment was based on ODOT traffic volume projections for OR 99W just south of SW 124th Avenue between years 2019 and 2040. Background growth was applied to all movements at all intersections, except driveways. Figure 6 presents the background growth from 2024 to 2027 for the AM and PM peak hours.

In-Process Traffic

In-process traffic volumes account for developments that have been approved or that are under construction at the time of a traffic study. These traffic volumes account for traffic that will be added to the external roadway network before buildout of the proposed development. Traffic volumes for the following developments were included as in-process:

- Lam Building G
- 124th Business Park
- Tualatin Logistics Park
- Fujimi Expansion

Figure 7 presents the total trip assignment for the 124th Business Park, Tualatin Logistics Park, and Fujimi Expansion.

The Lam Building G project was approved with two new driveways on SW 108th Avenue and a change in use of the existing East Access on SW Leveton Drive to be exclusive for trucks. Figure 8 presents the Lam Building G trip assignment as approved for that project. Figure 9 presents an updated reroute of passenger vehicle traffic from the existing East Access on SW Leveton Drive to the new driveways on SW 108th Avenue, utilizing the new traffic counts at that access. Detailed copies of the respective project trip assignment sheets are included in Appendix G.

Pre-Development Traffic

The 2027 pre-development analysis scenario is a combination of existing year 2024 traffic volumes, a seasonal adjustment factor on OR 99W, background growth of 1% over three years, and in-process trips from nearby approved developments. Figure 10 presents the 2027 pre-development traffic volumes during the AM and PM peak hours.

Figure 15 presents the additional three years of background growth applied between the 2027 and 2030 scenarios, used to grow traffic volumes for the Phase 2 analysis.

IV. SITE DEVELOPMENT

The trip-making characteristics of the proposed development are described below.

Trip Generation

Trip generation estimates for the full occupancy of approximately 600 employees were prepared utilizing rates for a Research and Development Center from the Institute of Transportation Engineers’ (ITE) Trip Generation Manual, 11th Edition. This land use was found to best match the existing campus trip generation based on employees. Trip generation estimates for the planned expansion are presented in Table 3.

TABLE 3 – PROPOSED TRIP GENERATION									
Phase	ITE Land Use	Employees	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
1	Research and Development Center (LUC 860)	360	124	22	146	17	123	140	1222
2		240	83	15	98	11	82	93	814
Total		600	207	37	244	28	205	233	2036

As shown in Table 3, the planned campus expansion is estimated to generate an additional 244 AM peak hour, 233 PM peak hour, and 2036 daily trips with both phases of development. A proportionate number of trips was assigned to each phase, based on the number of employees.

West Access Reroutes

Going forward, the existing West Access on SW Leveton Drive will be relocated and restricted to trucks. Figure 11 presents a reroute of existing volumes to the Center Access on SW Leveton Drive and the proposed access on SW Tualatin Road.

Trip Distribution and Assignment

Site trip distribution has been modified slightly from the original master plan based on employee zip code information provided by Lam, as well as counts conducted in April 2024 at the three active site driveways on Leveton Drive and the surrounding intersections. The following general percentages apply to both the AM and PM Peak hours.

- 24.5% to/from the north on OR 99W
- 26.5% to/from the south on OR 99W
- 4% to/from the east on SW Tualatin Road
- 4.5% to/from the south on SW 118th Avenue
- 10% to/from the south on SW 124th Avenue
- 21% to/from the west on SW Tualatin-Sherwood Road via SW 108th Avenue and SW Teton Avenue
- 9.5% to/from the west on SW Herman Road via SW 108th Avenue

The detailed site trip distribution is based on the following assumptions:

- 30% of the new trips are expected to utilize the one remaining employee driveway (middle access) on Leveton Drive. The remaining 70% would use the new driveway to SW Tualatin Road.
- Existing counts indicate some vehicles arriving from the southwest on OR 99W are turning right and traveling along the full length of Leveton Drive instead of turning at SW 124th Avenue.
- 8% of site trips will use SW 115th Avenue and Hazelbrook Road to access OR 99W, or approximately one-third of the 30% of site trips anticipated to travel north on OR 99W. This is consistent with current volumes traveling westbound on SW Tualatin Road and assumes no mitigation to discourage or prohibit this travel route.

At ODOT's request, trip distribution estimates were carried out to the Nyberg and Boones Ferry interchanges with Interstate 5 in order to address the anticipated number of vehicles that would be added at these locations.

Figure 12 presents the overall trip distribution at the study area intersections and routes to Interstate 5. This distribution is used for both Phase 1 and Phase 2 trips. Figure 13 presents the trip assignment for Phase 1 and Figure 16 presents the trip assignment for Phase 2.

Post-Development Traffic

Post-Development traffic volumes are the sum of the pre-development traffic volumes, the project trips, and background growth at 1% over three years. Figure 14 presents the 2027 Phase 1 post-development traffic volumes for the AM and PM peak hours. Figure 17 presents the 2030 Phase 2 post-development traffic volumes for the AM and PM peak hours.

V. SITE ACCESS AND CIRCULATION

The on-site evaluation of traffic access and circulation and a review of sight distance at the proposed site driveways are presented below.

Site Access

To accommodate added TUX employee traffic to the new parking lots at the north side of the site, the existing emergency access on SW Tualatin Road opposite SW 115th Avenue is proposed to be expanded and opened for Lam employee access.

Access Standards

The TDC includes several sections related to access standards. Chapter 75 of the TDC presents access standards relative to driveway widths and spacing on the site. Per Table 75-1 of the TDC, minimum driveway approach width for industrial driveways is 36 feet and the maximum is 40 feet for driveways providing access for over 250 parking spaces. The existing driveways for the site meet these standards. The proposed driveways on SW 108th Avenue will meet these standards at a proposed width of 36 feet.

Per TDC 75.120, driveways on Minor Collectors must be spaced at a minimum of 100 feet. Driveways must be located at least 150 feet from the intersection of Collector or Arterial streets, as measured from the stop bar, per TDC 75.040(11)(a). Additionally, driveways must provide a minimum distance of 40 feet between on-site driveways per TDC 75.040(10). Table 4 below presents a summary of required and proposed access spacing.

TABLE 4 – ACCESS SPACING SUMMARY					
Access	Roadway	Functional Classification	Spacing Standard	Access Spacing Measured Edge-to-Edge	
				To East	To West
SW 115th Avenue	SW Tualatin Road	Major Collector	150' from intersection with Arterial or Collector	>750'	>350'
East Access (relocated)	SW Leveton Drive	Minor Arterial	150' from intersection with Arterial or Collector	>600'	>600'

On-Site Circulation

With the proposed project, employee parking will be located along the north side of the campus and at the southeast corner of the campus. The north side parking area will primarily have access to SW Tualatin Road opposite SW 115th Avenue as well as continued use of the Center Access on Leveton Drive. The southeast parking area will have two driveways to SW 108th Avenue. An internal connection is provided between these main parking areas through the lot located between Buildings B and G. Truck access will be provided to Building G at the East Access and to the new TUX buildings as well as existing facilities at the relocated West Access. The existing north access to SW 108th Avenue will continue to be used for emergency access and may be utilized for truck egress from the bulk gas yard.

Sight Distance Evaluation

Intersection sight distance was evaluated for the proposed site driveway locations. The American Association of State Highway and Transportation Officials’ (AASHTO) A Policy on Geometric Design of Highways and Streets, 7th Edition provides recommendations for intersection sight distance (ISD) based on roadway design speed. At minimum, stopping sight distance (SSD), also based on roadway design speed, must be provided.

Two driveways are currently under construction on SW 108th Avenue, which have been reviewed in previous studies. The West Access on SW Leveton Drive is proposed to relocate and the emergency access on SW Tualatin Road is proposed to be expanded and used for employee access.

The posted speed on SW Tualatin Road and SW Leveton Drive is 35 mph, for a design speed of 40 mph. There is no posted speed on SW 108th Avenue north of SW Herman Road. Therefore, the design speed on SW 108th Avenue is assumed to be 5 mph over the posted speed of 35 mph for other Minor Collectors in the area, or 40 mph. A time gap of 7.5 seconds and 11.5 seconds were assumed for passenger vehicles and combination trucks completing a left turn from stop, respectively. The recommendations for ISD have been noted for left turns from stop on a stop-controlled minor approach (driveway). The sight distance evaluation for the site driveways is presented in Table 5.

TABLE 5 – SIGHT DISTANCE EVALUATION						
Access/ Intersection	Design Speed (mph)	Design Vehicle	Recommended Intersection Sight Distance (feet)	Required Stopping Sight Distance (feet)	Available Sight Distance (feet)	
					To North/West	To South/East
SW 108th Avenue	40	Passenger Car	445	305	Already reviewed	
SW Leveton Drive	40	Passenger Car	445	305	500	500
SW Tualatin Road	40	Passenger Car	475	305	500	>500

As presented in Table 5, sight distances for the driveways along SW 108th Avenue are being reviewed and approved under Building G and will meet the standards with that project. At the proposed relocated West Driveway on Leveton Drive, sight distance can be made available in excess of 500 feet, meeting the standards for intersection sight distance, although some landscaping and street trees may need to be trimmed.

At the Tualatin Access, sight distance is available in excess of 500 feet to the east and approximately 500 feet to the west. Some landscaping and street trees may need to be trimmed to maintain the required 475 feet of intersection sight distance.

VI. OPERATIONAL ANALYSIS

Two aspects of operational analysis were evaluated for the study area intersections: 1) intersection operations analysis, which evaluates how well an intersection processes traffic demand, and 2) queuing analysis, which compares intersection queues with available storage for different travel lanes.

Intersection Operation Analysis

Intersection operations are generally measured by three mobility standards: volume-to-capacity (v/c) ratio, level-of-service (LOS), and delay (measured in seconds). Signalized and all-way, stop-controlled (AWSC) intersections are measured by one overall v/c ratio, LOS, and delay. Two-way, stop-controlled (TWSC) intersections are typically measured by a single v/c ratio, LOS, and delay representative of the worst stopped movement.

Performance Measures

All study area intersections are located within City of Tualatin jurisdiction but OR 99W is under ODOT's jurisdiction.

City of Tualatin

The TDC Section 74.440(3)(e) requires the following mobility standards for intersections within City jurisdiction:

- LOS D or better for signalized intersections
- LOS E or better for unsignalized intersections

ODOT

The *Oregon Highway Plan* (OHP) designates OR 99W as a Principal Arterial Route at SW 124th Avenue. Table 7 of the OHP establishes a v/c target of 0.99 for the OR 99W/SW 124th Avenue intersection.

Methodology

Intersection operations were analyzed with the use of Synchro 12 software, which utilizes the Transportation Research Board's *Highway Capacity Manual* (HCM) 2000, HCM 2010, and HCM 7 methodologies. Signalized study area intersections were reported using HCM 2000 reports for overall v/c ratio and HCM 7 reports for delay and LOS. Two-way, stop-controlled (TWSC) and AWSC intersections were reported using HCM 7 reports. Signal timing plans were obtained from the Washington County traffic plans database, as well as from ODOT staff, and are provided in Appendix H for reference.

Calibration

For 2024 Existing conditions at the OR 99W/SW Hazelbrook Avenue and SW Tualatin Road/Teton Avenue intersections, Synchro and SimTraffic results did not match the delay and queues expected and observed in the field.

The City's Traffic Study Requirements document dictates that the existing conditions calculations shall be calibrated to reflect observed site conditions through delay studies and other observations, so queue and

delay studies were conducted in order to determine the methodology and any calibration needed to match observed conditions in the field.

OR 99W/SW Hazelbrook Avenue

Field observations based on traffic count video at the intersection indicate the drivers treat this right turn similar to a yield, with several vehicles clearing the stop sign without stopping if there is a gap in traffic.

Rather than report Hazelbrook as a yield control, which seemed to match existing delay and queuing, we reviewed the peak 15 minutes in the PM for the critical gaps in traffic accepted by approaching westbound vehicles. This was done by specifically noting situations where more than one vehicle was in a queue, but only one accepted a gap in approaching traffic. The smallest gap taken was four seconds, and four of the 10 critical gaps observed were less than six seconds. We changed the critical gap acceptance in Synchro from seven seconds to six seconds. A summary of the critical gaps observed is included in Appendix L. We also reviewed follow up gaps and found them to be consistent with the default of 3.3 seconds at the intersection.

In order to adjust the critical gap in the Synchro calculations, output for HCM 2000 was required. HCM 6th and 7th Editions do not allow for such an adjustment to the gaps – results are unchanged if gap acceptance values are adjusted.

Tualatin Road/Teton Avenue

A delay survey at this intersection indicated actual delays at much less than the HCM 7 output was providing. We found HCM 2000 output provides a better match to existing conditions. Survey results are included in Appendix L.

At both intersections we have included Synchro output results for both HCM 7 and HCM 2000 as noted in Table 6.

Findings

Table 6 below summarizes the AM and PM peak hour capacity results. For signalized intersections, the overall intersection performance (v/c ratio, LOS, delay) is reported along with the lane group with the maximum v/c ratio and the lane group with the maximum delay. For unsignalized sections, the lane group with the maximum v/c ratio and the lane group with the maximum delay are reported. The Synchro output reports and summary tables of all lane groups are provided in Appendix I.

TABLE 6 – PEAK HOUR INTERSECTION OPERATIONS					
Intersection (Control)	Peak Hour	Analysis Results (v/c-LOS-Delay in seconds)			
		2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
OR 99W/ SW 124th (Signalized)	AM	0.74-C-29.0	0.80-C-31.6	0.82-C-32.4	0.85-C-34.7
	PM	0.74-C-27.3	0.79-C-28.5	0.80-C-29.5	0.84-C-30.9
SW Tualatin/	AM	0.57-B-14.2	0.60-B-14.0	0.74-B-16.3	0.79-B-17.6

TABLE 6 – PEAK HOUR INTERSECTION OPERATIONS

Intersection (Control)	Peak Hour	Analysis Results (v/c-LOS-Delay in seconds)			
		2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
SW 124th (Signalized)	PM	0.51-C-20.8	0.57-C-22.0	0.58-C-22.4	0.63-C-23.1
SW Tualatin/ SW 115th/ Site Access (TWSC)	AM	0.02-E-39.5 (NBL)	0.02-E-42.6 (NBL)	0.34-F-103.1 (NBL)	0.59-F-172.1 (NBL)
	PM	0.24-D-29.2 (SB)	0.27-D-32.0 (SB)	1.10-F-171.9 (NBL)	1.48-F-318.9 (NBL)
SW Tualatin/ SW 112th (TWSC)	AM	0.06-B-14.4 (SB)	0.07-B-14.8 (SB)	0.07-C-15.4 (SB)	0.08-C-16.1 (SB)
	PM	0.04-C-19.2 (SB)	0.04-C-19.9 (SB)	0.05-C-20.6 (SB)	0.05-C-21.4 (SB)
SW Tualatin/ SW 108th (TWSC)	AM	0.02-C-16.1 (NB)	0.03-C-16.7 (NB)	0.22-C-20.2 (NB)	0.28-C-22.1 (NB)
	PM	0.15-C-16.3 (NB)	0.21-C-17.3 (NB)	0.24-C-19.8 (NB)	0.27-C-20.9 (NB)
SW 108th/ Center Access (TWSC)	AM	N/A	0.02-A-8.9 (EB)	0.02-A-8.9 (EB)	0.02-A-8.9 (EB)
	PM	N/A	0.12-A-8.9 (EB)	0.12-A-9.1 (EB)	0.12-A-9.2 (EB)
SW 108th/ South Access (TWSC)	AM	N/A	0.01-A-9.1 (EB)	0.01-A-9.1 (EB)	0.01-A-9.2 (EB)
	PM	N/A	0.05-A-9.5 (EB)	0.05-A-9.7 (EB)	0.06-A-9.8 (EB)
SW 124th/ SW Leveton (Signalized)	AM	0.43-B-12.9	0.48-B-14.1	0.47-B-14.4	0.49-B-15.0
	PM	0.36-C-20.2	0.43-C-29.3	0.41-C-20.3	0.42-C-21.0
SW Leveton/ SW 118th (AWSC)	AM	0.40-A-9.8 (EB)	0.57-B-12.4 (EB)	0.43-B-10.2 (EB)	0.46-B-10.6 (EB)
	PM	0.43-C-10.2 (WB)	0.63-B-14.3 (WB)	0.48-B-10.9 (WB)	0.51-C-11.6 (WB)
SW Leveton/ West Access (TWSC)	AM	0.02-B-14.6 (SBL)	0.03-C-17.7 (SBL)	0.01-B-11.5 (SBL)	0.01-B-11.8 (SBL)
	PM	0.22-B-10.4 (SBR)	0.26-B-12.0 (SBR)	0.01-B-11.8 (SBL)	0.01-B-12.0 (SBL)
SW Leveton/ Center Access (TWSC)	AM	0.01-B-10.7 (SBL)	0.01-B-12.6 (SBL)	0.02-B-13.7 (SBL)	0.03-C-14.7 (SBL)
	PM	0.05-B-11.0 (SBL)	0.06-B-12.7 (SBL)	0.16-C-12.7 (SBL)	0.19-B-13.2 (SBL)
SW Leveton/ East Access (TWSC)	AM	0.01-B-10.5 (SB)	0.03-B-11.1 (NB)	0.03-B-10.9 (NB)	0.03-C-11.0 (NB)
	PM	0.12-B-10.3 (SB)	0.10-B-12.0 (NB)	0.09-B-11.5 (NB)	0.09-B-11.8 (NB)
SW Leveton/ SW 108th (TWSC)	AM	0.12-B-10.2 (EB)	0.44-C-16.1 (EB)	0.45-C-2.3 (EB)	0.49-C-18.4 (EB)
	PM	0.24-A-9.8 (EB)	0.32-B-12.0 (EB)	0.29-B-11.9 (EB)	0.33-B-12.5 (EB)
SW Herman/ SW 108th (Signalized)	AM	0.45-A-5.9	0.53-A-6.5	0.56-A-6.9	0.59-A-7.2
	PM	0.58-A-9.6	0.65-B-11.9	0.66-B-12.3	0.68-B-13.5

TABLE 6 – PEAK HOUR INTERSECTION OPERATIONS

Intersection (Control)	Peak Hour	Analysis Results (v/c-LOS-Delay in seconds)			
		2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
SW Tualatin/ SW Teton (TWSC)	AM	<i>18 s¹</i> 0.43-E-38.3 (NBL) ² 0.20-C-16.7 (NBL) ³	0.47-E-43.5 (NBL) ² 0.22-C-17.3 (NBL) ³	0.48-E-44.1 (NBL) ² 0.22-C-17.4 (NBL) ³	0.52-E-49.7 (NBL) ² 0.23-C-15.0 (NBL) ³
	PM	<i>43 s¹</i> 0.95-F-110.9 (NBL)² 0.46-C-23.6 (NBL) ³	1.05-F-144.0 (NBL)² 0.49-D-25.2 (NBL) ³	1.09-F-155.8 (NBL)² 0.50-D-25.6 (NBL) ³	1.18-F-192.0 (NBL)² 0.53-D-27.4 (NBL) ³
SW Hazelbrook/ SW 115th (TWSC)	AM	0.45-B-13.9 (NB)	0.46-B-14.3 (NB)	0.47-B-14.4 (NB)	0.49-B-14.9 (NB)
	PM	0.69-C-24.3 (NB)	0.73-D-26.5 (NB)	0.82-D-33.8 (NB)	0.87-E-40.9 (NB)
SW Hazelbrook/ OR 99W (TWSC)	AM	<i>10 s¹</i> 0.53-C-24.4 (WBR) ² 0.45-C-18.8 (WBR) ³	0.58-D-27.0 (WBR) ² 0.48-C-20.0 (WBR) ³	0.59-D-27.5 (WBR) ² 0.48-C-20.3 (WBR) ³	0.63-D-30.4 (WBR) ² 0.52-C-21.6 (WBR) ³
	PM	<i>38 s¹</i> 0.95-F-73.3 (WBR)² 0.77-E-37.8 (WBR) ³	1.06-F-108.3 (WBR)² 0.85-E-49.7 (WBR) ³	1.12-F-126.5 (WBR)² 0.89-F-56.9 (WBR)³	1.24-F-170.3 (WBR)² 0.98-F-76.5 (WBR)³
SW Herman/ SW Teton (Signalized)	AM	0.62-B-18.3	0.68-B-20.0	0.71-C-21.1	0.75-C-22.7
	PM	0.58-B-19.4	0.65-C-22.3	0.72-C-25.0	0.76-C-27.7
OR 99W/ SW Fischer (Signalized)	AM	0.68-D-45.1	0.71-D-47.2	0.72-D-46.1	0.76-D-44.7
	PM	0.84-D-52.8	0.86-E-55.4	0.88-E-56.8	0.90-E-59.6
OR 99W/ SW Durham (Signalized)	AM	0.74-D-40.3	0.77-D-41.1	0.77-D-41.5	0.80-D-42.5
	PM	0.83-D-49.6	0.88-D-53.3	0.89-E-55.6	0.92-E-60.5

As shown in Table 6, all but two of the study area intersections will meet operational standards with the addition of site trips:

- SW Hazelbrook Road/OR 99W – long delays are expected on the stop-controlled approach to OR 99W during the PM peak hour. Mitigation is not recommended because it would encourage vehicles to travel this route from SW Tualatin Road instead of using SW 124th Avenue to access OR 99W northbound.
- SW Tualatin Road/SW 115th Avenue/Site Access – with the addition of this site access to SW Tualatin Road, left turns to SW Tualatin Road will experience long delays. A traffic signal has been

¹ Italics indicate Observed

² HCM 7th

³ HCM 2000

noted in the City’s Transportation plan for this intersection, so signal warrants and operations are addressed below as possible mitigation.

Intersection Queuing Analysis

An intersection queuing analysis was conducted for the study area intersections for both the AM and PM peak hours to evaluate any potential queue spillbacks.

Methodology

The 95th percentile queues during the AM and PM peak hours were estimated using Synchro and SimTraffic software. Queue demand results were rounded to the nearest 25 feet to represent average vehicle lengths. Because queues are based on an average of five traffic simulations using random arrivals, some fluctuation in results can be anticipated, particularly for movements that are near or over-capacity.

Available queue lengths were estimated using Google Earth Pro software and rounded to the nearest 5 feet. For turn lanes, two available storage values are stated: the first represents the striped storage and the second is the effective storage, or the length physically available regardless of striping, such as a center turn lane upstream of a striped left-turn lane at an intersection. Although travel lanes have no storage defined by striping at signalized locations, we note the distance to an upstream public street intersection.

Findings

The 95th percentile queues obtained from SimTraffic for the AM and PM peak hours are presented in Table 7. The detailed SimTraffic reports are provided in Appendix J for reference. Queue lengths in **bold** type show movements which exceed the effective storage length.

Where intersections have high volumes and/or are close to capacity, simulation results can vary significantly from observed queues. In such cases, the HCM 2000 methodology queue output is noted because it better matches actual queues.

Where intersections are closely spaced and coordinated, SimTraffic results will generally provide better estimates for queue length because the HCM 2000 methodology cannot account for progression as well as the simulation. This is very apparent for the left turns from SW 124th Avenue to Tualatin Road.

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS						
Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (Feet)	AM/PM Peak Hour Queue (feet)			
			2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
OR 99W/ SW 124th (Signalized)	EBT	>1000	1,200/1,250	1,575/900	1,775/775	2,250/825
	EBT	>1000	1,250/1,250	1,650/900	1,825/750	2,275/825
	EBR	225/305	525/500	500/450	500/425	500/450

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS

Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (Feet)	AM/PM Peak Hour Queue (feet)			
			2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
	WBL1	550/770	<i>575/450¹</i> 675/525 575/350 ³	1,225/650 700/400 ³	1,525/575 725/400 ³	1,725/750 775/425 ³
	WBL2	550/690	<i>575/325¹</i> 475/400 575/350 ³	1,150/525 700/400³	1,475/475 725/400³	1,700/625 775/425³
	WBT	>1,000	200/375	700/425	1,000/450	1,175/475
	WBT	>1,000	200/400	525/425	825/450	875/475
	NBL1	315/475	<i>125/450¹</i> 125/400 25/250 ³	125/475 25/250 ³	125/475 25/325 ³	175/475 25/350 ³
	NBL2	315/475	<i>75/400¹</i> 125/425 25/250 ³	125/ 500 25/250 ³	125/475 25/325 ³	175/ 500 25/350 ³
	NBR1	295/330	<i>125/275¹</i> 150/325 175/300 ³	150/ 400 200/ 350³	150/ 375 200/325 ³	150/ 425 200/ 350³
	NBR2	295/315	<i>75/250¹</i> 150/200 175/300 ³	150/225 200/ 350³	150/225 200/ 325³	150/225 200/ 350³
SW 124th/ SW Tualatin (Signalized)	WBL	310/350	100/75	100/100	100/100	100/100
	WBR	300/350	125/ 400 PM: 100 ³	100/ 550 PM: 125 ³	125/ 625 PM: 300 ³	150/ 950 PM: 425³
	NBT	995	150/300 PM: 325 ³	175/ 475 PM: 400 ³	150/ 625 PM: 350 ³	175/ 850 PM: 350 ³
	NBT	995	350/475 PM: 325 ³	350/750 PM: 400 ³	350/825 PM: 350 ³	375/ 1075 PM: 350 ³
	NBR	145/230	100/225	75/ 275	125/ 300	150/ 325
	SBL	200/300	<i>225/300¹</i> 375/350 375/150³	400/350 400/175³	450/400 850/175³	450/375 1,000/175³
	SBT	450	250/275	350/250	500/425	550/375

¹ Italics indicate Observed

³ HCM 2000

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS

Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (Feet)	AM/PM Peak Hour Queue (feet)			
			2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
	SBT	450	125/200	150/150	175/200	175/200
SW Tualatin/ SW 115th (TWSC)	EBL	60	50/75	50/50	50/75	50/75
	WBL	60	25/25	25/25	125/25	125/25
	NBL	TBD	25/25	25/25	75/225	125/400
	NB	TBD	25/50	25/50	50/125	75/300
	SB	630	75/75	75/75	125/75	150/100
SW Tualatin/ SW 112th (TWSC)	EBL	750	25/25	25/25	25/25	25/25
	SBL+R	95	50/25	50/50	50/25	50/50
SW Tualatin/ SW 108th (TWSC)	WBL	140	50/25	75/25	50/25	50/350
	NB	330	25/50	25/75	75/100	100/125
SW 108th/ Center Access (TWSC)	EB L+R	60	N/A	50/75	50/75	50/75
SW 108th/ South Access (TWSC)	EB L+R	60	N/A	25/50	25/50	25/50
SW 124th/ SW Leveton (Signalized)	EBL	100/130	25/50	25/50	50/50	50/50
	EBT+R	580	175/50	175/50	200/75	200/50
	WBL	145/185	50/75	50/100	50/75	75/100
	WBT+R	>1,000	75/100	50/150	75/100	75/100
	NBL	155/230	50/25	50/25	50/50	50/25
	NBT	>1,000	75/150	100/175	75/150	100/150
	NBT+R	>1,000	150/150	175/500	200/150	175/150
	SBL	165/245	125/50	175/75	100/75	100/75
	SBT	>1,000	125/100	150/100	150/125	150/125
	SBT+R	995	150/125	175/125	150/150	175/125
SW Leveton/ SW 118th (AWSC)	EB	>1,000	75/50	125/50	100/50	100/50
	WB	>1,000	50/75	50/125	50/100	75/100
	NB	>1,000	50/50	50/50	50/50	50/50

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS

Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (Feet)	AM/PM Peak Hour Queue (feet)			
			2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
	SB	650	25/50	25/50	25/50	25/50
SW Leveton/ West Access (TWSC)	SBL	135	25/50	25/75	25/25	25/25
	SBR	135	50/75	50/100	25/25	25/25
SW Leveton/ Center Access (TWSC)	SBL	125	25/50	25/50	25/50	25/75
	SBR	125	25/50	25/50	50/75	50/75
SW Leveton/ East Access (TWSC)	SB	105	50/75	25/25	25/25	25/25
SW Leveton/ SW 108th (TWSC)	EB	270	50/75	100/75	100/75	100/75
SW Herman/ SW 108th (Signalized)	EBL	100/390	25/25	50/25	50/25	50/25
	EB	>1,000	125/125	125/150	150/150	150/175
	WB	435	125/175	150/200	150/200	175/250
	SBL	135/165	50/100	50/150	75/150	75/175
	SBR	115/790	25/25	25/25	25/25	25/50
SW Tualatin/ SW Teton (TWSC)	WBL	260	75/50	75/50	75/50	75/50
	NBL	95/170	<i>50/150¹</i> 100/175 25/50 ³	125/175 25/75 ³	100/ 200 25/75 ³	100/ 200 25/75 ³
	NBR	30/>1,000	<i>25/25¹</i> 75/150 25/25 ³	100/200 25/25 ³	75/200 25/25 ³	100/450 25/25 ³
SW 115th/SW Hazelbrook (TWSC)	NB	215	100/100	100/175	75/ 500	100/ 975

¹Italics indicate Observed

³ HCM 2000

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS

Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (Feet)	AM/PM Peak Hour Queue (feet)			
			2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
OR 99W/ SW Hazelbrook	WBR	325	<i>50/500¹</i> 125/450 50/150 ³	125/650 75/200 ³	75/1,100 75/225 ³	125/1,300 75/275 ³
SW Teton/ SW Herman (Signalized)	EBL	>1000	25/25	50/25	25/75	50/25
	EB T+R	>1000	225/200	225/325	275/375	275/475
	WBL	100/150	50/75	75/75	50/75	50/75
	WB T+R	500	225/175	250/175	275/200	300/200
	NBL	>1000	150/100	175/150	175/150	175/150
	NB T+R	800	125/125	175/175	200/200	250/200
	SBL	50/100	50/50	50/25	50/25	50/50
	SB T+R	>1,000	125/125	125/175	150/150	150/175
OR 99W/ SW Fischer (Signalized)	EBL	290/400	475/475	475/500	500/525	525/500
	EBR	300/>1,000	575/675	700/875	625/950	900/775
	NBL	270/475	525/525	550/525	575/525	525/525
	NBT	80/>1,000	675/1,600	1,000/1,750	1,250/1,775	1,175/2,000
	NBT	80/>1,000	650/1,650	1,000/1,750	1,225/2,100	1,175/2,050
	SBT	330/>1,000	650/1,250	475/1,675	550/1,750	525/1,575
	SBT	330/>1,000	500/1,300	475/1,725	525/1,775	525/1,625
	SBR	200/725	225/450	200/450	275/475	225/475
OR 99W/ SW Durham (Signalized)	EB LT	275	100/125	125/150	100/150	125/150
	EB TR	175/440	175/200	175/225	175/225	175/225
	WBL	310/440	300/425	275/425	300/425	325/425
	WB LT	440	375/ 900	325/ 1,050	350/ 775	350/ 950
	WBR	310/440	200/ 775	200/ 1,025	175/ 625	225/ 775
	NBL	550/600	125/425	125/650	125/550	175/650
	NBT	350/>1,000	525/725	525/1,150	525/1,025	525/1,125

¹ Italics indicate Observed

³ HCM 2000

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS

Intersection (Control)	Approach/Movement	Striped/Effective Storage (Feet)	AM/PM Peak Hour Queue (feet)			
			2024 Existing	2027 Pre-Development	2027 Post-Development	2030 Post-Development
	NBT	350/>1,000	550/750	550/1,175	575/1,050	550/1,150
	NBR	230/260	375/425	400/425	375/425	375/425
	SBL	240/300	300/ 325	300/ 375	300/ 325	300/ 325
	SBL	240/300	350/400	325/475	350/400	350/450
	SBT	890/1,300	325/500	350/675	375/500	400/575
	SBT	890/1,300	325/500	350/650	375/500	375/575
	SBR	400/425	25/25	25/75	25/75	25/175

Alternate Results

OR 99W/SW 124th Avenue

For this intersection, the queue output from HCM 2000 more accurately represents the westbound left turn queues observed in the field. The HCM 2000 queue length calculations for the pre- and post-development scenarios seem to be in line with expectations given the volume increases at the intersection. SimTraffic estimates for queuing are much higher and not reasonable based on the existing observation.

SW 124th Avenue/SW Tualatin Road

While a queue or delay study was not conducted for these movements, SimTraffic results for the westbound right and northbound through movements in the PM are significantly higher than reasonable in pre- and post-development scenarios. The number of site trips added to these movements is not high enough to cause queue length increases of 10-13 vehicles in one cycle as is predicted by SimTraffic, especially when these queue lengths increase on multiple approaches. The queuing output from HCM 2000 is provided as a more realistic alternative.

SW Tualatin Road/SW Teton Avenue

At this intersection, SimTraffic results overestimate the queues for the existing scenario compared to the conditions observed in the field, so HCM 2000 results are provided for comparison and appear to be much more reasonable for the pre- and post-development scenarios as well.

Recommendations

As shown in Table 7, queues at some intersections along OR 99W appear to be longer than available storage lengths. These intersections are built out to their full capacity, and little can be done to mitigate these queues. At the intersections of OR 99W and SW Tualatin Road with SW 124th Avenue, we are recommending coordination of the left turn movement from OR 99W with the left turn movement to SW

Tualatin Road in order to minimize queuing and delays in the short segment between the two intersections, especially during the AM commute times.

At the intersection of SW Tualatin Road/SW 115th Avenue, left turn lanes should be striped to provide the necessary storage. Currently, Tualatin Road is striped for a center left turn lane.

Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities are currently provided in the study area and along the frontages of the campus. With development of the TUX project, these facilities will remain and will be enhanced as appropriate with any required frontage or intersection improvements, especially where curb ramps are replaced. There are no gaps in the bicycle or pedestrian facilities that need to be addressed along the site frontage or nearby roadways.

Existing bicycle volumes along SW Tualatin Road are less than 10 per hour.

Pedestrian volumes on the SW Tualatin Road frontage are currently low with less than 10 per hour. Leveton has higher pedestrian volumes including approximately 20 pedestrian crossing at the center and west driveways during peak hours.

Transit Facilities

No changes are proposed to existing transit facilities or locations of stops.

VII. WARRANTS

The City of Tualatin has plans to signalize the SW Tualatin Road/SW 115th Avenue intersection. We reviewed signal warrant criteria established by the Federal Highway Administration's (FHWA) and published in the Manual on Uniform Traffic Control Devices (MUTCD) for this intersection. 2027 volumes were developed using the same methodologies used to calculate future year peak hour volumes. The warrant analysis calculations are provided in Appendix K for reference.

Traffic Signals

Peak hour signal warrants were reviewed for the intersection of SW Tualatin Road with SW 115th Avenue using the AM and PM peak hour volumes for both Phase 1 and 2 post development conditions.

Based on the volumes anticipated at the site driveway, traffic signal warrants are met in the PM peak hour for both Phases.

The 2027 and 2030 Post-Development volumes were analyzed at the proposed SW Tualatin Road access with a traffic signal, consistent with the City of Tualatin's plans to install one. In both scenarios, the traffic signal operates at about 75% capacity with an overall LOS of B. Synchro reports for the traffic signal mitigation are included in Appendix I.

Turn Lanes

Turn-lane criteria were reviewed for the proposed driveway on SW Tualatin Road using the right-turn lane criteria established by the Texas Transportation Institute (TTI) for unsignalized intersections.

SW Tualatin Road is currently a two-lane roadway with no existing turn lanes into the site. Based on 2027 and 2030 Post-Development volumes, right-turn lane criterion are met for the eastbound direction in the AM peak hour, and for the westbound direction in both the AM and PM peak hours. Note the intersection operation is at acceptable levels without right turn lanes when a traffic signal is installed.

VIII. RECOMMENDATIONS

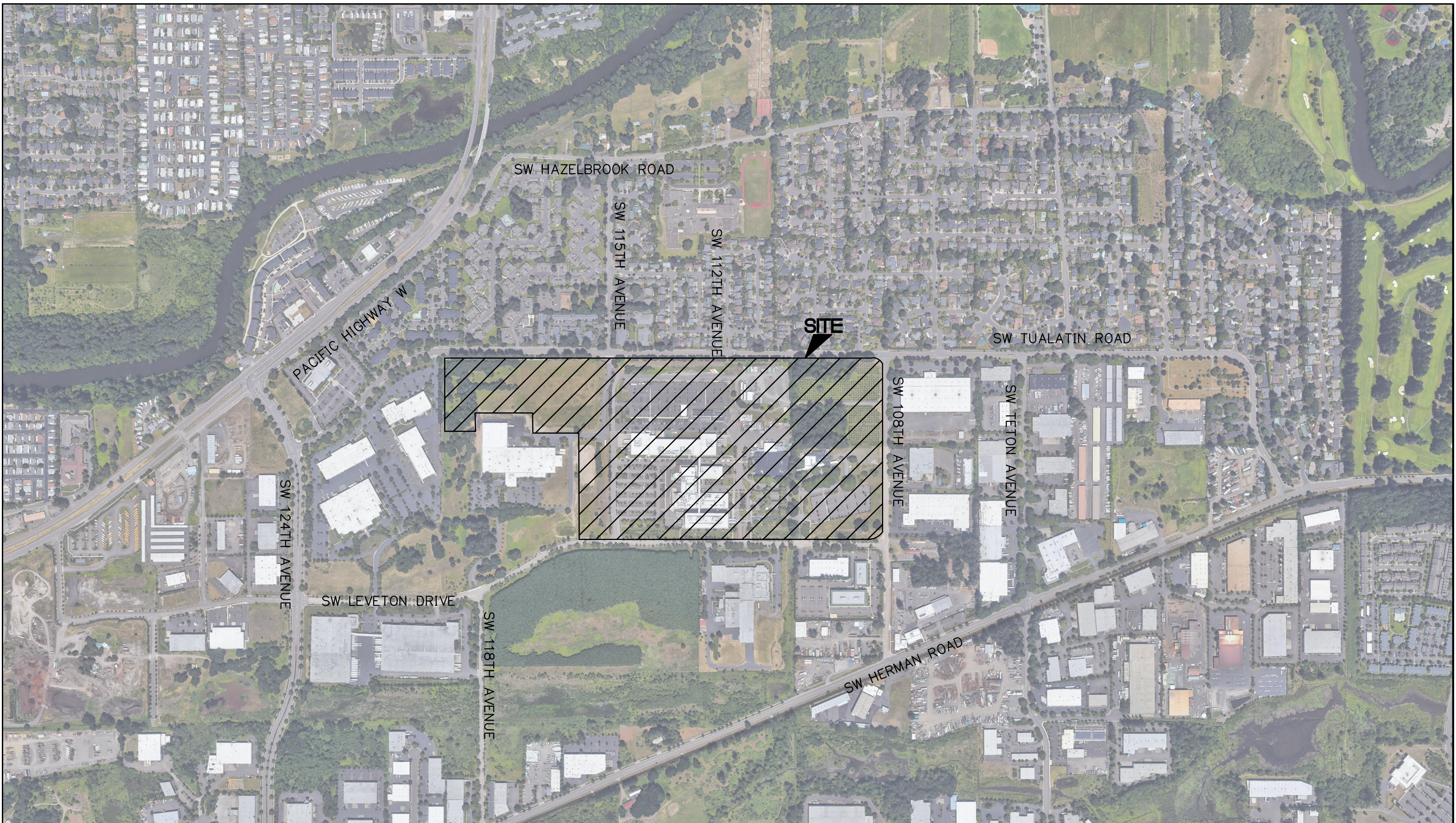
The following recommendations for mitigation are made to address impacts of the project on the transportation system:

1. Install a traffic signal at the site access on SW Tualatin Road opposite SW 115th Avenue with Phase 1. The signal can operate with a common green phase for the driveway and SW 115th Avenue.
2. Provide separate left and right turn lanes on the driveway approach to SW Tualatin Road opposite SW 115th Avenue.
3. Stripe left turn lanes on SW Tualatin Road where a center left turn lane is currently provided.
4. Coordinate left turn movements from OR 99W to SW Tualatin Road at the intersections with SW 124th Avenue. This will minimize the queue lengths and delays for southbound left turns on SW 124th Avenue and avoid potential spill back to OR 99W.
5. Trim vegetation at the site access locations as needed to provide the recommended intersection sight distances.

IX. APPENDIX

- Appendix A. Figures
- Appendix B. Scoping Material
- Appendix C. Transit Information
- Appendix D. Traffic Count Summaries
- Appendix E. Seasonal Adjustment Data
- Appendix F. Crash Data
- Appendix G. In-Process Data
- Appendix H. Signal Information
- Appendix I. Operations Calculations
- Appendix J. Queuing Analysis
- Appendix K. Warrants
- Appendix L. Calibration Materials

APPENDIX A.
FIGURES



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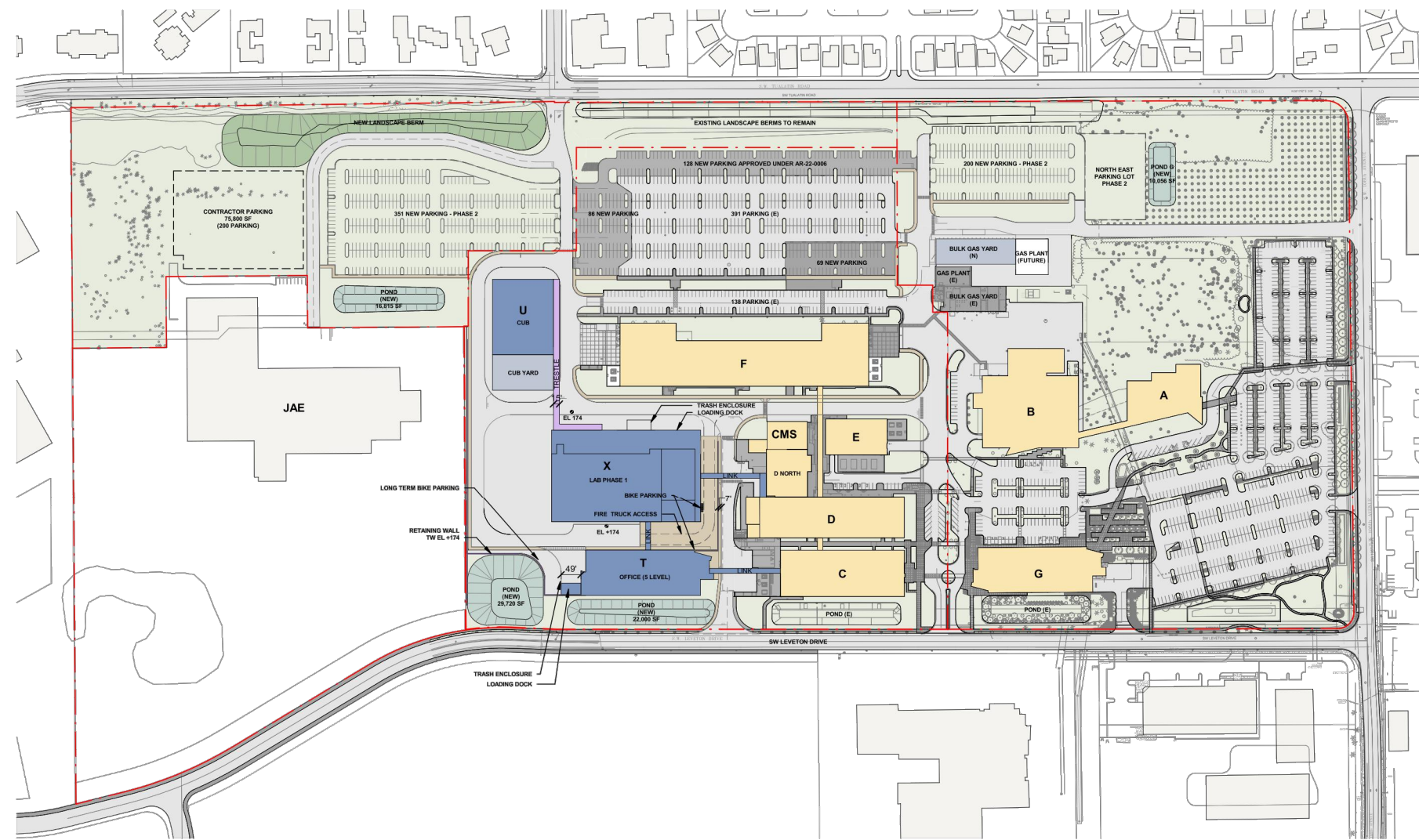
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VICINITY MAP

**LAM RESEARCH TUX
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FIGURE
1

**PRELIMINARY
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CONSTRUCTION**



LEGEND

- EXISTING BUILDINGS
- NEW BUILDINGS (143,100 SF FLOOR PLATE)
- NEW BUILDINGS PHASE 2 (32,500 SF FP)
- NEW YARDS
- NEW TRESTLE
- NEW PEDESTRIAN
- ROADS
- DETENTION POND
- RETAINING WALL
- PROPERTY LINES
- PARKING (TOTAL: 1,635 STALLS)
- EXISTING: 1,352
- NEW: 283

TOTAL LAM CAMPUS SITE AREA: 73.17 ACRES

**ARCHITECTURAL
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TITLE:
SITE MASTER PLAN - PHASE I

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REVIT FILE: BUILDING DESIGNATOR:

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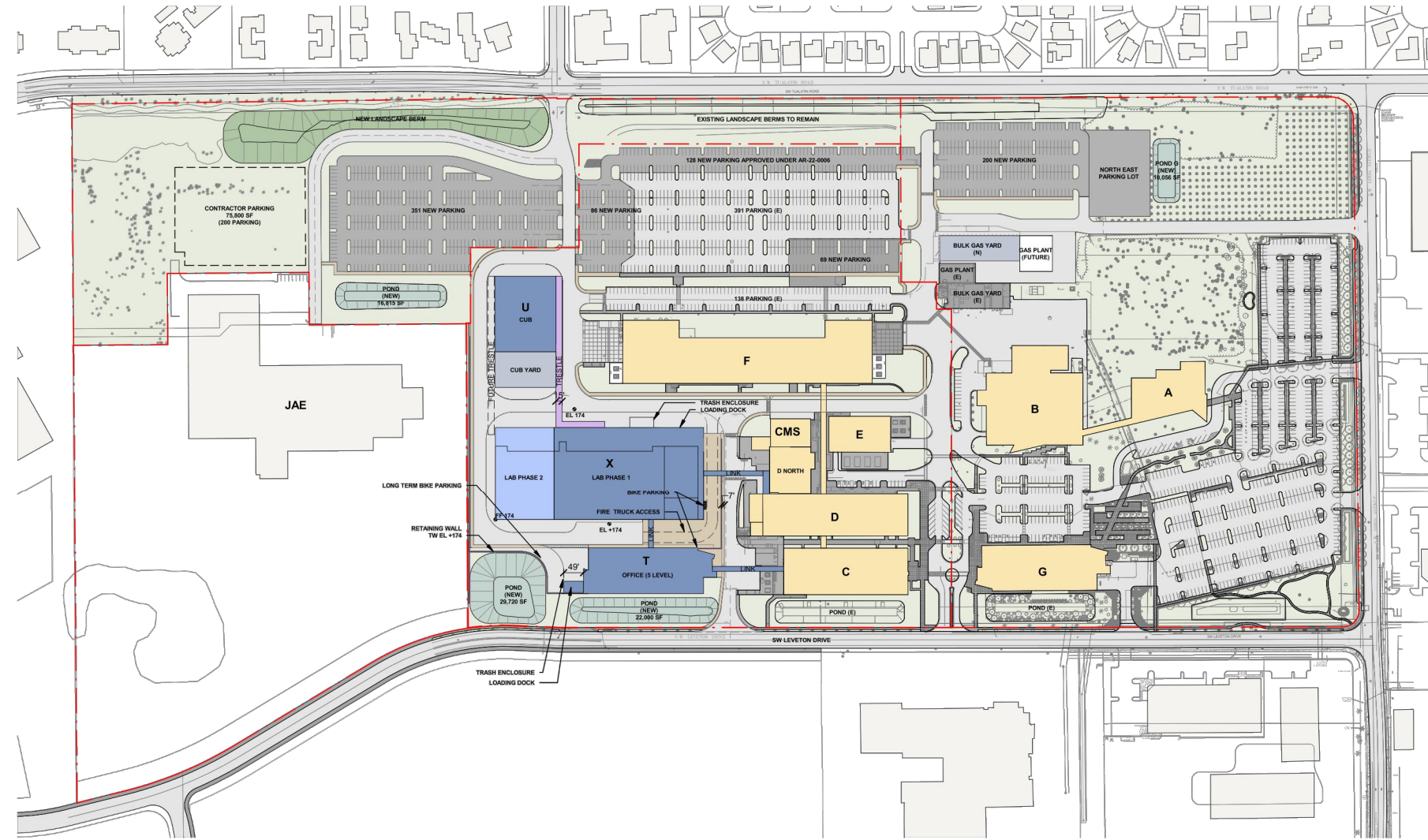
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SITE PLAN - PHASE 1

**LAM RESEARCH TUX
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**FIGURE
2A**

**PRELIMINARY
NOT FOR
CONSTRUCTION**



LEGEND

- EXISTING BUILDINGS
- NEW BUILDINGS (143,100 SF FLOOR PLATE)
- NEW BUILDINGS PHASE 2 (32,500 SF FP)
- NEW YARDS
- NEW TRESTLE
- NEW PEDESTRIAN
- ROADS
- DETENTION POND
- RETAINING WALL
- PROPERTY LINES
- PARKING (TOTAL: 2,186 STALLS)
- EXISTING: 1,352
- NEW: 834

TOTAL LAM CAMPUS SITE AREA: 73.17 ACRES

**ARCHITECTURAL
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FREMONT, CA 94538

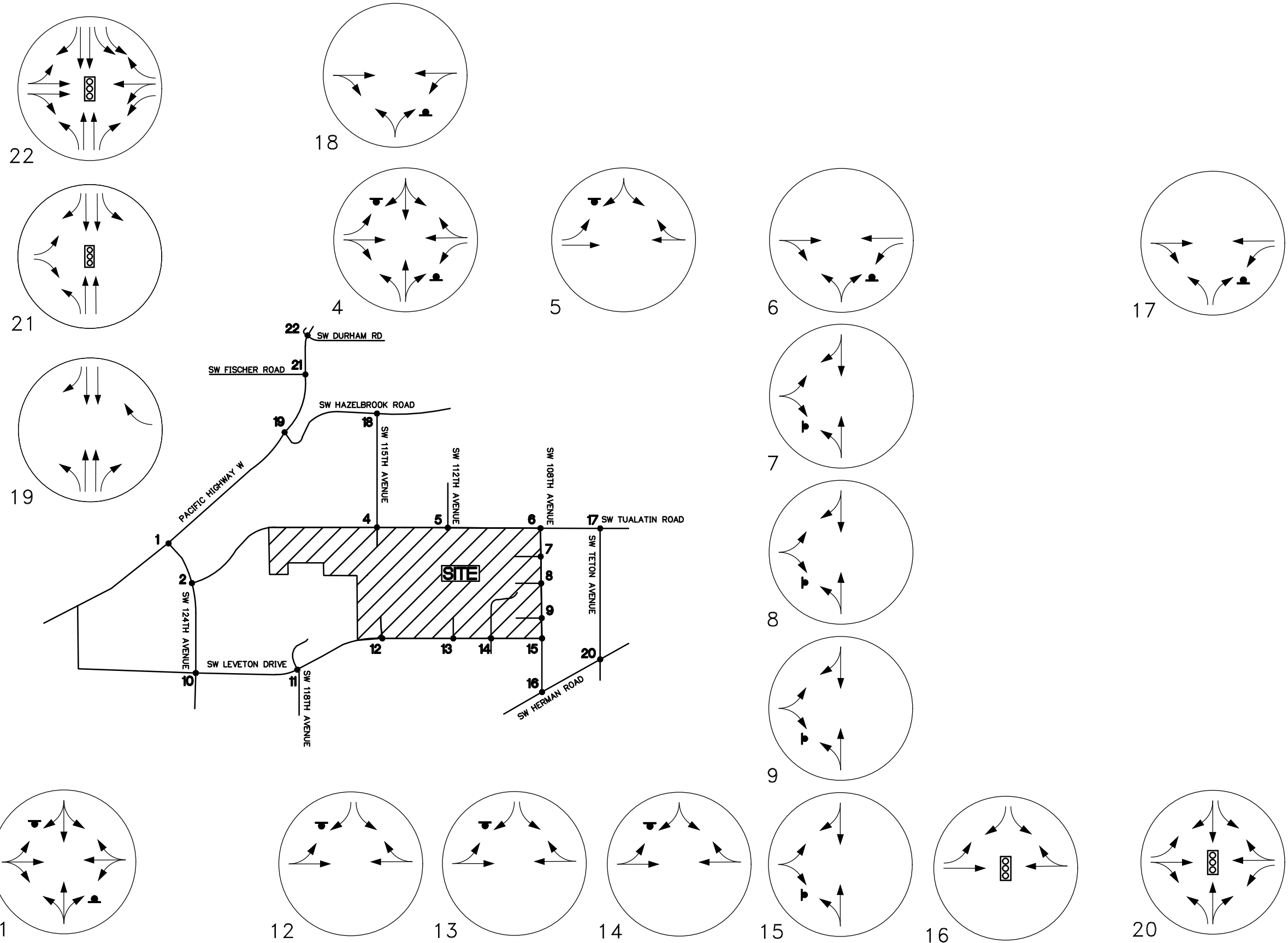
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
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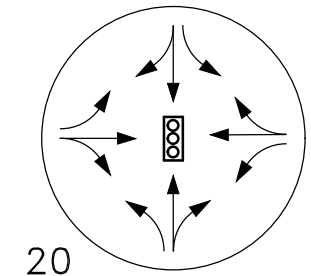
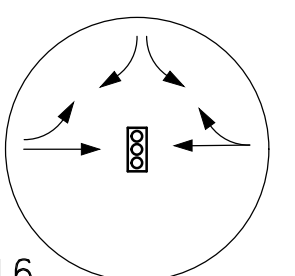
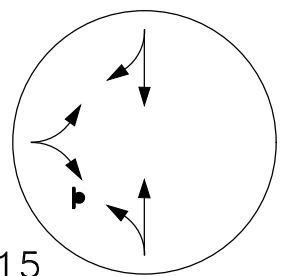
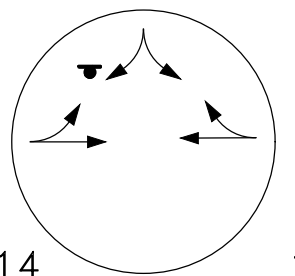
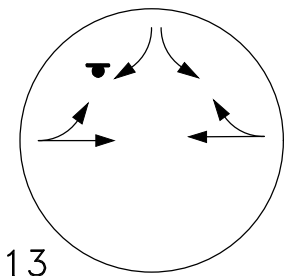
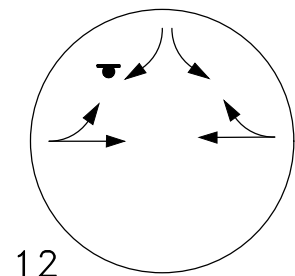
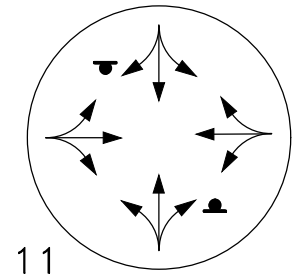
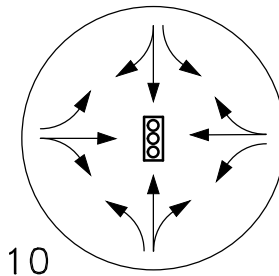
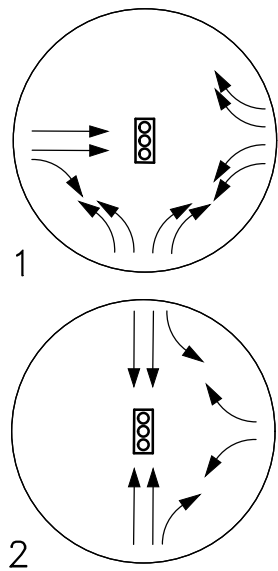
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LEGEND

-  EXISTING
-  PLANNED
-  STOP SIGN
-  SIGNAL



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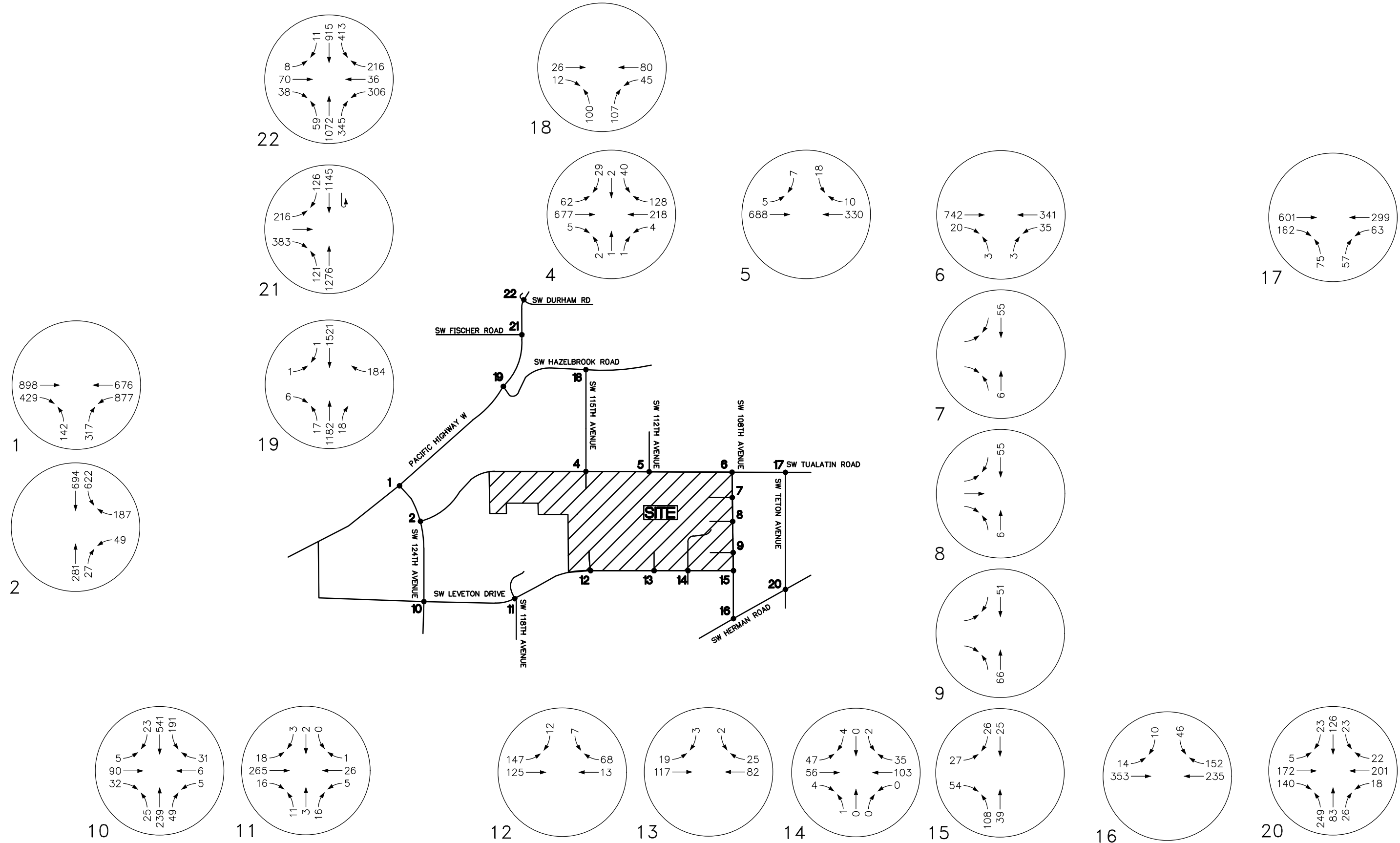
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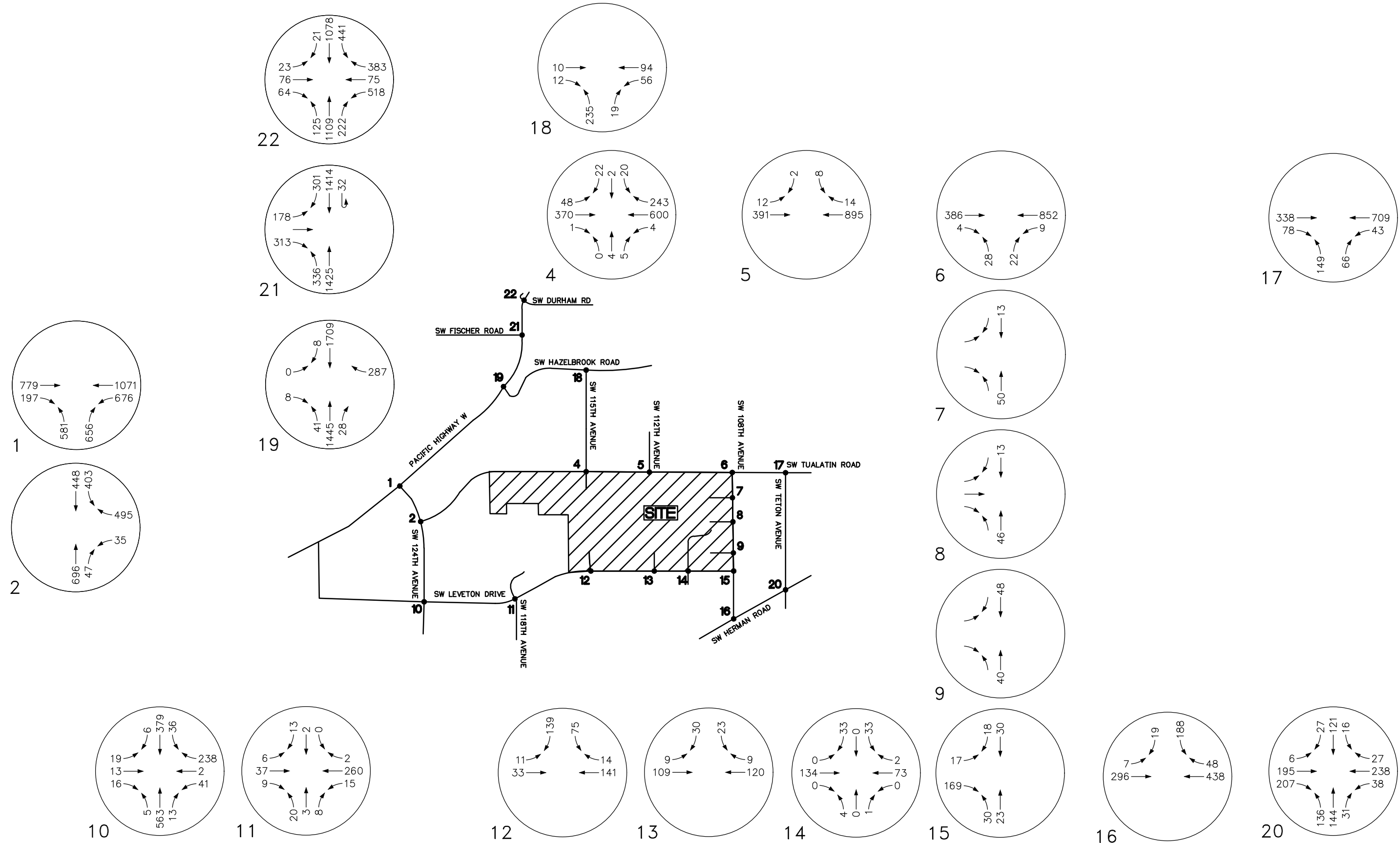
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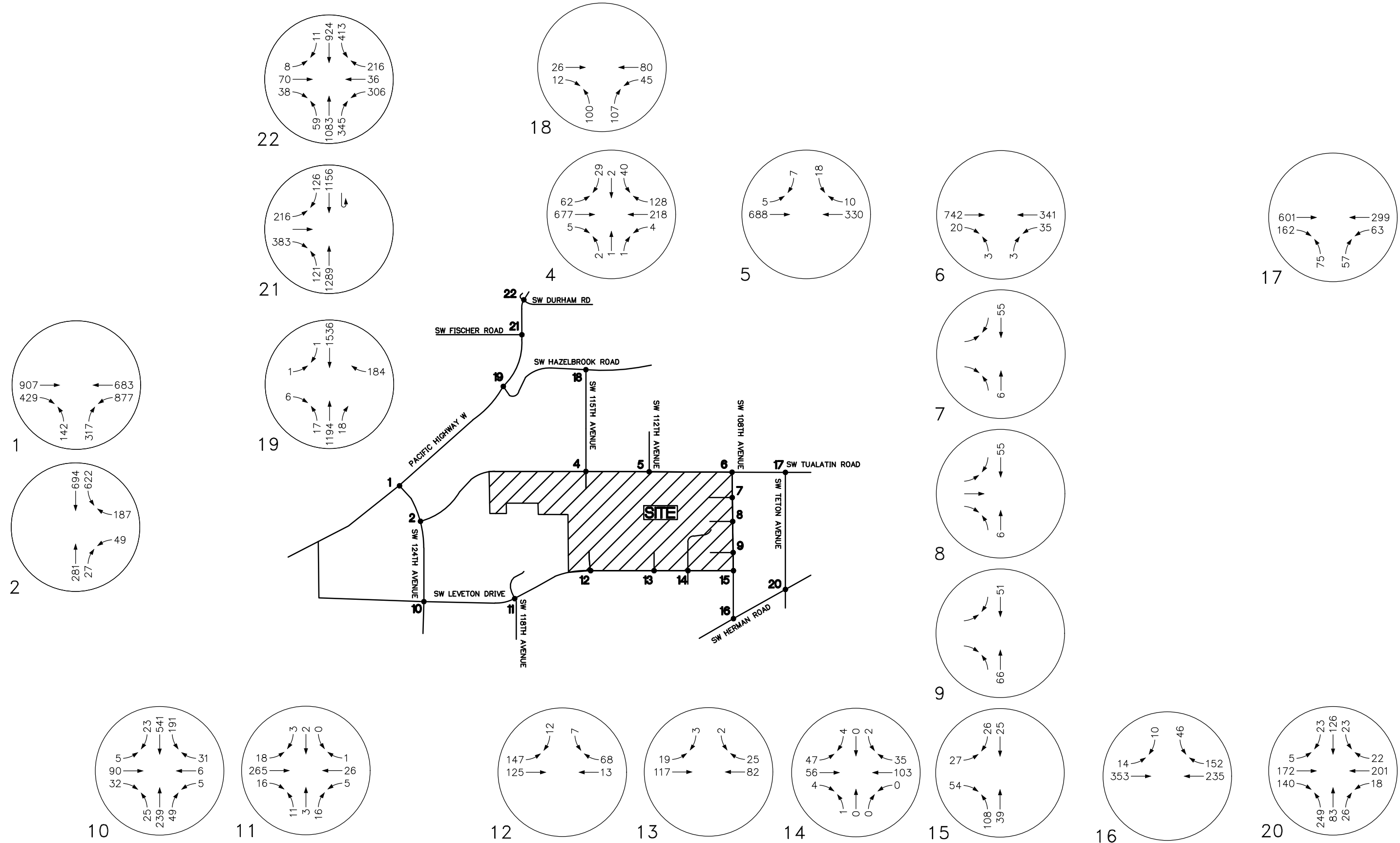
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 + LANE CONFIGURATIONS**

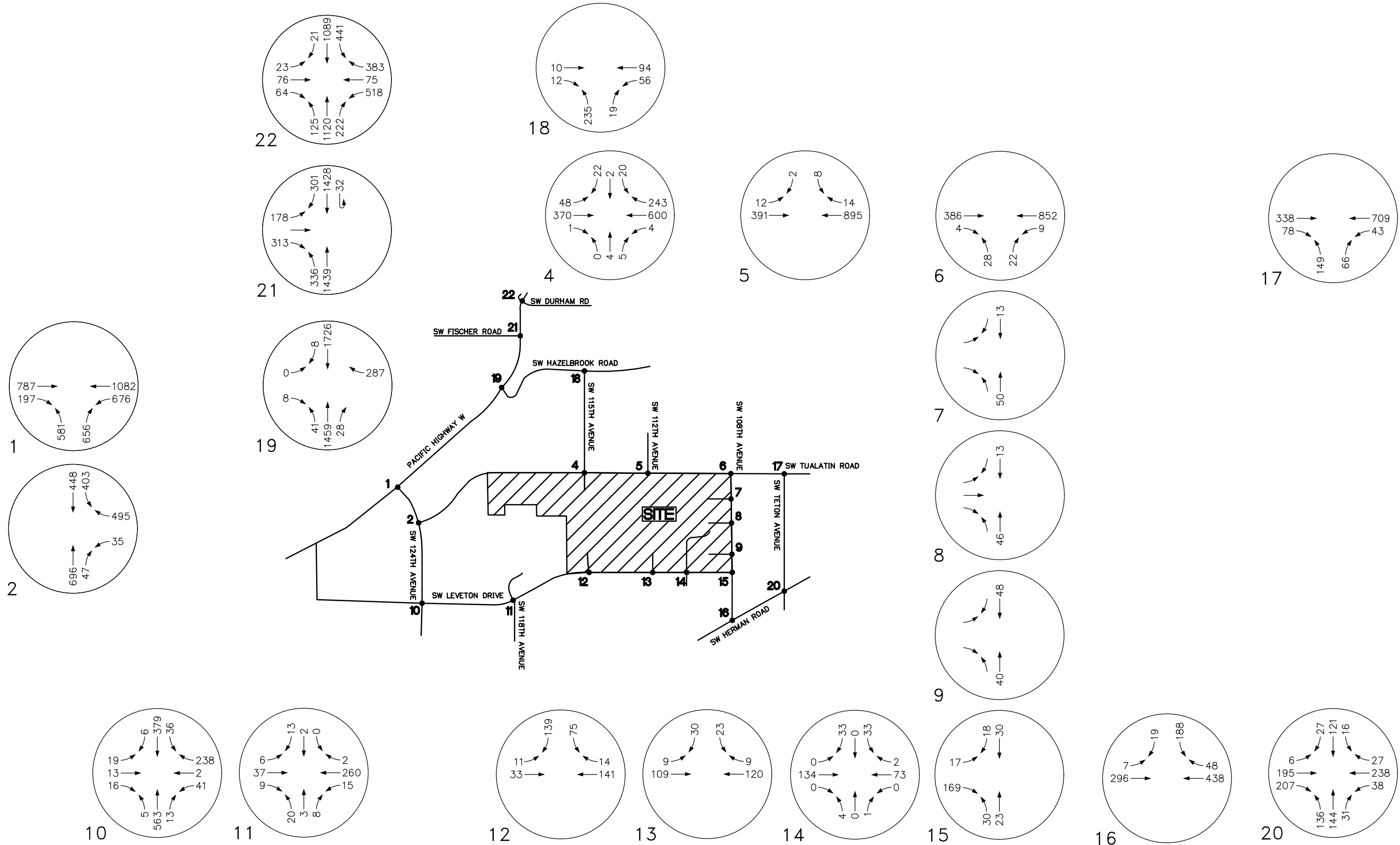
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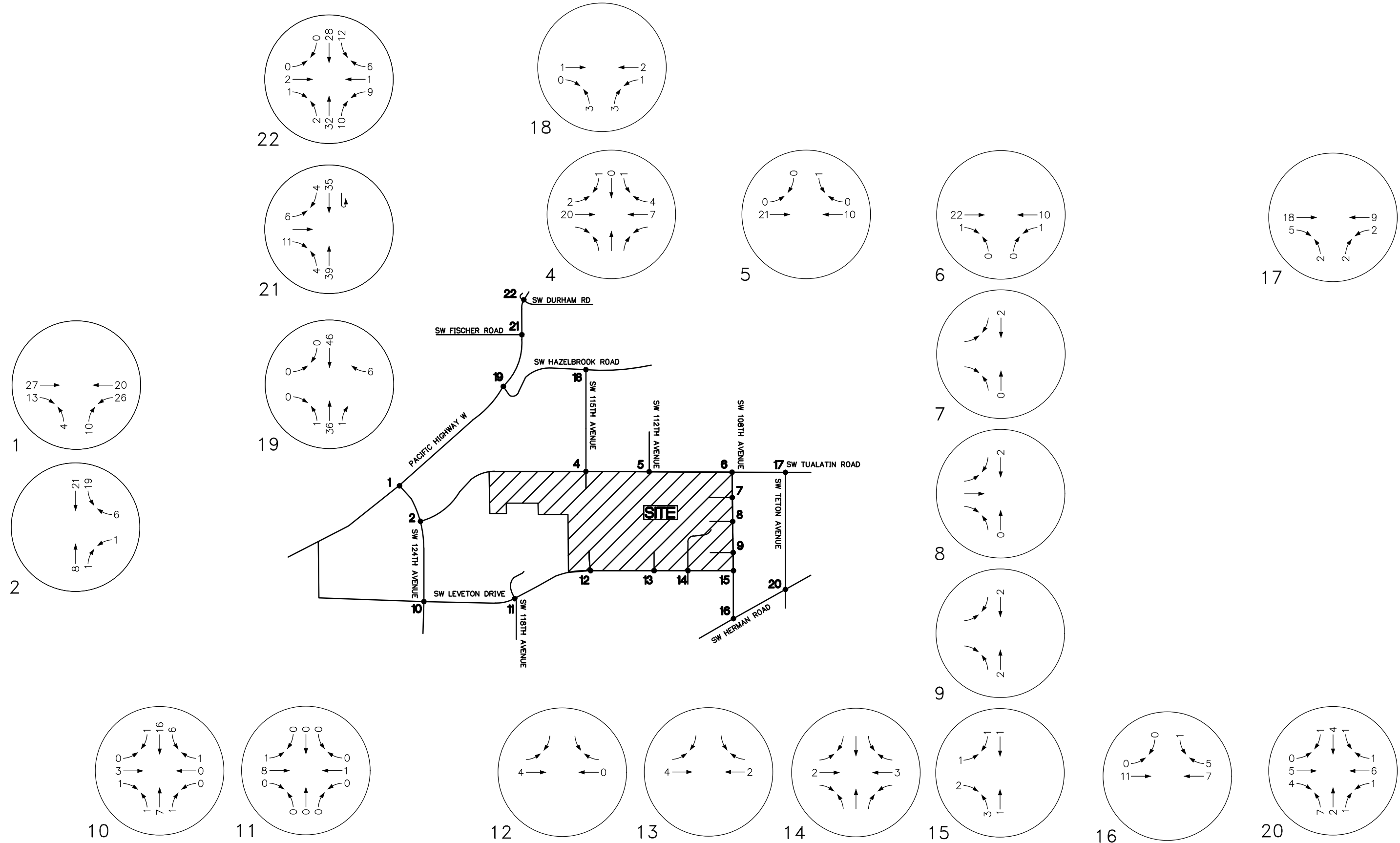
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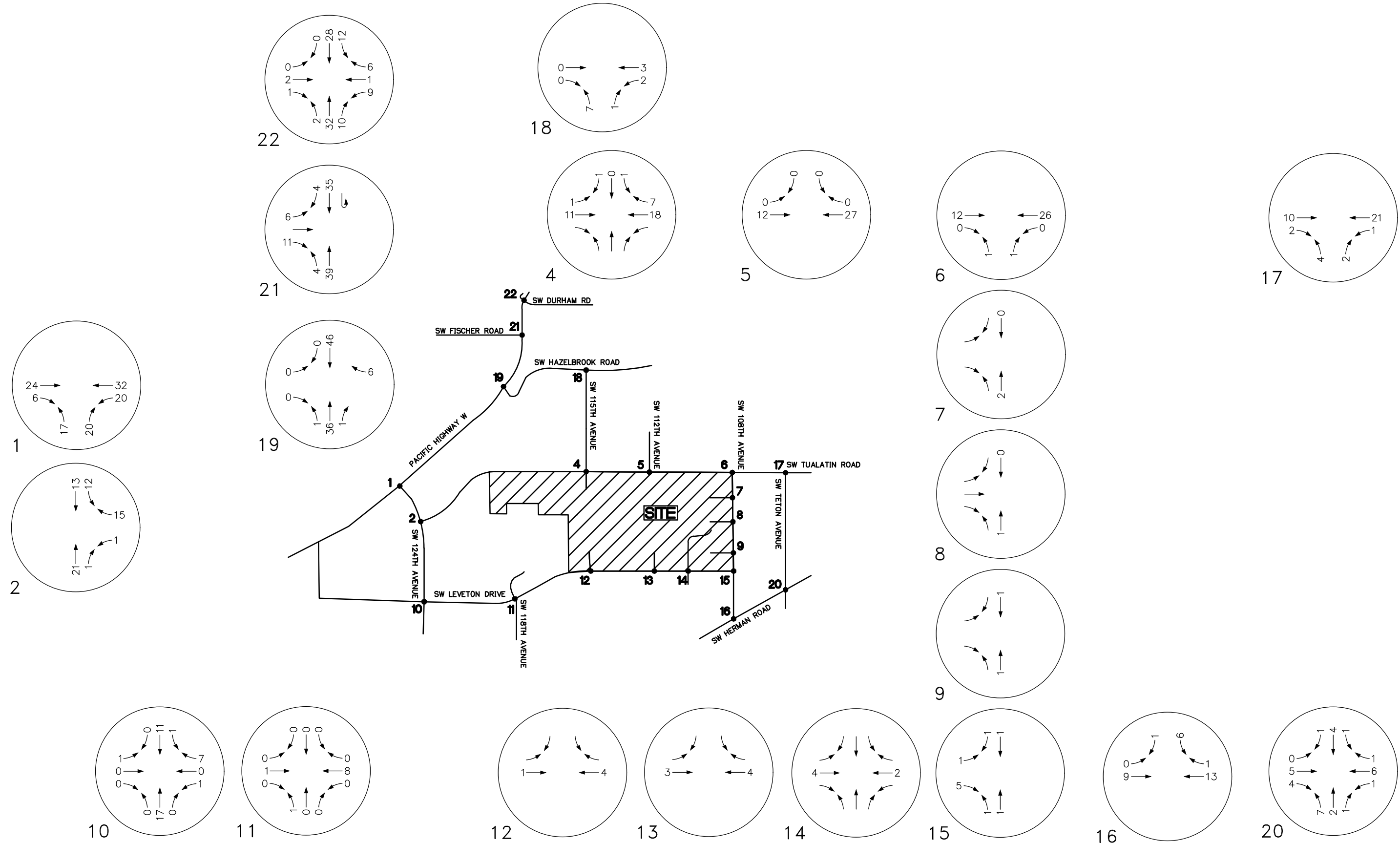


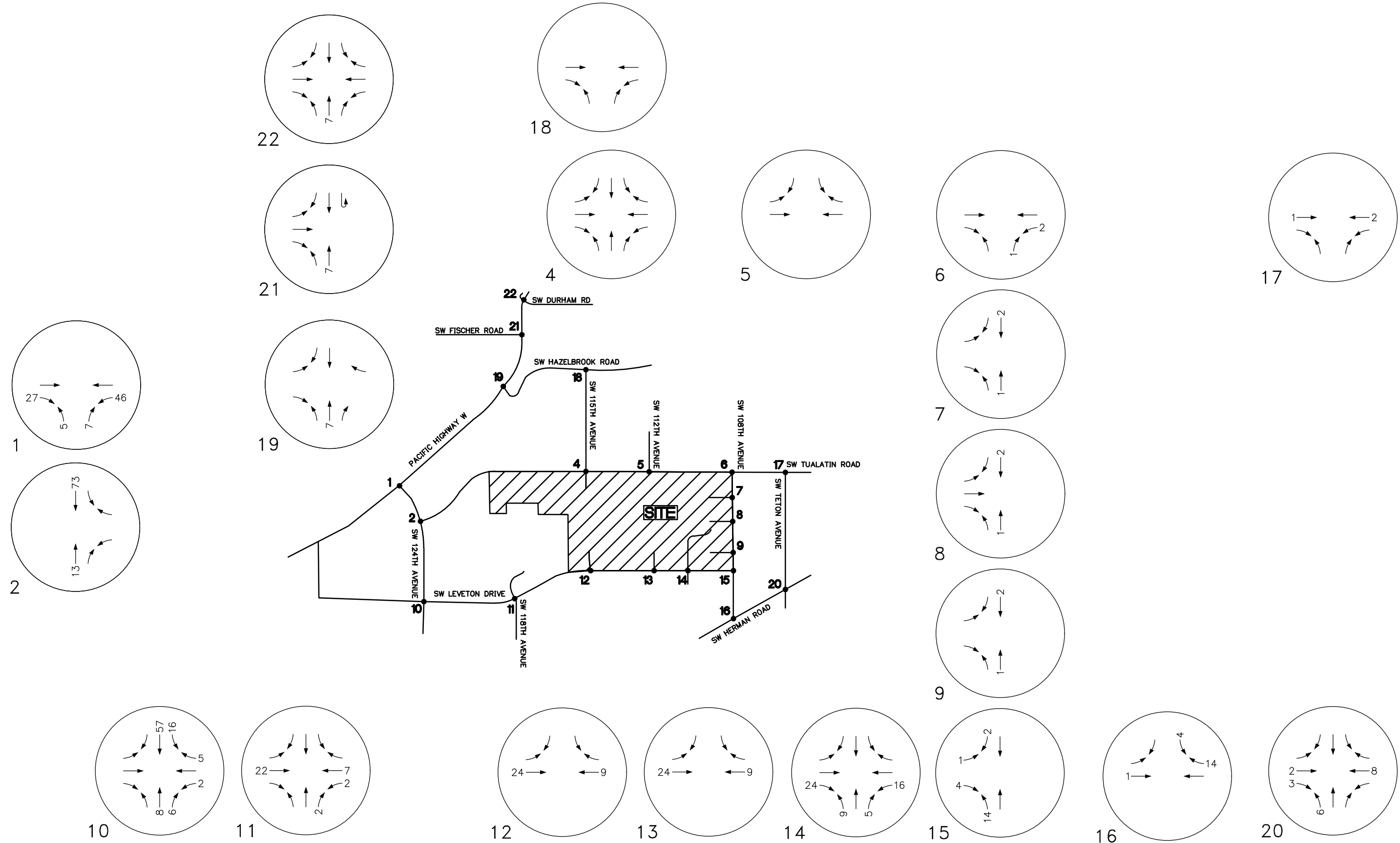


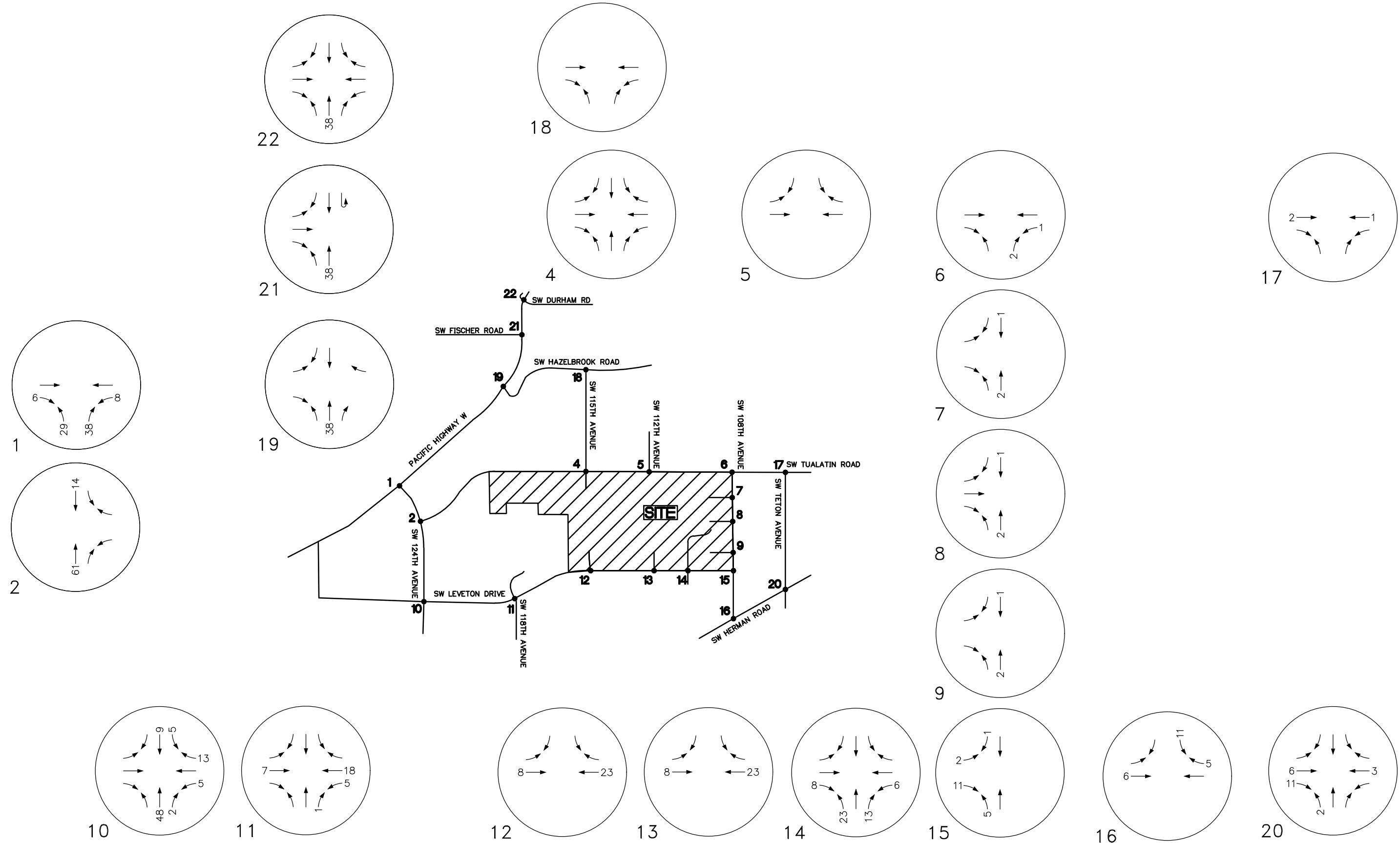


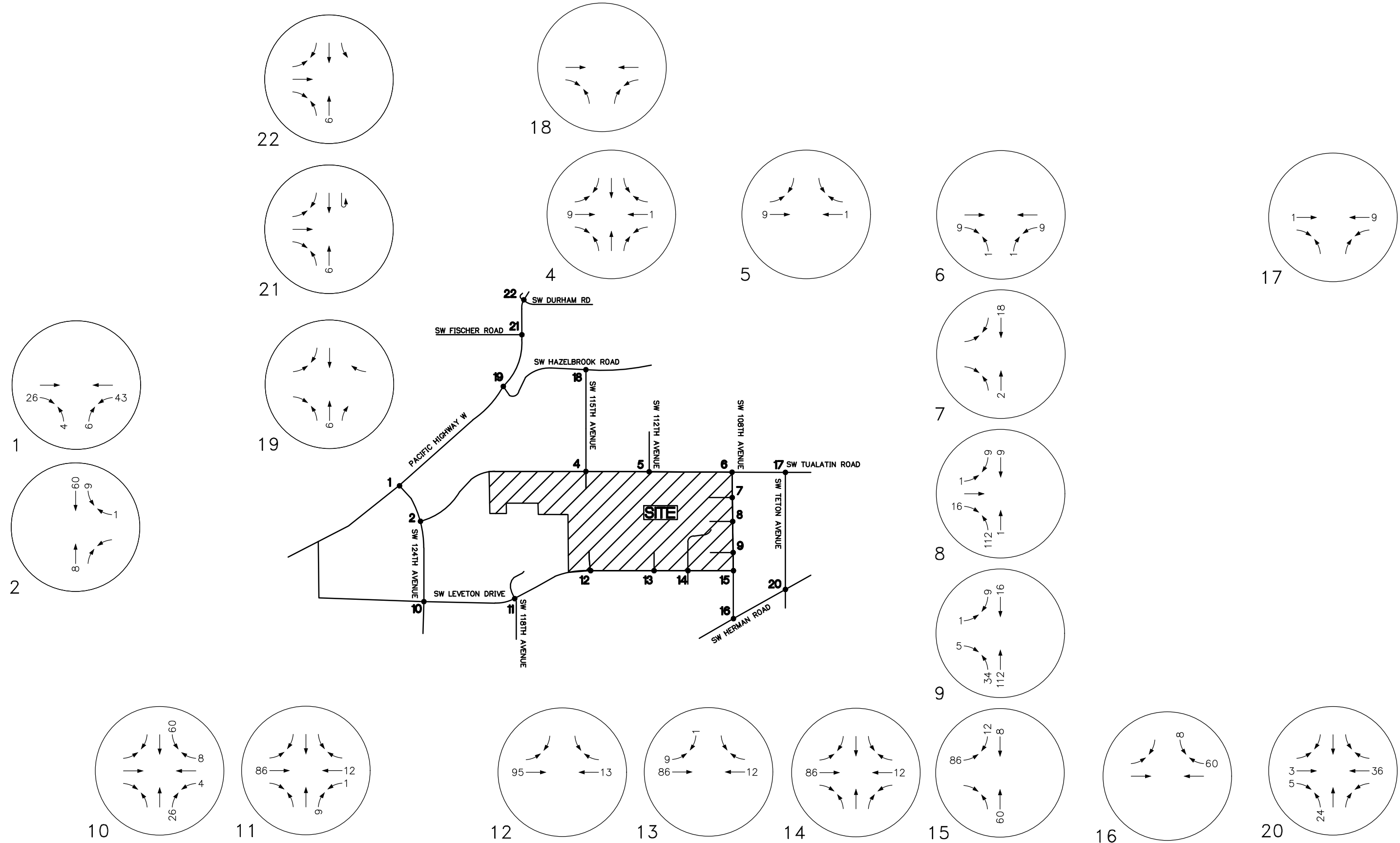


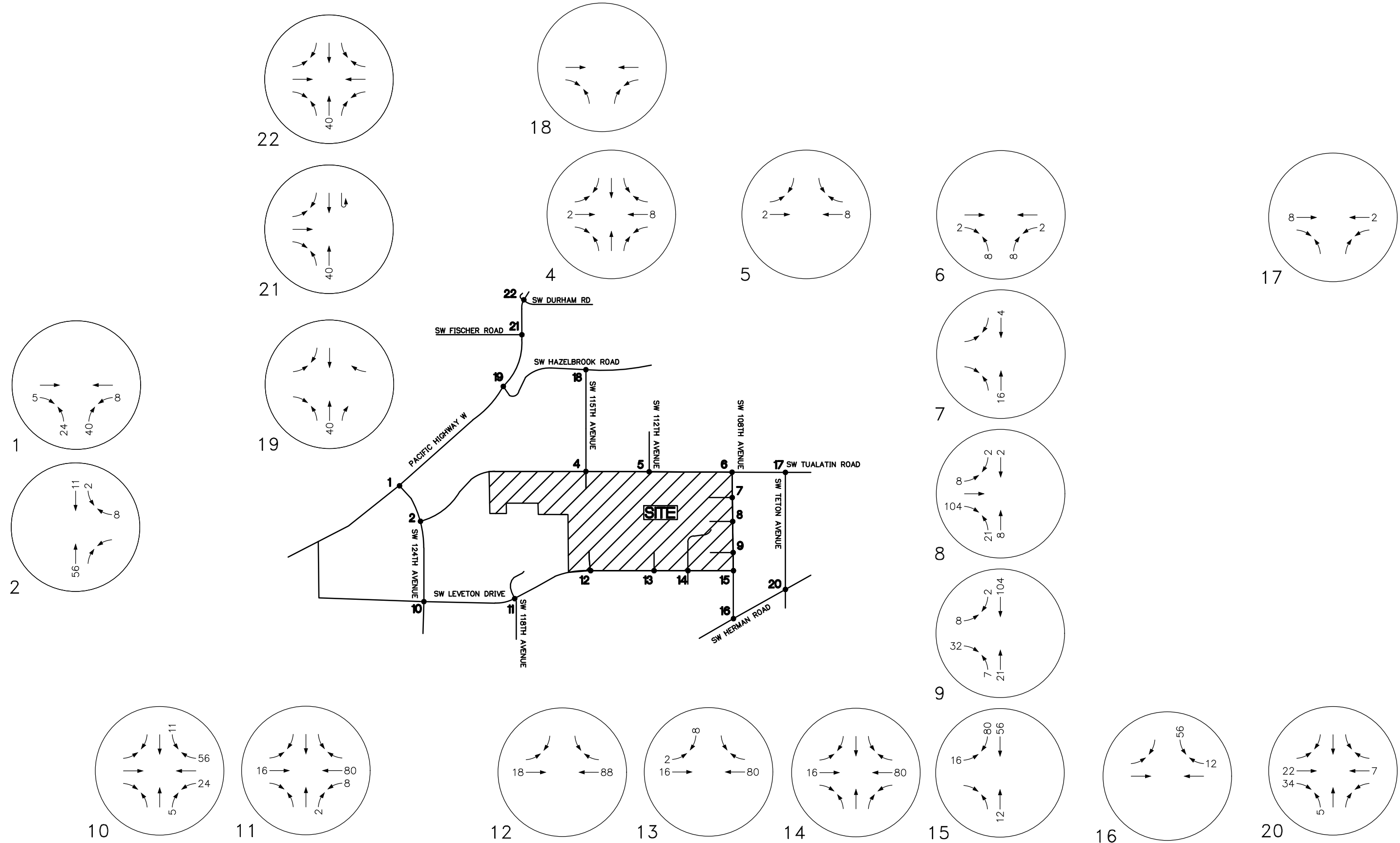


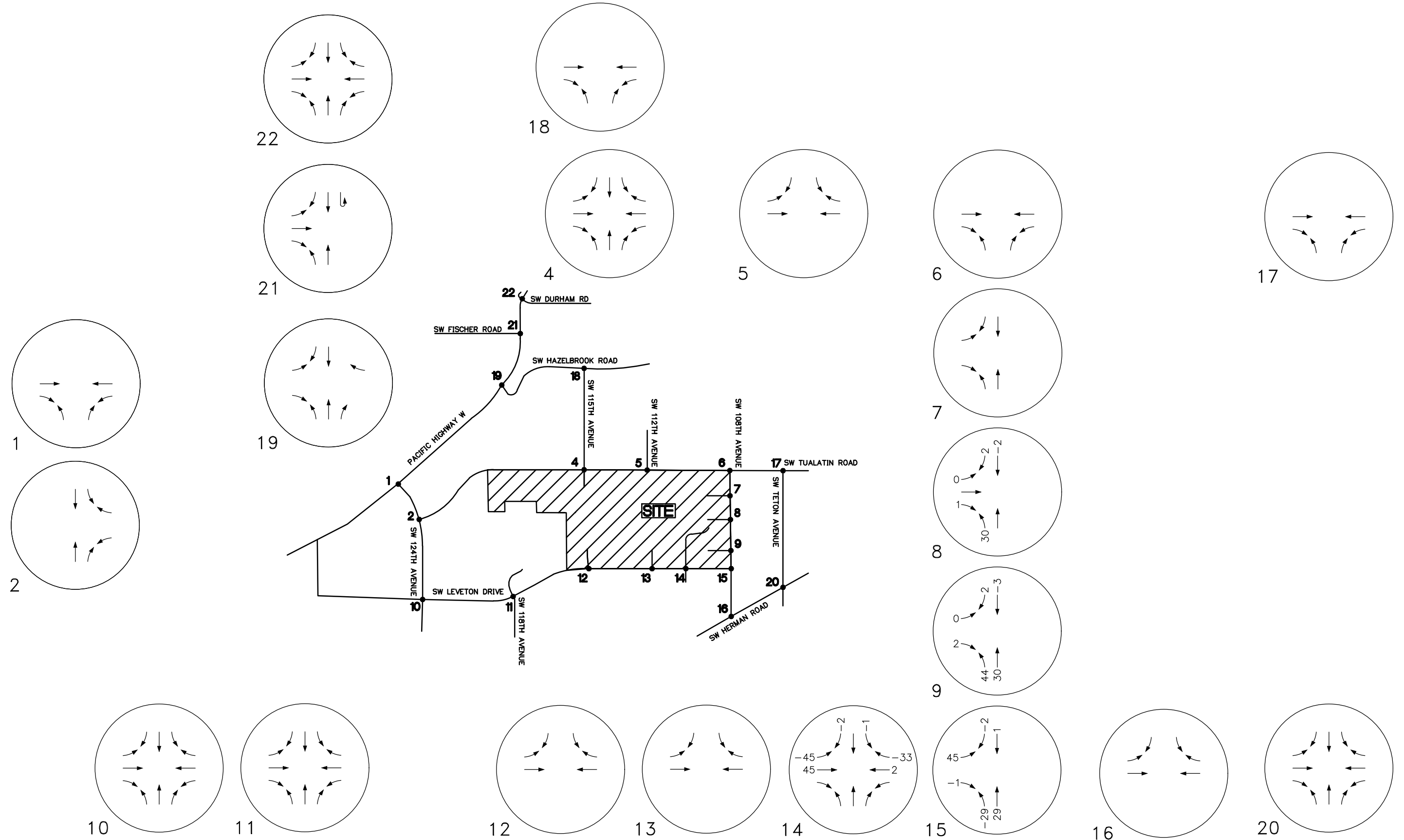


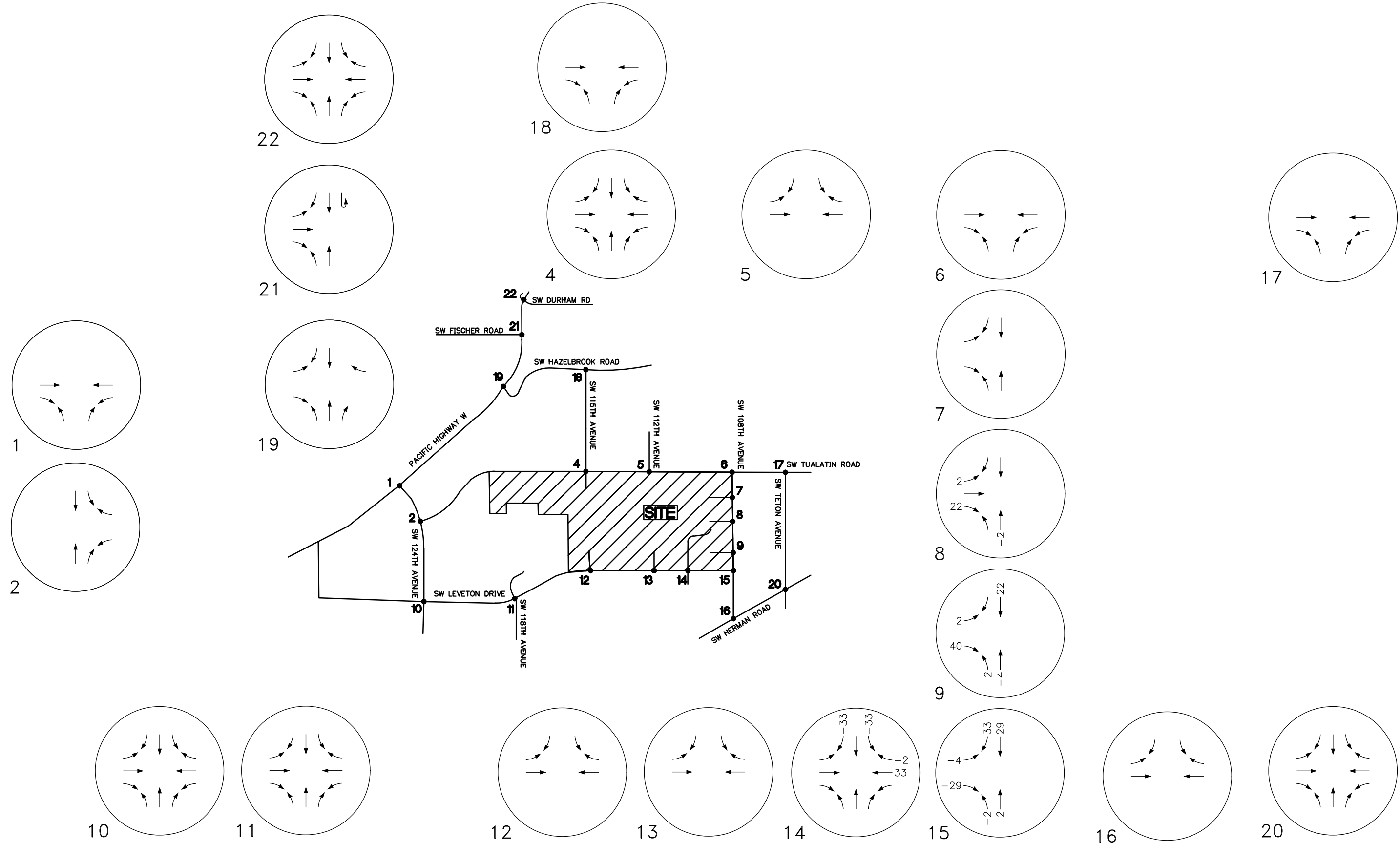


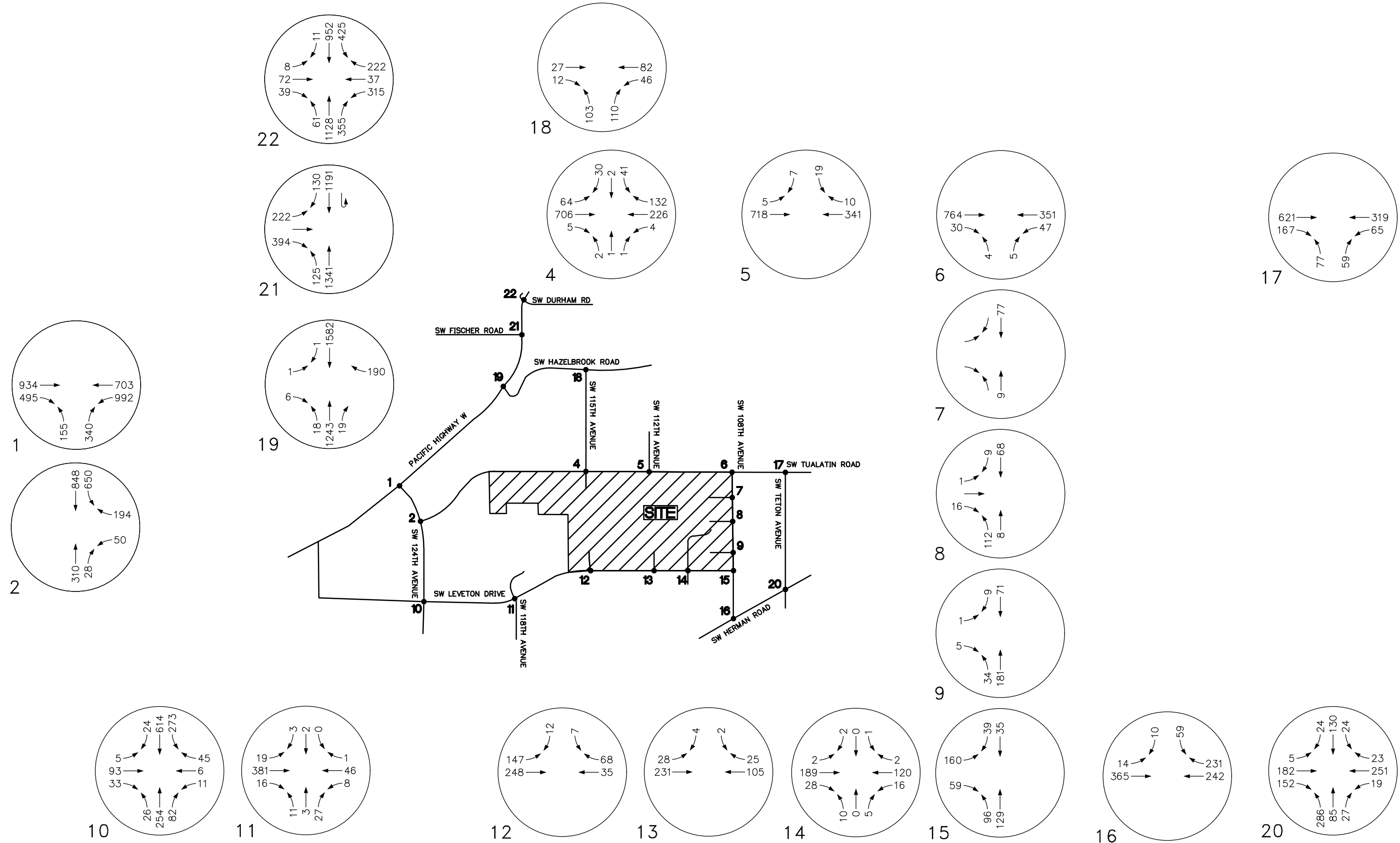


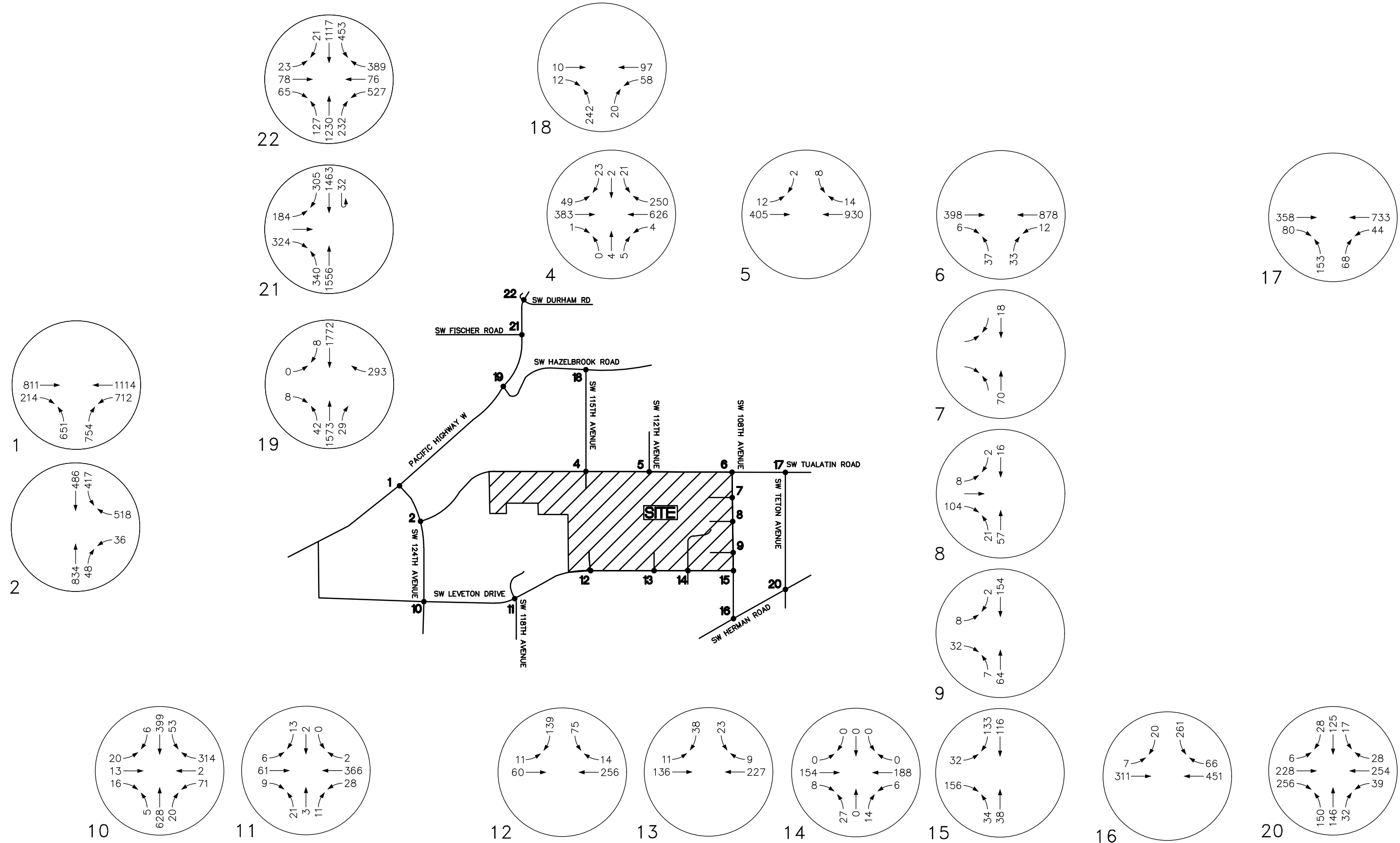


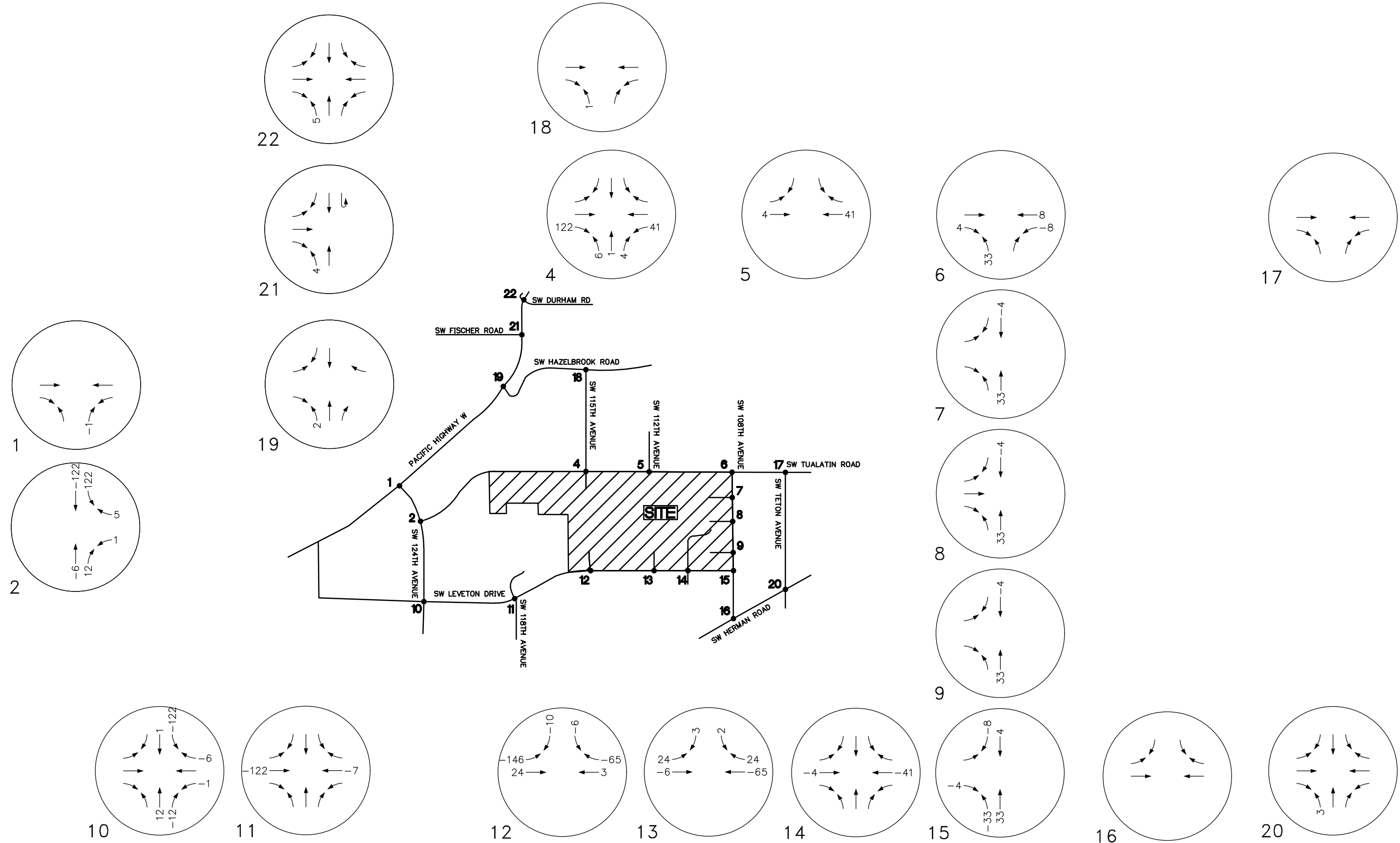


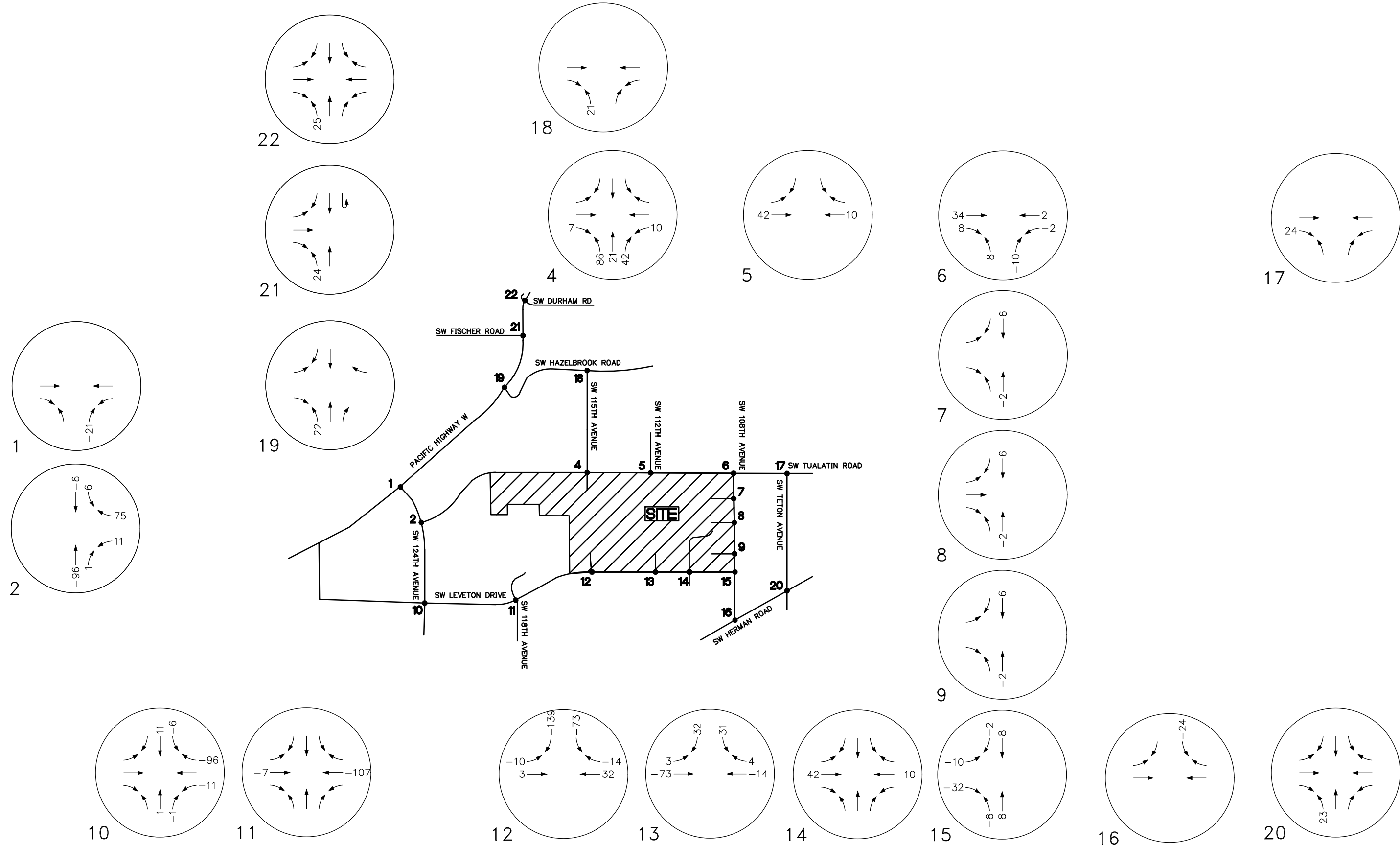


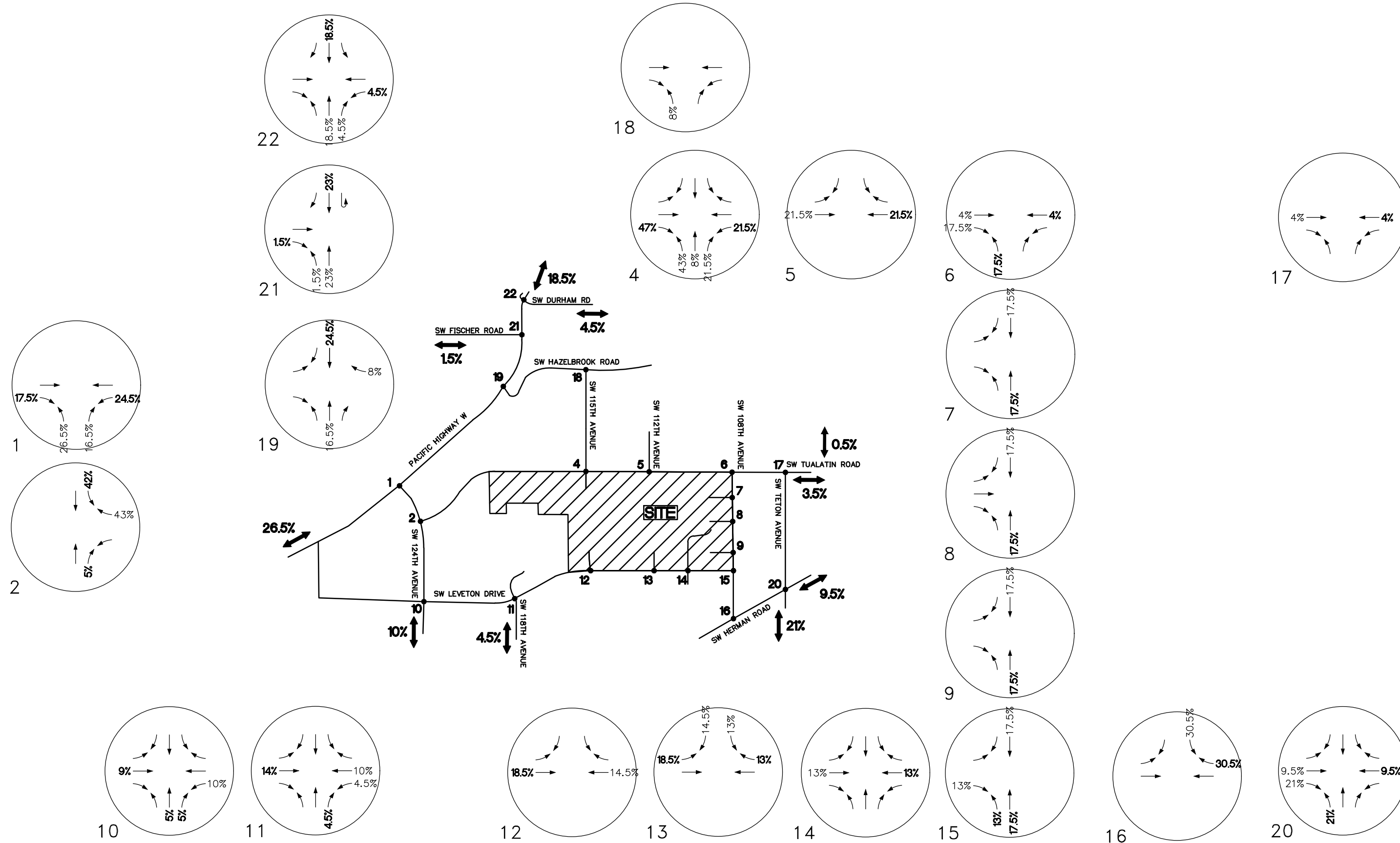


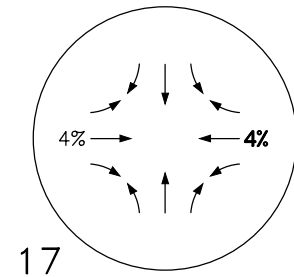




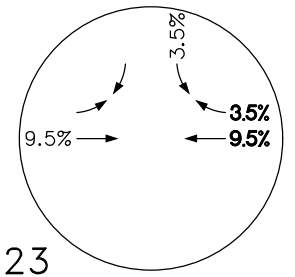




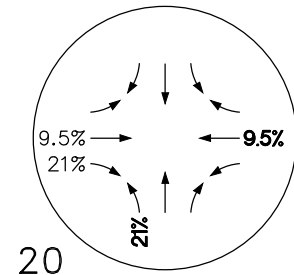




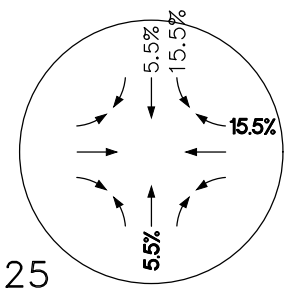
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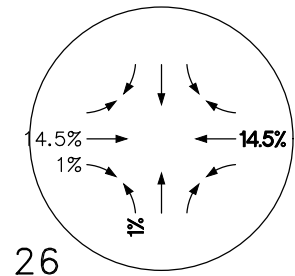
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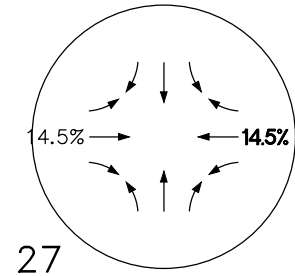
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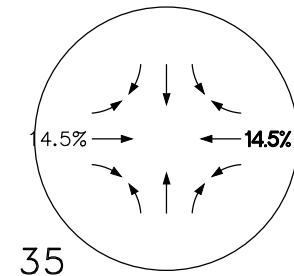
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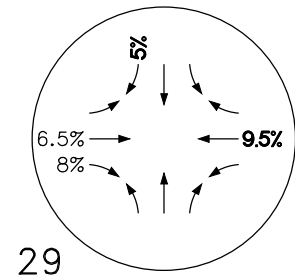
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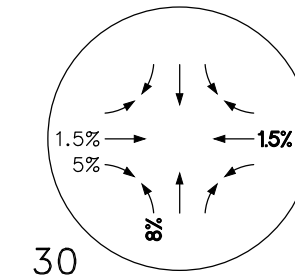
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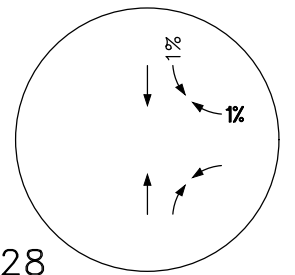
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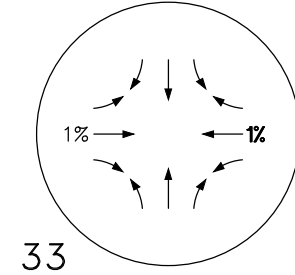
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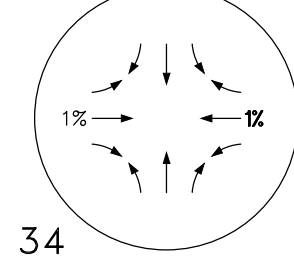
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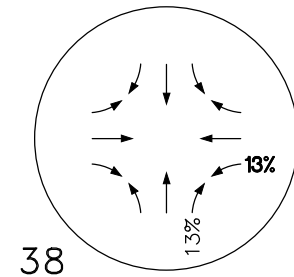
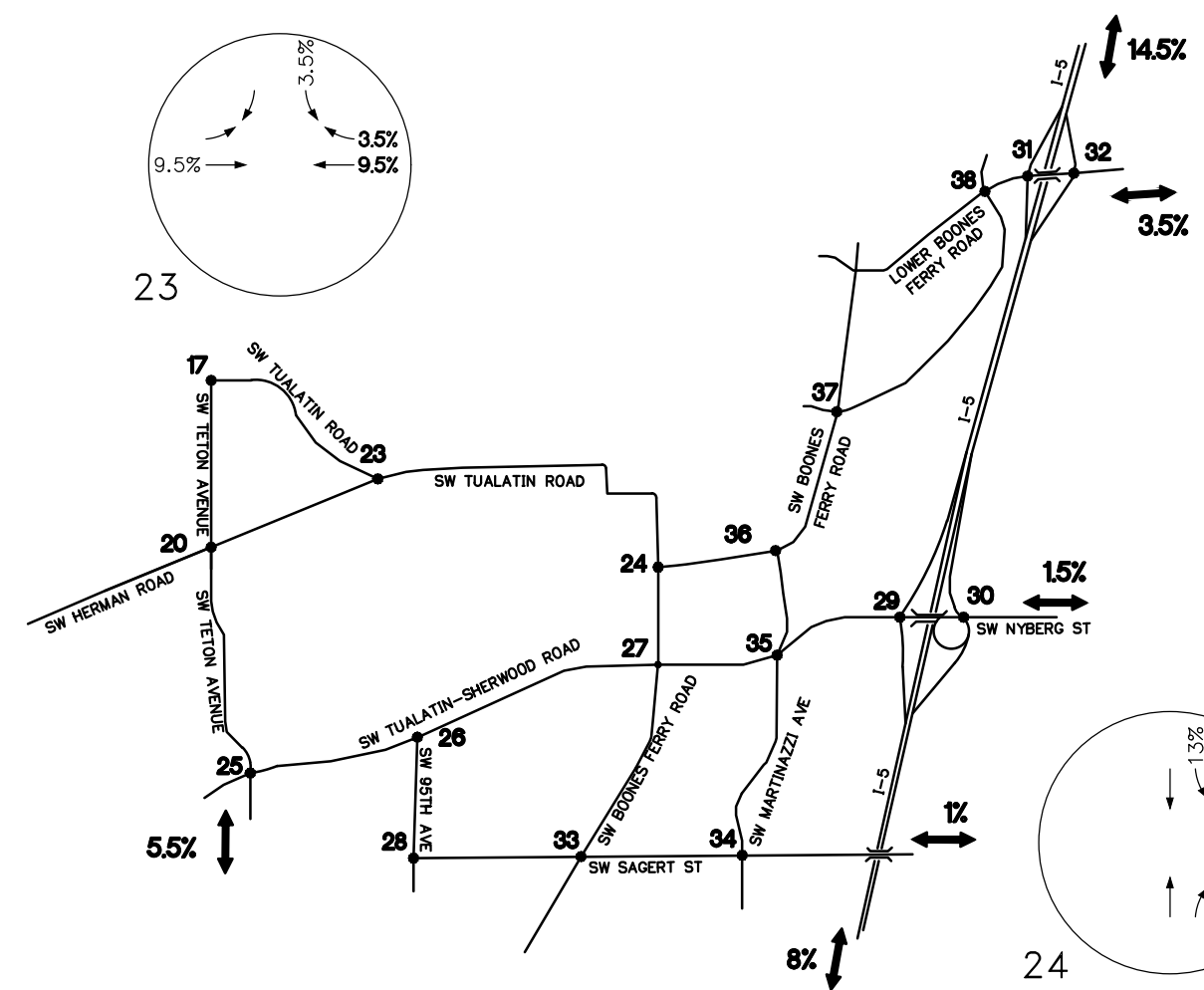
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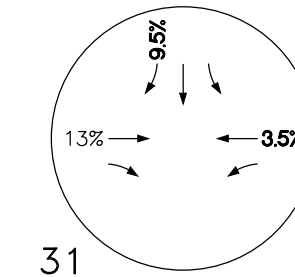
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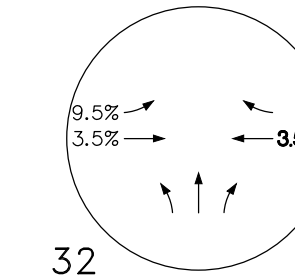
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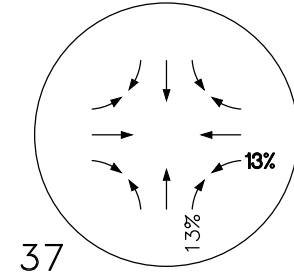
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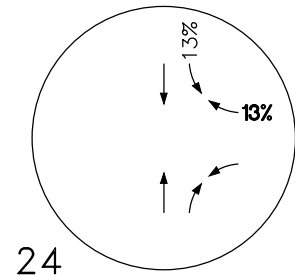
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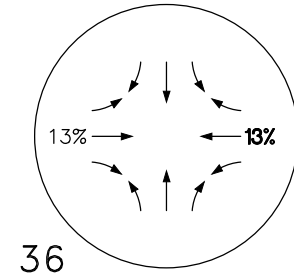
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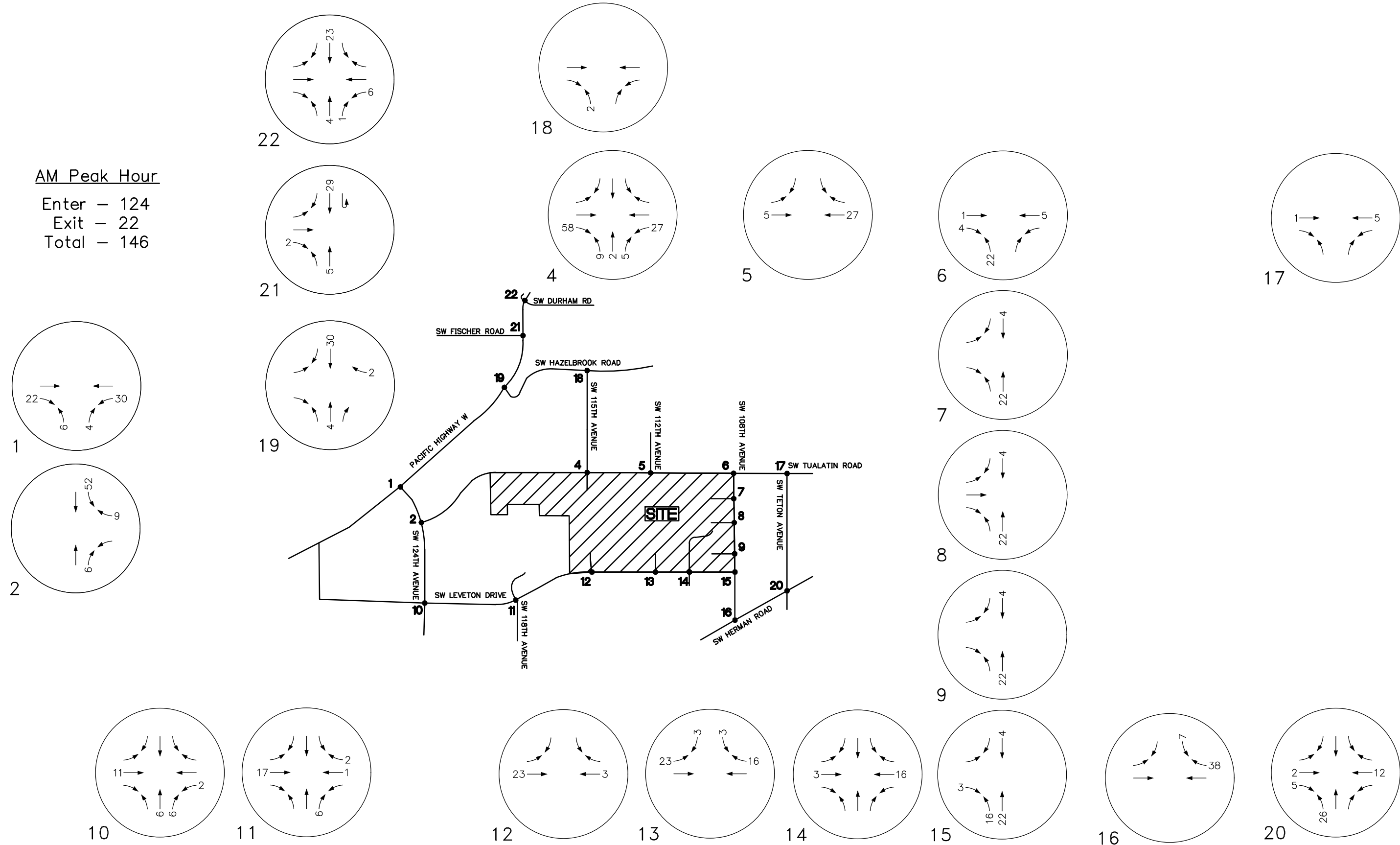
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FIGURE 12B

AM Peak Hour

Enter - 124
 Exit - 22
 Total - 146



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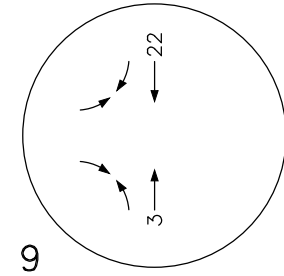
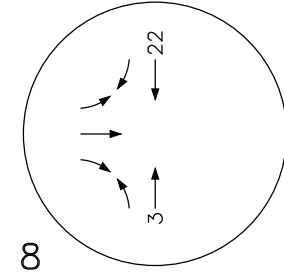
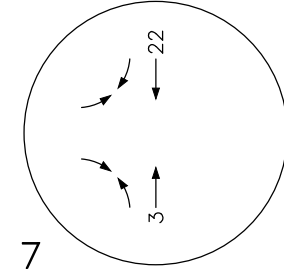
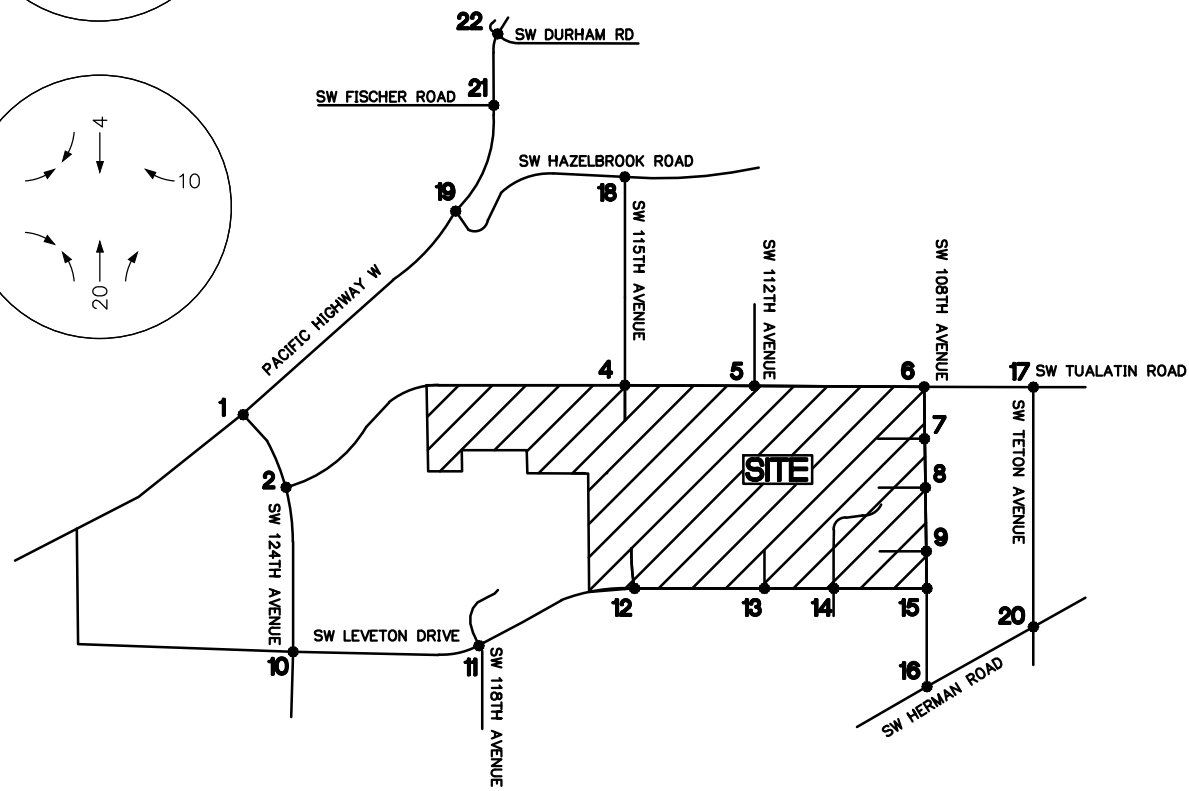
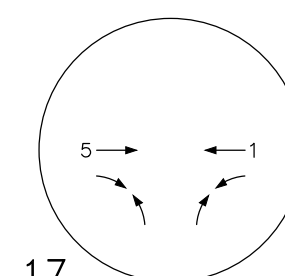
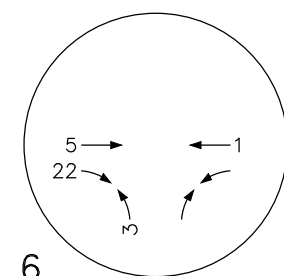
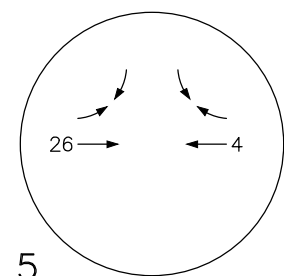
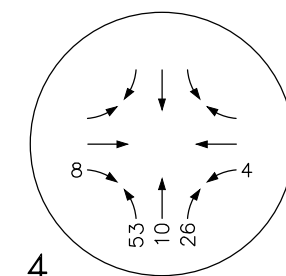
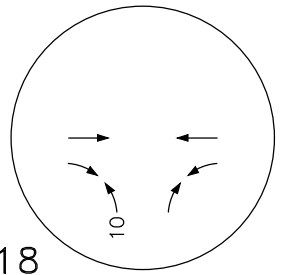
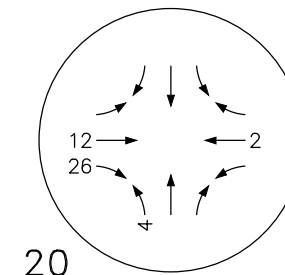
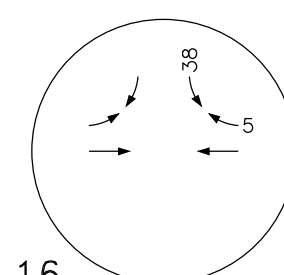
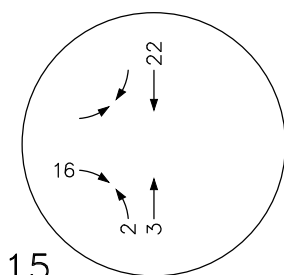
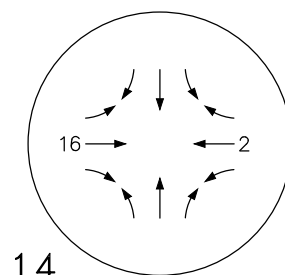
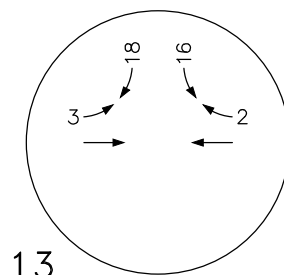
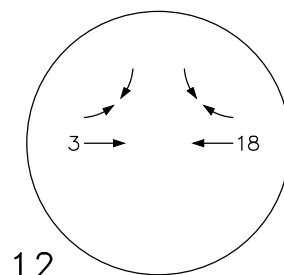
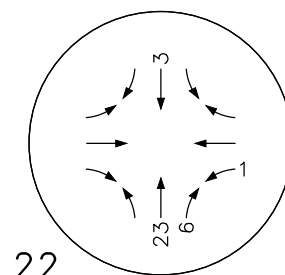
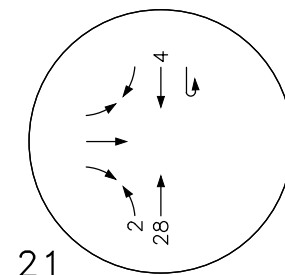
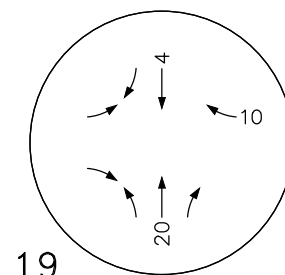
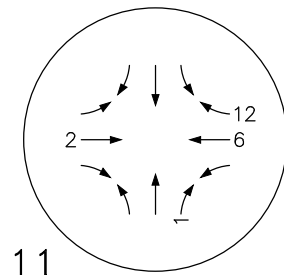
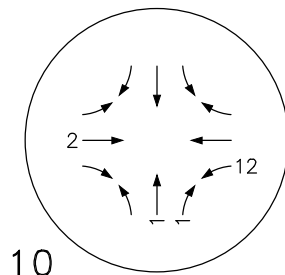
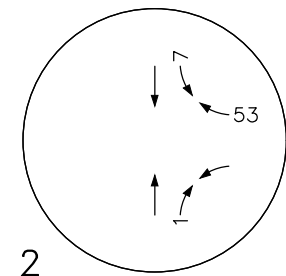
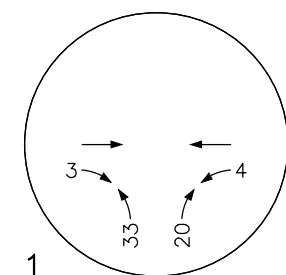
PHASE 1
TRIP ASSIGNMENT -
AM PEAK HOUR
LAM RESEARCH TUX
TUALATIN, OR

FIGURE
13A

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PM Peak Hour

Enter - 17
 Exit - 123
 Total - 140



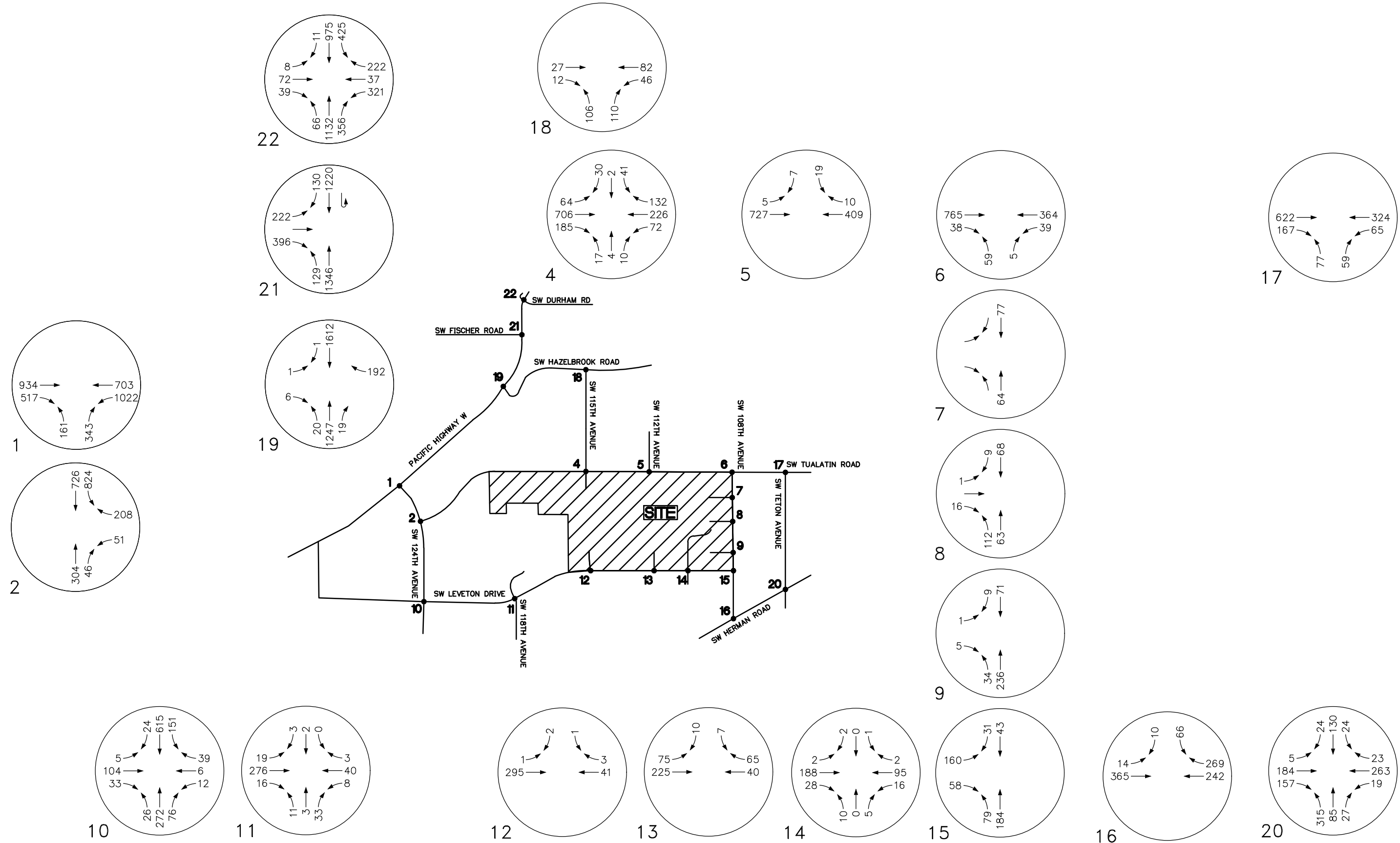
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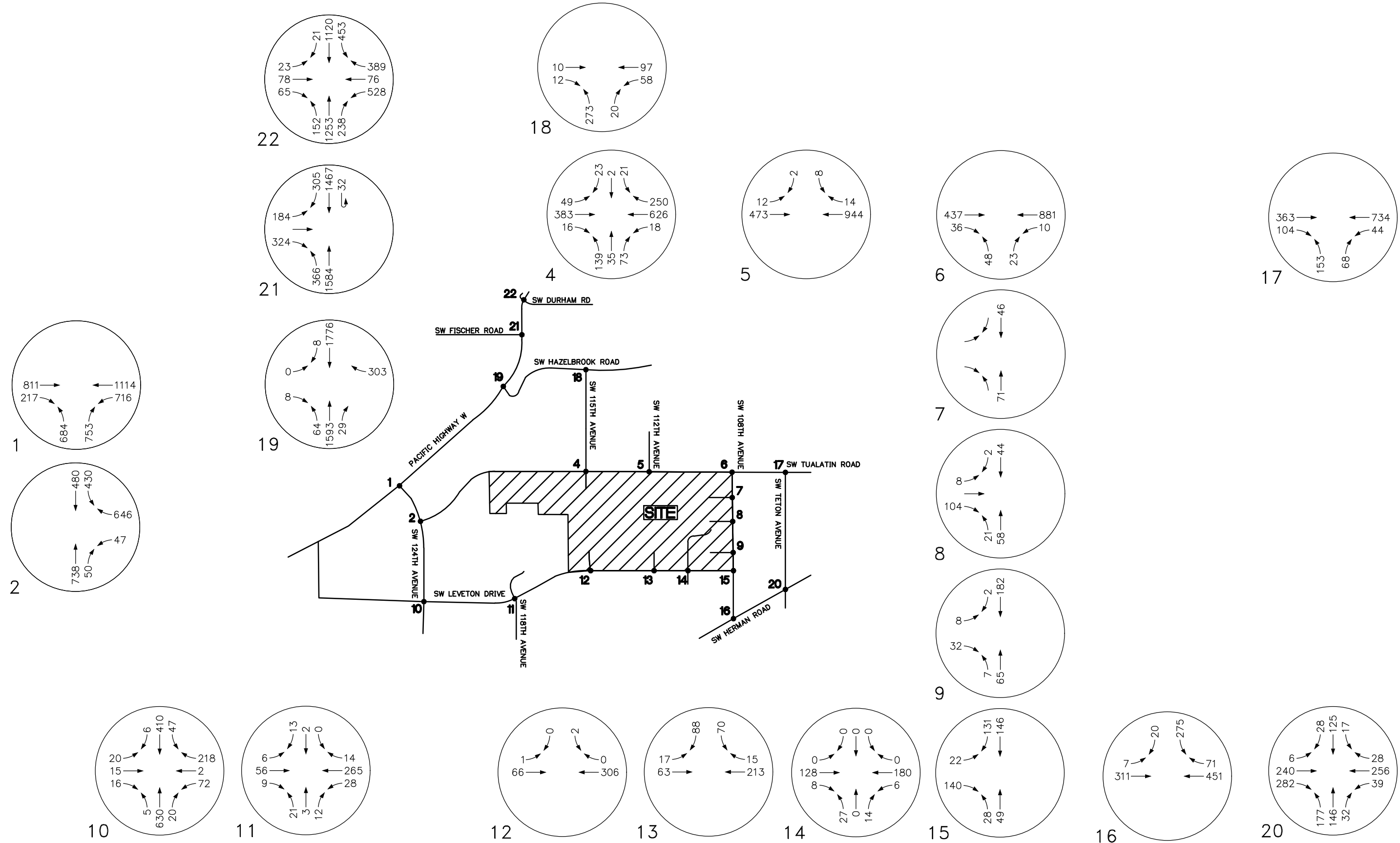
DATE: 10.9.2024
 DRAWN BY: FMS
 CHECKED BY: BTA
 JOB NO:
 224002200

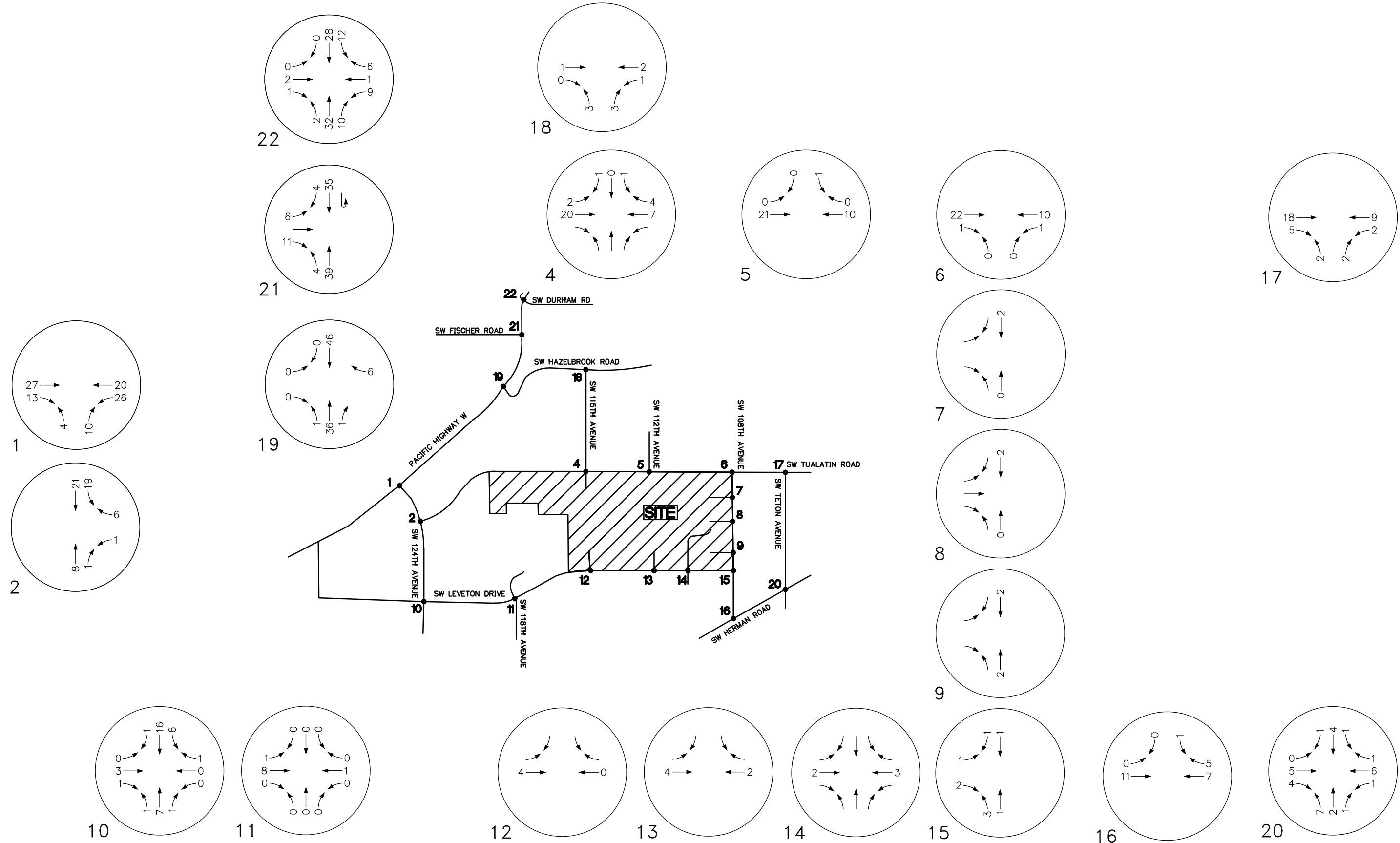
PHASE 1
 TRIP ASSIGNMENT -
 PM PEAK HOUR
 LAM RESEARCH TUX
 TUALATIN, OR

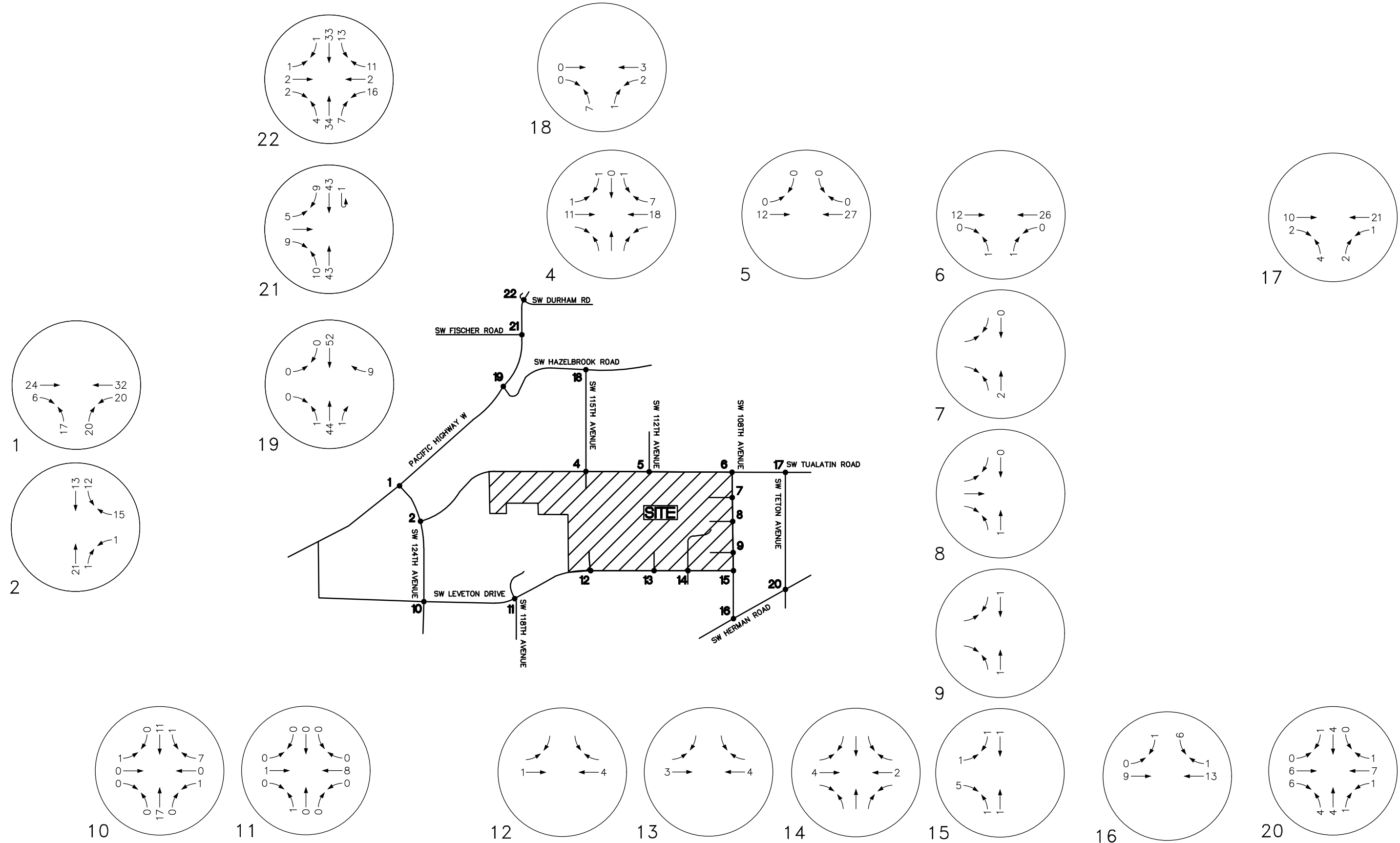
FIGURE
13B

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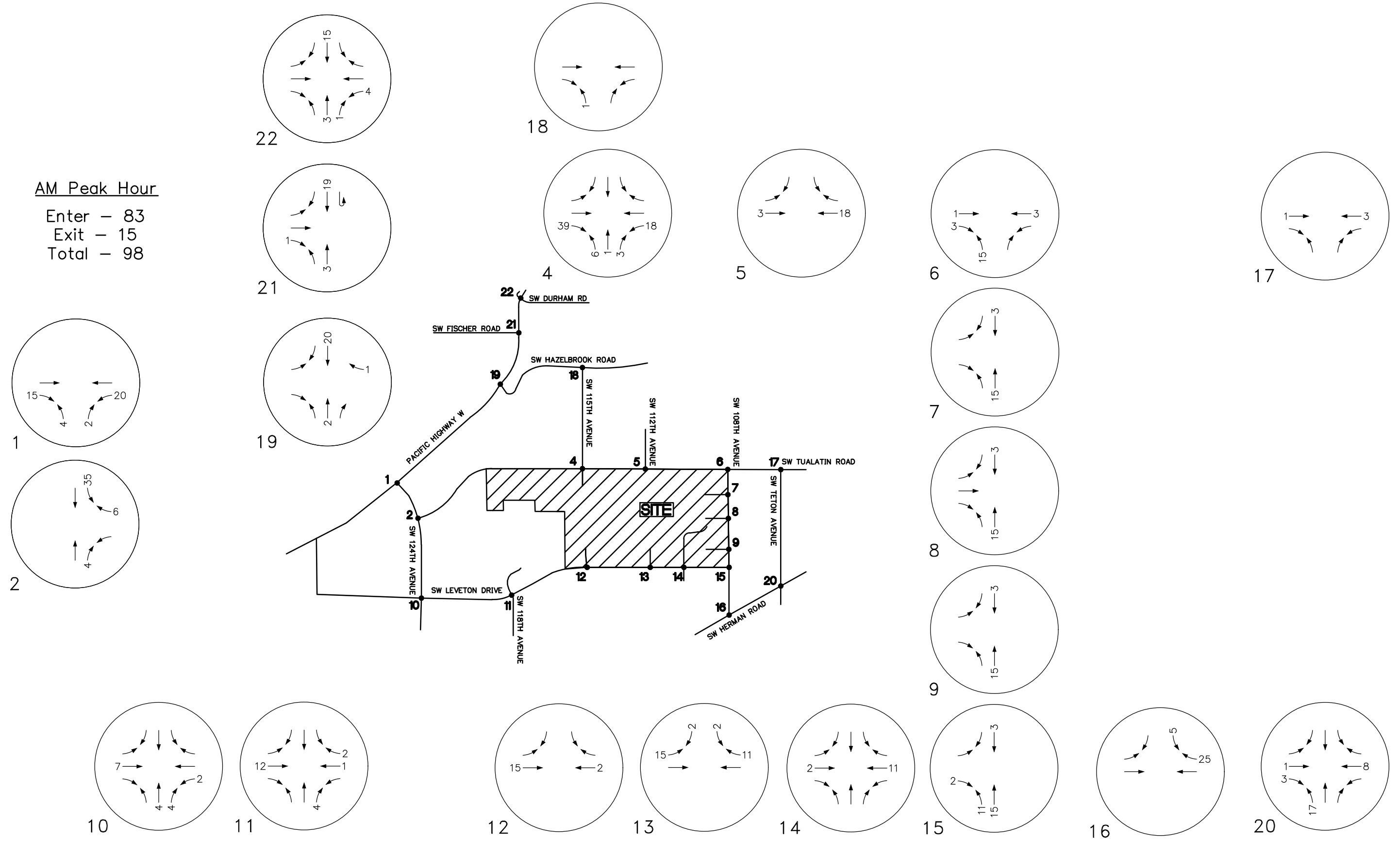






AM Peak Hour

Enter - 83
Exit - 15
Total - 98



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DATE: 10.9.2024
 DRAWN BY: FMS
 CHECKED BY: BTA
 JOB NO:
 224002200

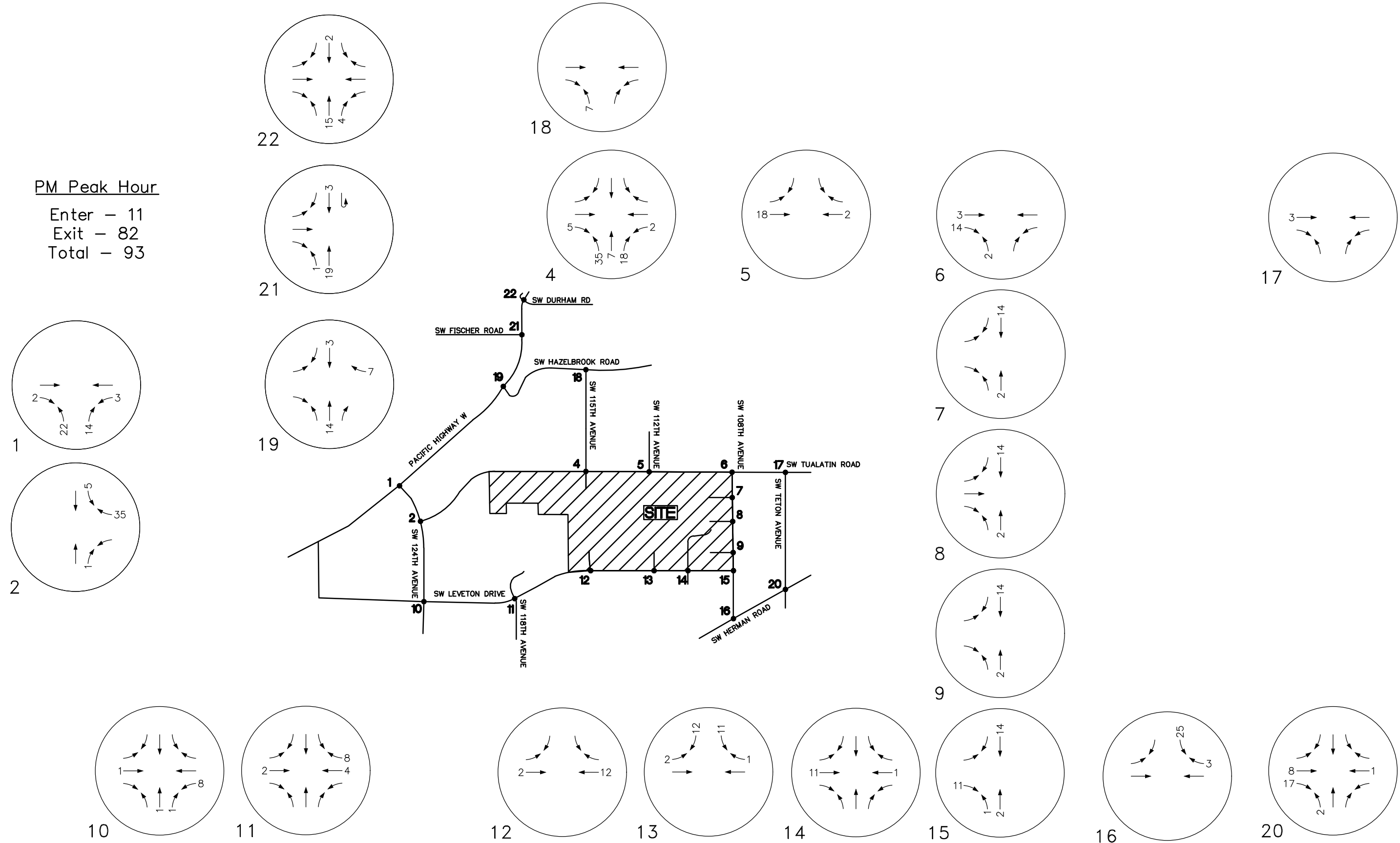
PHASE 2 TRIP ASSIGNMENT
 TRAFFIC VOLUMES -
 AM PEAK HOUR
 LAM RESEARCH TUX
 TUALATIN, OR

FIGURE
16A

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PM Peak Hour

Enter - 11
Exit - 82
Total - 93



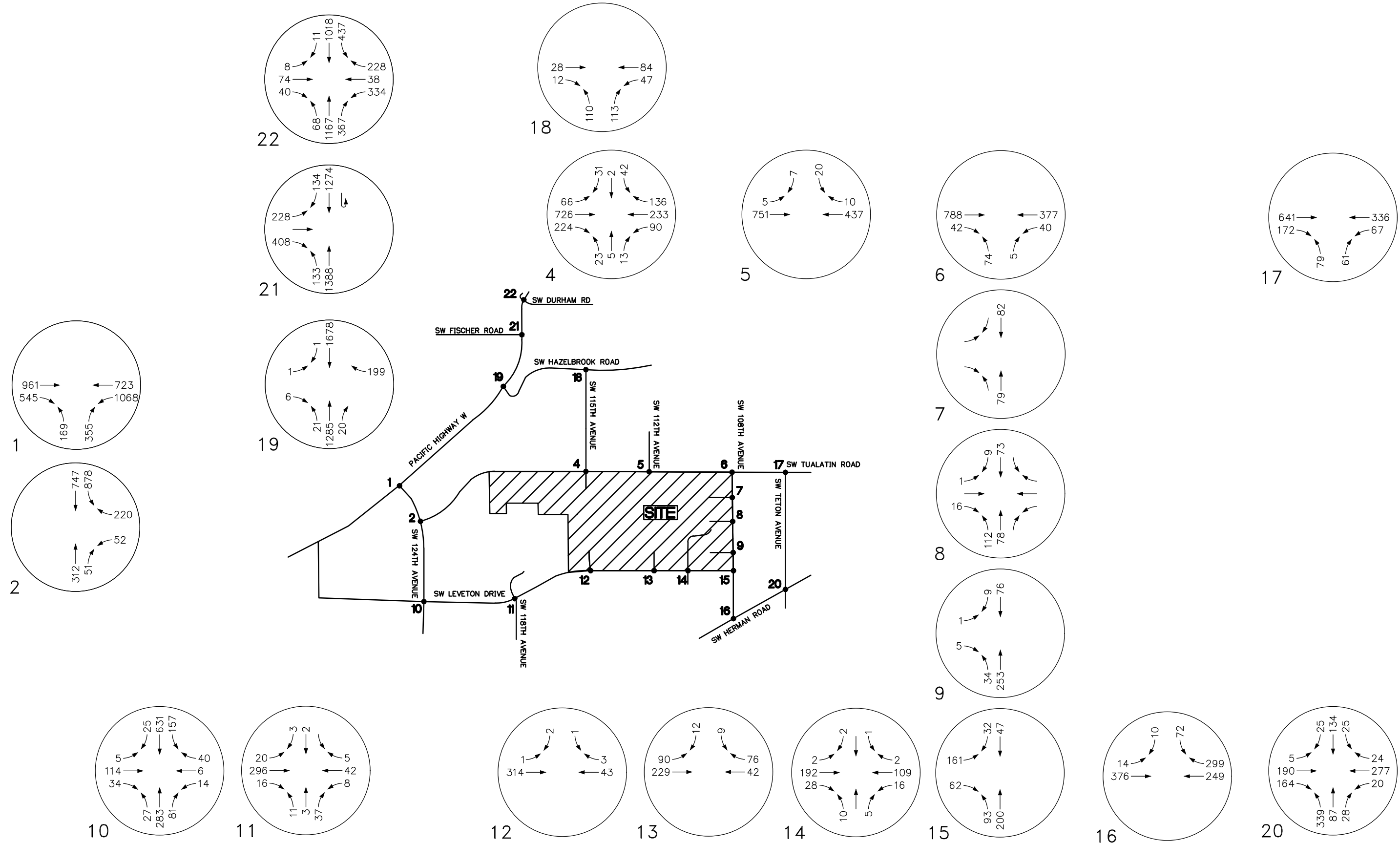
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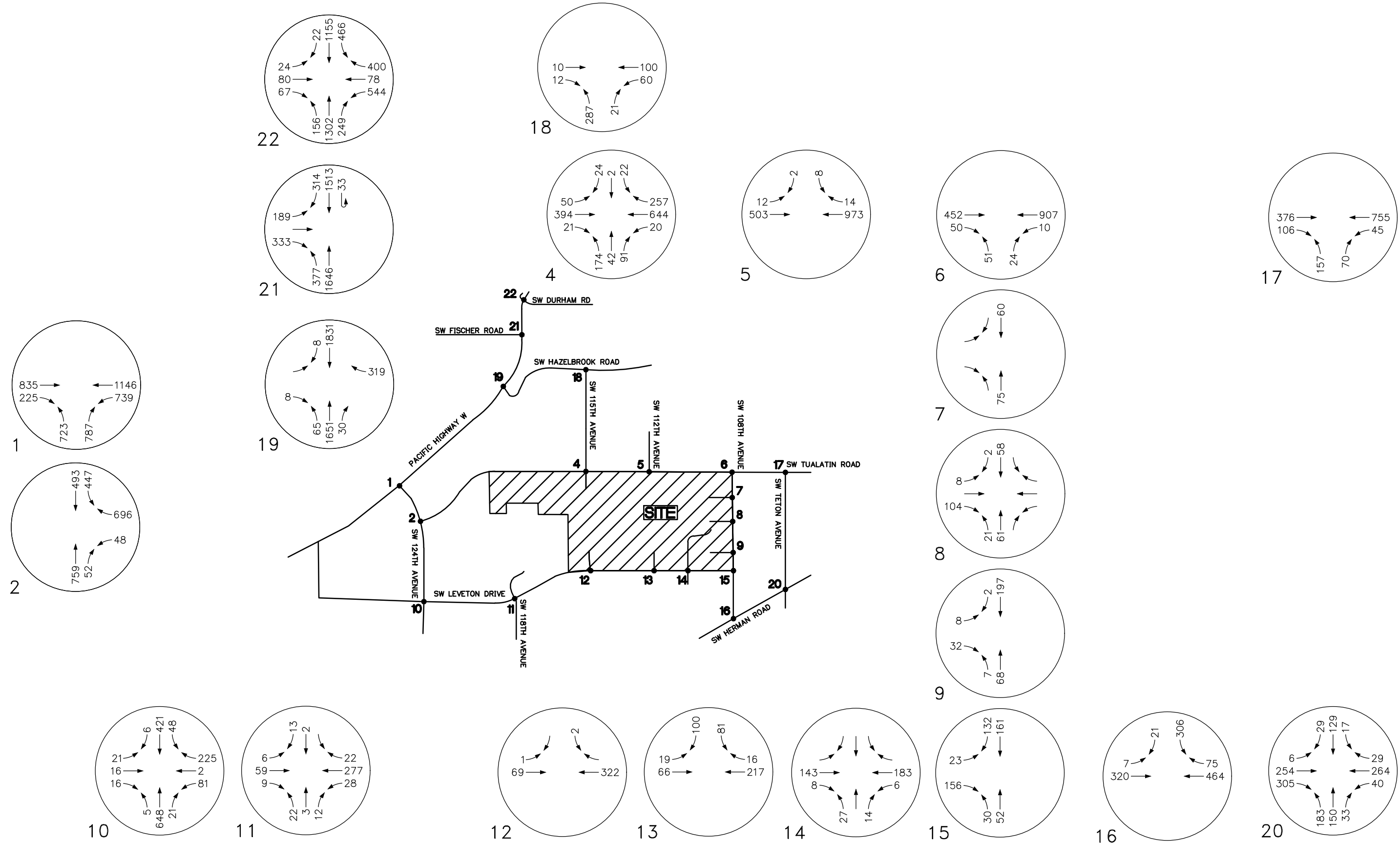
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 JOB NO:
 224002200

PHASE 2 TRIP ASSIGNMENT
 TRAFFIC VOLUMES -
 PM PEAK HOUR
 LAM RESEARCH TUX
 TUALATIN, OR

FIGURE
16B

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APPENDIX B.
SCOPING MATERIAL

MACKENZIE.

June 7, 2024 (*Revised June 20, 2024*)

City of Tualatin
Attention: Mike McCarthy
18880 SW Martinazzi Avenue
Tualatin, OR 97062

Re: **Lam TUX- Site**
Transportation Impact Analysis Scoping
Project Number 2240022.00

Dear Mike:

Mackenzie has prepared this scoping letter in advance of preparing the required Transportation Impact Analysis (TIA) for the proposed laboratory/research and development building, office building, and utility building at the Lam Research campus in Tualatin, Oregon.

SITE CONDITIONS

Existing

The Lam Research campus is bounded by SW Tualatin Road to the north, SW 108th Avenue to the east, SW Leveton Drive to the south, and JAE Oregon to the west. The site currently has three full-movement driveways on SW Leveton Drive, a gated access on SW 108th Avenue, and a gated fire access from Quackenbush Lane, opposite SW 115th Avenue. The existing buildings include office, laboratory, manufacturing, and utility uses, totaling approximately 560,040 square feet (SF).

Approved

The campus was approved for Building G and associated parking improvements (AR 22-0006) in January 2023, and the project is currently under construction. With this project, the total building area increases by 120,000 SF to 680,040 SF, parking is expanded at the southeast corner of the site and two new driveways are provided to SW 108th Avenue.

TUX Proposal

The TUX project includes the addition of three buildings. Building T is an office building with an area of up to 164,000 SF, Building U is a utility building with an area of approximately 55,000 SF, and Building X is a laboratory building with an area of approximately 200,000 SF for a total of approximately 419,000 SF. Initially, only the first phase of the laboratory building will be constructed, with a potential expansion in the future to the full 200,000 SF size. An estimated 600 employees will work in the new buildings at full occupancy. Phase 1 will provide capacity for 360 employees (60%) and Phase 2 will add the remaining 240 employees (40%).

The new buildings will be located at the southwest corner of the site, replacing the existing surface parking lot. The west access to SW Leveton Drive at the southwest corner of the site will be relocated to the east and repurposed as a truck access for deliveries to the existing and proposed buildings.



The parking areas along the north side of the campus will be expanded to offset the loss of the southwest lot and to accommodate additional need with the TUX project. The permanent access to the expanded employee parking lots is proposed at Tualatin Road opposite SW 115th Avenue. This access is currently used by JAE and a gated emergency access is provided to Lam. With the proposal, the driveway would primarily be used as access for Lam employees and will continue to provide access to JAE, especially for their loading dock area.

We propose to analyze the following two phases:

Phase 1 – 2027 Occupancy for up to 360 employees:

- Building T (office)
- Building X (145 KSF of lab)
- Building U (utility building)
- Expand north parking lot (new + replaced parking)
- New employee access to Tualatin Road opposite SW 115th Avenue

Phase 2 – 2030 occupancy for an additional 240 employees:

- Building X (lab expansion to 200 KSF)
- Add parking lot at northwest corner of campus

TRIP GENERATION

The three buildings operate in conjunction with each other and best match the description of a “Research and Development Center” (LUC 760) from the Institute of Transportation Engineers’ (ITE) Trip Generation Manual, 11th Edition.

The appropriateness of this land use was confirmed by comparing with the current campus conditions. The campus has approximately 1,160 office and lab employees assigned and working a day shift (generally 8-5) plus 400 manufacturing staff who work 12-hour shifts with changes outside the peak hours (7-7 shift schedule). The current campus driveway counts during the peak hours of the site (8-9 AM, 4:45-5:45 PM) are 371 and 378, respectively. Applying the R&D trip rate to the 1160 employees working a typical day shift results in an estimate of 418 AM, 402 PM and 3609 daily trips, indicating actual trip generation is about 10% lower than predicted using this approach.

The proposed trip generation for the TUX project is presented in Table 1 below. We utilized the trip generation equations for each time period based on the full occupancy of 600 employees. Each phase trip estimate was made by applying the percentage of employees in that phase to the full occupancy estimates.

TABLE 1 – PROPOSED TRIP GENERATION									
Phase	ITE Land Use	Employees	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
1	Research and Development Center LUC 860	360	124	22	146	17	123	140	1222
2		240	83	15	98	11	82	93	814
Total		600	207	37	244	28	205	233	2036

As shown in Table 1, the planned campus expansion is estimated to generate an additional 244 AM peak hour, 233 PM peak hour, and 2036 daily trips with both phases of development.

TRIP DISTRIBUTION

Site trip distribution has been modified slightly from the original master plan based on counts conducted in April 2024 at the three active site driveways on Leveton Drive and the surrounding intersections. The following percentages apply to both the AM and PM Peak hours.

- 30% to/from the north on Highway 99W
- 15% to/from the south on Highway 99W
- 5% to/from the east on SW Tualatin Road
- 5% to/from the south on SW 118th Avenue
- 10% to/from the south on SW 124th Avenue
- 35% to/from the west on SW Herman Road via SW 108th Avenue

The attached Distribution Figure presents the percentage of trips at each study area intersection, based on the following assumptions:

- 30% of the new trips are expected to utilize the one remaining employee driveway (middle access) on Leveton Drive. The remaining 70% would use the new driveway to Tualatin Road.
- Existing counts indicate some vehicles arriving from the southwest on Highway 99W are traveling along the full length of Leveton Drive instead of turning at SW 124th Avenue.
- Vehicles leaving the site at the Tualatin Road driveway and traveling to the east on SW Herman Road may find it easier to travel west on Tualatin Road and turn Right on Teton Avenue instead of SW 108th Avenue.
- 10% of site trips will use SW 115th Avenue and Hazelbrook Road to access Highway 99W, or approximately one-third of the 30% of site trips anticipated to travel north on Highway 99W. This is consistent with current volumes traveling westbound on Tualatin Road and assumes no mitigation to discourage or prohibit this travel route.

STUDY AREA

Based on previous studies, as well as the City's *Traffic Study Requirements* document requiring that all intersections within a 1/4-mile radius of the project site be included as part of the study area and City and neighborhood concerns, the following public intersections are included in the study area:

- SW Leveton Drive/SW 118th Avenue
- SW Leveton Drive/SW 108th Avenue
- SW Tualatin Road/SW Teton Road
- SW Tualatin Road/SW 108th Avenue
- SW Tualatin Road/SW 112th Avenue
- SW Tualatin Road/SW 115th Avenue
- SW 124th Avenue/SW Leveton Road
- SW 124th Avenue/SW Tualatin Road
- SW 124th Avenue/OR 99W
- SW Herman Road/SW 108th Avenue
- SW Hazelbrook Road/SW 115th Avenue
- SW Hazelbrook Road/OR 99W

The following site driveways will also be studied (includes those opposite public streets listed above):

- SW Leveton Drive/West Access (to be relocated east)
- SW Leveton Drive/Center Access
- SW Leveton Drive/East Access
- SW 108th Avenue/North Access (currently gated)
- SW 108th Avenue/Center Access (approved with Building G)
- SW 108th Avenue/South Access (approved with Building G)
- SW Tualatin Road/SW 115th Avenue

No additional Washington County intersections are proposed because projected trips are not expected to meet the threshold of 10% impact of the roadway's average daily traffic (ADT).

TRAFFIC COUNTS

Traffic counts were conducted at the above listed intersections for standard peak periods of 7:00-9:00 AM and 4:00-6:00 PM. An extended time period was counted at the three existing driveways on SW Leveton Drive. Most of the intersections were counted on Tuesday, April 23rd, 2024. The intersection of SW Tualatin Road/SW 112th Avenue was counted on Tuesday, May 14th, 2024. The remaining two intersections on SW Hazelbrook Road were counted on June 11, 2024. At the intersections of SW 115th Avenue with SW Tualatin Road and SW Hazelbrook Road, an extended PM period from 2:00-6:00 PM was counted to capture afternoon traffic to the nearby middle school.

Based on our review of the counts in comparison with those conducted in 2022, it does not appear that construction activity on SW Tualatin-Sherwood Road has had a significant impact on volumes at these study area intersections and roadways.

TRANSPORTATION IMPACT ANALYSIS

Based on the City's traffic study requirements, as well as the required scope for the new Lam Research office building, the TIA will review AM and PM peak hour conditions at the study area intersections for the following scenarios:

- 2024 Existing
- 2027 Pre-Development without project
- 2027 Post-Development with Phase 1
- 2030 Post-Development with Phase 2

The TIA will also include the following analysis components:

- 1% annual background growth per ODOT's 2040 Future Volumes table for OR 99W south of 124th Avenue.
- Seasonal adjustment factor of 1.04 applied to through volumes on OR 99W per ODOT's Seasonal Trend Table.
- Intersection capacity analyses will be conducted at the study area intersections using Synchro software which implements the methodologies of the *Highway Capacity Manual* (HCM).
- Trips from the approved Lam Building G project will be included as in-process volumes.
- Additional in-process project trips will be included for the following projects:
 - Tualatin Logistics Park
 - Fujimi property
 - 124th Business Park
- Crash data will be compiled and evaluated for safety concerns.
- Intersection sight distance evaluations will be based on AASHTO methodology for the proposed site access points.
- Intersection queuing, turn-lane warrants, and signal warrants will also be evaluated where appropriate.

Please confirm the proposed trip generation, trip distribution, study area, TIA analysis components, and in-process project list are acceptable for the required TIA.

Please contact me at bahrend@mcknze.com or 971-346-3781 if you have any questions or comments regarding the information presented in this scoping letter.

Sincerely,



Brent Ahrend, PE
Associate Principal | Traffic Engineer

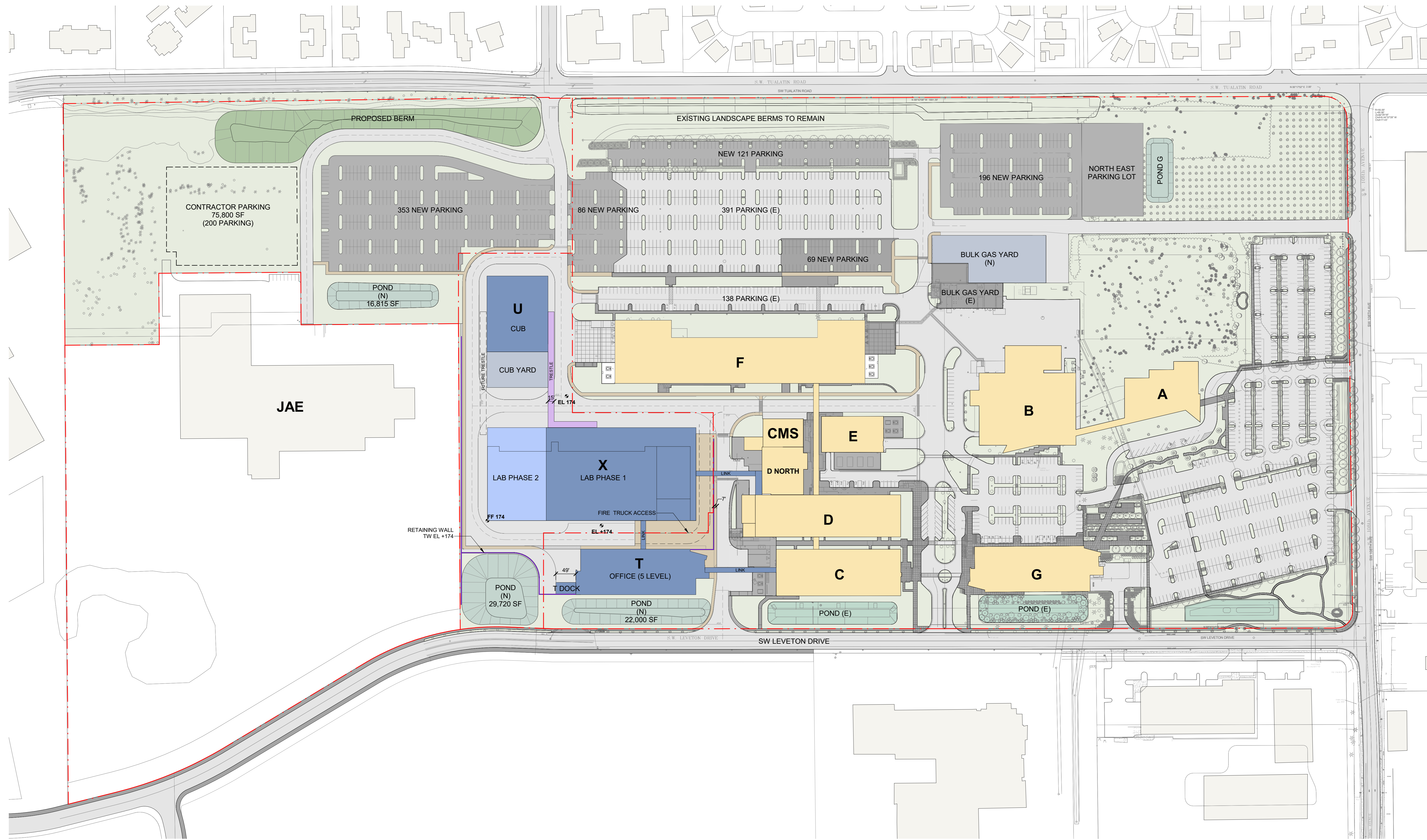
Enclosure(s): Attachment A – Site Plan
Attachment B – 2024 Turning Movement Counts
Attachment C – Trip Distribution Figure



EXPIRES: 12/31/25

c: Steve Koper, Kim McMillan, Abby McFetridge, Tony Doran, Hayden Ausland – City of Tualatin
Liatt Braun, Todd Chittenden, David Mustonen – Jacobs

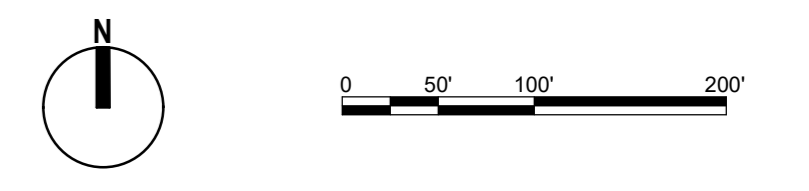
Jennifer Otterness, Stefanie McEvers, Paul Roessler, Todd Fosler – Lam Research
Suzannah Stanley, Bill Bezio, Megan Diaz, Clara Layton – Mackenzie



LEGEND

- EXISTING BUILDINGS
- NEW BUILDINGS (143,100 SF FLOOR PLATE)
- NEW BUILDINGS PHASE 2 (32,500 SF FP)
- NEW YARDS
- NEW TRESTLE
- NEW PEDESTRIAN
- ROADS
- DETENTION POND
- RETAINING WALL
- SITE BOUNDARY
- PARKING (TOTAL: 2,177 STALLS)
 - EXISTING: 1,352
 - NEW: 825

TOTAL LAM CAMPUS SITE AREA: 76 ACRES

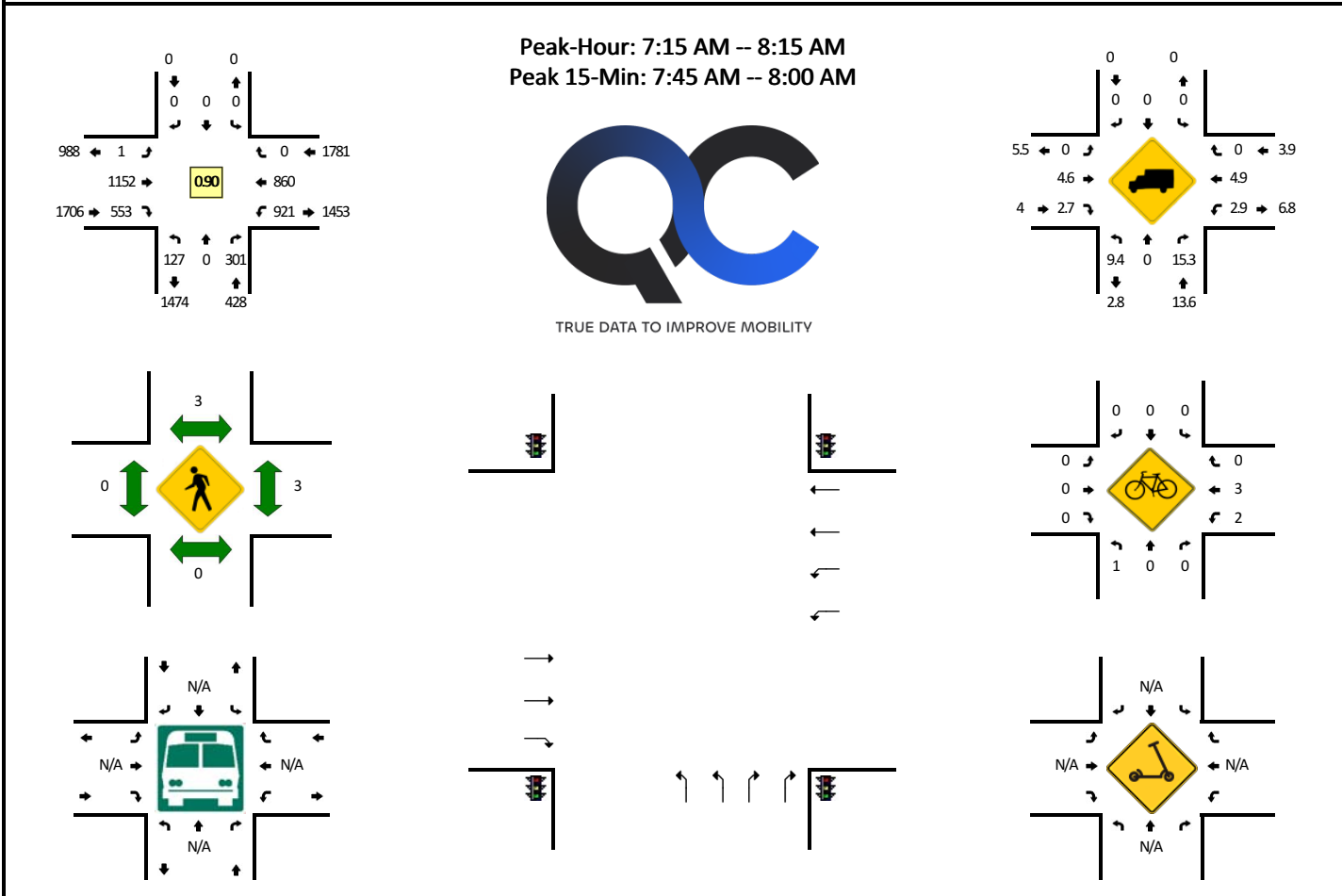


Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 124th Ave -- SW Pacific Hwy
CITY/STATE: Tualatin, OR

QC JOB #: 16573201
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Pacific Hwy (Eastbound)				SW Pacific Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	21	0	58	0	0	0	0	0	0	324	78	1	143	161	0	1	787	
7:15 AM	16	0	63	0	0	0	0	0	0	324	127	0	211	181	0	0	922	
7:30 AM	31	0	69	0	0	0	0	0	0	296	130	0	209	236	0	0	971	
7:45 AM	41	0	78	0	0	0	0	0	0	276	167	1	272	248	0	0	1083	3763
8:00 AM	39	0	91	0	0	0	0	0	0	256	129	0	229	195	0	0	939	3915
8:15 AM	40	0	61	0	0	0	0	0	0	272	114	0	198	159	0	0	844	3837
8:30 AM	28	0	70	0	0	0	0	0	0	244	72	0	253	184	0	0	851	3717
8:45 AM	19	0	81	0	0	0	0	0	0	254	86	0	189	173	0	1	803	3437

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	164	0	312	0	0	0	0	0	0	1104	668	4	1088	992	0	0	4332
Heavy Trucks	20	0	44		0	0	0		0	48	24		20	44	0		200
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

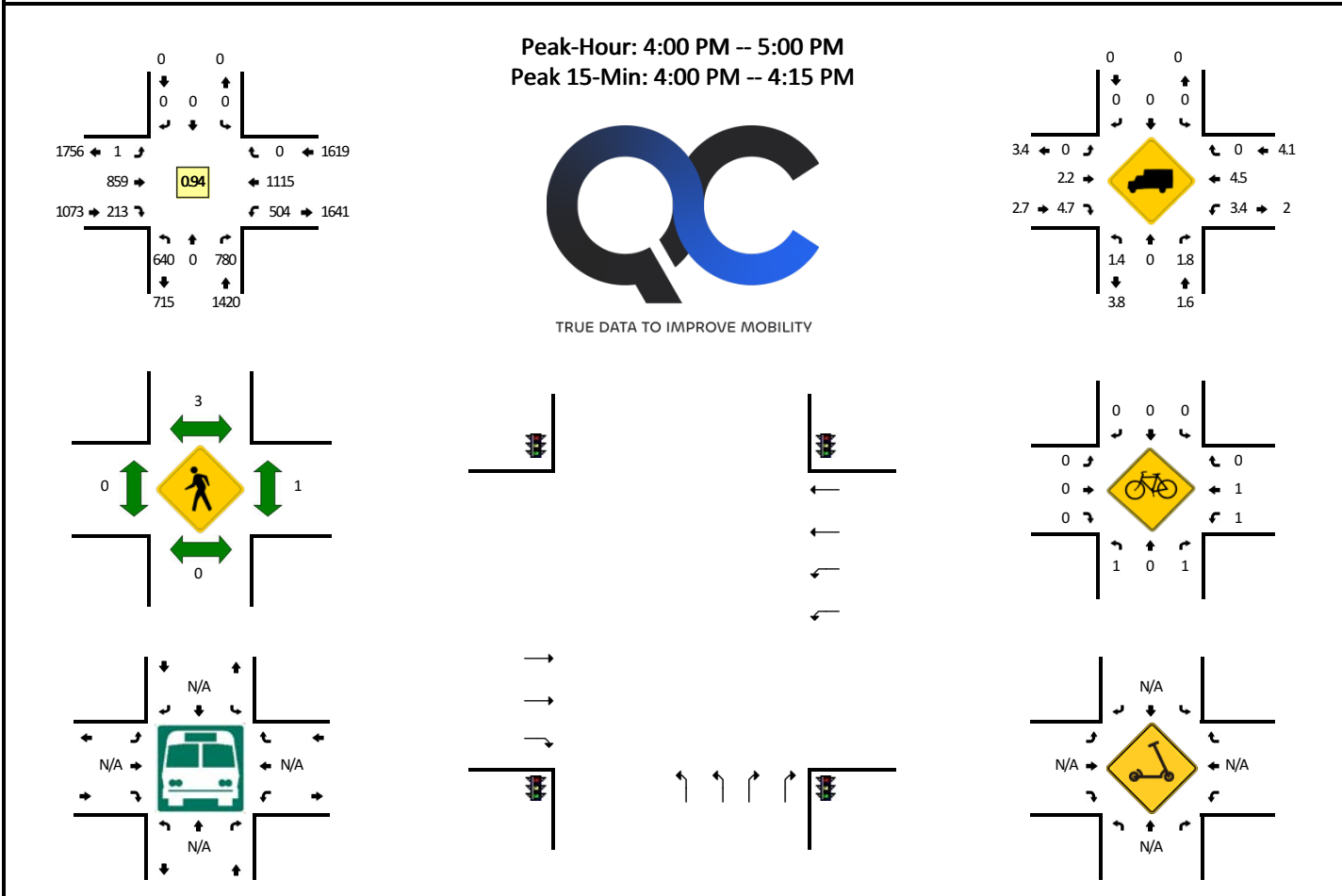
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 124th Ave -- SW Pacific Hwy
CITY/STATE: Tualatin, OR

QC JOB #: 16573202
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Pacific Hwy (Eastbound)				SW Pacific Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	167	0	216	0	0	0	0	0	0	262	42	0	105	297	0	1	1090	
4:15 PM	156	0	181	0	0	0	0	0	0	207	63	0	116	285	0	0	1008	
4:30 PM	184	0	190	0	0	0	0	0	0	178	50	0	159	299	0	0	1060	
4:45 PM	133	0	193	0	0	0	0	0	0	212	58	1	122	234	0	1	954	
5:00 PM	157	0	189	0	0	0	0	0	0	209	55	0	132	198	0	0	940	
5:15 PM	201	0	206	0	0	0	0	0	0	135	48	0	129	247	0	0	966	
5:30 PM	166	0	179	0	0	0	0	0	0	181	45	0	110	262	0	1	944	
5:45 PM	109	0	166	0	0	0	0	0	0	203	47	0	121	244	0	2	892	

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	668	0	864	0	0	0	0	0	0	1048	168	0	420	1188	0	4	4360
Heavy Trucks	8	0	32		0	0	0		0	40	8		12	80	0		180
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	4		0	0	0		0	0	0		0	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

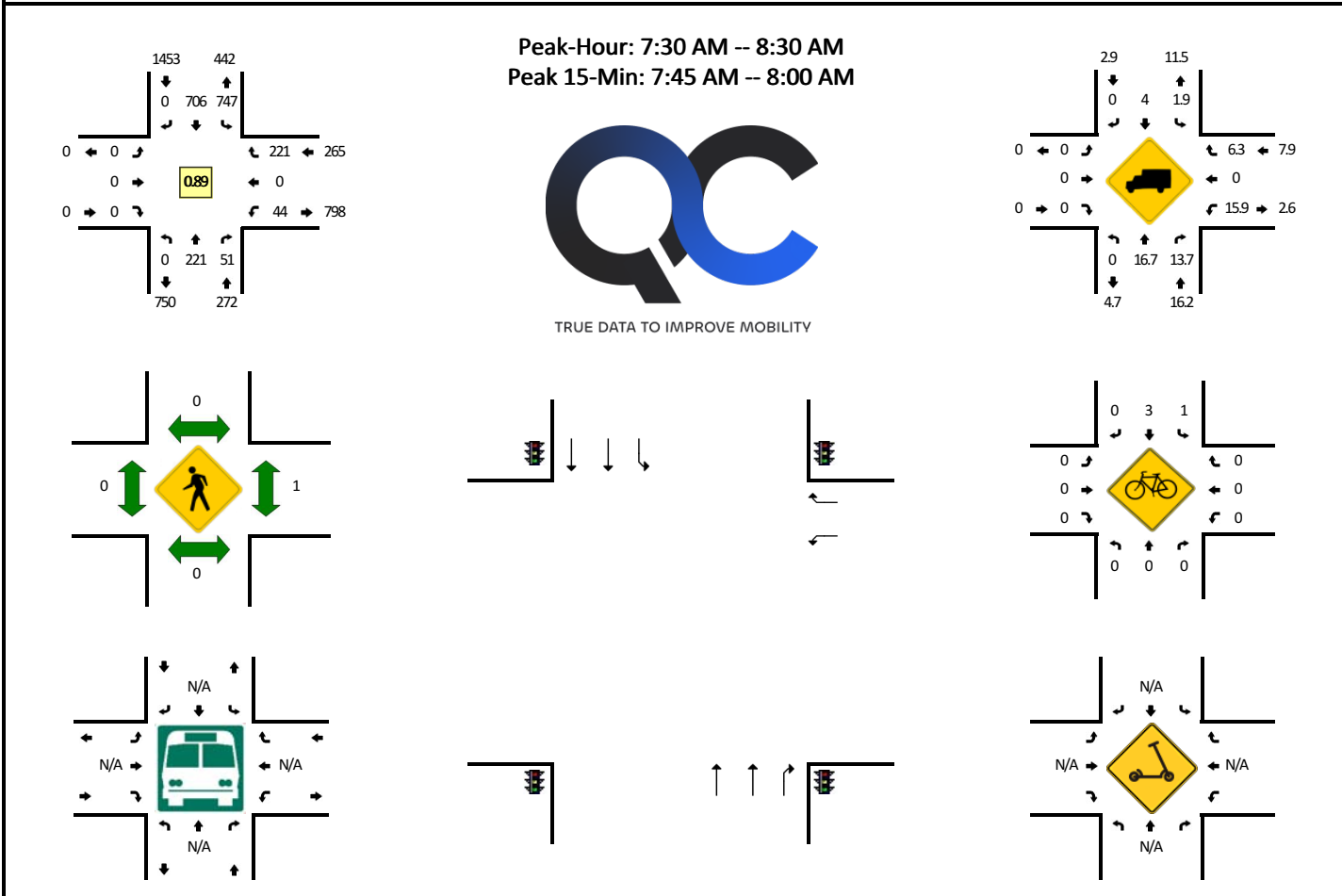
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 124th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573203
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	51	3	0	114	112	0	0	0	0	0	0	8	0	31	0	319	
7:15 AM	0	52	7	0	156	174	0	0	0	0	0	0	8	0	28	0	425	
7:30 AM	0	58	12	0	191	148	0	0	0	0	0	0	15	0	50	0	474	
7:45 AM	0	53	13	0	195	231	0	0	0	0	0	0	8	0	62	0	562	1780
8:00 AM	0	63	14	0	183	170	0	0	0	0	0	0	11	0	56	0	497	1958
8:15 AM	0	47	12	0	178	157	0	0	0	0	0	0	10	0	53	0	457	1990
8:30 AM	0	50	8	0	135	196	0	0	0	0	0	0	5	0	51	0	445	1961
8:45 AM	0	54	10	0	113	162	0	0	0	0	0	0	7	0	41	0	387	1786

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	212	52	0	780	924	0	0	0	0	0	0	32	0	248	0	2248
Heavy Trucks	0	40	12		8	40	0		0	0	0		0	0	24		124
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

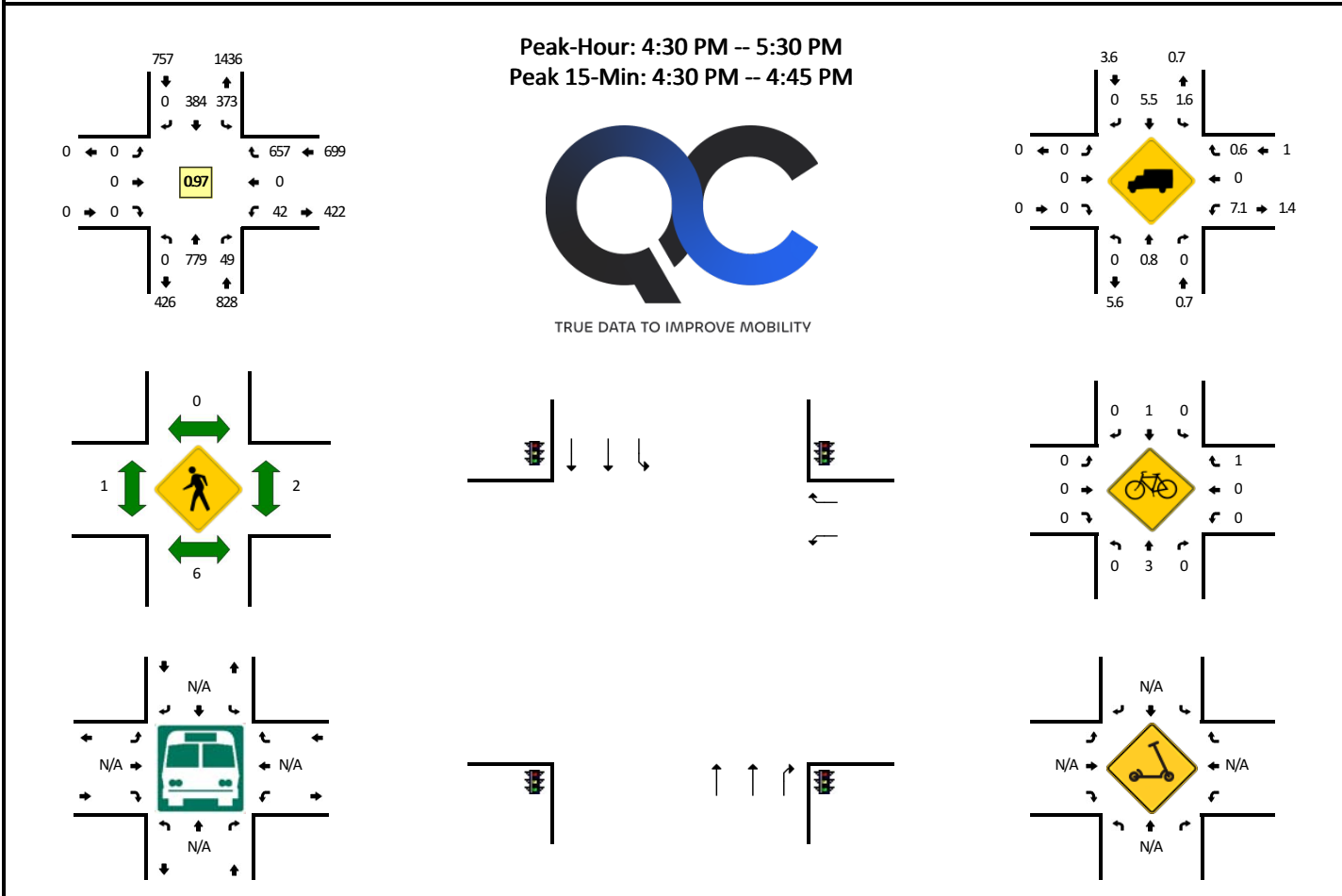
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 124th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573204
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin 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	240	12	0	85	64	0	0	0	0	0	0	10	0	157	0	568	
4:15 PM	0	164	10	0	96	84	0	0	0	0	0	0	10	0	153	0	517	
4:30 PM	0	190	14	0	97	101	0	0	0	0	0	0	9	0	179	0	590	
4:45 PM	0	187	11	0	102	93	0	0	0	0	0	0	7	0	139	0	539	2214
5:00 PM	0	206	11	0	86	100	0	0	0	0	0	0	15	0	152	0	570	2216
5:15 PM	0	196	13	0	88	90	0	0	0	0	0	0	11	0	187	0	585	2284
5:30 PM	0	169	10	0	110	57	0	0	0	0	0	0	2	0	150	0	498	2192
5:45 PM	0	138	13	0	87	81	0	0	0	0	0	0	14	0	107	0	440	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	760	56	0	388	404	0	0	0	0	0	0	36	0	716	0	2360
Heavy Trucks	0	12	0		12	24	0		0	0	0		4	0	4		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	0	0		0	0	0		0	0	4		8
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

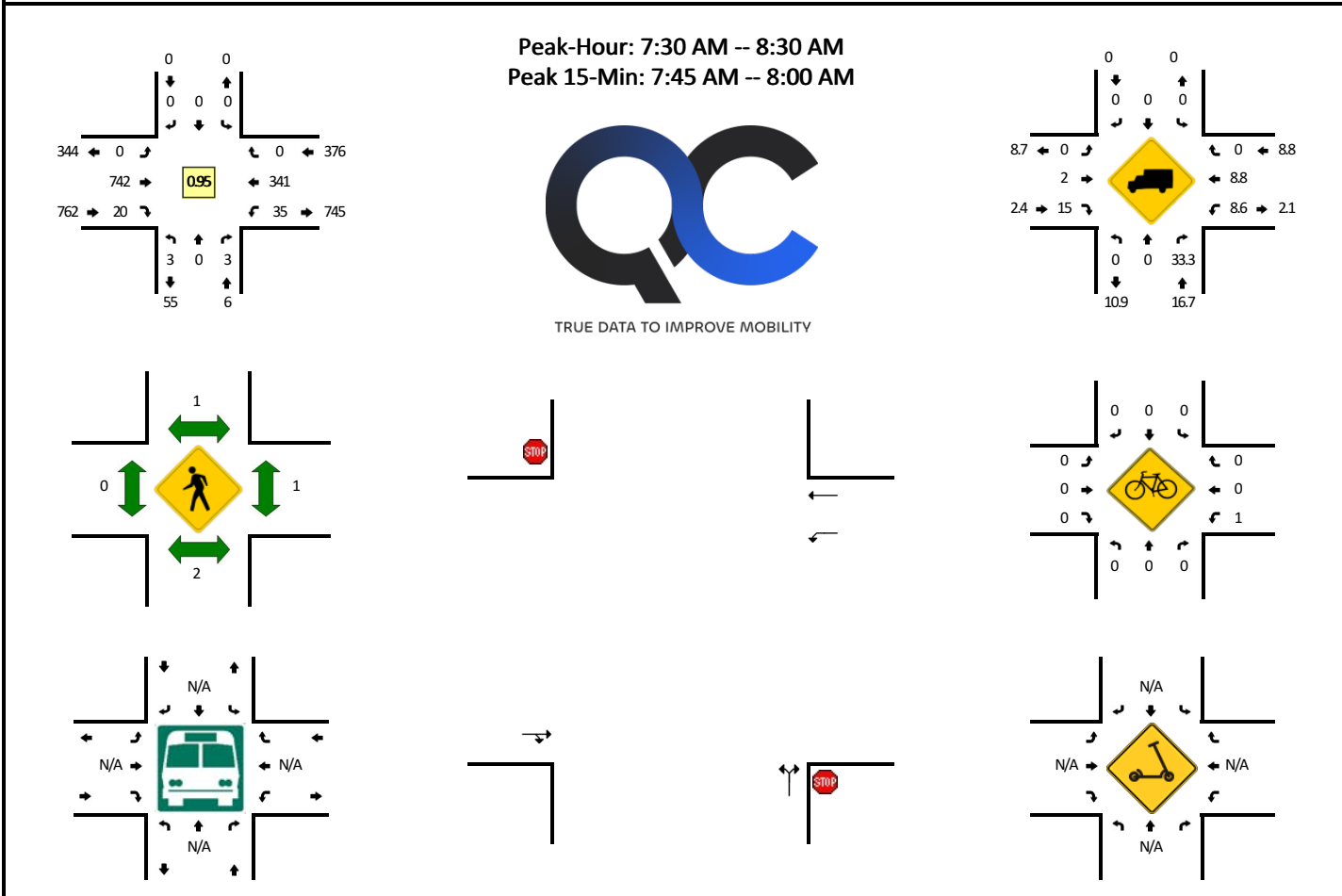
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573205
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	1	0	0	0	0	0	0	117	3	0	5	36	0	0	163	
7:15 AM	3	0	2	0	0	0	0	0	0	152	5	0	5	39	0	0	206	
7:30 AM	0	0	1	0	0	0	0	0	0	205	3	0	7	74	0	0	290	
7:45 AM	1	0	0	0	0	0	0	0	0	196	4	0	13	86	0	0	300	959
8:00 AM	1	0	1	0	0	0	0	0	0	166	4	0	10	87	0	0	269	1065
8:15 AM	1	0	1	0	0	0	0	0	0	175	9	0	5	94	0	0	285	1144
8:30 AM	0	0	1	0	0	0	0	0	0	133	2	0	8	71	0	0	215	1069
8:45 AM	1	0	4	0	0	0	0	0	0	111	2	0	8	71	0	0	197	966

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	0	0	0	0	0	0	0	0	784	16	0	52	344	0	0	1200
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	24	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:

Report generated on 6/7/2024 12:47 PM

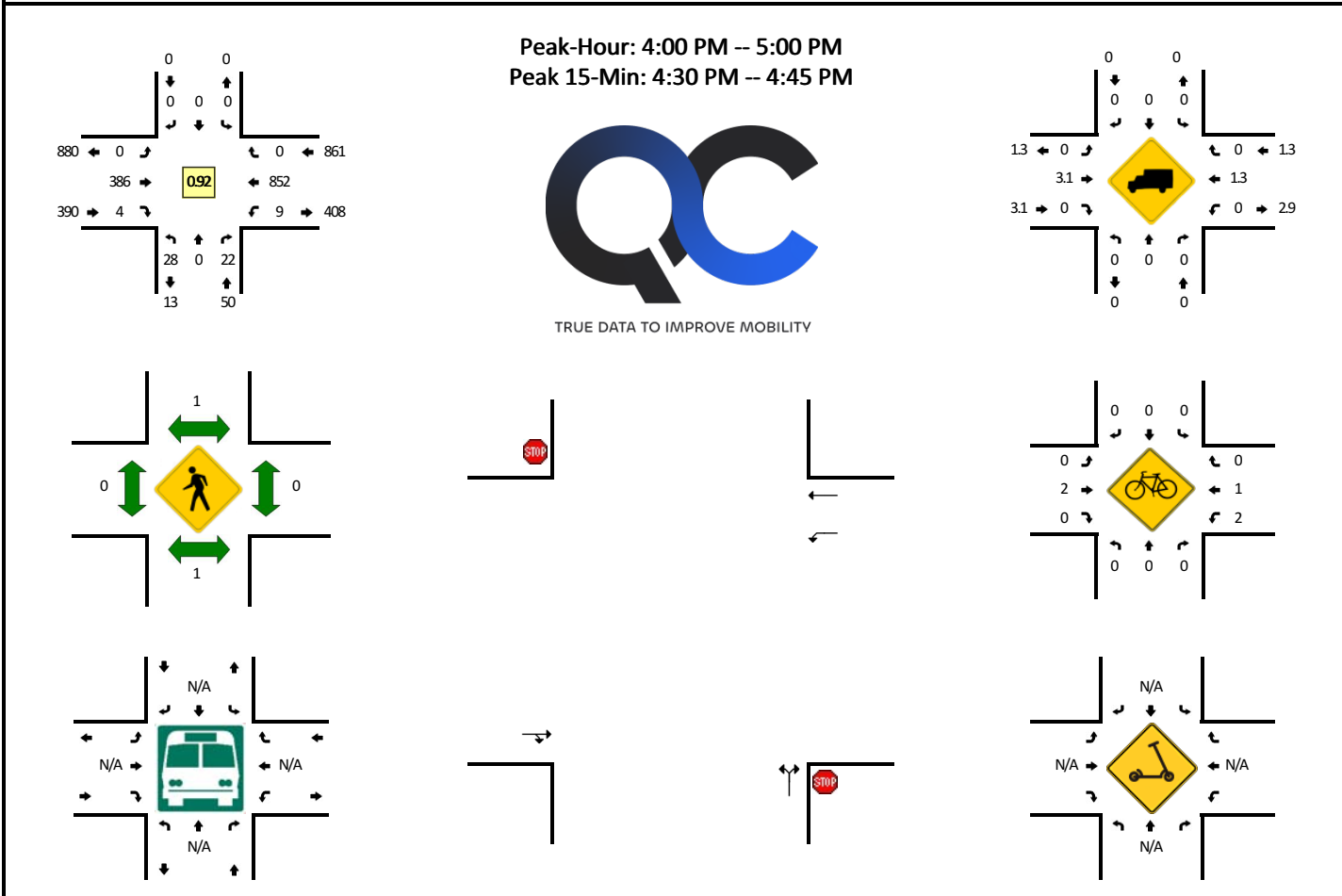
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573206
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	0	4	0	0	0	0	0	0	80	2	0	3	248	0	0	344	
4:15 PM	5	0	3	0	0	0	0	0	0	99	0	0	2	200	0	0	309	
4:30 PM	12	0	11	0	0	0	0	0	0	103	1	0	0	225	0	0	352	
4:45 PM	4	0	4	0	0	0	0	0	0	104	1	0	4	179	0	0	296	1301
5:00 PM	14	0	9	0	0	0	0	0	0	83	1	0	0	220	0	0	327	1284
5:15 PM	4	0	2	0	0	0	0	0	0	72	2	0	2	230	0	0	312	1287
5:30 PM	5	0	5	0	0	0	0	0	0	98	2	0	1	199	0	0	310	1245
5:45 PM	7	0	4	0	0	0	0	0	0	88	3	0	0	132	0	0	234	1183

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	48	0	44	0	0	0	0	0	0	412	4	0	0	900	0	0	1408
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	12	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

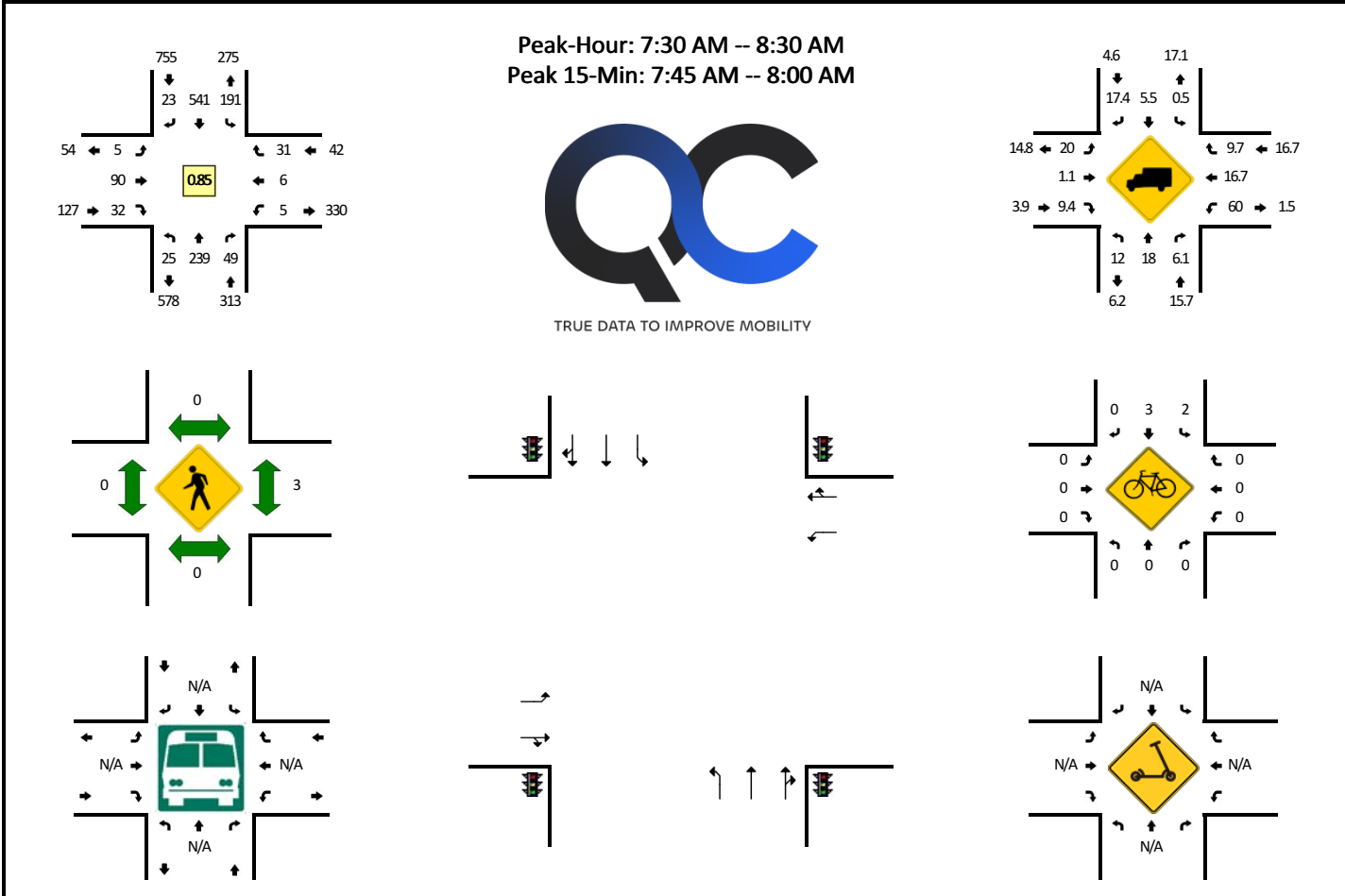
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 124th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573207
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	38	9	0	29	83	5	0	6	7	3	0	2	0	7	0	199	
7:15 AM	6	50	4	0	33	125	9	0	4	10	10	0	1	2	5	0	259	
7:30 AM	4	55	6	0	42	130	5	0	4	27	9	0	2	1	10	0	295	
7:45 AM	9	61	14	0	54	175	5	0	0	27	9	0	1	2	6	0	363	1116
8:00 AM	9	66	18	0	51	119	8	0	1	25	6	0	2	2	12	0	319	1236
8:15 AM	3	57	11	0	44	117	5	0	0	11	8	0	0	1	3	0	260	1237
8:30 AM	4	53	8	0	41	138	6	0	2	9	6	0	3	2	2	0	274	1216
8:45 AM	6	67	9	0	57	111	10	0	1	10	7	0	2	1	1	0	282	1135

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	36	244	56	0	216	700	20	0	0	108	36	0	4	8	24	0	1452
Heavy Trucks	0	52	4		0	28	4		0	0	4		4	0	4		100
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

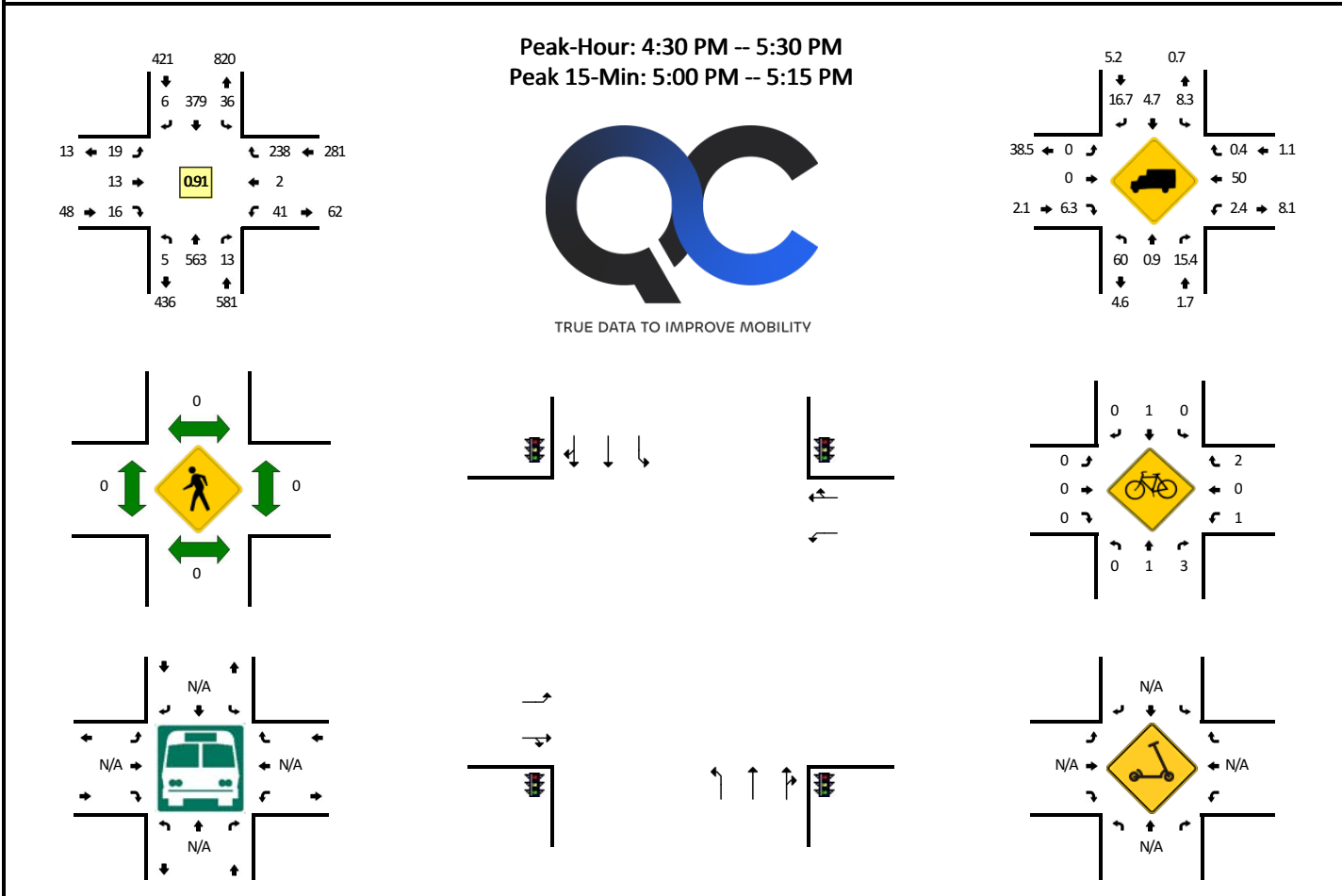
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 124th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573208
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	195	3	0	4	61	3	0	7	4	12	0	8	1	54	0	354	
4:15 PM	4	120	4	0	5	87	6	0	5	4	6	0	5	0	41	0	287	
4:30 PM	2	161	4	0	10	94	1	0	4	4	6	0	8	0	45	0	339	
4:45 PM	1	133	5	0	10	84	2	0	7	1	3	0	9	1	43	0	299	1279
5:00 PM	1	131	2	0	9	112	2	0	4	5	1	0	13	1	84	0	365	1290
5:15 PM	1	138	2	0	7	89	1	0	4	3	6	0	11	0	66	0	328	1331
5:30 PM	0	120	0	0	7	53	1	0	5	1	3	0	11	0	59	0	260	1252
5:45 PM	0	108	1	0	5	84	2	0	3	2	2	0	4	0	38	0	249	1202

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	524	8	0	36	448	8	0	16	20	4	0	52	4	336	0	1460
Heavy Trucks	0	4	0		4	16	0		0	0	0		0	0	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

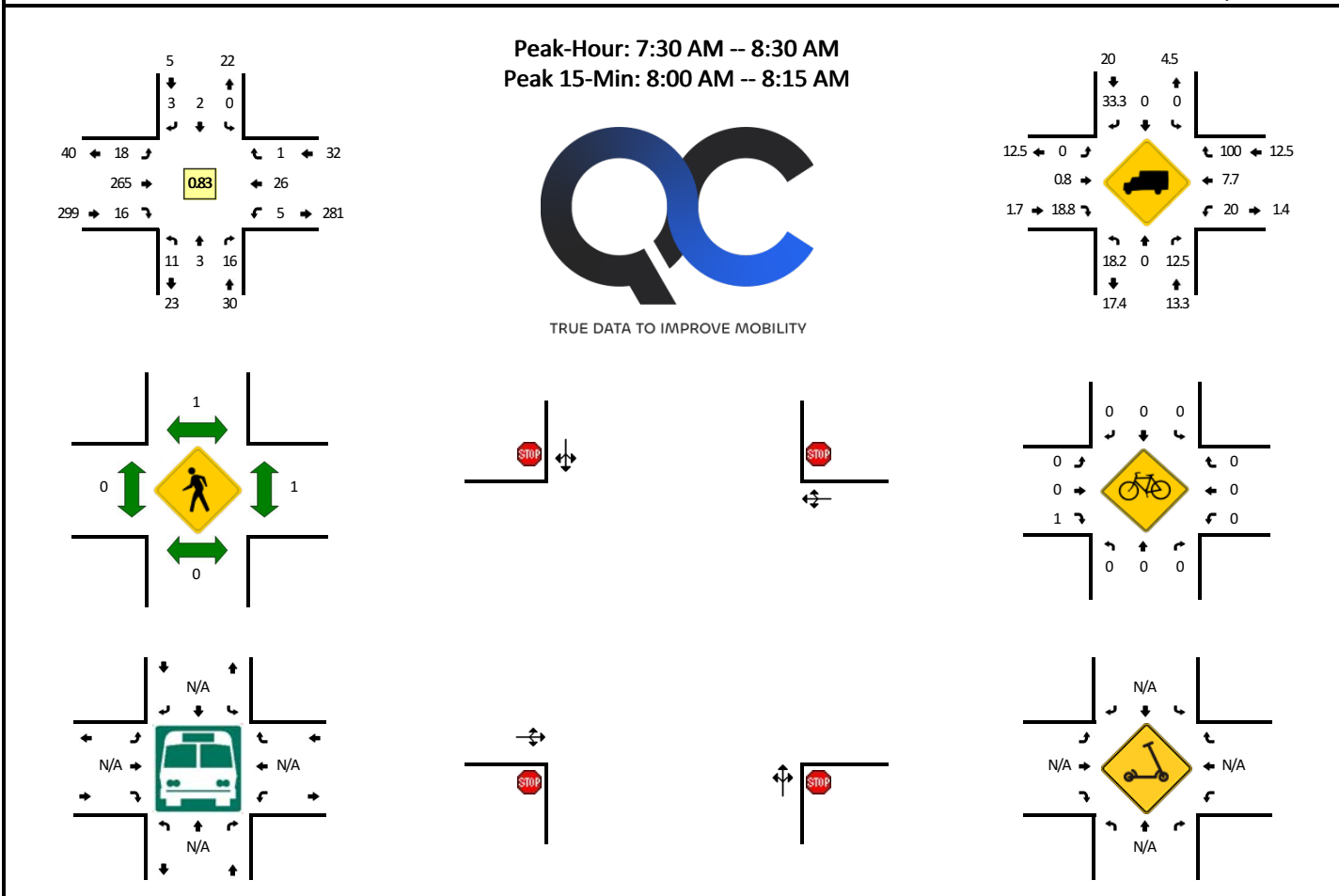
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 118th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573209
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 118th Ave (Northbound)				SW 118th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	2	0	0	0	0	0	2	34	6	0	4	8	1	0	58	
7:15 AM	1	2	5	0	0	1	2	0	2	37	6	0	0	5	4	0	65	
7:30 AM	3	2	2	0	0	1	0	0	7	47	7	0	2	11	0	0	82	
7:45 AM	2	1	3	0	0	0	0	0	4	75	3	0	1	6	1	0	96	301
8:00 AM	5	0	3	0	0	1	1	0	2	85	4	0	1	8	0	0	110	353
8:15 AM	1	0	8	0	0	0	2	0	5	58	2	0	1	1	0	0	78	366
8:30 AM	0	0	1	0	0	0	0	0	2	52	3	0	1	6	0	0	65	349
8:45 AM	1	0	1	0	0	0	0	0	2	68	1	0	0	5	1	0	79	332

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	20	0	12	0	0	4	4	0	8	340	16	0	4	32	0	0	440
Heavy Trucks	4	0	4		0	0	0		0	8	4		0	4	0		24
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	4		0	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

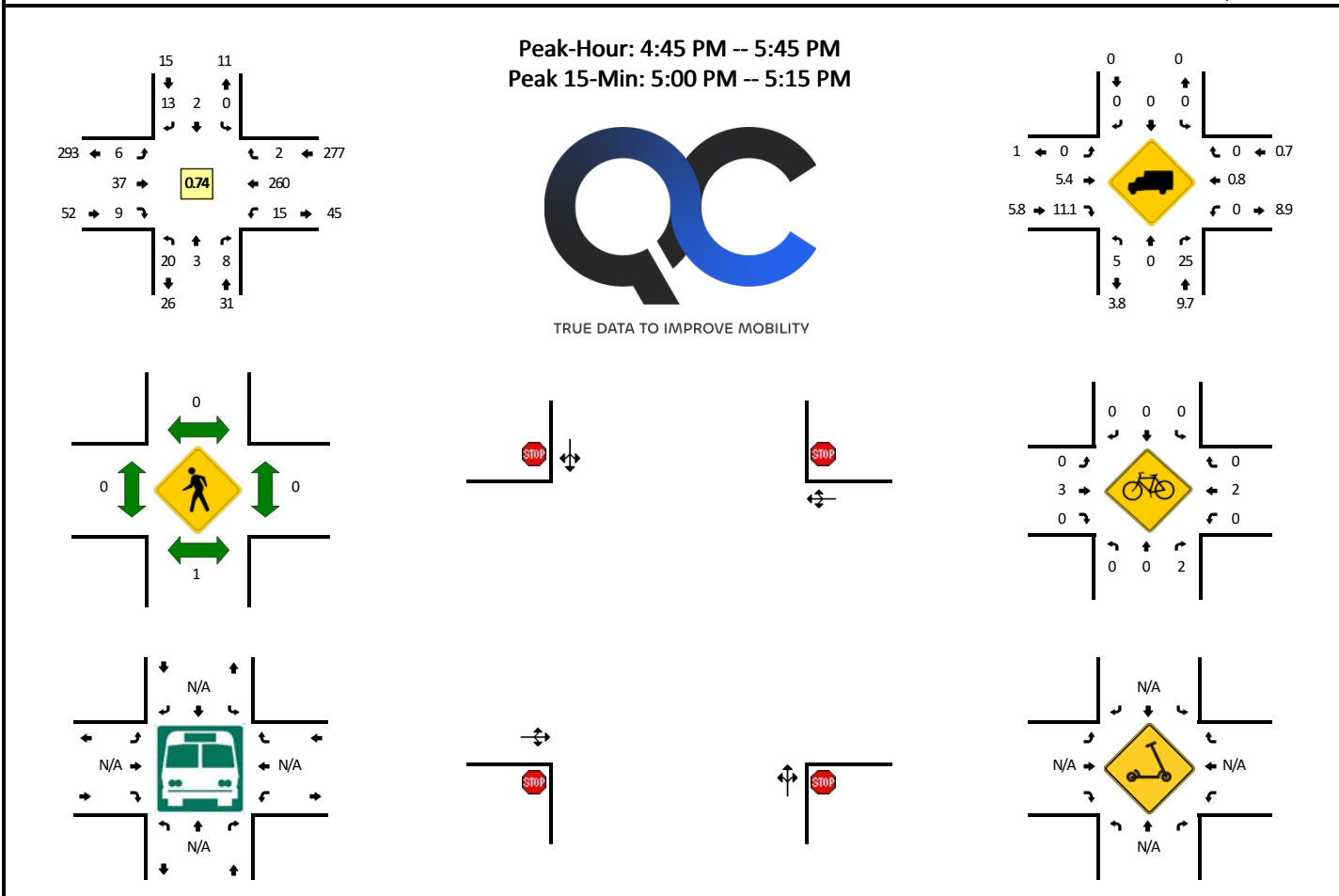
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 118th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573210
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 118th Ave (Northbound)				SW 118th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	1	0	0	2	1	5	0	0	7	1	0	2	49	0	0	78	
4:15 PM	9	0	1	0	0	2	4	0	1	13	0	0	1	30	1	0	62	
4:30 PM	7	0	2	0	0	1	1	0	0	15	6	0	4	41	0	0	77	
4:45 PM	3	1	2	0	0	0	5	0	0	11	3	0	3	43	2	0	73	290
5:00 PM	10	1	2	0	0	1	3	0	1	15	0	0	4	89	0	0	126	338
5:15 PM	1	0	2	0	0	1	1	0	3	6	3	0	3	69	0	0	89	365
5:30 PM	6	1	2	0	0	0	4	0	2	5	3	0	5	59	0	0	87	375
5:45 PM	3	0	3	0	0	2	2	0	2	6	3	0	3	32	0	0	56	358

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	40	4	8	0	0	4	12	0	4	60	0	0	16	356	0	0	504
Heavy Trucks	0	0	4	0	0	0	0	0	0	4	0	0	0	0	0	0	8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	4		0	0	0		0	0	0		0	4	0		8
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

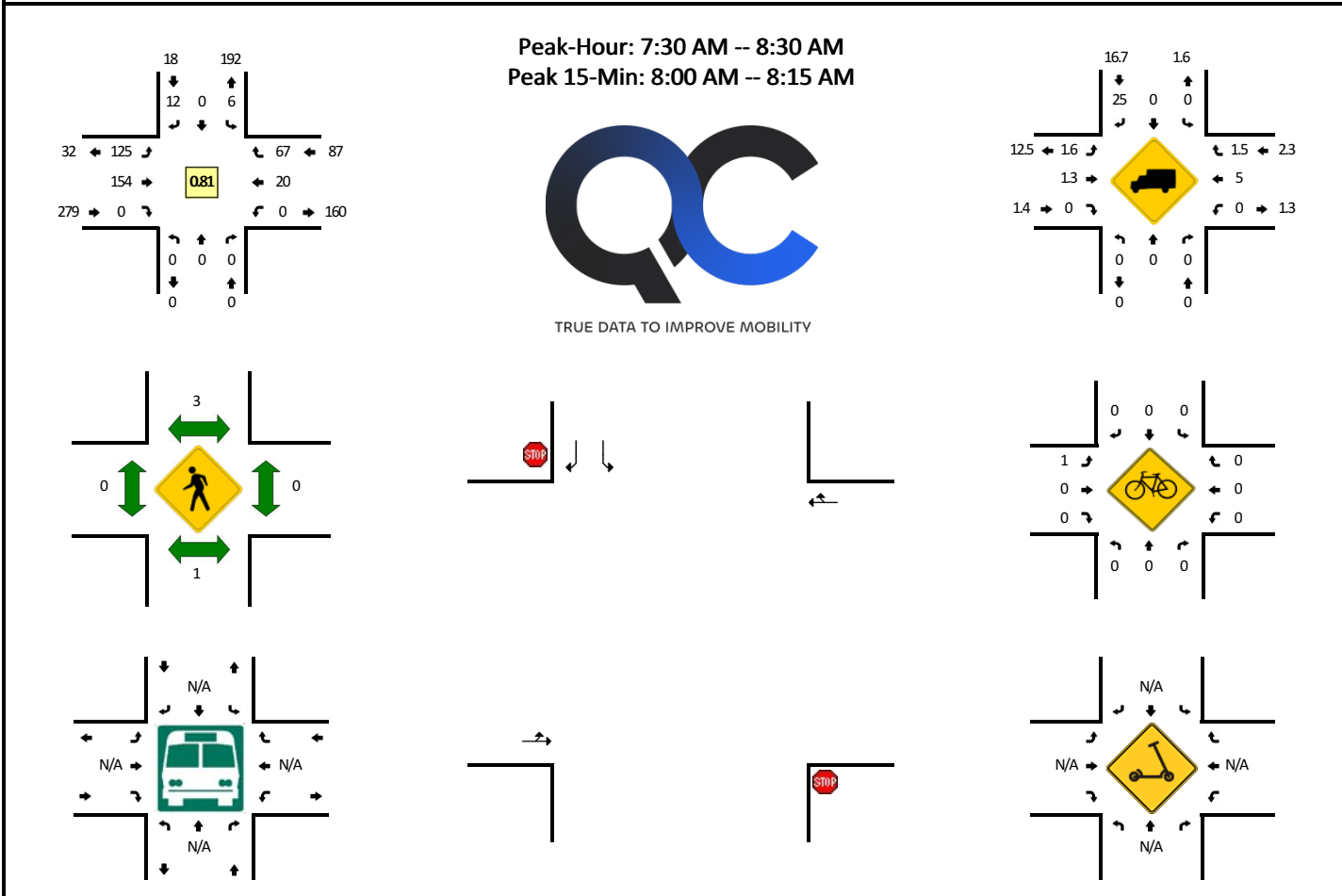
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: West LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573211
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	West LAM Access (Northbound)				West LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	7	0	15	25	0	0	0	6	11	0	64	
7:15 AM	0	0	0	0	0	0	3	0	21	20	0	0	0	6	7	0	57	
7:30 AM	0	0	0	0	3	0	4	0	14	34	0	0	0	10	12	0	77	
7:45 AM	0	0	0	0	0	0	3	0	29	50	0	0	0	4	13	0	99	297
8:00 AM	0	0	0	0	2	0	4	0	40	44	0	0	0	5	23	0	118	351
8:15 AM	0	0	0	0	1	0	1	0	42	26	0	0	0	1	19	0	90	384
8:30 AM	0	0	0	0	2	0	3	0	25	24	0	0	0	4	12	0	70	377
8:45 AM	0	0	0	0	2	0	4	0	40	31	0	0	0	3	14	0	94	372

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	8	0	16	0	160	176	0	0	0	20	92	0	472
Heavy Trucks	0	0	0	0	0	0	4	0	4	8	0	0	0	0	0	0	16
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

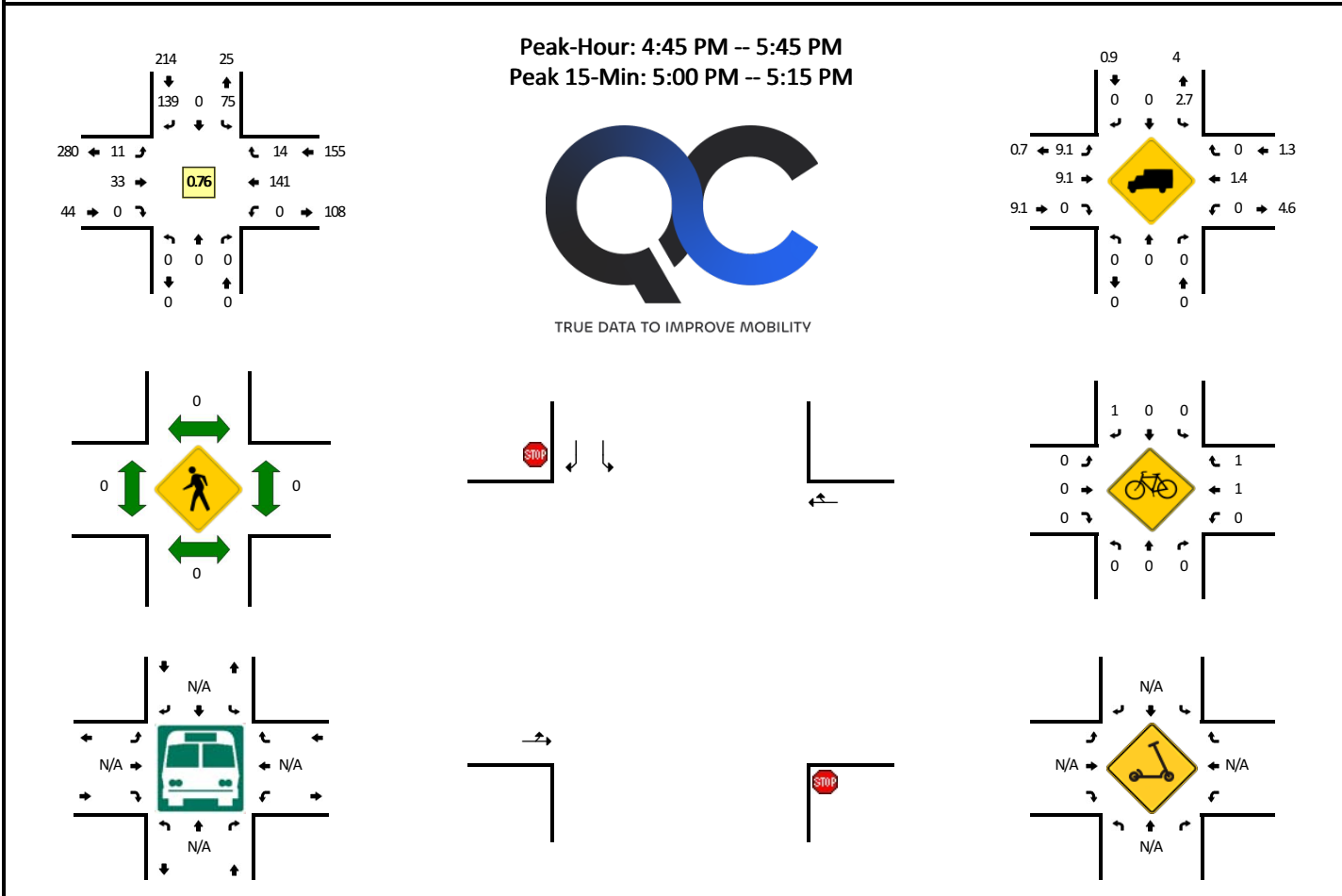
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: West LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573212
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	West LAM Access (Northbound)				West LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (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	7	0	28	0	2	7	0	0	0	25	4	0	73	
4:15 PM	0	0	0	0	9	0	17	0	5	9	0	0	0	12	4	0	56	
4:30 PM	0	0	0	0	12	0	20	0	5	12	0	0	0	25	2	0	76	
4:45 PM	0	0	0	0	9	0	23	0	6	8	0	0	0	24	7	0	77	282
5:00 PM	0	0	0	0	18	0	45	0	3	14	0	0	0	51	5	0	136	345
5:15 PM	0	0	0	0	27	0	35	0	1	7	0	0	0	34	1	0	105	394
5:30 PM	0	0	0	0	21	0	36	0	1	4	0	0	0	32	1	0	95	413
5:45 PM	0	0	0	0	15	0	16	0	2	8	0	0	0	16	0	0	57	393

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	72	0	180	0	12	56	0	0	0	204	20	0	544
Heavy Trucks	0	0	0	0	4	0	0	0	4	4	0	0	0	0	0	0	12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

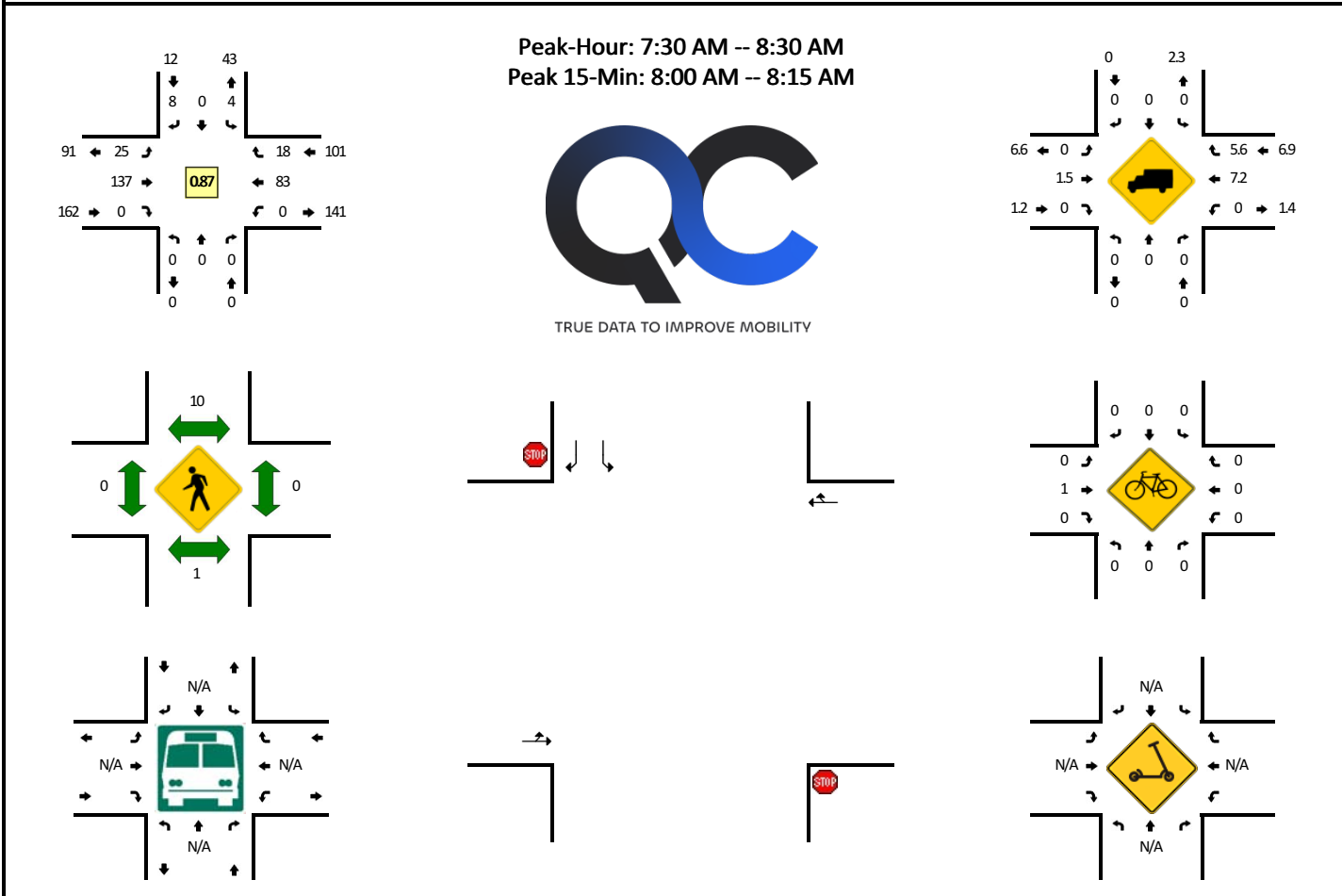
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Center LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573213
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	Center LAM Access (Northbound)				Center LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	6	0	2	0	6	22	0	0	0	15	4	0	55	
7:15 AM	0	0	0	0	5	0	0	0	3	19	0	0	0	15	1	0	43	
7:30 AM	0	0	0	0	2	0	4	0	6	33	0	0	0	18	2	0	65	
7:45 AM	0	0	0	0	1	0	1	0	8	42	0	0	0	18	7	0	77	240
8:00 AM	0	0	0	0	0	0	3	0	5	41	0	0	0	24	6	0	79	264
8:15 AM	0	0	0	0	1	0	0	0	6	21	0	0	0	23	3	0	54	275
8:30 AM	0	0	0	0	1	0	0	0	3	24	0	0	0	15	7	0	50	260
8:45 AM	0	0	0	0	0	0	0	0	5	31	0	0	0	20	9	0	65	248

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	0	0	12	0	20	164	0	0	0	96	24	0	316
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8
Buses																	
Pedestrians		4				4				0				0			8
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

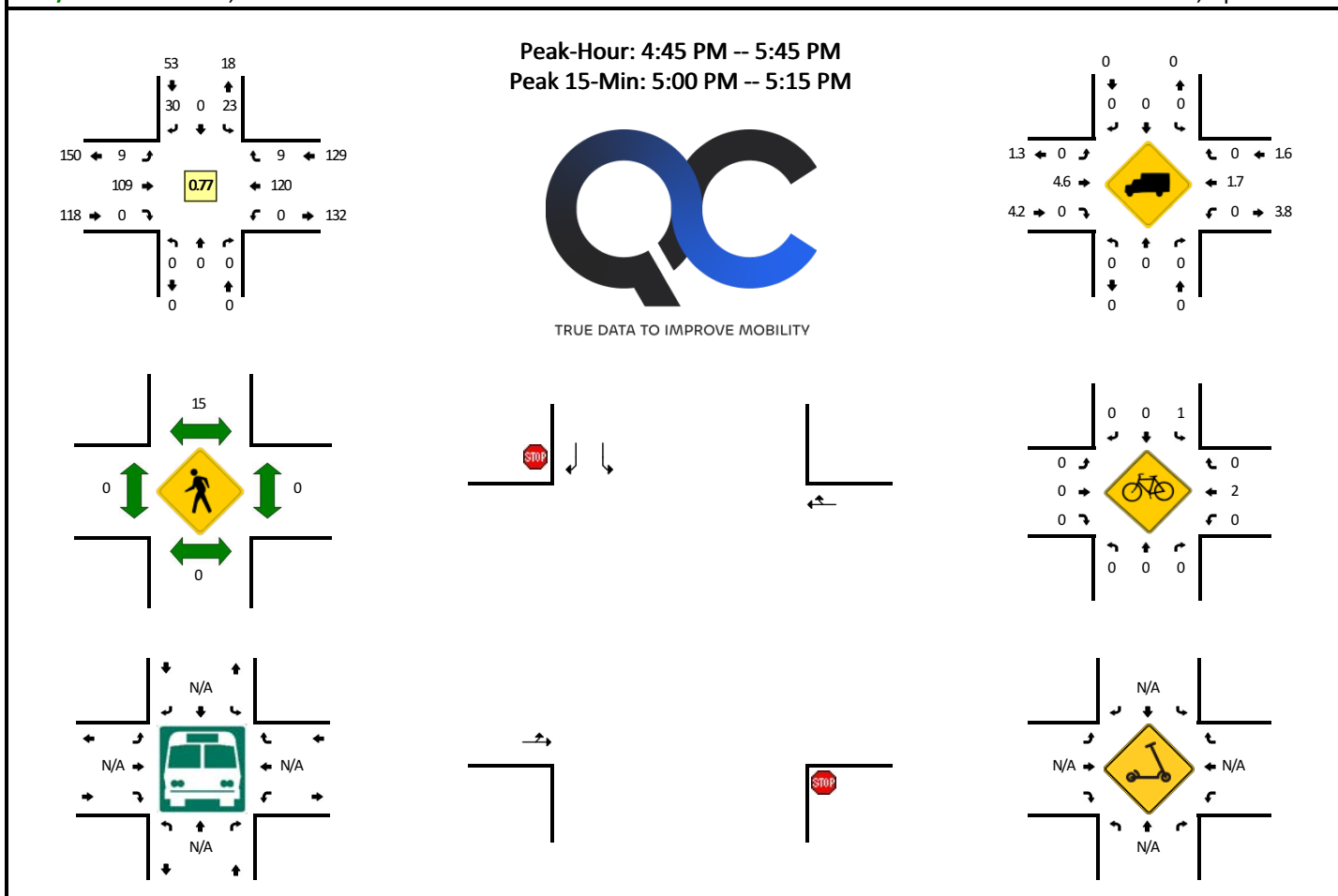
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Center LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573214
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	Center LAM Access (Northbound)				Center LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (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	3	0	7	0	0	14	0	0	0	21	1	0	46	
4:15 PM	0	0	0	0	3	0	5	0	2	13	0	0	0	12	3	0	38	
4:30 PM	0	0	0	0	5	0	4	0	1	24	0	0	0	16	3	0	53	
4:45 PM	0	0	0	0	3	0	8	0	3	16	0	0	0	23	3	0	56	193
5:00 PM	0	0	0	0	6	0	6	0	4	30	0	0	0	48	3	0	97	244
5:15 PM	0	0	0	0	7	0	12	0	2	35	0	0	0	22	2	0	80	286
5:30 PM	0	0	0	0	7	0	4	0	0	28	0	0	0	27	1	0	67	300
5:45 PM	0	0	0	0	4	0	2	0	0	24	0	0	0	13	3	0	46	290

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	24	0	24	0	16	120	0	0	0	192	12	0	388
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

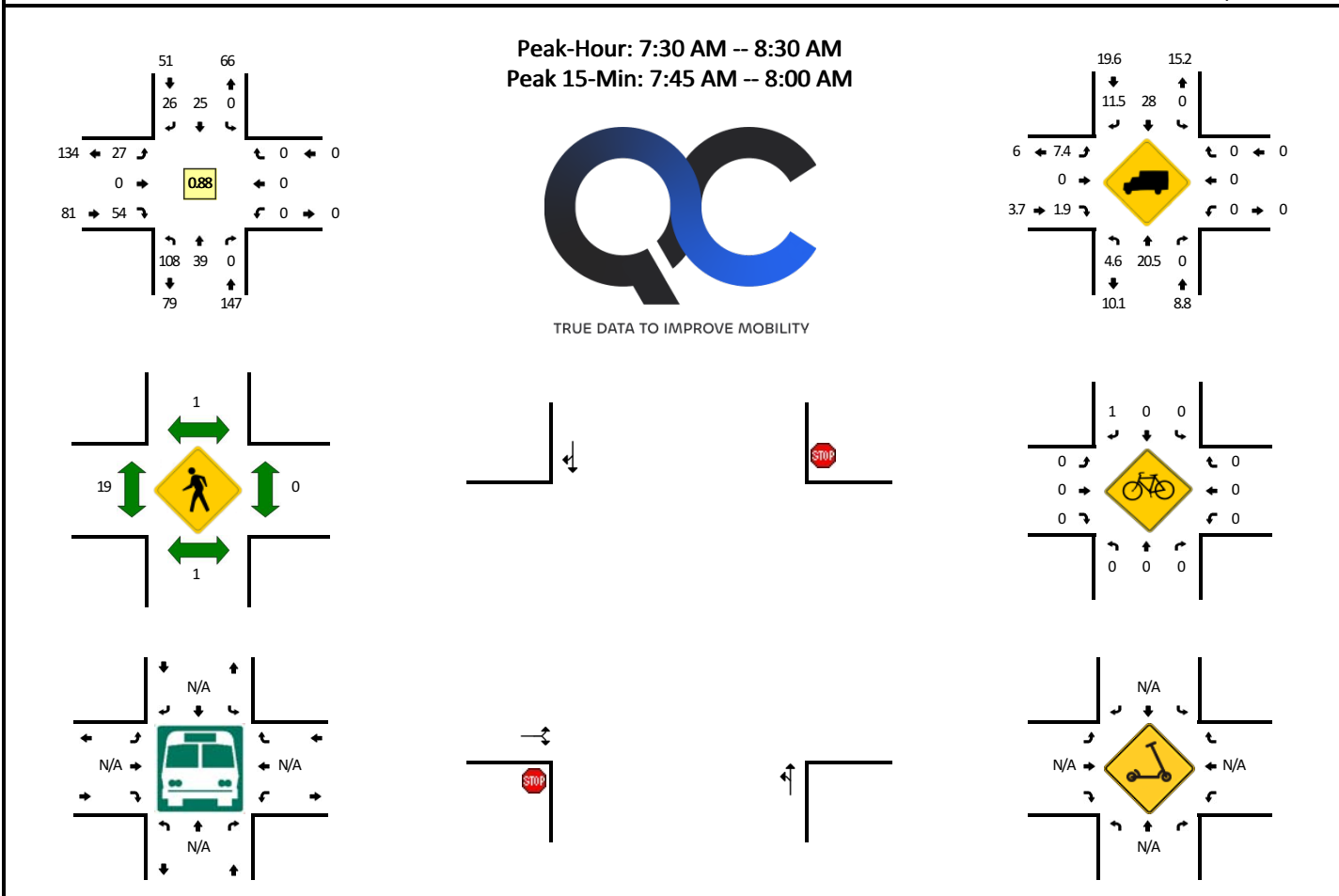
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573215
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	23	3	0	0	0	5	4	0	6	0	12	0	0	0	0	0	53	
7:15 AM	17	9	0	0	0	6	4	0	7	0	15	0	0	0	0	0	58	
7:30 AM	24	11	0	0	0	5	3	0	2	0	17	0	0	0	0	0	62	
7:45 AM	28	10	0	0	0	4	11	0	13	0	13	0	0	0	0	0	79	252
8:00 AM	30	12	0	0	0	5	7	0	7	0	13	0	0	0	0	0	74	273
8:15 AM	26	6	0	0	0	11	5	0	5	0	11	0	0	0	0	0	64	279
8:30 AM	24	3	0	0	0	5	8	0	3	0	4	0	0	0	0	0	47	264
8:45 AM	29	7	0	0	0	4	8	0	5	0	3	0	0	0	0	0	56	241
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	112	40	0	0	0	16	44	0	52	0	52	0	0	0	0	0	316	
Heavy Trucks	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
Buses																		
Pedestrians		0				0					32			0			32	
Bicycles	0	0	0		0	0	4		0	0	0		0	0	0		4	
Scoters																		

Comments:

Report generated on 6/7/2024 12:47 PM

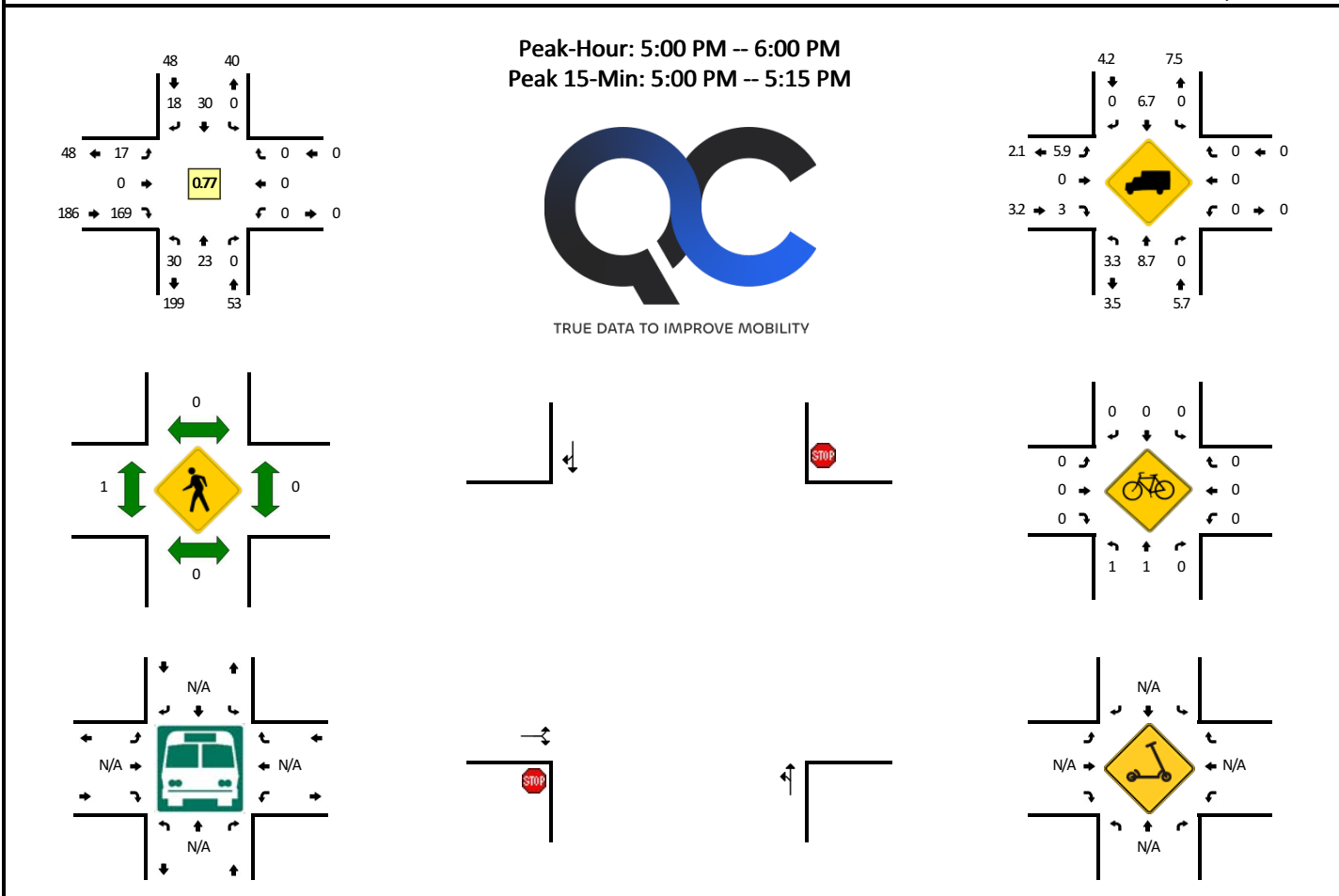
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573216
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	5	0	0	0	14	4	0	2	0	23	0	0	0	0	0	56	
4:15 PM	8	2	0	0	0	5	2	0	2	0	21	0	0	0	0	0	40	
4:30 PM	9	8	0	0	0	6	3	0	5	0	29	0	0	0	0	0	60	
4:45 PM	14	5	0	0	0	6	4	0	3	0	23	0	0	0	0	0	55	211
5:00 PM	15	10	0	0	0	10	10	0	6	0	42	0	0	0	0	0	93	248
5:15 PM	6	5	0	0	0	9	2	0	1	0	46	0	0	0	0	0	69	277
5:30 PM	6	3	0	0	0	4	4	0	4	0	46	0	0	0	0	0	67	284
5:45 PM	3	5	0	0	0	7	2	0	6	0	35	0	0	0	0	0	58	287

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	60	40	0	0	0	40	40	0	24	0	168	0	0	0	0	0	372
Heavy Trucks	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	8
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4
Scoters																	

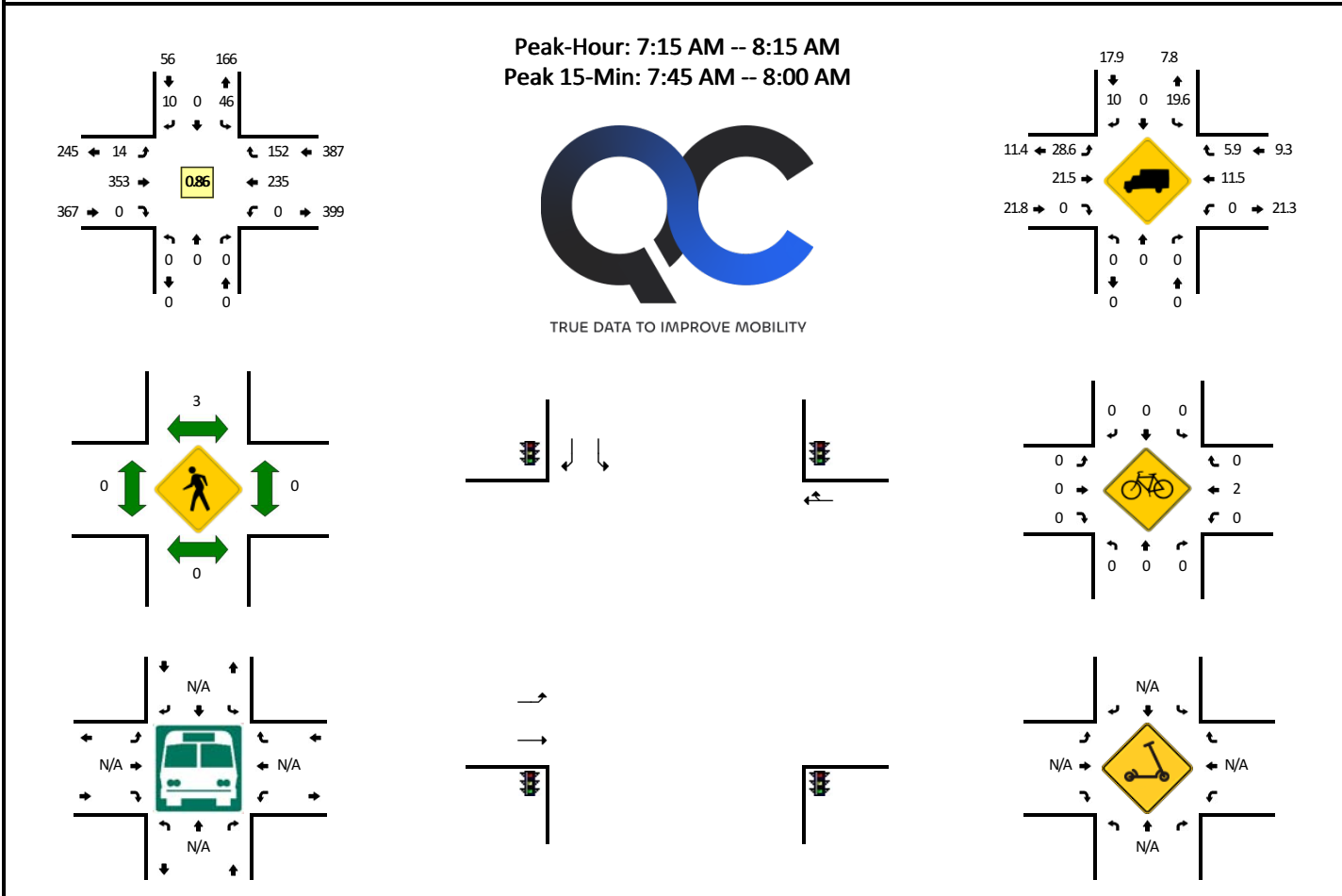
Comments:

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573217
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	13	0	2	0	4	44	0	0	0	52	28	0	143	
7:15 AM	0	0	0	0	19	0	5	0	1	87	0	0	0	59	25	0	196	
7:30 AM	0	0	0	0	14	0	3	0	6	92	0	0	0	58	35	0	208	
7:45 AM	0	0	0	0	7	0	2	0	3	97	0	0	0	76	50	0	235	782
8:00 AM	0	0	0	0	6	0	0	0	4	77	0	0	0	42	42	0	171	810
8:15 AM	0	0	0	0	11	0	3	0	1	81	0	0	0	27	40	0	163	777
8:30 AM	0	0	0	0	3	0	3	0	3	54	0	0	0	51	34	0	148	717
8:45 AM	0	0	0	0	4	0	0	0	1	60	0	0	0	46	39	0	150	632

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	28	0	8	0	12	388	0	0	0	304	200	0	940
Heavy Trucks	0	0	0	0	0	0	0	0	0	60	0	0	0	32	8	0	100
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

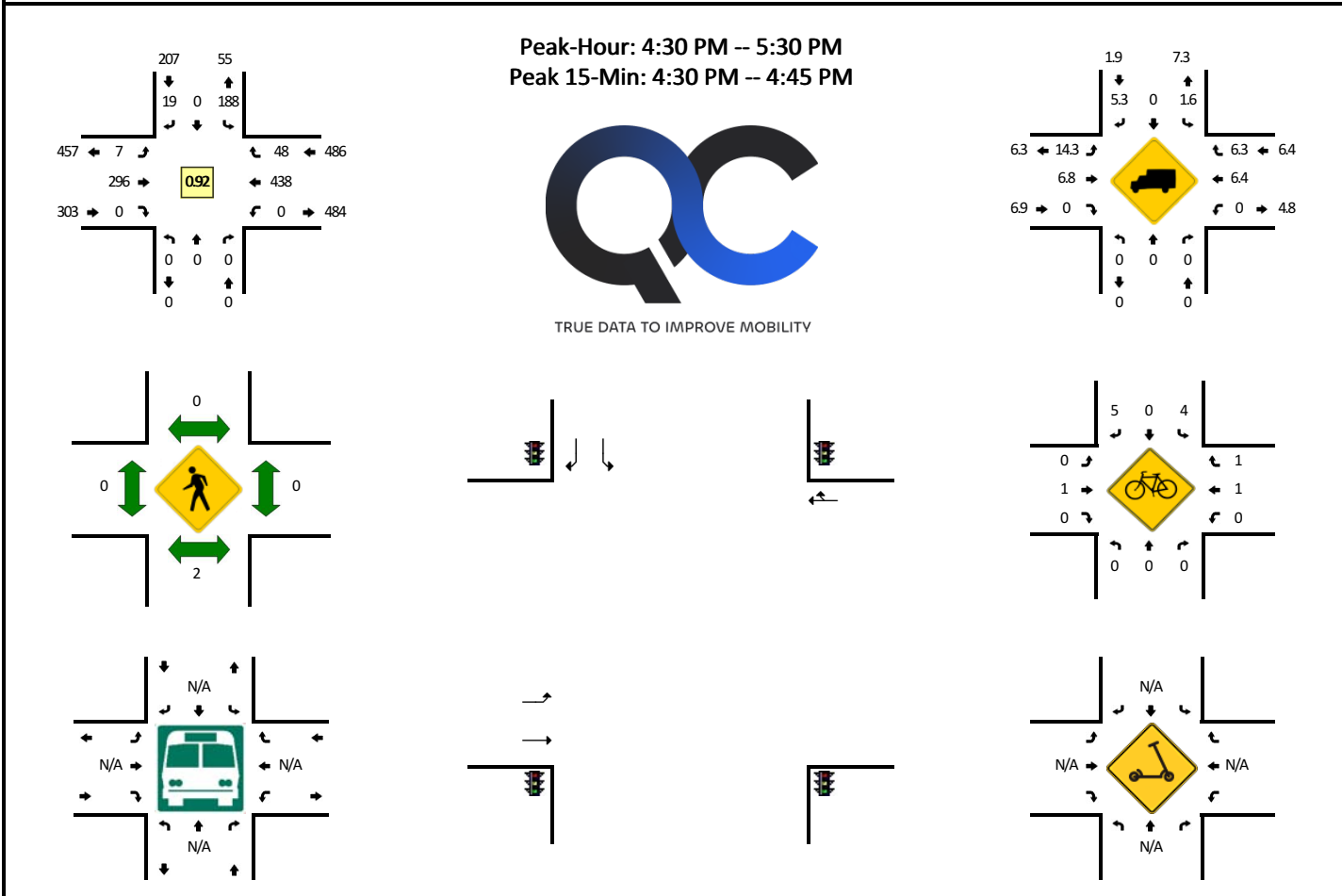
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573218
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman 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	40	0	5	0	2	76	0	0	0	120	12	0	255	
4:15 PM	0	0	0	0	26	0	3	0	2	78	0	0	0	121	5	0	235	
4:30 PM	0	0	0	0	38	0	4	0	4	84	0	0	0	132	10	0	272	
4:45 PM	0	0	0	0	32	0	4	0	0	63	0	0	0	101	16	0	216	978
5:00 PM	0	0	0	0	50	0	6	0	1	85	0	0	0	99	14	0	255	978
5:15 PM	0	0	0	0	68	0	5	0	2	64	0	0	0	106	8	0	253	996
5:30 PM	0	0	0	0	52	0	5	0	0	53	0	0	0	66	8	0	184	908
5:45 PM	0	0	0	0	49	0	7	0	0	45	0	0	0	46	5	0	152	844

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	152	0	16	0	16	336	0	0	0	528	40	0	1088
Heavy Trucks	0	0	0	0	0	0	0	0	0	20	0	0	0	28	0	0	48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	4		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/7/2024 12:47 PM

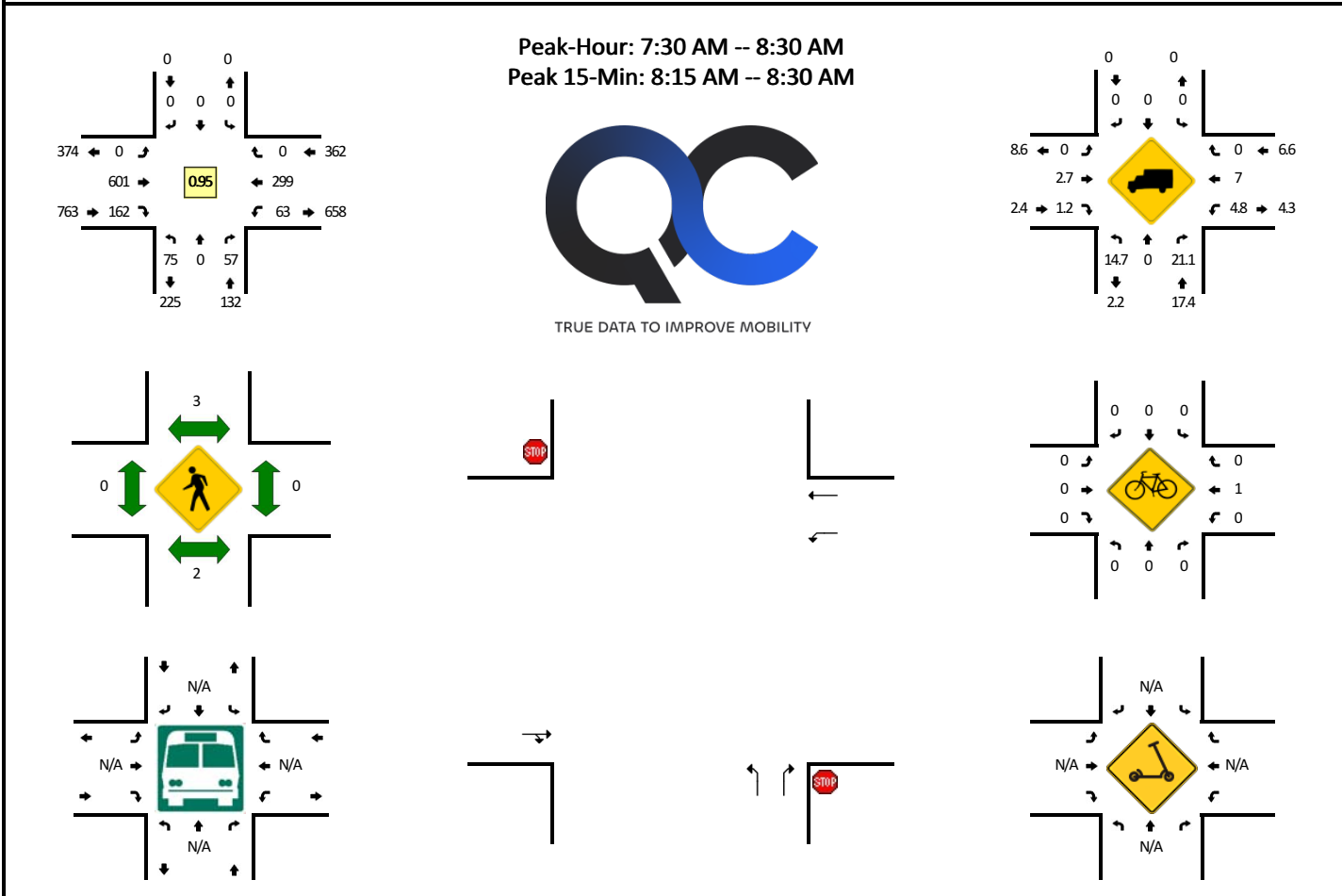
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Teton Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573219
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	7	0	4	0	0	0	0	0	0	76	39	0	5	37	0	0	168		
7:15 AM	16	0	5	0	0	0	0	0	0	128	25	0	8	28	0	0	210		
7:30 AM	12	0	6	0	0	0	0	0	0	160	50	0	5	70	0	0	303		
7:45 AM	17	0	4	0	0	0	0	0	0	153	51	0	4	83	0	0	312	993	
8:00 AM	25	0	26	0	0	0	0	0	0	138	33	0	18	72	0	0	312	1137	
8:15 AM	21	0	21	0	0	0	0	0	0	150	28	0	36	74	0	0	330	1257	
8:30 AM	12	0	8	0	0	0	0	0	0	90	50	0	18	67	0	0	245	1199	
8:45 AM	22	0	8	0	0	0	0	0	0	96	25	0	7	55	0	0	213	1100	
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	84	0	84	0	0	0	0	0	0	600	112	0	144	296	0	0	1320		
Heavy Trucks	8	0	12		0	0	0		0	20	4		8	28	0		80		
Buses																			
Pedestrians		0				8				0				0			8		
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0		
Scoters																			

Comments:

Report generated on 6/7/2024 12:47 PM

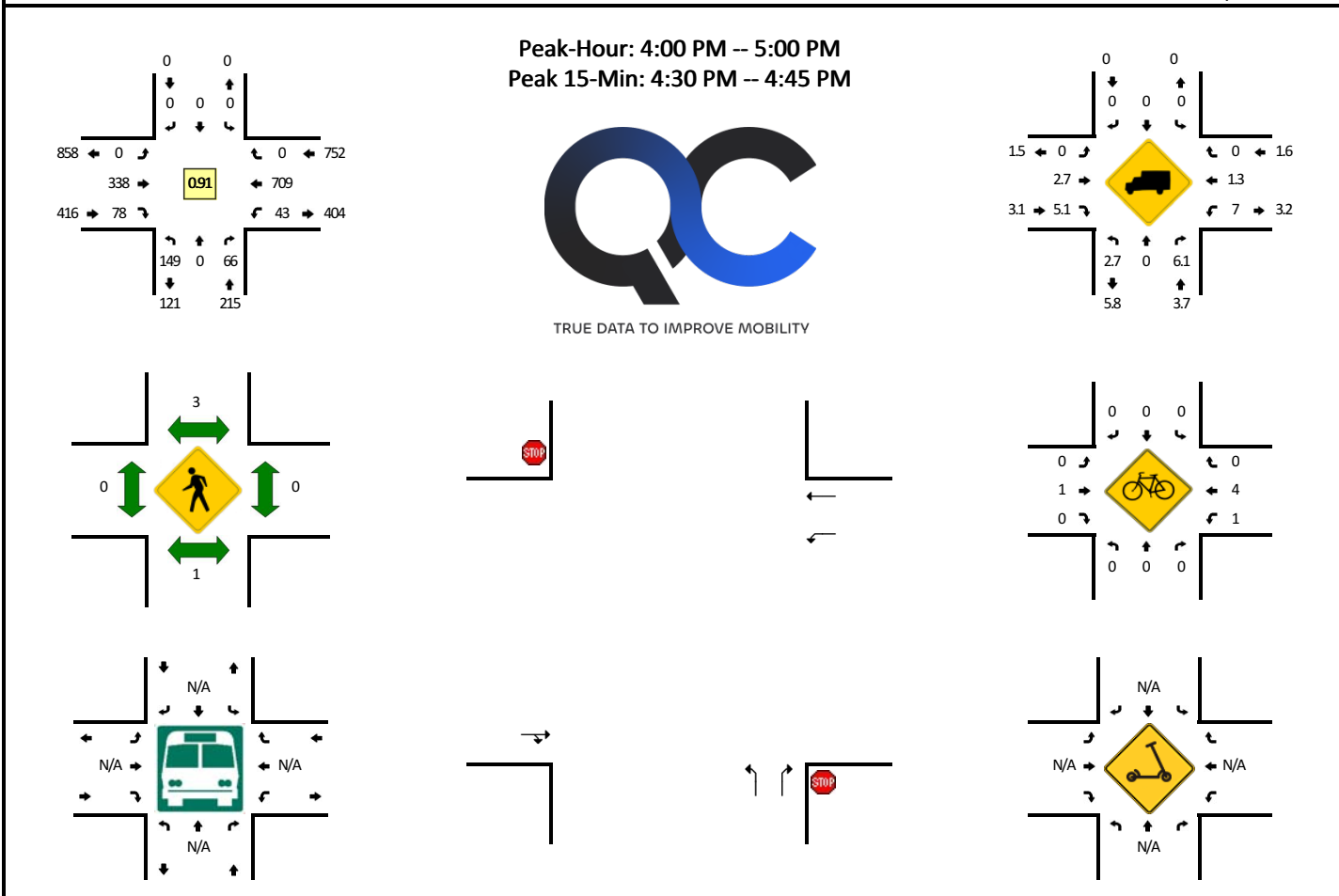
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Teton Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573220
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	47	0	23	0	0	0	0	0	0	69	12	0	5	200	0	0	356	
4:15 PM	36	0	10	0	0	0	0	0	0	88	21	0	17	166	0	0	338	
4:30 PM	39	0	25	0	0	0	0	0	0	86	28	0	11	189	0	0	378	
4:45 PM	27	0	8	0	0	0	0	0	0	95	17	0	10	154	0	0	311	1383
5:00 PM	45	0	13	0	0	0	0	0	0	74	15	0	10	182	0	0	339	1366
5:15 PM	36	0	3	0	0	0	0	0	0	62	13	0	6	196	0	0	316	1344
5:30 PM	24	0	7	0	0	0	0	0	0	79	21	0	2	174	0	0	307	1273
5:45 PM	22	0	5	0	0	0	0	0	0	74	12	0	4	115	0	0	232	1194

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	156	0	100	0	0	0	0	0	0	344	112	0	44	756	0	0	1512
Heavy Trucks	0	0	0		0	0	0		0	16	8		4	12	0		40
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

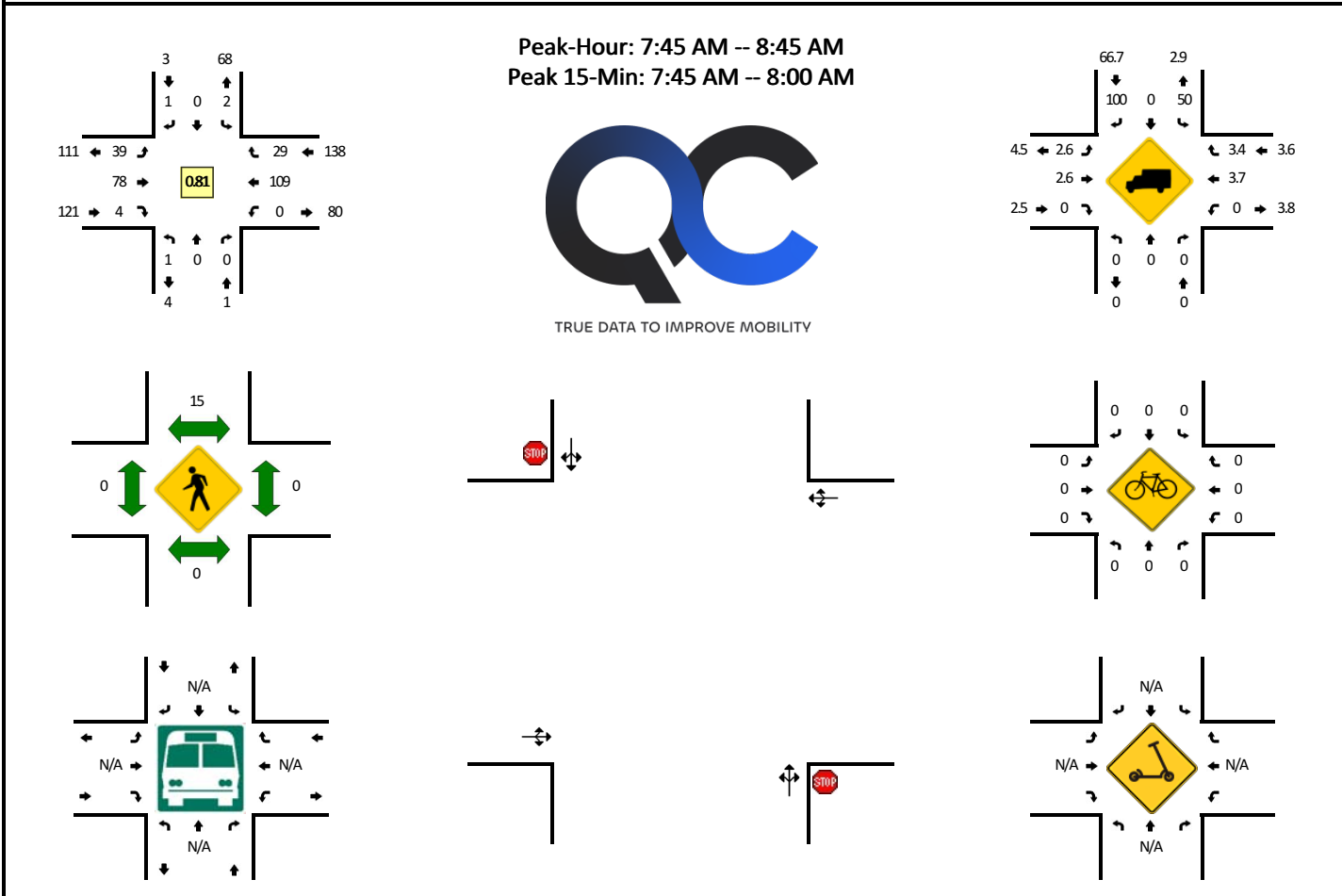
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: East LAM Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573221
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	East LAM Access (Northbound)				East LAM Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	20	3	0	0	22	4	0	50	
7:15 AM	0	0	0	0	0	0	0	0	0	24	1	0	0	15	5	0	45	
7:30 AM	0	0	0	0	1	0	1	0	5	18	1	0	0	22	4	0	52	
7:45 AM	0	0	0	0	0	0	0	0	9	31	0	0	0	33	8	0	81	228
8:00 AM	0	0	0	0	2	0	0	0	16	19	1	0	0	28	6	0	72	250
8:15 AM	1	0	0	0	0	0	0	0	4	18	0	0	0	26	8	0	57	262
8:30 AM	0	0	0	0	0	0	1	0	10	10	3	0	0	22	7	0	53	263
8:45 AM	0	0	0	0	0	0	3	0	17	9	0	0	0	27	14	0	70	252

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	0	0	0	0	36	124	0	0	0	132	32	0	324
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses																	
Pedestrians		0				12				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scoters																	

Comments:

Report generated on 6/7/2024 12:47 PM

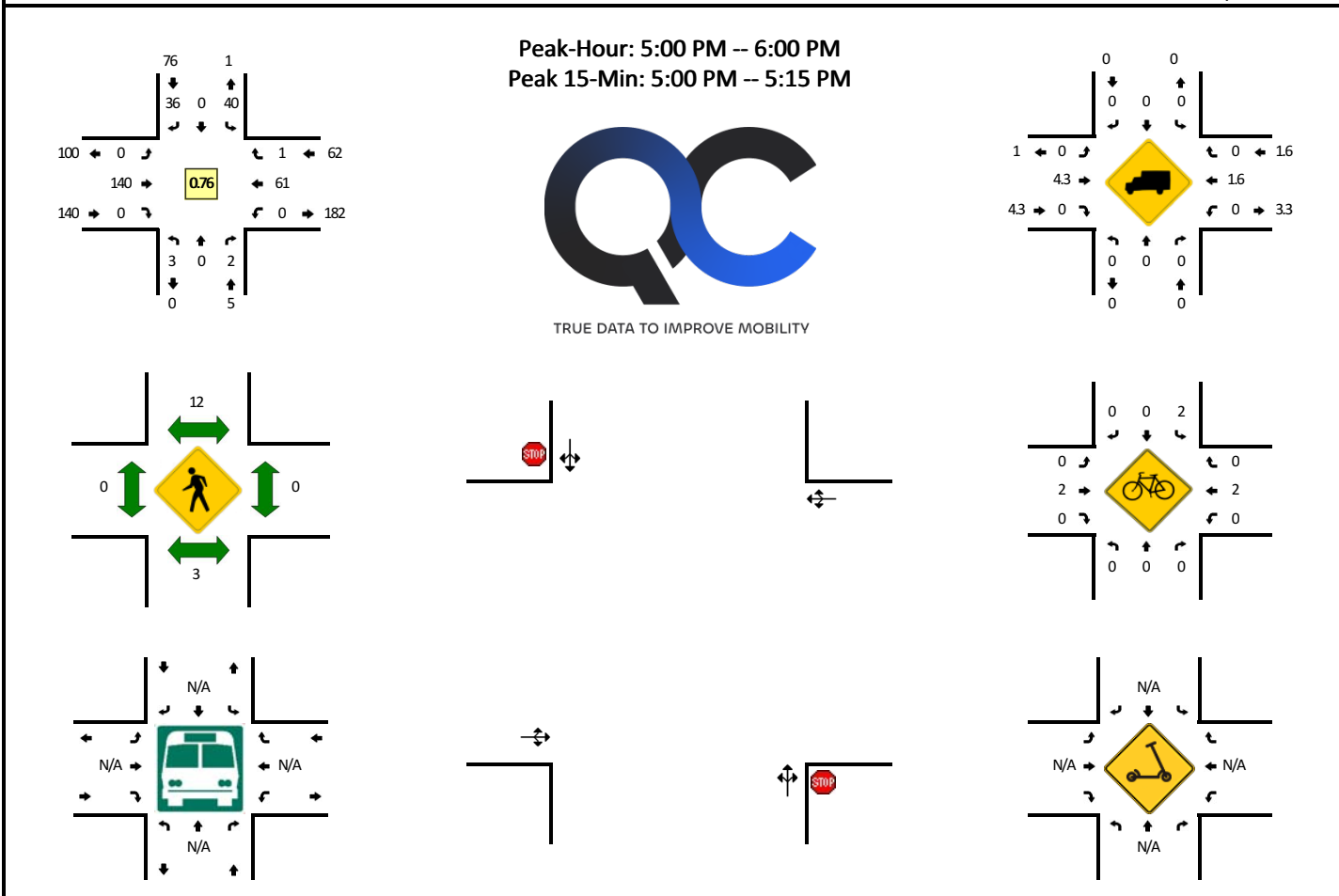
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: East LAM Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573222
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	East LAM Access (Northbound)				East LAM Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (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	6	0	7	0	0	19	0	0	0	13	1	0	46	
4:15 PM	0	0	0	0	3	0	3	0	0	19	1	0	0	12	0	0	38	
4:30 PM	1	0	0	0	5	0	3	0	0	28	0	0	0	14	0	0	51	
4:45 PM	1	0	0	0	6	0	5	0	0	21	0	0	0	18	1	0	52	187
5:00 PM	3	0	0	0	12	0	13	0	0	35	0	0	0	30	0	0	93	234
5:15 PM	0	0	1	0	6	0	7	0	0	41	0	0	0	13	0	0	68	264
5:30 PM	0	0	0	0	9	0	8	0	0	37	0	0	0	12	1	0	67	280
5:45 PM	0	0	1	0	13	0	8	0	0	27	0	0	0	6	0	0	55	283

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	0	0	0	48	0	52	0	0	140	0	0	0	120	0	0	372
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
Buses																	
Pedestrians		4				12				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	8	0		8
Scoters																	

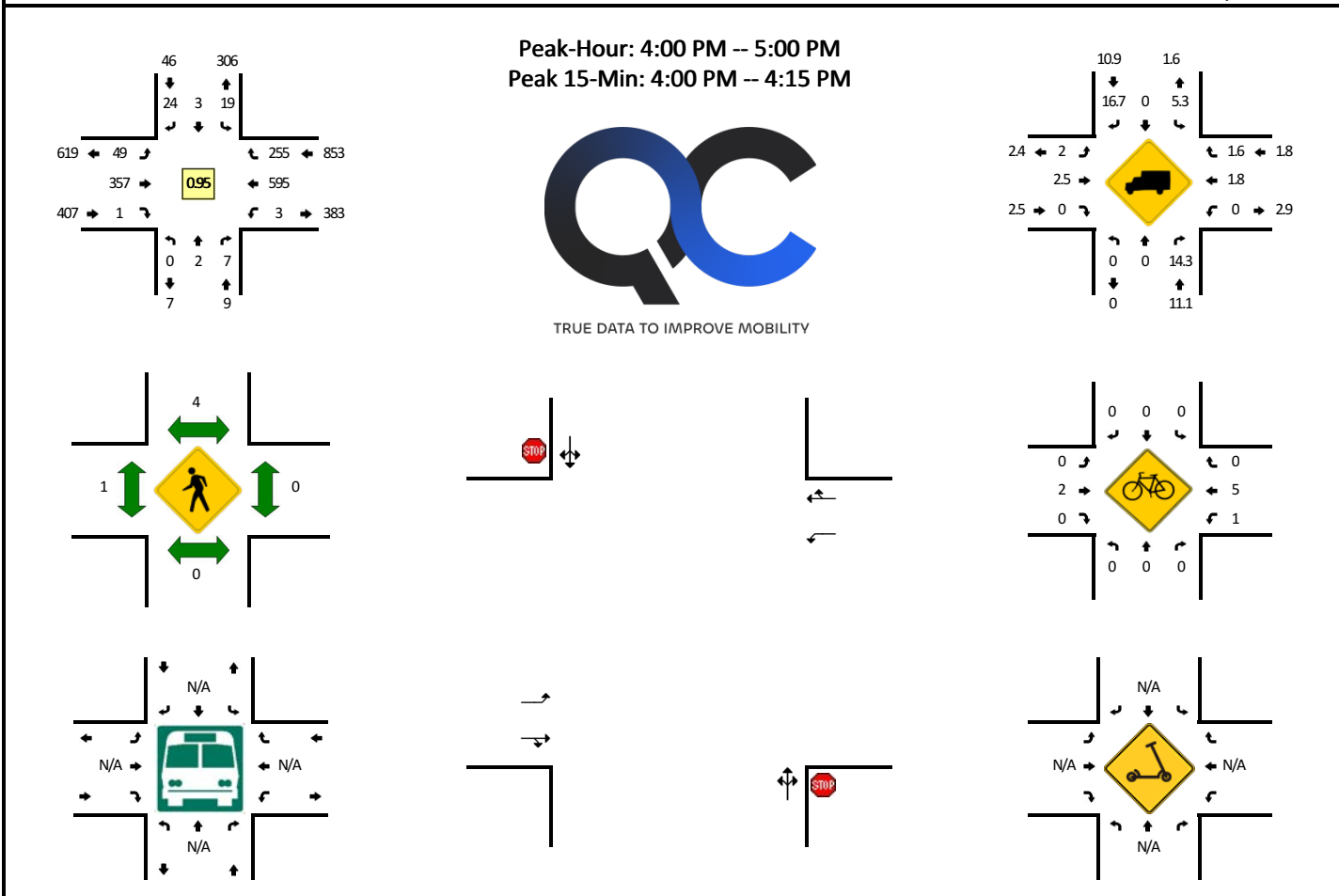
Comments:

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 115th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573223
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	3	0	8	110	0	0	3	21	16	0	163	
7:15 AM	0	0	0	0	6	1	5	0	10	142	0	0	0	27	13	0	204	
7:30 AM	0	1	0	0	10	0	5	0	3	181	1	0	1	53	21	0	276	
7:45 AM	1	0	0	0	11	1	4	0	11	184	2	0	0	60	28	0	302	945
8:00 AM	0	0	0	0	7	1	8	0	19	151	2	0	2	59	26	0	275	1057
8:15 AM	1	0	1	0	12	0	12	0	29	161	0	0	1	46	53	0	316	1169
8:30 AM	0	0	1	0	8	0	3	0	10	127	1	0	1	47	26	0	224	1117
8:45 AM	1	0	0	0	7	0	1	0	6	93	1	0	1	47	19	0	176	991
9:00 AM	0	0	0	0	1	0	1	0	3	78	0	0	1	34	33	0	151	867
9:15 AM	0	0	0	0	2	0	1	0	2	73	0	0	1	54	18	0	151	702
9:30 AM	0	1	0	0	2	0	4	0	2	68	1	0	0	57	18	0	153	631
9:45 AM	1	0	0	0	3	0	3	0	6	58	0	0	0	33	12	0	116	571
10:00 AM	0	0	2	0	2	0	2	0	7	78	1	0	0	29	19	0	140	560
10:15 AM	0	0	0	0	6	0	4	0	6	49	0	0	1	30	17	0	113	522
10:30 AM	0	0	0	0	2	0	4	0	10	58	0	0	1	44	16	0	135	504
10:45 AM	1	1	0	0	2	0	3	0	5	63	1	0	0	57	31	0	164	552
11:00 AM	1	0	0	0	7	1	4	0	5	57	1	0	0	43	26	0	145	557
11:15 AM	0	0	1	0	2	0	2	0	3	56	1	0	0	59	28	0	152	596
11:30 AM	0	2	1	0	5	0	7	0	10	68	0	0	1	65	22	0	181	642
11:45 AM	0	0	1	0	4	0	3	0	4	75	1	0	1	52	15	0	156	634
12:00 PM	1	0	2	0	0	0	7	0	13	66	2	0	1	59	15	0	166	655
12:15 PM	1	0	1	0	4	0	2	0	7	82	0	0	0	62	28	0	187	690
12:30 PM	0	0	3	0	4	0	6	0	4	78	1	0	2	67	17	0	182	691
12:45 PM	1	0	0	0	1	0	6	0	8	76	1	0	0	56	22	0	171	706
1:00 PM	1	1	1	0	2	1	7	0	5	66	0	0	1	64	30	0	179	719
1:15 PM	0	0	2	0	1	0	7	0	10	79	1	0	0	65	26	0	191	723
1:30 PM	0	0	0	0	6	0	4	0	5	71	0	0	0	77	24	0	187	728
1:45 PM	0	0	0	0	6	0	1	0	7	68	0	0	0	54	33	0	169	726
2:00 PM	1	0	0	0	3	0	3	0	4	76	1	0	0	56	30	0	174	721
2:15 PM	0	0	1	0	4	0	5	0	5	76	0	0	0	64	37	0	192	722
2:30 PM	0	1	2	0	8	0	5	0	11	85	4	0	2	77	68	0	263	798
2:45 PM	0	0	4	0	2	0	4	0	11	89	0	0	0	98	52	0	260	889
3:00 PM	0	0	0	0	6	0	2	0	23	63	0	0	0	84	45	0	223	938
3:15 PM	0	0	0	0	19	0	24	0	8	89	0	0	3	107	44	0	294	1040
3:30 PM	1	1	2	0	5	0	3	0	7	94	1	0	0	128	59	0	301	1078
3:45 PM	0	0	1	0	6	0	4	0	8	88	0	0	1	101	68	0	277	1095
4:00 PM	0	0	4	0	2	1	7	0	10	81	0	0	1	160	80	0	346	1218
4:15 PM	0	1	2	0	4	2	7	0	12	85	0	0	2	142	58	0	315	1239

15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	1	1	0	4	0	3	0	8	94	0	0	0	164	68	0	343	1281
4:45 PM	0	0	0	0	9	0	7	0	19	97	1	0	0	129	49	0	311	1315
5:00 PM	0	1	1	0	2	0	5	0	9	90	0	0	2	159	66	0	335	1304
5:15 PM	0	1	2	0	4	0	4	0	17	71	1	0	1	165	58	0	324	1313
5:30 PM	0	0	0	0	4	0	3	0	9	103	1	0	0	139	54	0	313	1283
5:45 PM	0	1	1	0	3	0	4	0	10	85	2	0	0	98	47	0	251	1223
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	16	0	8	4	28	0	40	324	0	0	4	640	320	0	1384	
Heavy Trucks	0	0	0		0	0	4		0	4	0		0	20	12		40	
Buses																		
Pedestrians		0				12				0				0			12	
Bicycles	0	0	0		0	0	0		0	4	0		4	8	0		16	
Scooters																		
<i>Comments:</i>																		

Report generated on 6/7/2024 12:47 PM

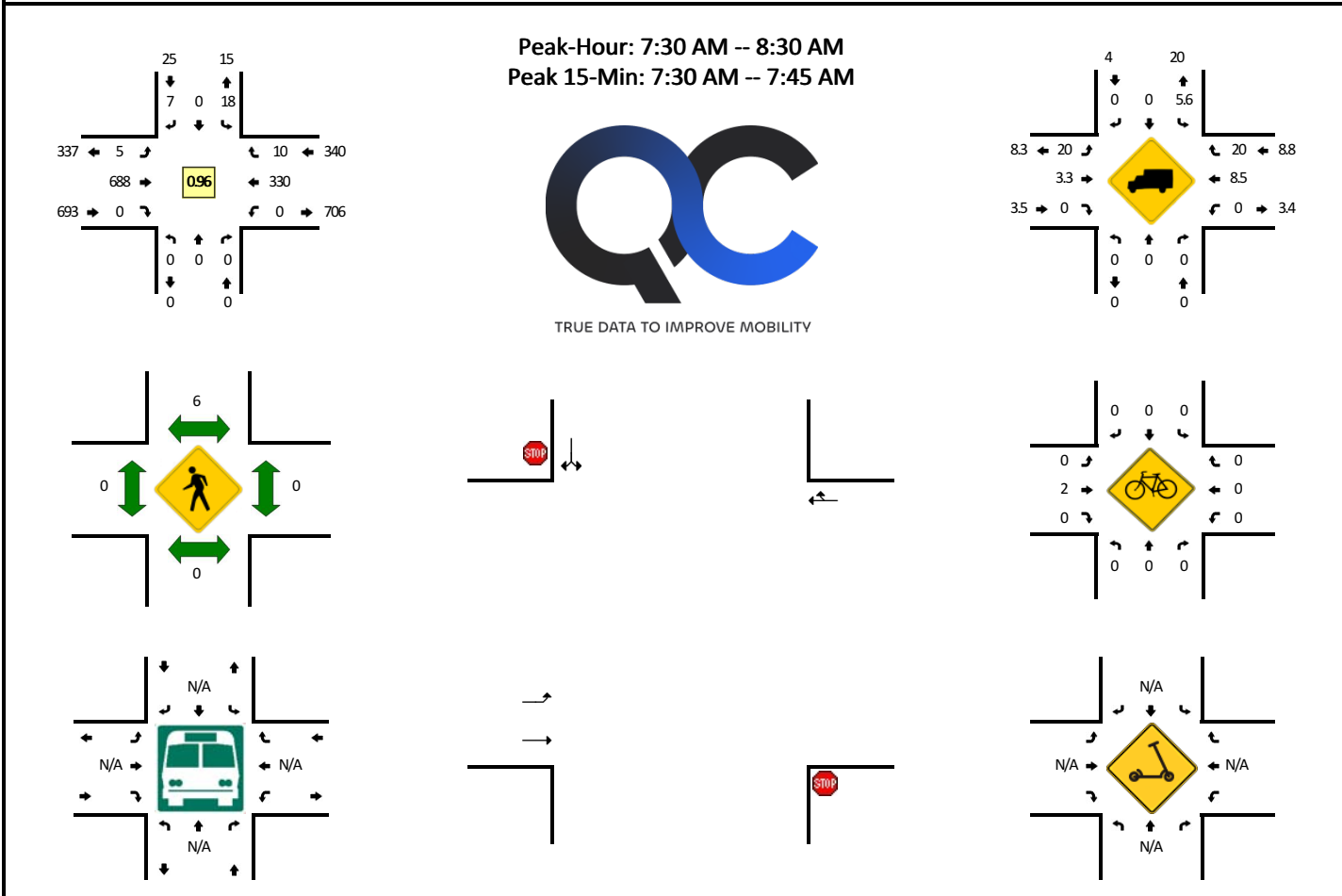
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 112th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16614101
DATE: Tue, May 14 2024



15-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	3	0	1	0	1	105	0	0	0	35	1	0	146	
7:15 AM	0	0	0	0	8	0	1	0	0	149	0	0	0	42	0	0	200	
7:30 AM	0	0	0	0	11	0	1	0	0	190	0	0	0	71	2	0	275	
7:45 AM	0	0	0	0	1	0	1	0	1	191	0	0	0	76	5	0	275	896
8:00 AM	0	0	0	0	1	0	3	0	3	158	0	0	0	87	0	0	252	1002
8:15 AM	0	0	0	0	5	0	2	0	1	149	0	0	0	96	3	0	256	1058
8:30 AM	0	0	0	0	6	0	1	0	3	164	0	0	0	64	1	0	239	1022
8:45 AM	0	0	0	0	1	0	2	0	2	131	0	0	0	78	1	0	215	962
9:00 AM	0	0	0	0	3	0	1	0	1	97	0	0	0	78	3	0	183	893
9:15 AM	0	0	0	0	6	0	0	0	2	74	0	0	0	67	2	0	151	788
9:30 AM	0	0	0	0	2	0	0	0	0	69	0	0	0	58	0	0	129	678
9:45 AM	0	0	0	0	1	0	2	0	0	59	0	0	0	72	3	0	137	600
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	44	0	4	0	0	760	0	0	0	284	8	0	1100	
Heavy Trucks	0	0	0	0	0	0	0	0	0	32	0	0	0	36	0	0	68	
Buses																		
Pedestrians		0				4				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

Report generated on 6/7/2024 12:48 PM

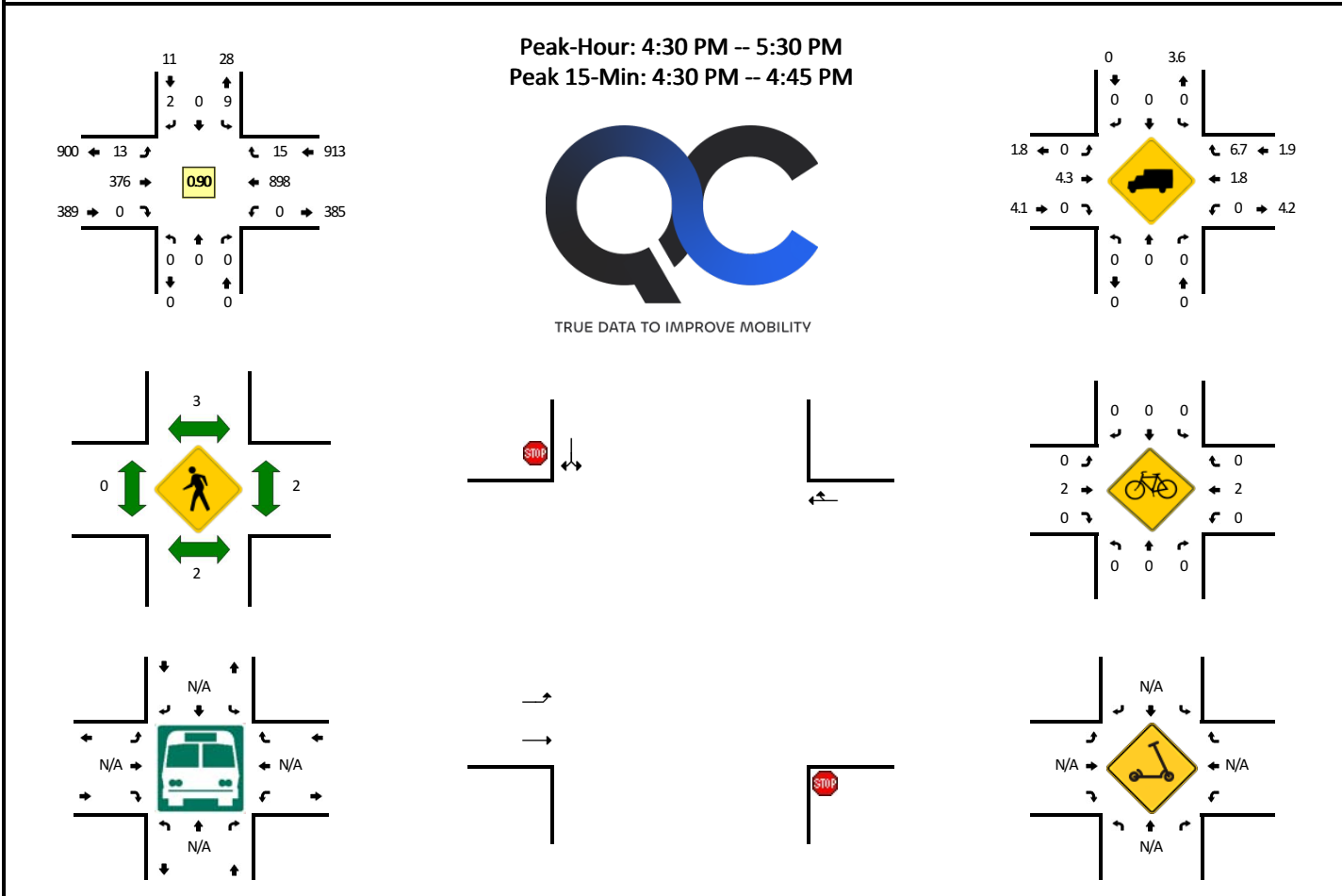
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 112th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16614102
DATE: Tue, May 14 2024



15-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin 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	1	0	1	0	3	102	0	0	0	219	6	0	332	
4:15 PM	0	0	0	0	0	0	0	0	2	101	0	0	0	192	2	0	297	
4:30 PM	0	0	0	0	2	0	1	0	3	101	0	0	0	251	5	0	363	
4:45 PM	0	0	0	0	4	0	0	0	4	86	0	0	0	204	2	0	300	1292
5:00 PM	0	0	0	0	2	0	0	0	3	95	0	0	0	238	2	0	340	1300
5:15 PM	0	0	0	0	1	0	1	0	3	94	0	0	0	205	6	0	310	1313
5:30 PM	0	0	0	0	2	0	0	0	7	87	0	0	0	200	3	0	299	1249
5:45 PM	0	0	0	0	3	0	1	0	2	70	0	0	0	149	5	0	230	1179
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	8	0	4	0	12	404	0	0	0	1004	20	0	1452	
Heavy Trucks	0	0	0	0	0	0	0	0	0	12	0	0	0	12	4	0	28	
Buses																		
Pedestrians		0				4				0				4			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4	
Scooters																		

Comments:

Report generated on 6/7/2024 12:48 PM

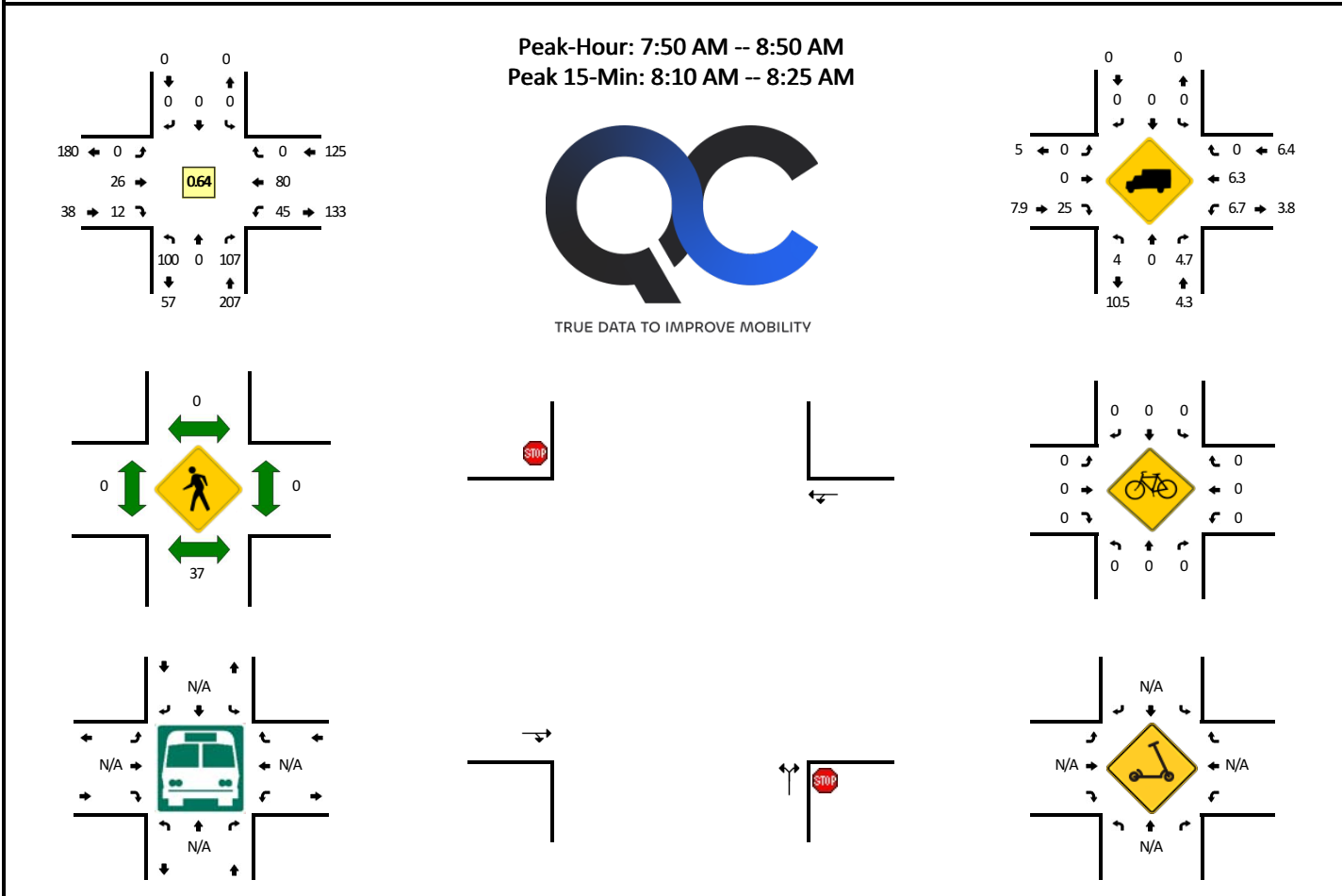
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 115th Ave -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16651303
DATE: Tue, Jun 11 2024



5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	0	2	0	0	0	0	0	0	0	0	0	1	3	0	0	10	
7:05 AM	8	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	11	
7:10 AM	6	0	1	0	0	0	0	0	0	2	0	0	0	5	0	0	14	
7:15 AM	6	0	1	0	0	0	0	0	0	1	1	0	0	2	0	0	11	
7:20 AM	6	0	3	0	0	0	0	0	0	1	0	0	0	5	0	0	15	
7:25 AM	9	0	2	0	0	0	0	0	0	1	1	0	1	4	0	0	18	
7:30 AM	7	0	7	0	0	0	0	0	0	3	2	0	0	6	0	0	25	
7:35 AM	10	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	12	
7:40 AM	7	0	1	0	0	0	0	0	0	3	1	0	0	7	0	0	19	
7:45 AM	8	0	4	0	0	0	0	0	0	3	1	0	0	3	0	0	19	
7:50 AM	9	0	6	0	0	0	0	0	0	5	1	0	0	0	0	0	21	191
7:55 AM	7	0	1	0	0	0	0	0	0	3	0	0	2	3	0	0	16	210
8:00 AM	13	0	10	0	0	0	0	0	0	0	2	0	1	3	0	0	29	238
8:05 AM	9	0	18	0	0	0	0	0	0	2	0	0	5	5	0	0	39	262
8:10 AM	5	0	11	0	0	0	0	0	0	3	2	0	8	9	0	0	38	296
8:15 AM	6	0	17	0	0	0	0	0	0	1	0	0	12	9	0	0	45	342
8:20 AM	12	0	22	0	0	0	0	0	0	4	1	0	4	18	0	0	61	351
8:25 AM	8	0	6	0	0	0	0	0	0	3	0	0	3	7	0	0	27	355
8:30 AM	8	0	6	0	0	0	0	0	0	2	2	0	3	8	0	0	29	356
8:35 AM	2	0	2	0	0	0	0	0	0	0	2	0	2	5	0	0	13	362
8:40 AM	9	0	3	0	0	0	0	0	0	2	2	0	1	8	0	0	25	370
8:45 AM	12	0	5	0	0	0	0	0	0	1	0	0	4	5	0	0	27	358
8:50 AM	4	0	1	0	0	0	0	0	0	0	1	0	0	3	0	0	9	360
8:55 AM	12	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	18	
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	92	0	200	0	0	0	0	0	0	32	12	0	96	144	0	0	576	
Heavy Trucks	4	0	16		0	0	0		0	0	4		12	8	0		44	
Buses		100				0				0				0			100	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles																		
Scoters																		

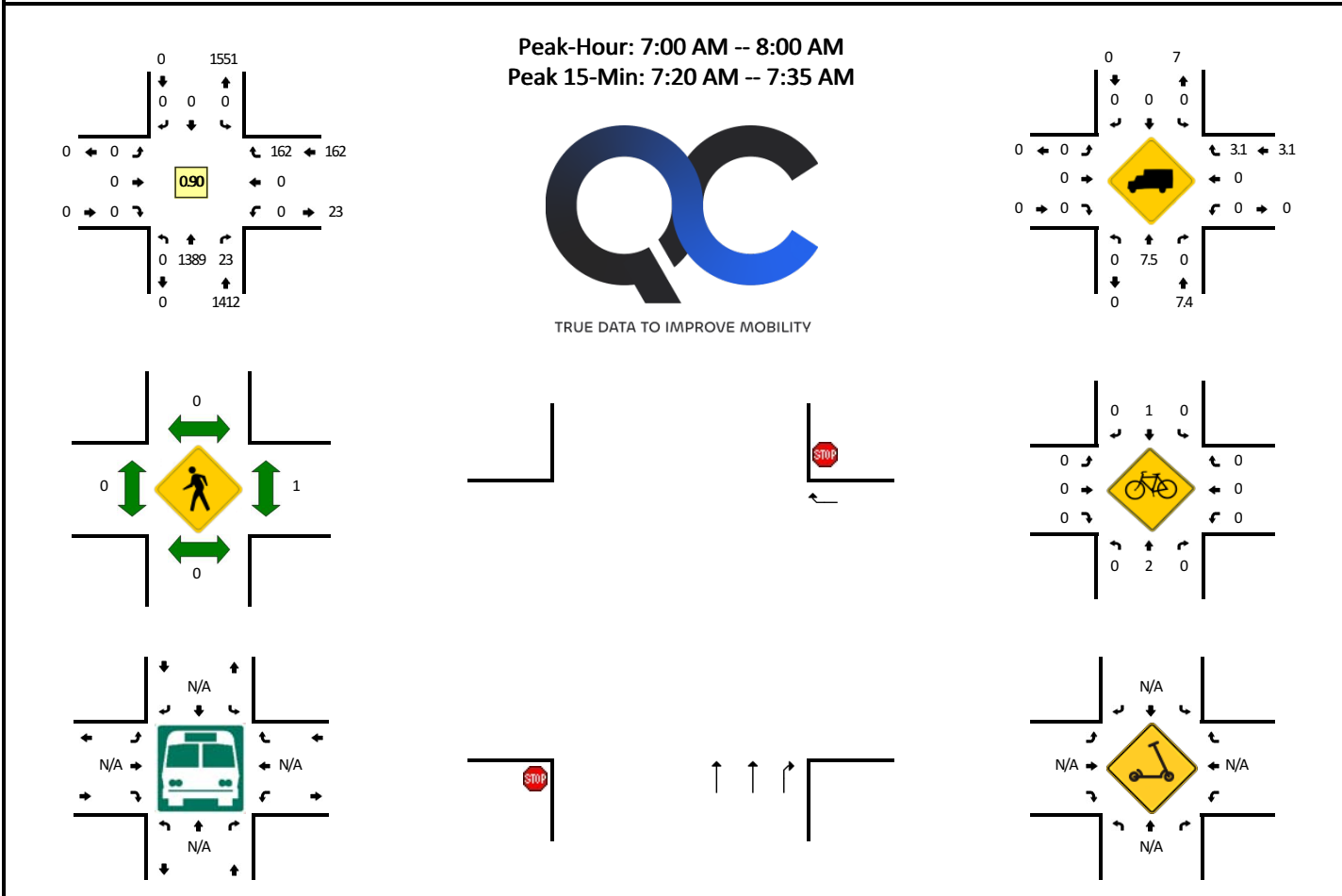
Comments:

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Pacific Hwy -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16651301
DATE: Tue, Jun 11 2024



5-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	128	0	0	0	0	0	0	0	0	0	0	0	0	11	0	139	
7:05 AM	0	141	0	0	0	0	0	0	0	0	0	0	0	0	12	0	153	
7:10 AM	0	90	2	0	0	0	0	0	0	0	0	0	0	0	13	0	105	
7:15 AM	0	137	1	0	0	0	0	0	0	0	0	0	0	0	8	0	146	
7:20 AM	0	129	1	0	0	0	0	0	0	0	0	0	0	0	13	0	143	
7:25 AM	0	130	2	0	0	0	0	0	0	0	0	0	0	0	12	0	144	
7:30 AM	0	131	2	0	0	0	0	0	0	0	0	0	0	0	19	0	152	
7:35 AM	0	102	0	0	0	0	0	0	0	0	0	0	0	0	18	0	120	
7:40 AM	0	101	5	0	0	0	0	0	0	0	0	0	0	0	16	0	122	
7:45 AM	0	107	2	0	0	0	0	0	0	0	0	0	0	0	12	0	121	
7:50 AM	0	96	6	0	0	0	0	0	0	0	0	0	0	0	13	0	115	
7:55 AM	0	97	2	0	0	0	0	0	0	0	0	0	0	0	15	0	114	1574
8:00 AM	0	82	4	0	0	0	0	0	0	0	0	0	0	0	20	0	106	1541
8:05 AM	0	104	1	0	0	0	0	0	0	0	0	0	0	0	11	0	116	1504
8:10 AM	0	99	4	0	0	0	0	0	0	0	0	0	0	0	16	0	119	1518
8:15 AM	0	114	3	0	0	0	0	0	0	0	0	0	0	0	17	0	134	1506
8:20 AM	0	107	4	0	0	0	0	0	0	0	0	0	0	0	27	0	138	1501
8:25 AM	0	62	3	0	0	0	0	0	0	0	0	0	0	0	21	0	86	1443
8:30 AM	0	82	2	0	0	0	0	0	0	0	0	0	0	0	17	0	101	1392
8:35 AM	0	101	0	0	0	0	0	0	0	0	0	0	0	0	10	0	111	1383
8:40 AM	0	105	2	0	0	0	0	0	0	0	0	0	0	0	14	0	121	1382
8:45 AM	0	116	0	0	0	0	0	0	0	0	0	0	0	0	19	0	135	1396
8:50 AM	0	80	1	0	0	0	0	0	0	0	0	0	0	0	9	0	90	1371
8:55 AM	0	118	3	0	0	0	0	0	0	0	0	0	0	0	14	0	135	1392
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	1560	20	0	0	0	0	0	0	0	0	0	0	0	176	0	1756	
Heavy Trucks	0	100	0	0	0	0	0	0	0	0	0	0	0	0	12	0	112	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scoters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

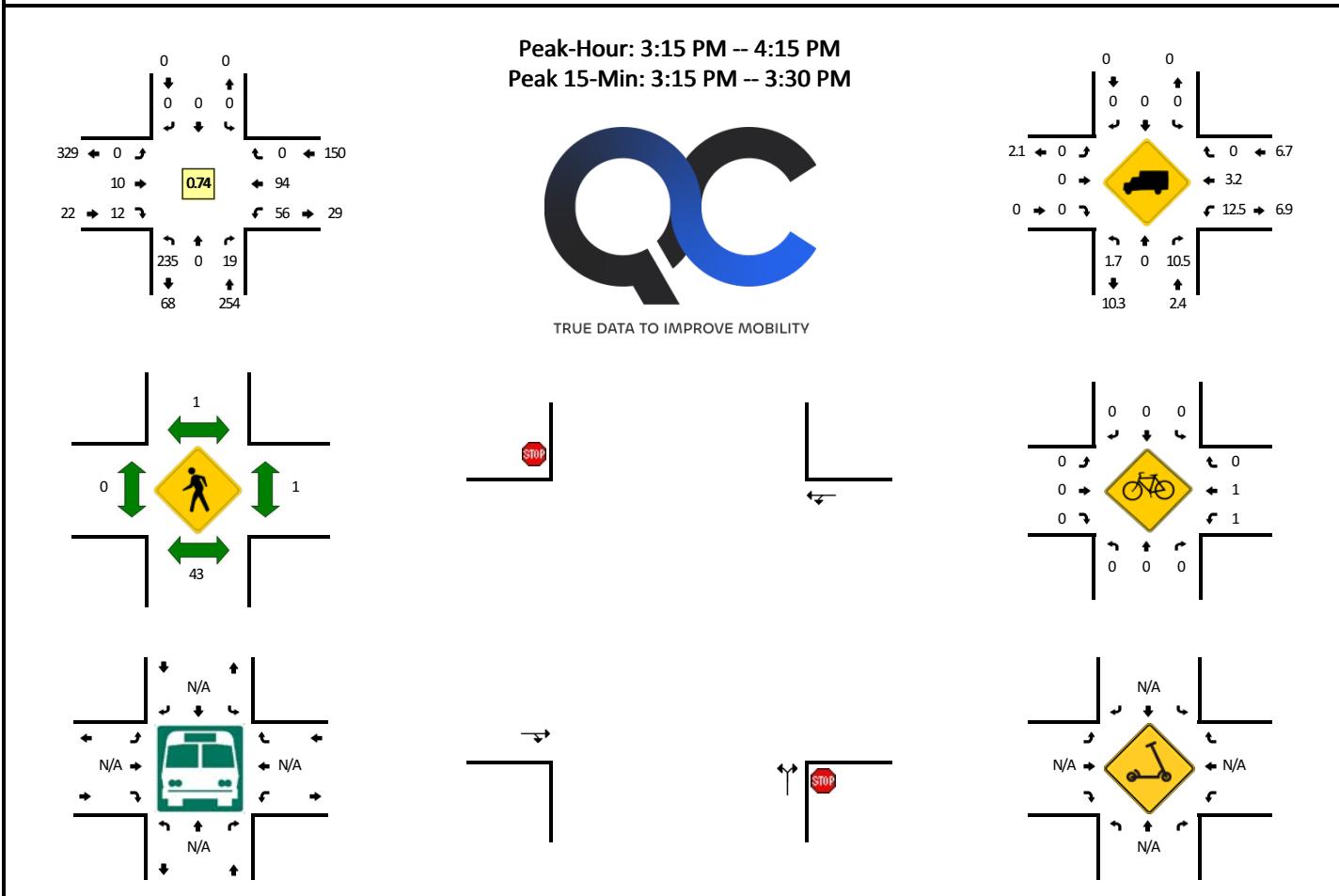
Comments:

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 115th Ave -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16651304
DATE: Tue, Jun 11 2024



5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
2:00 PM	12	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	16	
2:05 PM	10	0	1	0	0	0	0	0	0	0	2	2	0	1	2	0	0	18	
2:10 PM	11	0	1	0	0	0	0	0	0	0	2	0	0	0	7	0	0	21	
2:15 PM	9	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	11	
2:20 PM	12	0	1	0	0	0	0	0	0	0	0	0	0	1	4	0	0	18	
2:25 PM	10	0	4	0	0	0	0	0	0	0	1	4	0	1	5	0	0	25	
2:30 PM	14	0	1	0	0	0	0	0	0	0	1	0	0	0	3	0	0	19	
2:35 PM	13	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	19	
2:40 PM	19	0	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	24	
2:45 PM	15	0	6	0	0	0	0	0	0	0	3	0	0	1	4	0	0	29	
2:50 PM	10	0	8	0	0	0	0	0	0	0	2	0	0	0	4	0	0	24	
2:55 PM	18	0	5	0	0	0	0	0	0	0	0	1	0	1	3	0	0	28	252
3:00 PM	19	0	10	0	0	0	0	0	0	0	2	1	0	1	2	0	0	35	271
3:05 PM	10	0	8	0	0	0	0	0	0	0	1	0	0	1	5	0	0	25	278
3:10 PM	13	0	9	0	0	0	0	0	0	0	4	1	0	6	4	0	0	37	294
3:15 PM	5	0	3	0	0	0	0	0	0	0	1	0	0	23	22	0	0	54	337
3:20 PM	18	0	6	0	0	0	0	0	0	0	2	0	0	12	16	0	0	54	373
3:25 PM	19	0	1	0	0	0	0	0	0	0	0	3	0	3	9	0	0	35	383
3:30 PM	21	0	0	0	0	0	0	0	0	0	0	2	0	4	6	0	0	33	397
3:35 PM	19	0	0	0	0	0	0	0	0	0	1	1	0	2	3	0	0	26	404
3:40 PM	19	0	2	0	0	0	0	0	0	0	0	0	0	1	4	0	0	26	406
3:45 PM	25	0	2	0	0	0	0	0	0	0	2	1	0	3	5	0	0	38	415
3:50 PM	20	0	1	0	0	0	0	0	0	0	3	1	0	4	5	0	0	34	425
3:55 PM	16	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	24	421
4:00 PM	25	0	0	0	0	0	0	0	0	0	1	1	0	1	6	0	0	34	420
4:05 PM	17	0	3	0	0	0	0	0	0	0	0	1	0	1	5	0	0	27	422
4:10 PM	31	0	1	0	0	0	0	0	0	0	0	2	0	2	5	0	0	41	426
4:15 PM	21	0	0	0	0	0	0	0	0	0	2	1	0	0	2	0	0	26	398
4:20 PM	18	0	1	0	0	0	0	0	0	0	0	1	0	2	2	0	0	24	368
4:25 PM	17	0	2	0	0	0	0	0	0	0	1	0	0	2	7	0	0	29	362
4:30 PM	20	0	0	0	0	0	0	0	0	0	1	1	0	0	5	0	0	27	356
4:35 PM	32	0	0	0	0	0	0	0	0	0	2	0	0	0	12	0	0	46	376
4:40 PM	23	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	0	33	383
4:45 PM	19	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	22	367
4:50 PM	19	0	0	0	0	0	0	0	0	0	1	1	0	2	10	0	0	33	366
4:55 PM	13	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	17	359
5:00 PM	21	0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	26	351
5:05 PM	23	0	3	0	0	0	0	0	0	0	0	1	0	0	5	0	0	32	356

5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:10 PM	19	0	0	0	0	0	0	0	0	3	0	0	0	8	0	0	30	345
5:15 PM	21	0	0	0	0	0	0	0	0	1	0	0	1	4	0	0	27	346
5:20 PM	22	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	25	347
5:25 PM	18	0	1	0	0	0	0	0	0	1	1	0	3	2	0	0	26	344
5:30 PM	27	0	0	0	0	0	0	0	0	0	1	0	1	3	0	0	32	349
5:35 PM	22	0	1	0	0	0	0	0	0	0	1	0	0	4	0	0	28	331
5:40 PM	18	0	2	0	0	0	0	0	0	2	1	0	0	4	0	0	27	325
5:45 PM	18	0	1	0	0	0	0	0	0	5	0	0	1	3	0	0	28	331
5:50 PM	16	0	2	0	0	0	0	0	0	1	1	0	0	2	0	0	22	320
5:55 PM	15	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	18	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	168	0	40	0	0	0	0	0	0	12	12	0	152	188	0	0	572	
Heavy Trucks	0	0	0		0	0	0		0	0	0		28	4	0		32	
Buses																		
Pedestrians		164				0				0				0			164	
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4	
Scooters																		
<i>Comments:</i>																		

Report generated on 6/17/2024 10:33 AM

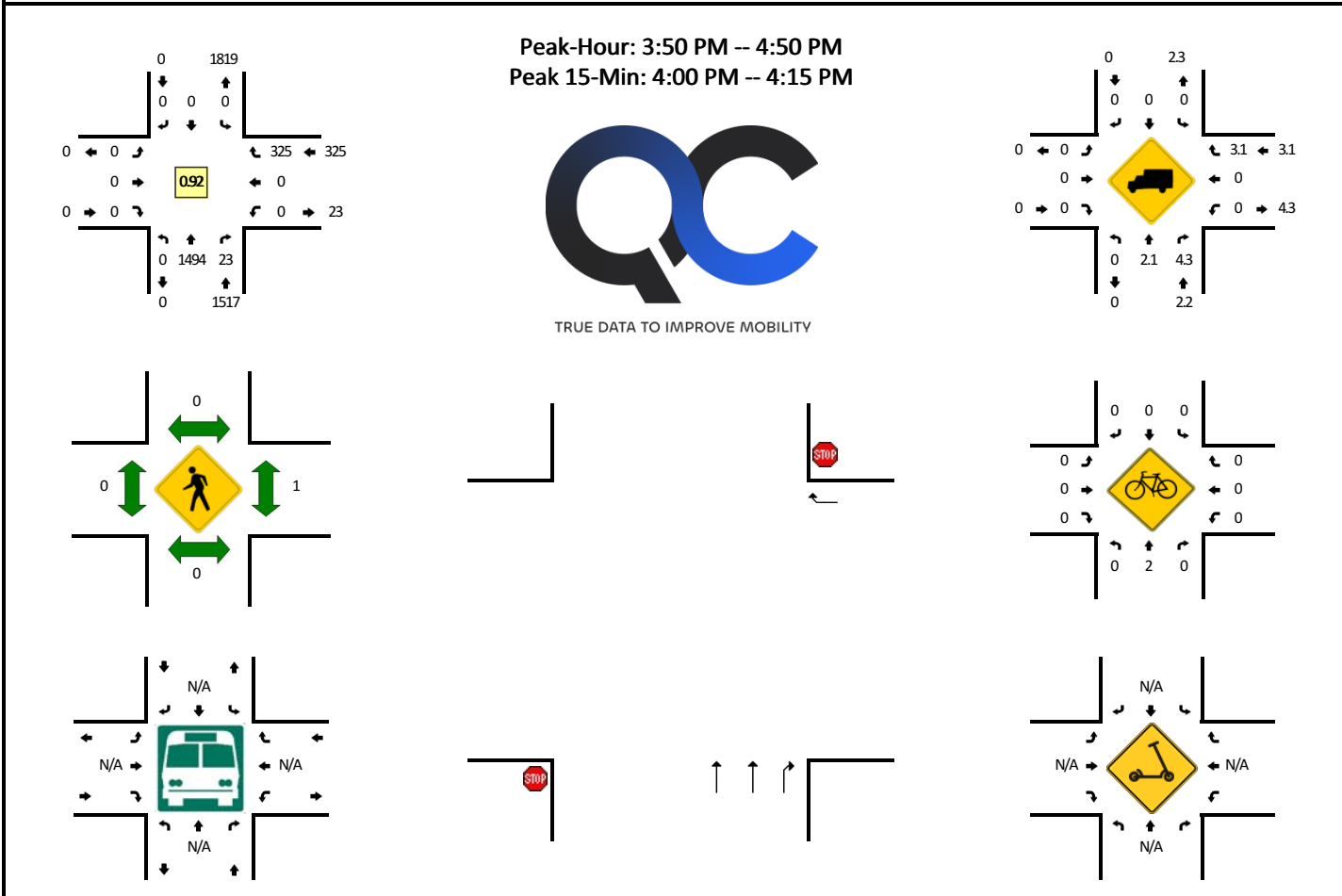
SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Pacific Hwy -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16651302
DATE: Tue, Jun 11 2024

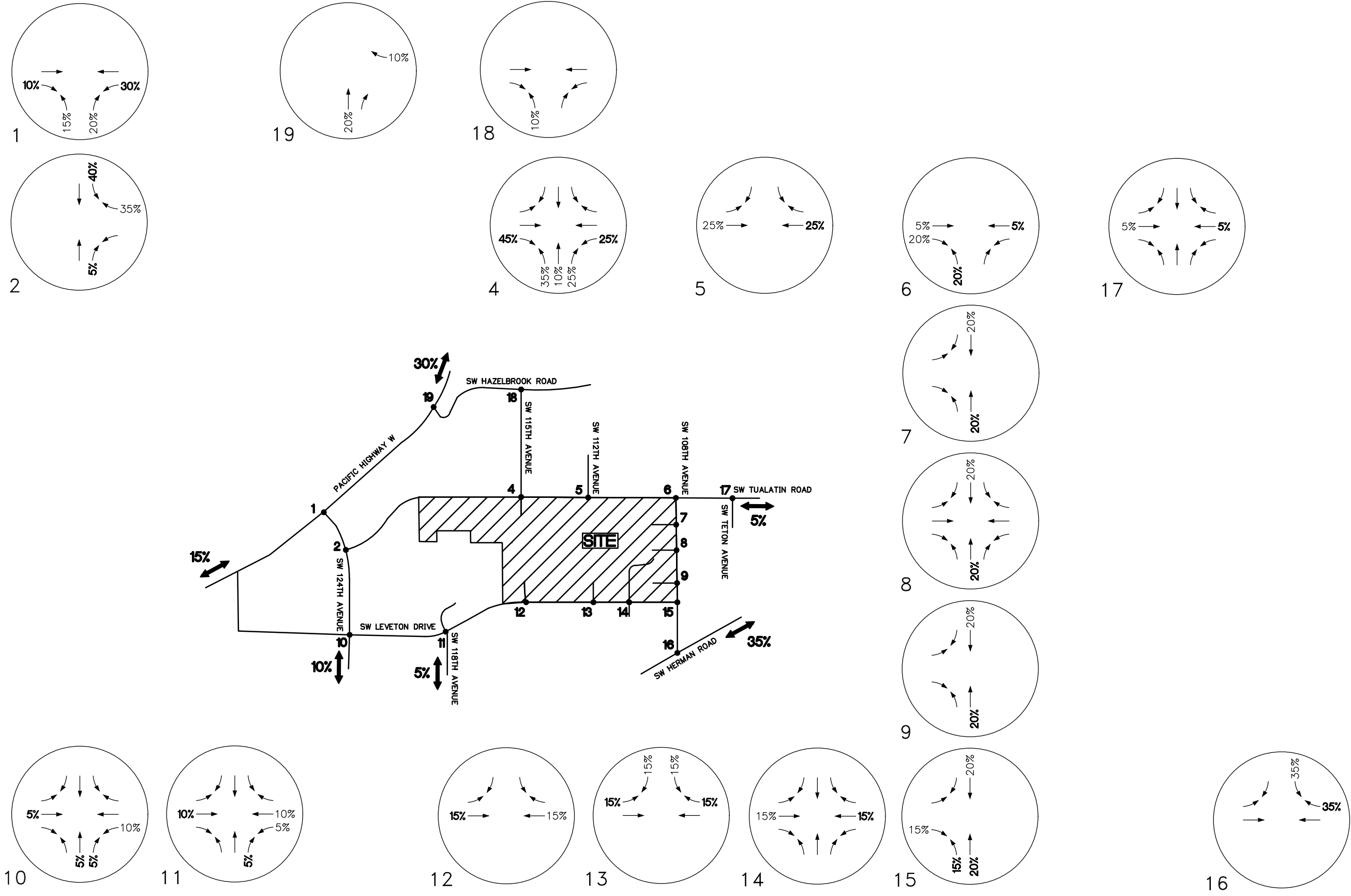


5-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	98	1	0	0	0	0	0	0	0	0	0	0	0	14	0	113	
2:05 PM	0	92	2	0	0	0	0	0	0	0	0	0	0	0	12	0	106	
2:10 PM	0	115	1	0	0	0	0	0	0	0	0	0	0	0	18	0	134	
2:15 PM	0	94	0	0	0	0	0	0	0	0	0	0	0	0	10	0	104	
2:20 PM	0	110	1	0	0	0	0	0	0	0	0	0	0	0	13	0	124	
2:25 PM	0	99	2	0	0	0	0	0	0	0	0	0	0	0	19	0	120	
2:30 PM	0	101	3	0	0	0	0	0	0	0	0	0	0	0	18	0	122	
2:35 PM	0	107	0	0	0	0	0	0	0	0	0	0	0	0	16	0	123	
2:40 PM	0	169	5	0	0	0	0	0	0	0	0	0	0	0	20	0	194	
2:45 PM	0	120	2	0	0	0	0	0	0	0	0	0	0	0	18	0	140	
2:50 PM	0	74	2	0	0	0	0	0	0	0	0	0	0	0	15	0	91	
2:55 PM	0	110	2	0	0	0	0	0	0	0	0	0	0	0	19	0	131	1502
3:00 PM	0	95	1	0	0	0	0	0	0	0	0	0	0	0	21	0	117	1506
3:05 PM	0	92	2	0	0	0	0	0	0	0	0	0	0	0	13	0	107	1507
3:10 PM	0	130	4	0	0	0	0	0	0	0	0	0	0	0	19	0	153	1526
3:15 PM	0	107	1	0	0	0	0	0	0	0	0	0	0	0	22	0	130	1552
3:20 PM	0	106	2	0	0	0	0	0	0	0	0	0	0	0	29	0	137	1565
3:25 PM	0	104	1	0	0	0	0	0	0	0	0	0	0	0	32	0	137	1582
3:30 PM	0	109	1	0	0	0	0	0	0	0	0	0	0	0	25	0	135	1595
3:35 PM	0	125	2	0	0	0	0	0	0	0	0	0	0	0	28	0	155	1627
3:40 PM	0	126	1	0	0	0	0	0	0	0	0	0	0	0	28	0	155	1588
3:45 PM	0	122	3	0	0	0	0	0	0	0	0	0	0	0	24	0	149	1597
3:50 PM	0	101	1	0	0	0	0	0	0	0	0	0	0	0	26	0	128	1634
3:55 PM	0	113	0	0	0	0	0	0	0	0	0	0	0	0	26	0	139	1642
4:00 PM	0	142	2	0	0	0	0	0	0	0	0	0	0	0	25	0	169	1694
4:05 PM	0	132	1	0	0	0	0	0	0	0	0	0	0	0	29	0	162	1749
4:10 PM	0	132	3	0	0	0	0	0	0	0	0	0	0	0	33	0	168	1764
4:15 PM	0	129	3	0	0	0	0	0	0	0	0	0	0	0	24	0	156	1790
4:20 PM	0	131	1	0	0	0	0	0	0	0	0	0	0	0	19	0	151	1804
4:25 PM	0	113	1	0	0	0	0	0	0	0	0	0	0	0	26	0	140	1807
4:30 PM	0	105	3	0	0	0	0	0	0	0	0	0	0	0	24	0	132	1804
4:35 PM	0	136	2	0	0	0	0	0	0	0	0	0	0	0	36	0	174	1823
4:40 PM	0	133	3	0	0	0	0	0	0	0	0	0	0	0	35	0	171	1839
4:45 PM	0	127	3	0	0	0	0	0	0	0	0	0	0	0	22	0	152	1842
4:50 PM	0	89	2	0	0	0	0	0	0	0	0	0	0	0	23	0	114	1828
4:55 PM	0	124	0	0	0	0	0	0	0	0	0	0	0	0	23	0	147	1836
5:00 PM	0	119	2	0	0	0	0	0	0	0	0	0	0	0	24	0	145	1812
5:05 PM	0	144	2	0	0	0	0	0	0	0	0	0	0	0	25	0	171	1821

5-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:10 PM	0	144	4	0	0	0	0	0	0	0	0	0	0	0	31	0	179	1832
5:15 PM	0	104	2	0	0	0	0	0	0	0	0	0	0	0	20	0	126	1802
5:20 PM	0	118	1	0	0	0	0	0	0	0	0	0	0	0	26	0	145	1796
5:25 PM	0	103	2	0	0	0	0	0	0	0	0	0	0	0	22	0	127	1783
5:30 PM	0	111	1	0	0	0	0	0	0	0	0	0	0	0	25	0	137	1788
5:35 PM	0	113	1	0	0	0	0	0	0	0	0	0	0	0	26	0	140	1754
5:40 PM	0	102	2	0	0	0	0	0	0	0	0	0	0	0	25	0	129	1712
5:45 PM	0	129	6	0	0	0	0	0	0	0	0	0	0	0	16	0	151	1711
5:50 PM	0	79	1	0	0	0	0	0	0	0	0	0	0	0	25	0	105	1702
5:55 PM	0	127	0	0	0	0	0	0	0	0	0	0	0	0	16	0	143	1698
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	1624	24	0	0	0	0	0	0	0	0	0	0	0	348	0	1996	
Heavy Trucks	0	32	0		0	0	0		0	0	0		0	0	8		40	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		
<i>Comments:</i>																		

Report generated on 6/17/2024 10:33 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212



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 CHECKED BY: BTA
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 224002200

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Re: Lam TIA

Joel Rabinovitz <joel.rabinovitz@dksassociates.com>

Tue 7/2/2024 9:52 AM

To: Brent Ahrend <BAhrend@mcknze.com>

Cc: Kim McMillan <kcmillan@tualatin.gov>; Garth Appanaitis <gaa@dksassociates.com>; Hayden Ausland <hausland@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Mike McCarthy <mmccarthy@tualatin.gov>; Abby McFetridge <Amcfetridge@tualatin.gov>; Suzannah Stanley <SStanley@mcknze.com>; Bill Bezio <WBezio@mcknze.com>; rsj@dksassociates.com <rsj@dksassociates.com>; brian.copeland@dksassociates.com <brian.copeland@dksassociates.com>; Clara Layton <CLayton@mcknze.com>

I concur with the items noted.

Joel

Joel Rabinovitz, PE (OR, TX, WA) | Senior Transportation EngineerDirect: 503.972.1209 | Cell: 925.285.6574 | joel.rabinovitz@dksassociates.comOn Mon, Jul 1, 2024 at 12:48 PM Brent Ahrend <BAhrend@mcknze.com> wrote:

All,

Thanks for the review of our revised TIA scoping letter and discussion at the meeting on June 27. This email summarizes the discussion and agreement to add an intersection to the study area.

- The intersection of Herman Road with Teton Avenue will be added to the study area based on the number of trips (up to 85 peak hour) added to the intersection. Joel confirmed it is a signalized intersection.
- In order to meet the current schedule, we will utilize counts from 2019, which Joel noted are likely higher than current volumes.
- We will not be adding the intersection of Tualatin-Sherwood Road/Teton Avenue because the increase is below the 10% threshold, with about half of the trips from the Herman/Teton intersection traveling to/from the south.
- The three buildings of the TUX project will have 600 employees working a typical day shift schedule. No manufacturing employees will be added. Therefore no additional daily trips would be generated beyond the 2036 estimated in the letter.

Let us know if you have any questions or comments on the summary,

Brent Ahrend PE Transportation Planning
 D 971-346-3781 C 503-705-7554 Associate Principal
 Professional Licenses & Certifications

Mackenzie.

ARCHITECTURE ▪ INTERIORS ▪ STRUCTURAL, CIVIL, AND TRAFFIC ENGINEERING
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Our offices will be closed Thursday, July 4th through Friday, July 5th. We will reopen on Monday, July 8th, 2024. If you need immediate assistance, please leave a message at 503.224.9560, which will be monitored closely. Happy Independence Day!

From: Kim McMillan <kmcmillan@tualatin.gov>
Sent: Wednesday, June 26, 2024 3:15 PM
To: Bill Bezio <WBezio@mcknze.com>
Subject: FW: Lam TIA

Hi Bill,

Garth with DKS will be attending our meeting tomorrow. I'm forwarding you his email with questions and comments that Brent may want to see ahead of tomorrow's meeting. I also think that a transportation focused meeting with DKS, Mackenzie, and city staff may need to be scheduled in the very near future.

Kim McMillan, P.E.

Community Development Director

City of Tualatin

Phone: 503-691-3036 | Cell: 503-866-5784

www.tualatinoregon.gov

kmcmillan@tualatin.gov

From: Joel Rabinovitz <joel.rabinovitz@dksassociates.com>
Sent: Wednesday, June 26, 2024 2:45 PM
To: Kim McMillan <kmcmillan@tualatin.gov>
Cc: Garth Appanaitis <gaa@dksassociates.com>; Hayden Ausland <hausland@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Mike McCarthy <mmccarthy@tualatin.gov>; Abby McFetridge <Amcfetridge@tualatin.gov>; Randy Johnson <rsj@dksassociates.com>; Brian Copeland <brian.copeland@dksassociates.com>; Joel Rabinovitz <JAR@dksassociates.com>
Subject: Re: Lam TIA

Kim,

The conflict I had for tomorrow's meeting has been cancelled, so I will be able to attend instead of Garth.

It looks like they addressed most of the questions I had previously. However, with this new approach, I have a few comments:

- The memo shows 35% distribution east on Herman Rd. The next intersection (Teton Ave) is only ~1000' to the east of the Herman Rd/108th Ave intersection. Should this intersection not also be added as a study intersection?
- Would the distribution east of Herman Rd/108th Ave intersection at Teton Ave be all to/from the east on Herman or would some turn down/come from Teton Ave to/from Tualatin-Sherwood Rd?
- The memo states that no other WA County intersections were assumed as the added volume does not exceed the 10% ADT threshold. However, there is no table or graphic showing that this is the case. If they are proposing 35% to/from Herman Rd, and a good portion of that would actually be coming/going to/from Teton Ave, that could very easily exceed the 10% on Teton Ave.
- The existing campus has 1160 office/lab employees plus 400 manufacturing staff. For the proposed TUX site, it is not clear if the 600 employees are inclusive or exclusive of any manufacturing staff (if there are any). While this would not change the AM and PM peak hour trips, it would increase the daily trips beyond just the 600 employees. This in turn could result in additional intersections needing to be analyzed, as the percent increase could exceed 10%,

Cheers,

Joel

Joel Rabinovitz, PE (OR, TX, WA) | Senior Transportation Engineer
Direct: 503.972.1209 | Cell: 925.285.6574 | joel.rabinovitz@dksassociates.com

On Mon, Jun 24, 2024 at 1:23 PM Kim McMillan <kmcmillan@tualatin.gov> wrote:

I couldn't find where I had sent this latest TIA Scoping email to you for review and comment ahead of Thursday's meeting. Call me if you have questions.

Kim McMillan, P.E.

Community Development Director

City of Tualatin

Phone: 503-691-3036 | Cell: 503-866-5784

www.tualatinoregon.gov

kmcmillan@tualatin.gov

From: Garth Appanaitis <gaa@dksassociates.com>

Sent: Friday, June 21, 2024 12:11 PM

To: Kim McMillan <kmcmillan@tualatin.gov>

Cc: Hayden Ausland <hausland@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Mike McCarthy <mmccarthy@tualatin.gov>; Abby McFetridge <Amcfetridge@tualatin.gov>; Randy Johnson <rsj@dksassociates.com>; Brian Copeland <brian.copeland@dksassociates.com>; Joel Rabinovitz <JAR@dksassociates.com>

Subject: Re: Lam TIA

Hi Kim,

Yes, we'll take a look and provide comments to cover this while Randy is out. I know Joel Rabinovitz has been involved in this one and I've chatted with him and we will coordinate comments early next week.

When are you seeking comments on the updated letter?

We can also plan to attend the weekly Thursday morning meetings. Joel has a conflict next week so I or someone else that is up to speed may need to cover in his place for the initial meeting. In the meantime can you please forward the invite to Joel and me?

Thanks,
Garth

Garth Appanaitis, PE (OR) (he/him) | Project Manager, Portland Planning Group Manager
Direct: 503.972.1212 | Cell: 971.570.4709 | gaa@dksassociates.com



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On Thu, Jun 20, 2024 at 3:15 PM Brian Copeland <brian.copeland@dksassociates.com> wrote:

Hi Kim -

I will be out next week, but I will reach out to someone in our planning group and find someone to help with this. We will be back in touch once we figure out a plan.

Thanks!

Brian

Brian K. Copeland, PE (he/him) | Principal, Sr. Project Manager
Direct: 503.972.1240 | Cell: 503.753.8992 | bkc@dksassociates.com



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On Thu, Jun 20, 2024 at 2:29 PM Kim McMillan <kmcmillan@tualatin.gov> wrote:

Good afternoon,

I understand Randy is out of the office and will not be back until July 1. We received this TIA Scoping for the Lam project and would like someone to take a look to provide any feedback prior to Randy's return. The timeline is a bit tight due to the applicant's desire to submit on July 8. Are either of you available to review/comment? If there is someone else that has been involved with this, please pass it along.

Also, we have a weekly coordination meeting on Thursdays at 11 am. The Lam team has asked if DKS, as the City's traffic consultant, can attend the next 6-8 meetings. Is that workable – the meetings are on Teams?

Kim McMillan, P.E.

Community Development Director

City of Tualatin

Phone: 503-691-3036 | Cell: 503-866-5784

www.tualatinoregon.gov

kmcmillan@tualatin.gov

Clara Layton

From: Abby McFetridge <Amcfetridge@tualatin.gov>
Sent: Tuesday, July 9, 2024 1:26 PM
To: Abby McFetridge
Subject: FW: Lam TUX - Traffic Analysis Update

From: RUSSELL John <John.RUSSELL@odot.oregon.gov>
Sent: Tuesday, July 2, 2024 5:45 PM
To: Tony Doran <TDORAN@tualatin.gov>
Cc: Mike McCarthy <mmccarthy@tualatin.gov>; Kim McMillan <kmcmillan@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>; ODOT_R1_DevRev <ODOT_R1_DevRev@odot.oregon.gov>
Subject: RE: Lam TUX - Traffic Analysis Update

Tony,

After reviewing the updated scoping memo, **ODOT does not have concerns with the proposed trip generation for the Lam TUX site. ODOT recommends that the City of Tualatin require analysis of any ODOT intersections impacted by at least 50 peak hour trips.**

In our previous comments I expressed that 5% to the east on SW Tualatin Road seemed low, but after reviewing Figure 1 showing trip distribution (excerpt included below), I am realizing that “35% to/from the west on SW Herman Road via SW 108th Avenue” should instead read “35% to/from the **east** on SW Herman Road via SW 108th Avenue,” which is in line with my expectations and previous comments. With 40% of trips heading to/from the east, ODOT would recommend analysis if the development generates at least 50 peak hour trips along ODOT facilities to the east, which could include on- and off-ramps at the SW Nyburg St Interchange (I-5 exit 289) and/or the intersection of SW Lower Boones Ferry Rd & SW Boones Ferry Rd, depending on trip distribution further east.

With 30% of trips heading to/from the north on OR 99W (while less than the 45% of trips originally proposed), it is not unreasonable to expect that traffic generation at additional intersections along OR 99W may exceed our analysis thresholds, including but not limited to **Fischer Rd, Durham Rd, Royalty Pkwy, Beef Bend Rd**, etc. As before, ODOT recommends that the City of Tualatin require analysis of these intersections along OR 99W in King City that exceed 50 new peak hour trips.

Please let us know if you have any remaining questions.

Thank you,

John Russell, PE [he/him]
Traffic Analysis Engineer
Oregon Dept of Transportation
John.Russell@odot.oregon.gov
503.731.8282



RE: LAM TUX TIA Scoping - ODOT Comments

From Brent Ahrend <BAhrend@mcknze.com>

Date Thu 7/18/2024 8:59 AM

To Abby McFetridge <Amcfetridge@tualatin.gov>

Cc Mike McCarthy <mmccarthy@tualatin.gov>; Kim McMillan <kmcmillan@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>; Steve Koper <skoper@tualatin.gov>; Keith Leonard <kleonard@tualatin.gov>; Bill Bezio <WBezio@mcknze.com>; Clara Layton <CLayton@mcknze.com>; Franklyn Santos <FSantos@mcknze.com>; Suzannah Stanley <SStanley@mcknze.com>; Jennifer.Otterness@lamresearch.com <Jennifer.Otterness@lamresearch.com>; Megan Diaz <MDiaz@mcknze.com>; Braun, Liatt <Liatt.Braun@jacobs.com>; Chittenden, Todd <Todd.Chittenden@jacobs.com>; Mustonen, David <david.mustonen@jacobs.com>; Paul.Roessler@lamresearch.com <Paul.Roessler@lamresearch.com>; Todd.Fosler@lamresearch.com <Todd.Fosler@lamresearch.com>; Alan.Lurie@lamresearch.com <Alan.Lurie@lamresearch.com>; Rabinovitz, Joel <joel.rabinovitz@dksassociates.com>

Abby,

We took a look at ODOT's request to add intersections to the study area as well as your suggestion to include the Fischer and Durham Road intersections with Hwy 99W.

Per ODOT's Development Review Guidelines and Appendices

<https://www.oregon.gov/odot/Planning/Documents/Development-Review-Guidelines-and-Appendices.pdf>, unless a project is requesting access on an ODOT highway or a Plan Amendment is proposed (neither is for Lam) the decision on the scope of the traffic analysis including study area intersections is up to the local jurisdiction. In general, ODOT recommends intersections within a one-mile radius, and suggests a threshold of 50 peak hour trips for ODOT approach permits.

Assuming the one-mile study area and 50 trip threshold, only the intersections of Fischer and Durham Roads with Hwy 99W would meet. We have already analyzed the Hwy 99W at SW 124th Avenue intersection and found that intersection would meet standards with both phases of the Lam project, and with fewer trips added at the Fischer and Durham Road intersections they would also likely meet standards.

Here is a summary of our review:

We extended our distribution to the east towards I-5 and north along Hwy 99W.

We assumed 40% of the site trips travel to and from the east on Herman and Tualatin Roads, with up to 20% of the site trips using the Nyberg interchange and up to 10% of the trips traveling through the SW Lower Boones Ferry Rd/SW Boones Ferry Rd intersection. Both of these intersections are outside the one-mile radius and would have up to 49 peak hour trips at Nyberg and 24 trips at the Lower Boones Ferry/Boones Ferry intersection. Based on 2018 volumes of 5164 trips at the interchange this is less than a 1% impact.

We assumed 30% of site trips would travel north on Hwy 99W at the Tualatin River crossing. The 30% carries to the Fischer Road intersection and most of that will make it to Durham Road. This represents up to 73 AM and 70 PM trips. Hwy 99W/SW Fischer Rd is a 1.6% impact from 4,387 trips in 2018, and

Hwy 99W/SW Durham Rd with 4,465 peak hour trips in 2019 is a 1.6% increase. Beyond Durham Road, we anticipate 20% of site trips would continue north, so there would be less than 50 peak hour trips at the SW Beef Bend Rd and Bull Mountain Rd intersections, plus both are well over one mile from the site.

We can include this information in our traffic analysis regarding trip distribution, number of trips and percentage impact at each of these intersections noted by ODOT. We are not sure a detailed analysis would be of value given the less than 2% impact at these intersections.

Brent Ahrend PE Transportation Planning
D 971-346-3781 C 503-705-7554 Associate Principal
 [Professional Licenses & Certifications](#)

From: Abby McFetridge <Amcfetridge@tualatin.gov>
Sent: Tuesday, July 9, 2024 1:31 PM
To: Brent Ahrend <BAhrend@mcknze.com>
Cc: Mike McCarthy <mmccarthy@tualatin.gov>; Kim McMillan <kmcmillan@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>; Steve Koper <skoper@tualatin.gov>; Keith Leonard <kleonard@tualatin.gov>; Bill Bezio <WBezio@mcknze.com>; Clara Layton <CLayton@mcknze.com>
Subject: RE: LAM TUX TIA Scoping - ODOT Comments

Hi Brent,

Yes, I have attached the original ODOT email.

Thanks,

Abby McFetridge, EI
Engineering Associate | Community Development

From: Brent Ahrend <BAhrend@mcknze.com>
Sent: Tuesday, July 9, 2024 12:07 PM
To: Abby McFetridge <Amcfetridge@tualatin.gov>
Cc: Mike McCarthy <mmccarthy@tualatin.gov>; Kim McMillan <kmcmillan@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>; Steve Koper <skoper@tualatin.gov>; Keith Leonard <kleonard@tualatin.gov>; Bill Bezio <WBezio@mcknze.com>; Clara Layton <CLayton@mcknze.com>
Subject: RE: LAM TUX TIA Scoping - ODOT Comments

Abby,

Thanks for sharing ODOT's comments. We will review and be ready to discuss on Thursday.

Can you provide us with their original letter or email for our records?

Brent Ahrend PE Transportation Planning
D 971-346-3781 C 503-705-7554 Associate Principal
 [Professional Licenses & Certifications](#)

[Disclaimer](#)

Mackenzie.

ARCHITECTURE ■ INTERIORS ■ STRUCTURAL, CIVIL, AND TRAFFIC ENGINEERING
LAND USE AND TRANSPORTATION PLANNING ■ LANDSCAPE ARCHITECTURE

PORTLAND, OR | VANCOUVER, WA | SEATTLE, WA

www.MACKENZIE.inc**From:** Abby McFetridge <Amcfetridge@tualatin.gov>**Sent:** Tuesday, July 9, 2024 10:50 AM**To:** Brent Ahrend <BAhrend@mcknze.com>**Cc:** Mike McCarthy <mmccarthy@tualatin.gov>; Kim McMillan <kmcmillan@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>; Steve Koper <skoper@tualatin.gov>; Keith Leonard <kleonard@tualatin.gov>; Bill Bezio <WBezio@mcknze.com>**Subject:** LAM TUX TIA Scoping - ODOT Comments

Hi Brent,

We recently received the response below from ODOT regarding the TIA scoping memo for the LAM TUX project. We wanted to give you a heads up with the intent to discuss more at the Thursday meeting.

First, it would be helpful to have the Trip Distribution extended on Tualatin-Sherwood Rd to I-5 and north on OR 99 to Beef Bend Rd so that we can see the percentages at ODOT's mentioned intersections. It would also be helpful to have what percent the 50 veh threshold is (by our initial calculations, it appears to be just under 22% - AM 50/233 = 21.5% and PM 50/244 = 20.5%).

While we understand the proportionality from the LAM development is likely low on the subsequent intersections, we also see potential benefit in including the Hwy 99 & Fischer Rd and Hwy 99 & Durham Rd in the analysis, rather than dismissing *all* of their comments. Additionally, it could be beneficial in conversations with the community.

"After reviewing the updated scoping memo, ODOT does not have concerns with the proposed trip generation for the Lam TUX site. ODOT recommends that the City of Tualatin require analysis of any ODOT intersections impacted by at least 50 peak hour trips.

In our previous comments I expressed that 5% to the east on SW Tualatin Road seemed low, but after reviewing Figure 1 showing trip distribution (excerpt included below), I am realizing that "35% to/from the west on SW Herman Road via SW 108th Avenue" should instead read "35% to/from the **east** on SW Herman Road via SW 108th Avenue," which is in line with my expectations and previous comments. With 40% of trips heading to/from the east, ODOT would recommend analysis if the development generates at least 50 peak hour trips along ODOT facilities to the east, which could include on- and off-ramps at the SW Nyburg St Interchange (I-5 exit 289) and/or the intersection of SW Lower Boones Ferry Rd & SW Boones Ferry Rd, depending on trip distribution further east.

With 30% of trips heading to/from the north on OR 99W (while less than the 45% of trips originally proposed), it is not unreasonable to expect that traffic generation at additional intersections along OR 99W may exceed our analysis thresholds, including but not limited to **Fischer Rd, Durham Rd, Royalty Pkwy, Beef Bend Rd**, etc. As before, ODOT recommends that the City of Tualatin require analysis of these intersections along OR 99W in King City that exceed 50 new peak hour trips."

Again, we can discuss this more on Thursday.

Best,

Abby McFetridge, EI

Engineering Associate

City of Tualatin | Community Development

503.691.3020 | www.tualatinoregon.gov



Emailed: July 24, 2024

Mackenzie
Attn: Suzannah Stanley, Senior Associate
1515 SE Water Ave., Suite 100
Portland, OR 97214
SStanley@mcknze.com (emailed and sent first class mail)

RE: Completeness Determination for: Lam Research TUX Expansion, IMP24-0001 and AR24-0002, 11155-11361 SW Leveton Dr., Tax Lots 2S122AA00500, 2122SSAA00800, 2S122AB00100 and 2S122BA00100.

Ms. Stanley,
Thank you for submitting an Industrial Master Plan (IMP) and Architectural Review (AR) applications for the Lam Research TUX expansion at 11155-11361 SW Leveton Drive (Tax Map/Lots: 2S122AA00500, 2122SSAA00800, 2S122AB00100 and 2S122BA00100) on July 8, 2024. Please be advised both IMP24-0001 and AR24-0002 have been **deemed incomplete** in accordance with the Tualatin Development Code (TDC) Subsection 32.160 and Oregon Revised Statutes (ORS) 227.178. All references below are to the TDC unless otherwise noted. The time period in which the City must take final action is suspended pending resolution of the items listed below.

Completeness Items: The following items can be submitted by email or other electronic means. For IMP24-0001 and AR24-0002 the following items are needed to demonstrate the application is complete:

- 32.140(1)(c): an updated Transportation Impact Analysis including the following information:
 - Trip distribution with the ODOT-identified intersections on Hwy 99 and Nyberg/I-5 interchange, if development would add more than 50 trips per hour. Identify number of trips if under the 50 trip threshold.
 - Meet all standards from Tualatin Traffic Study Requirements document (Example: executive summary is missing. Add anything else that is missing).
 - Hazelbrook Rd & OR 99W needs to be modeled with the actual traffic control device (stop sign, not yield).
 - For any road or intersection that is not meeting LOS standards or has queues that exceeds available turn storage, recommended improvements in the Recommendations section.
 - Queue length exceeding available storage must be addressed.
 - Movements for which demand exceeds capacity must be addressed.
 - Discussion/analysis of post-development conditions or upgrades to ped/bike/transit facilities. Refer to statements in the Traffic Study Requirements document.
 - Addressing queue lengths; ex: queues are shown to decrease from 2027 pre-development to 2027 post-development (SBL at 124th & Tualatin Rd).
 - SimTraffic video files.

- 32.140(1)(h): A statement as to whether any City-recognized Citizen Involvement Organizations (CIOs) whose boundaries include, or are adjacent to, the subject property were contacted in advance of filing the application and, if so, a summary of the contact. The summary must include the date when contact was made, the form of the contact and who it was with (e.g. phone conversation with neighborhood association chairperson, meeting with land use committee, presentation at neighborhood association meeting), and the result;

For IMP24-0001: The following items are needed to demonstrate the application is complete:

- 33.050(4)(b) A written statement describing all alternate development standards that may include the following: Building Height, Parking lot Landscaping standards and any other section of code that is proposed to be modified through the IMP process must be described in the narrative.

For AR24-0002 the following items are needed to demonstrate the application is complete:

- 32.140(1)(i): Hydraulic Modeling
 - Apply in TRAKiT for a HWM
 - Attach: A plan clearly highlighting the existing and proposed public water system matching your needs and the water master plan.
 - If staff indicate a need, you will need to submit revised plans matching the results of modeling.
- 32.140(1)(i): TVF&R SPL
 - Including hydrant test reports; and the application indicating use.
 - Pay the \$2,000 deposit requested by TRAKiT matching the fee schedule. (Staff will provide your submittals to our consultant. One a resulting memo is available actual consultant costs will be provided. Any additional expenses will be requested prior to providing your team the memo.)
- 32.140(1)(i) Republic Services SPL

Additional Items: The following items can be submitted by email or other electronic means.

For IMP24-0001 and AR24-0002 the following items are needed to support a recommendation of approval to the applicable hearing bodies and are recommended to be submitted before a hearing is scheduled. Note that the applications have not been fully reviewed for conformance against the applicable approvals standards. While our best effort has been made to identify any potential approvability items, further review of the applications will be required before a recommendation to the applicable hearing bodies can be made.

- 32.140(1)(b): address or update the responses to the following:
 - 32.120 – Neighborhood Meeting.
 - 32.130 – Initiation of Applications.
 - 32.150 – Sign Posting.
 - 32.230 – Type III Procedure (Quasi-Judicial Review – Public Hearing).

For AR24-0002 the following items are needed to support a recommendation of approval to the applicable hearing bodies and are recommended to be submitted before a hearing is scheduled.

- 33.020 – Architectural Review
 - (4)(b) Existing conditions plan, site plan, grading plan, utility plan, landscape plan, and lighting plan all drawn to scale. Please provide the existing conditions and lighting plans with a scale on all plan sheets.

- 33.110 – Clarify whether tree removal is occurring with application as show on Sheet SCI-06EO. If trees are being removed then an arborist report and other requirements of this section are needed to be submitted.
- 33.020(6)(b)(i) Propose a “reasonable time schedule placed on construction activities associated with the proposed development, or portion of the development.” No time schedule is identified. Please include details regarding phasing of both private improvements and public improvements as required by 74.110. In lieu of a plan to phase the development, Section (iii) allows for the entirety of the development to be approved as a single phase and developed on a phased schedule subject to “security from the property owners in such an amount that will assure compliance with approval granted.”

For AR24-0002 the following items are needed to satisfy conformance with the below listed standards. Without additional information, conditions of approval requiring completion these items following approval of the land use application will be recommended.

- 73A.300: A plan sheet showing screening details for all outdoor storage areas including the bulk gas yard facility.
- 73B.020, 73B.040, 73B.080 and 73B.090: additional details, including a planting schedule that are mentioned in the narrative with the reference to plan sheet SLA-1600 including:
 - Clarifies the planting plan in hatched area of plan set
 - Provides landscaping calculations
 - Includes plan details showing perimeter landscaping per 73B.040
 - Provides plan details showing that landscape buffer is being “extended” as identified in narrative
 - Details addressing 73B.080 including irrigation plan.
 - Planting schedule per 73B.090. Please provide the planting schedule that is referred to in the narrative findings.
- A detail showing screening for loading facilities per 73C.120(3). It appears that some of this loading facility will be located within Building “T” but it’s unclear if that will sufficiently screen the loading facility.

Next Steps:

Per ORS 227.178, please be advised that until you—as the applicant—take one of the three below listed steps, no further action will be taken on the application and your application will be void if one of the three actions listed is not taken within 180 days of the date you submitted your application (by Monday, January 5, 2025).

1. Submit all completeness items; or
2. Submit some completeness items and request that the City deem your application complete; or
3. Submit no completeness items and request that the City deem your application complete.

Once your application is deemed complete, staff will review your application for approvability. Staff makes every effort to identify all completeness issues with the first submittal. However, other completeness issues may arise as a result of each review. If you feel that we have made an error in our assessment, please notify us immediately so that we may resolve the issue.

Please contact me with any questions at (503) 691-3029 or kleoanrd@tualatin.gov.

Sincerely,



Keith Leonard, AICP
Associate Planner

Cc: Ajay Changaran, Lam Research Senior Director of Real Estate & Construction
Cc via email:




Kim McMillan, PE, Community Development Director
Steve Koper, AICP, Assistant Community Development Director
Mike McCarthy, PE, City Engineer
Hayden Ausland, PE, Principal Engineer
Tony Doran, Engineering Associate
Abby McFetridge, EI, Engineering Associate
Ed Jones, Senior Plans Examiner
Bill Belzio, Architect, Associate Principal, Mackenzie
Ian Sisson, Mackenzie
Brett Ahrend, Mackenzie
Clara Layton, Mackenzie
Aisha Bouziane, Mackenzie
Andrew Jepson-Sullivan, Mackenzie
Megan Diaz, Mackenzie
Steven Tuttle, Landscape Architect, Mackenzie
Franklyn Santos, Mackenzie
Alan Lurie, Lam Research
Paul Roessler, Lam Research
Jennifer Otterness, Lam Research
Liat Braun, Architect, Jacobs
Benjamin Sommer, Engineer, Jacobs
David Mustonen, Jacobs
Todd Chittenden, Jacobs

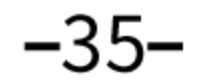

Cc file: IMP24-0001/AR24-0002

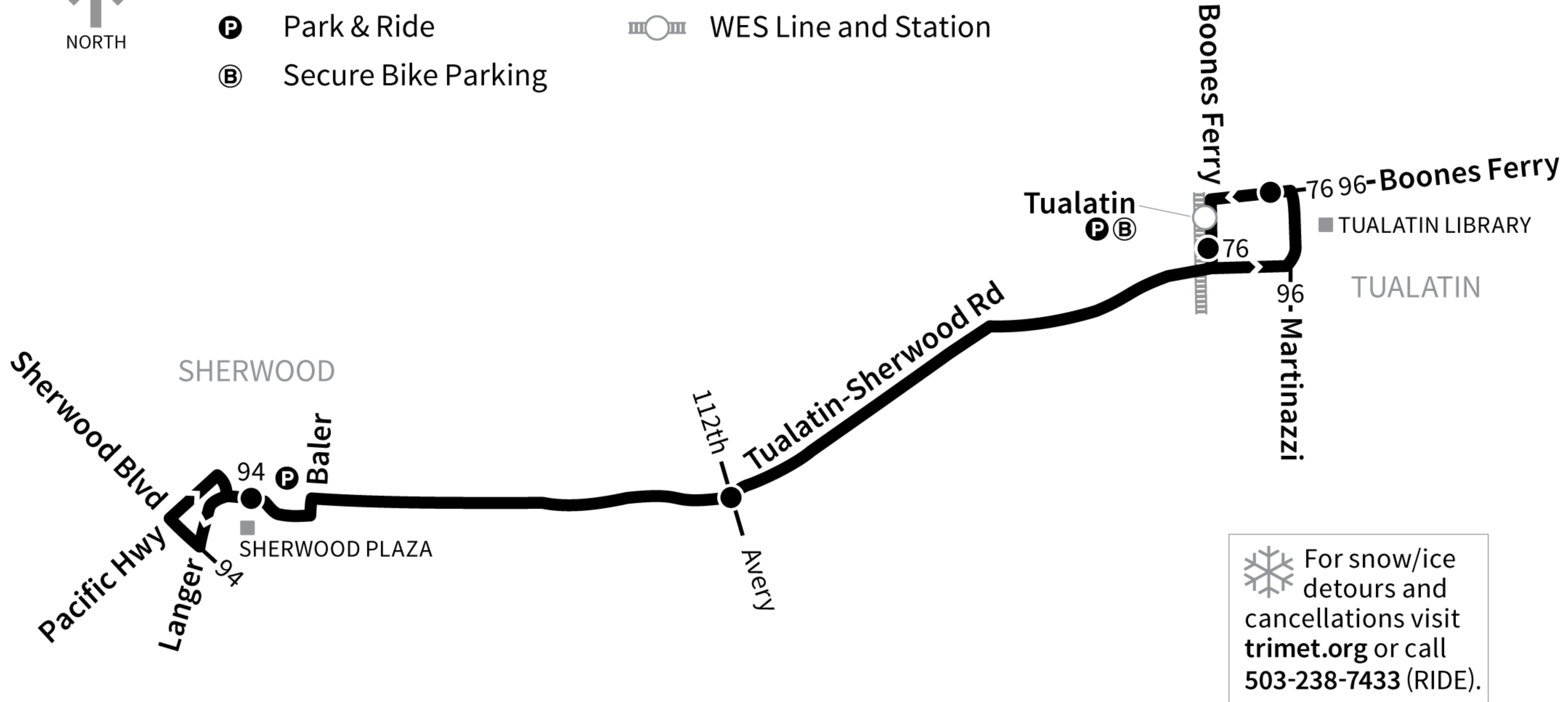
APPENDIX C.
**TRANSIT
INFORMATION**

97-Tualatin-Sherwood Rd



-  Route/Schedule Stop
-  Park & Ride
-  Secure Bike Parking

-  -35- Transfer Nearby
-  WES Line and Station





97-Tualatin-Sherwood Rd

Weekday To SW Langer Dr/Sherwood Plaza

SW Boones Ferry Rd & Nyberg Stop ID 13079	SW Tualatin-Sherwood Rd & 112th Stop ID 13830	SW Langer & Sherwood Plaza Stop ID 9188
6:18	6:23	6:32
7:18	7:23	7:32
8:18	8:23	8:32
9:18	9:23	9:32
3:33	3:39	3:50
4:43	4:49	5:00
5:53	5:59	6:10

Times in darker print are p.m.

Please note: Schedules may change without notice by up to three minutes to relieve overcrowding or adjust to traffic conditions. Service can also be affected by construction, accidents and weather conditions. You can check for any current detours or service disruptions at trimet.org/alerts or call 503-238-RIDE (7433) for real-time arrival information from TransitTracker™. All buses, MAX trains and streetcars are accessible to people with disabilities.



97-Tualatin-Sherwood Rd

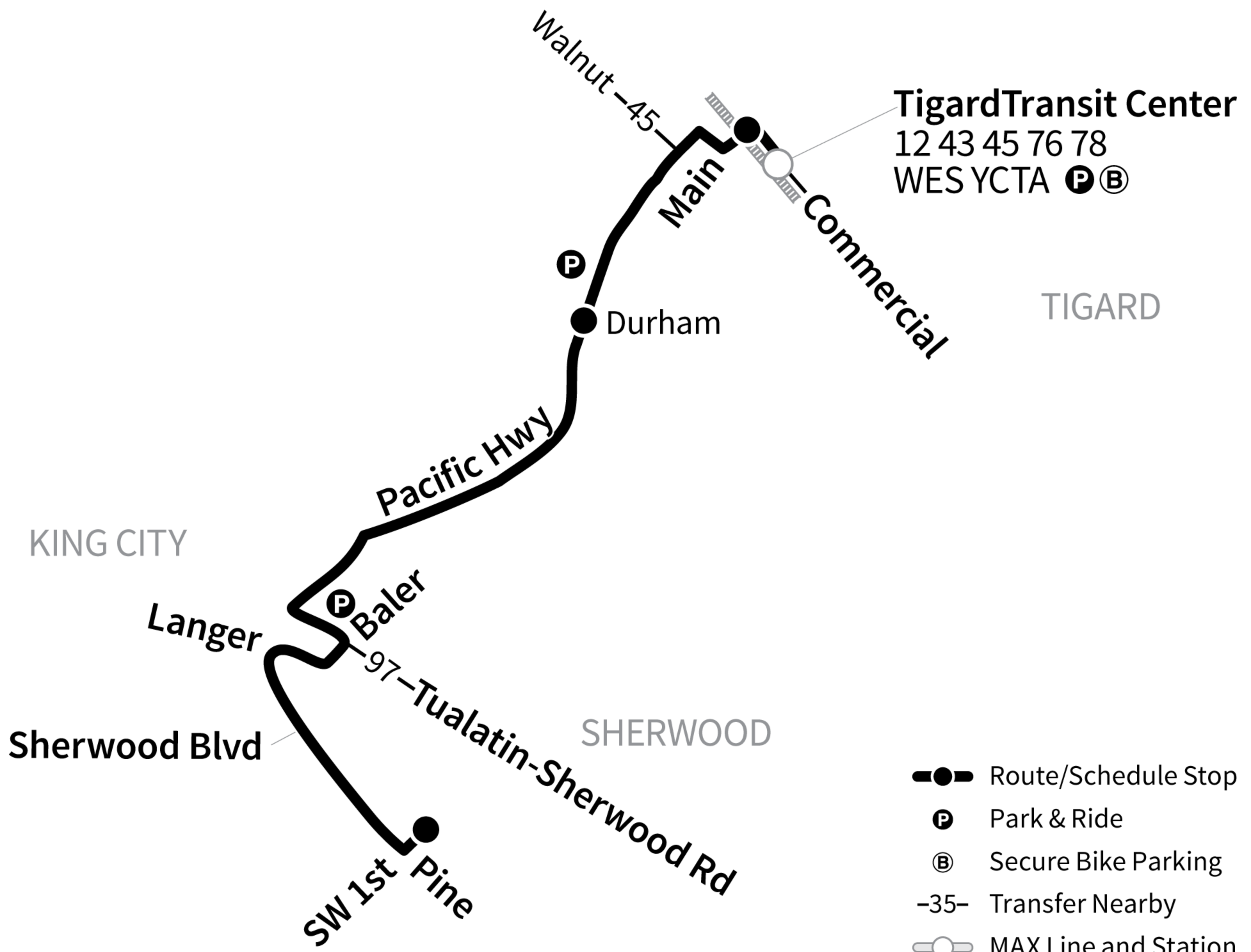
Weekday	To Tualatin WES Station		
16100 Block SW Langer Stop ID 9190	SW Tualatin- Sherwood Rd & Avery Stop ID 13843	SW Boones Ferry Rd & Martinez Stop ID 13078	SW Boones Ferry Rd & Nyberg Stop ID 13079
6:58	7:06	7:16	7:18
8:00	8:08	8:16	8:18
9:00	9:08	9:16	9:18
3:12	3:20	3:31	3:33
4:21	4:29	4:41	4:43
5:30	5:38	5:51	5:53
6:42	6:50	7:01	7:03

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Please note: Schedules may change without notice by up to three minutes to relieve overcrowding or adjust to traffic conditions. Service can also be affected by construction, accidents and weather conditions. You can check for any current detours or service disruptions at trimet.org/alerts or call 503-238-RIDE (7433) for real-time arrival information from TransitTracker™. All buses, MAX trains and streetcars are accessible to people with disabilities.

94-Tigard/Sherwood

 For snow/ice detours and cancellations visit trimet.org or call 503-238-7433 (RIDE).




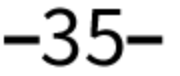




Tigard Transit Center
12 43 45 76 78
WES YCTA **P** **B**

TIGARD

KING CITY

SHERWOOD

-  Route/Schedule Stop
-  Park & Ride
-  Secure Bike Parking
-  Transfer Nearby
-  MAX Line and Station
-  WES Line and Station



94-Tigard/Sherwood

Weekday		To Tigard Transit Center	
SW 1st & Pine Stop ID 14108	SW Pacific Hwy & Durham Stop ID 8792		Tigard Transit Center
4:32	4:46		4:53
5:12	5:26		5:33
5:47	6:01		—
6:08	6:23		—
6:27	6:43		—
6:47	7:03		—
7:07	7:23		—
7:27	7:43		—
7:47	8:03		—
8:07	8:23		—
8:27	8:43		—
8:47	9:03		—
9:07	9:23		—
9:27	9:43		—
9:47	10:03		—
10:07	10:23		—
10:27	10:43		—
10:47	11:03		—
11:07	11:23		—
11:27	11:44		—
11:47	12:04		—
12:07	12:24		—
12:27	12:44		—
12:47	1:04		—
1:07	1:24		—
1:27	1:44		—
1:47	2:04		—
2:07	2:24		—
2:27	2:44		—
2:47	3:05		—
3:07	3:25		—
3:27	3:45		—
3:47	4:05		—
4:07	4:25		—
4:27	4:45		—
4:47	5:05		—
5:07	5:25		—
5:27	5:45		—
5:47	6:05		—
6:07	6:25		—
6:27	6:44		—
6:47	7:03		—
7:07	7:23		—
7:37	7:53		—
8:07	8:23		—
8:36	8:51		—
9:07	9:22		—
9:37	9:52	10:00	—
10:09	10:22		—
11:22	11:35		—

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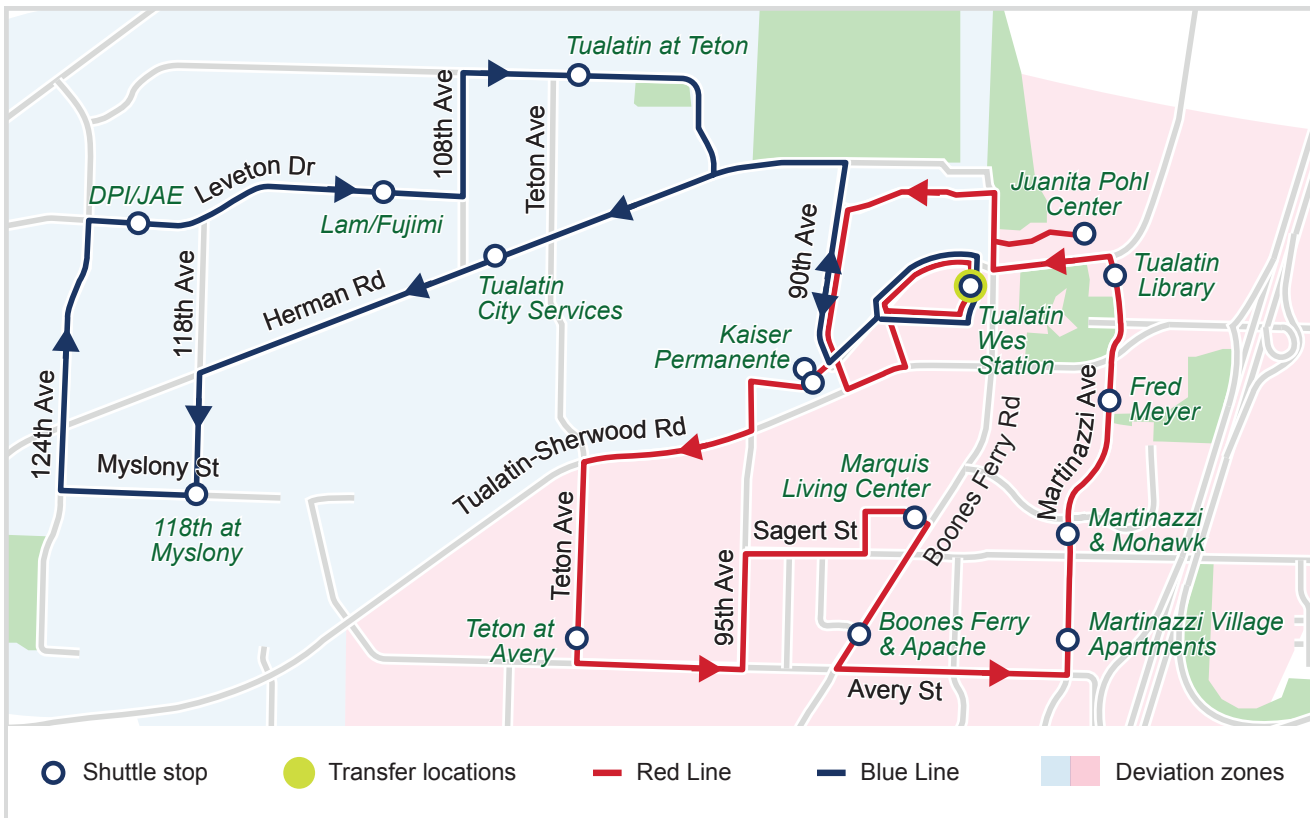


94-Tigard/Sherwood

Weekday	To Sherwood		
	Tigard Transit Center Stop ID 10180	SW Pacific Hwy & Durham Stop ID 8644	SW 1st & Pine Stop ID 14108
	6:04	6:12	6:27
	6:23	6:31	6:47
	6:43	6:51	7:07
	7:02	7:10	7:27
	7:21	7:29	7:47
	7:40	7:49	8:07
	8:00	8:09	8:27
	8:20	8:29	8:47
	8:40	8:49	9:07
	8:59	9:09	9:27
	9:19	9:29	9:47
	9:39	9:49	10:07
	9:59	10:09	10:27
	10:18	10:29	10:47
	10:38	10:49	11:07
	10:58	11:09	11:27
	11:18	11:29	11:47
	11:38	11:49	12:07
	11:58	12:09	12:27
	12:18	12:29	12:47
	12:38	12:49	1:07
	12:58	1:09	1:27
	1:18	1:29	1:47
	1:38	1:49	2:07
	1:58	2:09	2:27
	2:18	2:29	2:47
	2:38	2:49	3:07
	2:58	3:09	3:27
	3:18	3:29	3:47
	3:38	3:49	4:07
	3:58	4:09	4:27
	4:18	4:29	4:47
	4:38	4:49	5:07
	4:57	5:08	5:27
	5:17	5:28	5:47
	5:38	5:49	6:07
	5:59	6:10	6:27
	6:19	6:30	6:47
	6:39	6:50	7:07
	7:09	7:20	7:37
	7:40	7:51	8:07
	8:11	8:21	8:36
	8:42	8:52	9:07
	9:14	9:23	9:37
	9:47	9:56	10:09
	10:19	10:27	10:40
	11:01	11:09	11:22
	11:47	11:54	12:07
	12:18	12:25	—
	1:04	1:11	—

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CAR SEAT REQUIREMENT

Child passengers must be restrained in child safety seats until they weigh forty pounds or reach the upper weight limit for the car seat in use. Infants must ride rear-facing until they reach two years of age. Ride Connection does not provide/install child safety seats.

HOLIDAY CLOSURES

Service will not be available on: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day. Limited service on Christmas and New Year's Eve. If a holiday falls on Saturday, there is no service on Friday; if a holiday falls on Sunday, there is no service on Monday. Information about closures available at rideconnection.org

SEVERE WEATHER

Information about closures available at rideconnection.org

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CONTACT US

503-226-0700 | TTY: 711
info@rideconnection.org

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Updated December 2022


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 Blue & Red Line**

Free weekday service
 open to the public



Tualatin Shuttle

PM times in bold
Transfers  TriMet

Blue Line Schedule

Southbound WES Arrival Time	Tualatin WES Station	Tualatin City Services	118th at Myslony	DPI/JAE	SW Leveton (Fujimi & LAM Research)	SW Tualatin Rd & SW Teton Ave	Tualatin WES Station	Northbound WES Depart Time
TM	TM						TM	TM
	5:41	5:46	5:51	5:54	5:55	5:57	6:17	6:11
6:25	6:26	6:31	6:36	6:39	6:40	6:42	7:02	6:56
7:10	7:11	7:16	7:21	7:24	7:25	7:27	7:47	
7:55	7:56	8:01	8:06	8:09	8:10	8:12	8:32	
8:40	8:41	8:46	8:51	8:54	8:55	8:57	9:17	
9:25	9:26	9:31	9:36	9:39	9:40	9:42	10:02	
	3:03	3:08	3:13	3:16	3:17	3:19	3:24	3:38
	3:33	3:38	3:43	3:46	3:47	3:49	4:09	4:23
	4:18	4:23	4:28	4:31	4:32	4:34	4:54	5:08
	5:03	5:08	5:13	5:16	5:17	5:19	5:39	5:53
	5:48	5:53	5:58	6:01	6:02	6:04	6:24	6:38
6:07	6:33	6:38	6:43	6:46	6:47	6:49	7:09	

Red Line Schedule

Southbound WES Arrival Time	Tualatin WES Station	Kaiser Permanente	SW Teton Ave & SW Avery St	Marquis Living Center	Fred Meyer	Tualatin Library	Juanita Pohl Center	Tualatin WES Station	Northbound WES Depart Time
TM	TM							TM	TM
	5:02	5:06	5:10	5:18	5:24	5:25	5:30	5:38	
	5:47	5:51	5:55	6:03	6:09	6:10	6:15	6:23	
6:25	6:32	6:36	6:40	6:48	6:54	6:55	7:00	7:08	
7:10	7:17	7:21	7:25	7:33	7:39	7:40	7:45	7:53	
7:55	8:02	8:06	8:10	8:18	8:24	8:25	8:30	8:38	
	8:53	8:57	9:01	9:09	9:15	9:16	9:21	9:29	
	12:15	12:19	12:23	12:31	12:37	12:38	12:43	12:51	
	1:00	1:04	1:08	1:16	1:22	1:23	1:28	1:36	
	1:50	1:54	1:58	2:06	2:12	2:13	2:18	2:26	
	3:00	3:04	3:08	3:16	3:22	3:23	3:28	3:36	3:38
	3:42	3:46	3:50	3:58	4:04	4:05	4:10	4:18	4:23
	4:24	4:28	4:32	4:40	4:46	4:47	4:52	5:00	5:08
	5:14	5:18	5:22	5:30	5:36	5:37	5:42	5:50	5:53
	5:56	6:00	6:04	6:12	6:18	6:19	6:24	6:32	6:38
	6:38	6:42	6:46	6:54	7:00	7:01	7:06	7:14	



FLAG TUALATIN SHUTTLE DOWN

If you are on a residential street along the route, and not near a designated stop, you can “flag” or simply wave using your full arm to signal the Tualatin Shuttle bus driver to stop. Be sure to stand on the same side of the road as the bus’ direction of travel. Please identify a safe location, where the bus can stop without creating a hazard, and where the driver can see you in plenty of time to stop.



DEVIATIONS

We will deviate off the route to pick you up or drop you off for one leg of your trip. Deviation requests must be called in one day in advance. To call in for a deviation, please call 503-226-0700 between 7:30am and 5pm Monday-Friday. TTY: 711.

Deviations are not reservations. If the shuttle reaches capacity, we will make every effort to accommodate you.

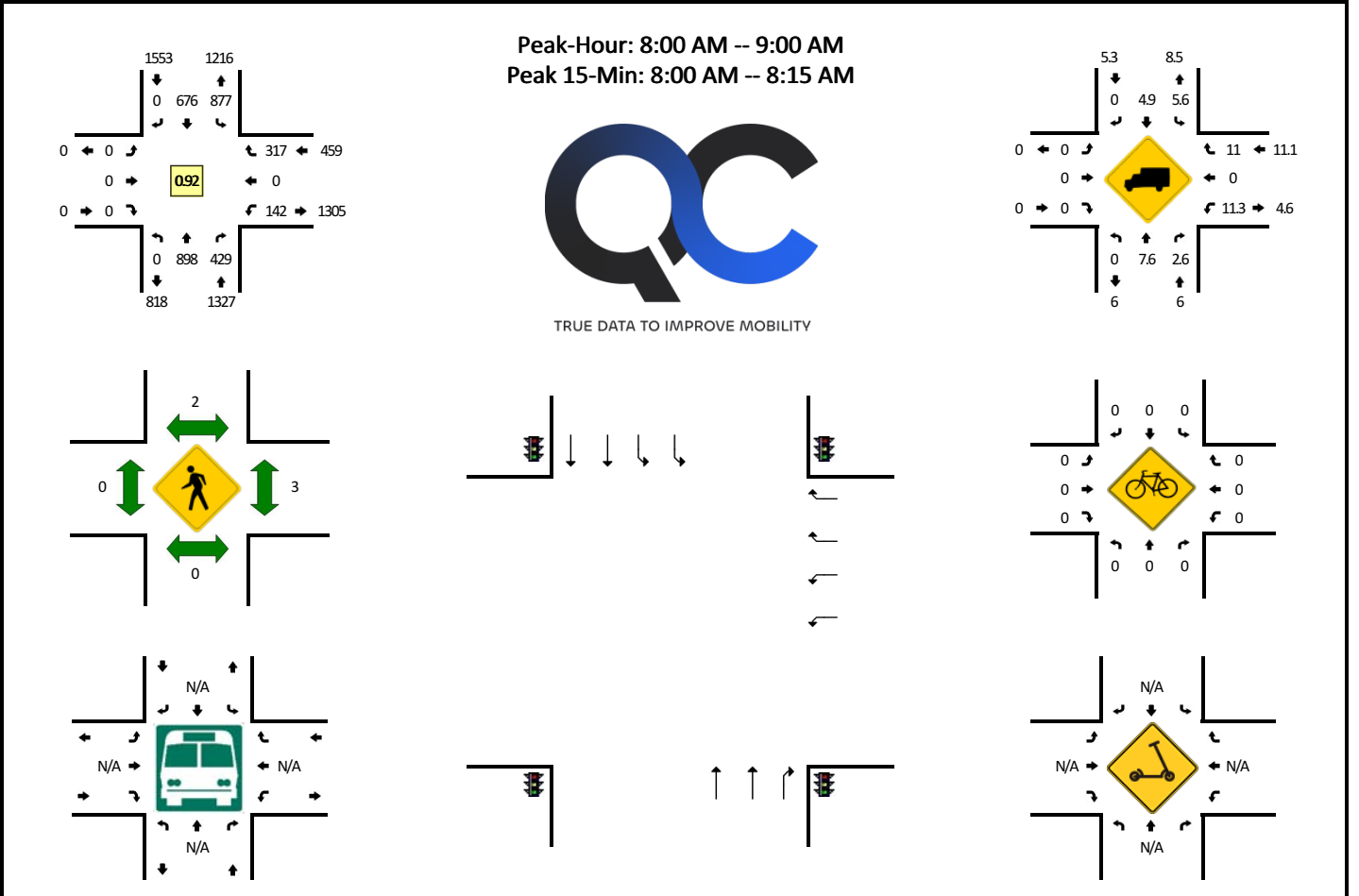
The service operates **Monday through Friday** and it’s free.



APPENDIX D.
**TRAFFIC COUNT
SUMMARIES**

LOCATION: Pacific Hwy W -- SW 124th Ave
CITY/STATE: Tualatin, OR

QC JOB #: 16751101
DATE: Thu, Sep 12 2024



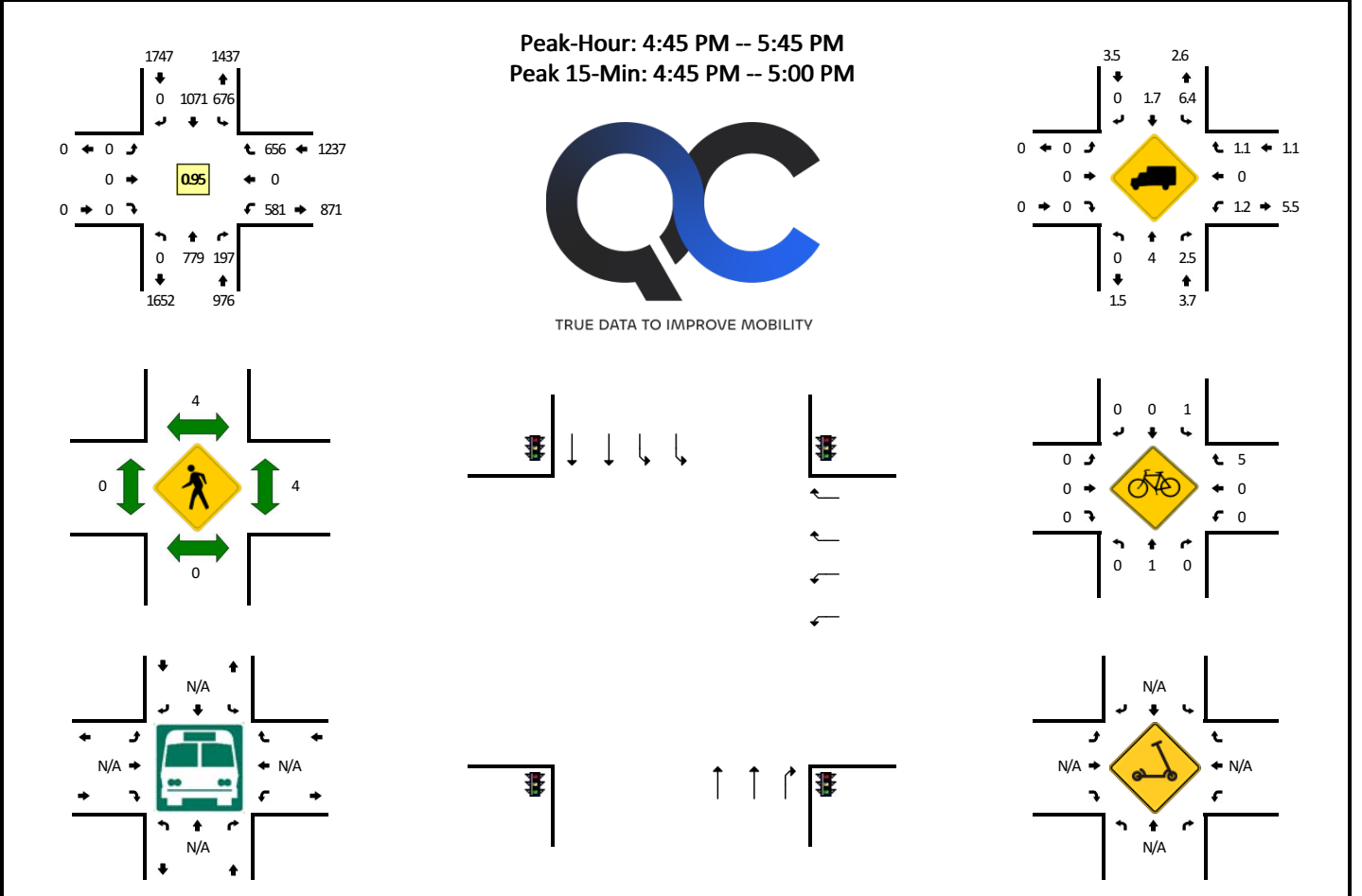
15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW 124th Ave (Eastbound)				SW 124th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	318	74	0	137	163	0	0	0	0	0	0	21	0	55	0	768	
7:15 AM	0	324	94	0	210	205	0	0	0	0	0	0	30	0	79	0	942	
7:30 AM	0	332	124	0	207	222	0	0	0	0	0	0	41	0	89	0	1015	
7:45 AM	0	234	172	0	265	187	0	0	0	0	0	0	33	0	75	0	966	3691
8:00 AM	0	218	130	0	262	192	0	0	0	0	0	0	34	0	69	0	905	3828
8:15 AM	0	235	106	0	209	174	0	0	0	0	0	0	41	0	74	0	839	3725
8:30 AM	0	228	104	0	214	156	0	0	0	0	0	0	28	0	89	0	819	3529
8:45 AM	0	217	89	0	191	154	0	1	0	0	0	0	39	0	85	0	776	3339

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	872	520	0	1048	768	0	0	0	0	0	0	136	0	276	0	3620
Heavy Trucks	0	64	8		56	28	0		0	0	0		20	0	28		204
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scoters																	

Comments:

LOCATION: Pacific Hwy W -- SW 124th Ave
CITY/STATE: Tualatin, OR

QC JOB #: 16751102
DATE: Thu, Sep 12 2024

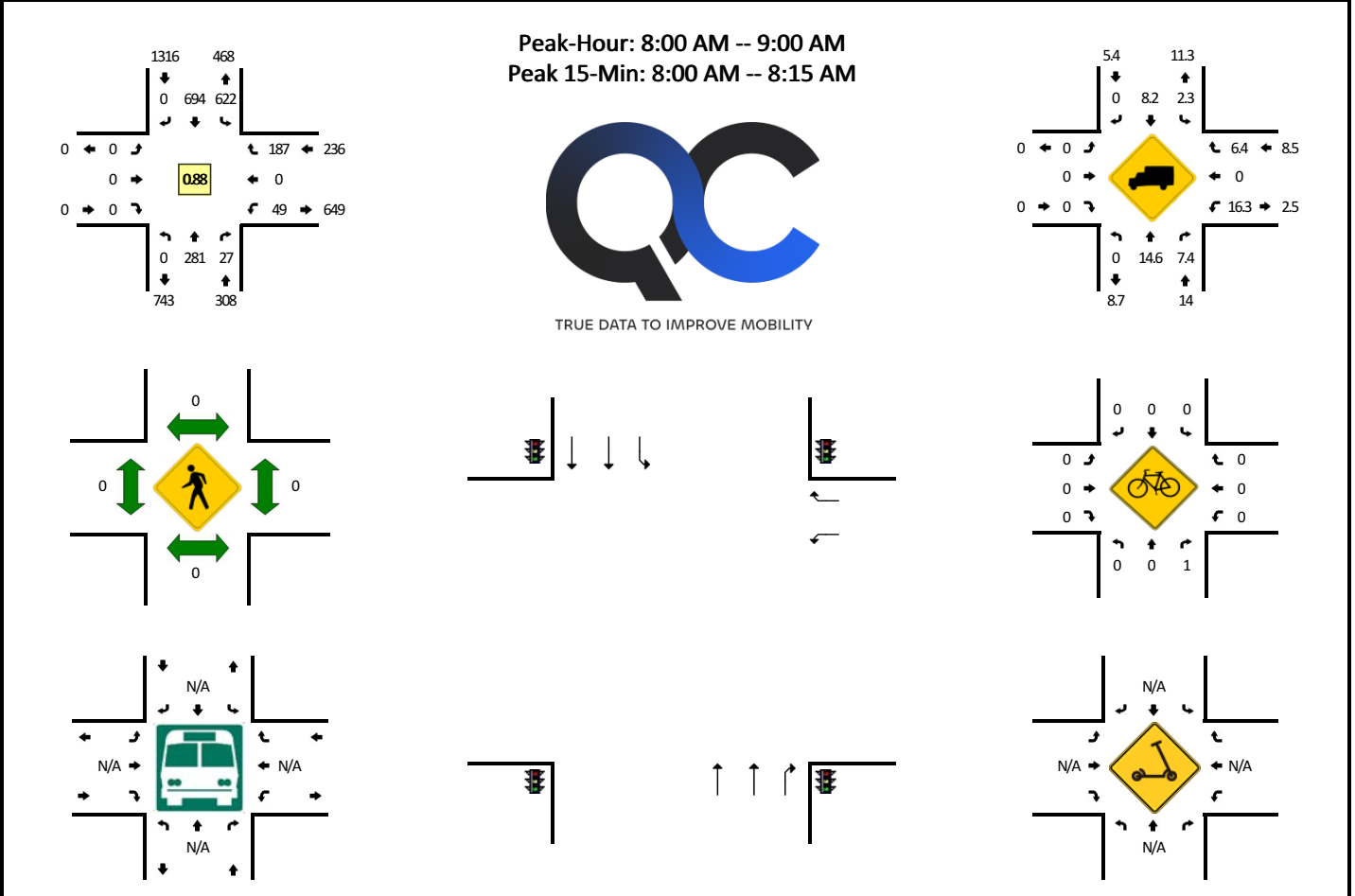


15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW 124th Ave (Eastbound)				SW 124th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	220	58	0	104	253	0	1	0	0	0	0	152	0	143	0	931	
3:15 PM	0	232	55	0	150	288	0	1	0	0	0	0	134	0	122	0	982	
3:30 PM	0	206	47	0	147	273	0	0	0	0	0	0	161	0	216	1	1051	
3:45 PM	0	221	65	0	164	283	0	0	0	0	0	0	165	0	153	0	1051	4015
4:00 PM	0	216	51	0	148	249	0	1	0	0	0	0	168	0	200	0	1033	4117
4:15 PM	0	210	67	0	147	280	0	1	0	0	0	0	166	0	175	0	1046	4181
4:30 PM	0	221	58	0	133	263	0	0	0	0	0	0	169	0	165	0	1009	4139
4:45 PM	0	196	40	0	185	288	0	0	0	0	0	0	164	0	166	0	1039	4127
5:00 PM	0	222	54	0	151	246	0	0	0	0	0	0	142	0	185	0	1000	4094
5:15 PM	0	185	56	0	168	275	0	1	0	0	0	0	150	0	162	0	997	4045
5:30 PM	0	176	47	0	170	262	0	1	0	0	0	0	125	0	143	0	924	3960
5:45 PM	0	206	60	0	148	253	0	0	0	0	0	0	94	0	106	0	867	3788
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	784	160	0	740	1152	0	0	0	0	0	0	656	0	664	0	4156	
Heavy Trucks	0	24	4		40	20	0		0	0	0		16	0	4		108	
Buses																		
Pedestrians	0	0				12				0				12			24	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4	
Scoters																		

Comments:

LOCATION: SW 124th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16751105
DATE: Thu, Sep 12 2024

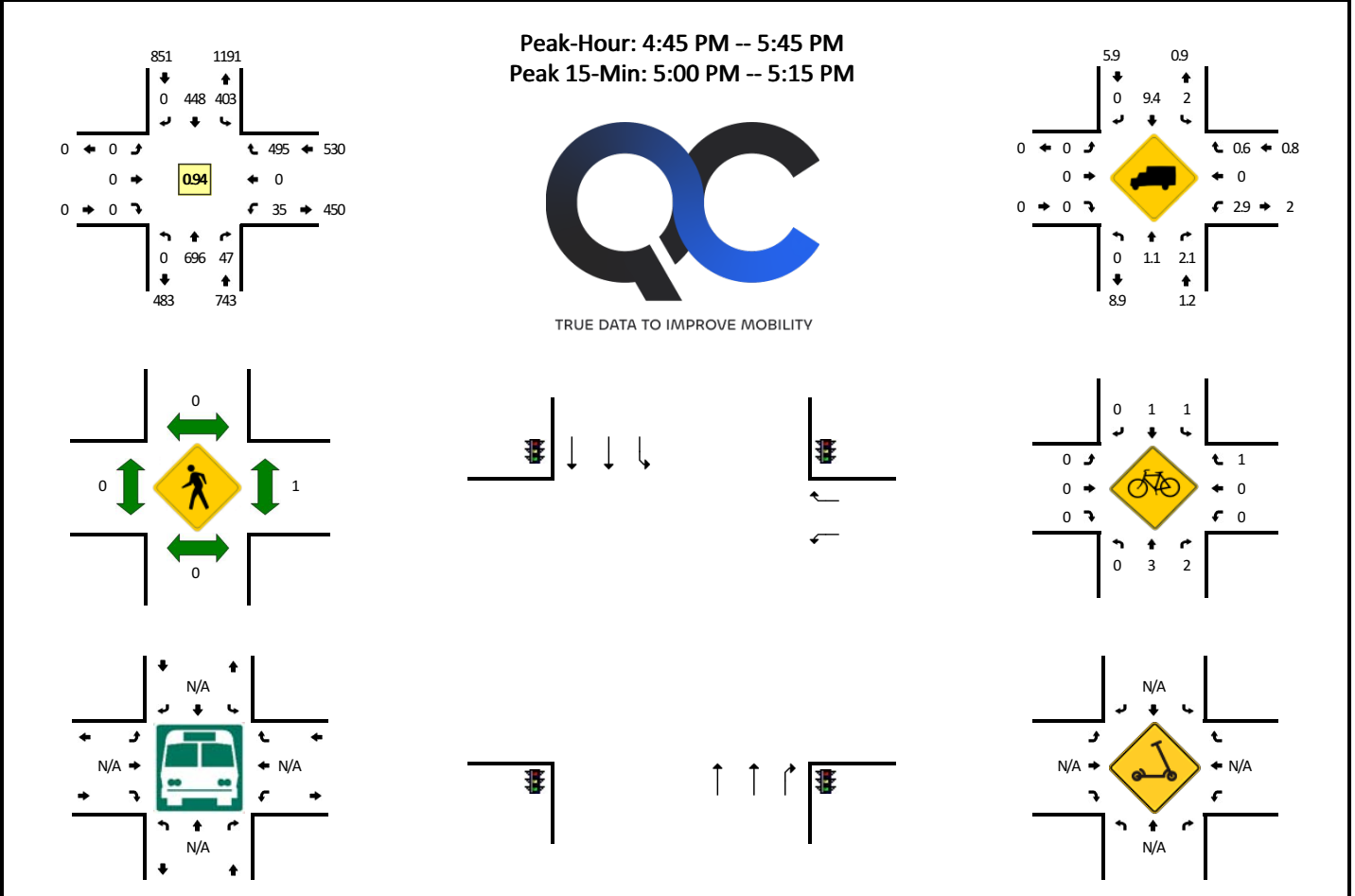


15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	56	4	0	108	111	0	0	0	0	0	0	5	0	31	0	315	
7:15 AM	0	56	8	0	127	177	0	0	0	0	0	0	8	0	41	0	417	
7:30 AM	0	74	8	0	167	176	0	0	0	0	0	0	10	0	55	0	490	
7:45 AM	0	57	8	0	210	210	0	0	0	0	0	0	12	0	50	0	547	1769
8:00 AM	0	63	8	0	200	193	0	0	0	0	0	0	13	0	50	0	527	1981
8:15 AM	0	66	11	0	151	170	0	0	0	0	0	0	15	0	47	0	460	2024
8:30 AM	0	77	4	0	132	188	0	0	0	0	0	0	9	0	37	0	447	1981
8:45 AM	0	75	4	0	139	143	0	0	0	0	0	0	12	0	53	0	426	1860
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	252	32	0	800	772	0	0	0	0	0	0	52	0	200	0	2108	
Heavy Trucks	0	44	8		16	48	0		0	0	0		12	0	20		148	
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: SW 124th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16751106
DATE: Thu, Sep 12 2024

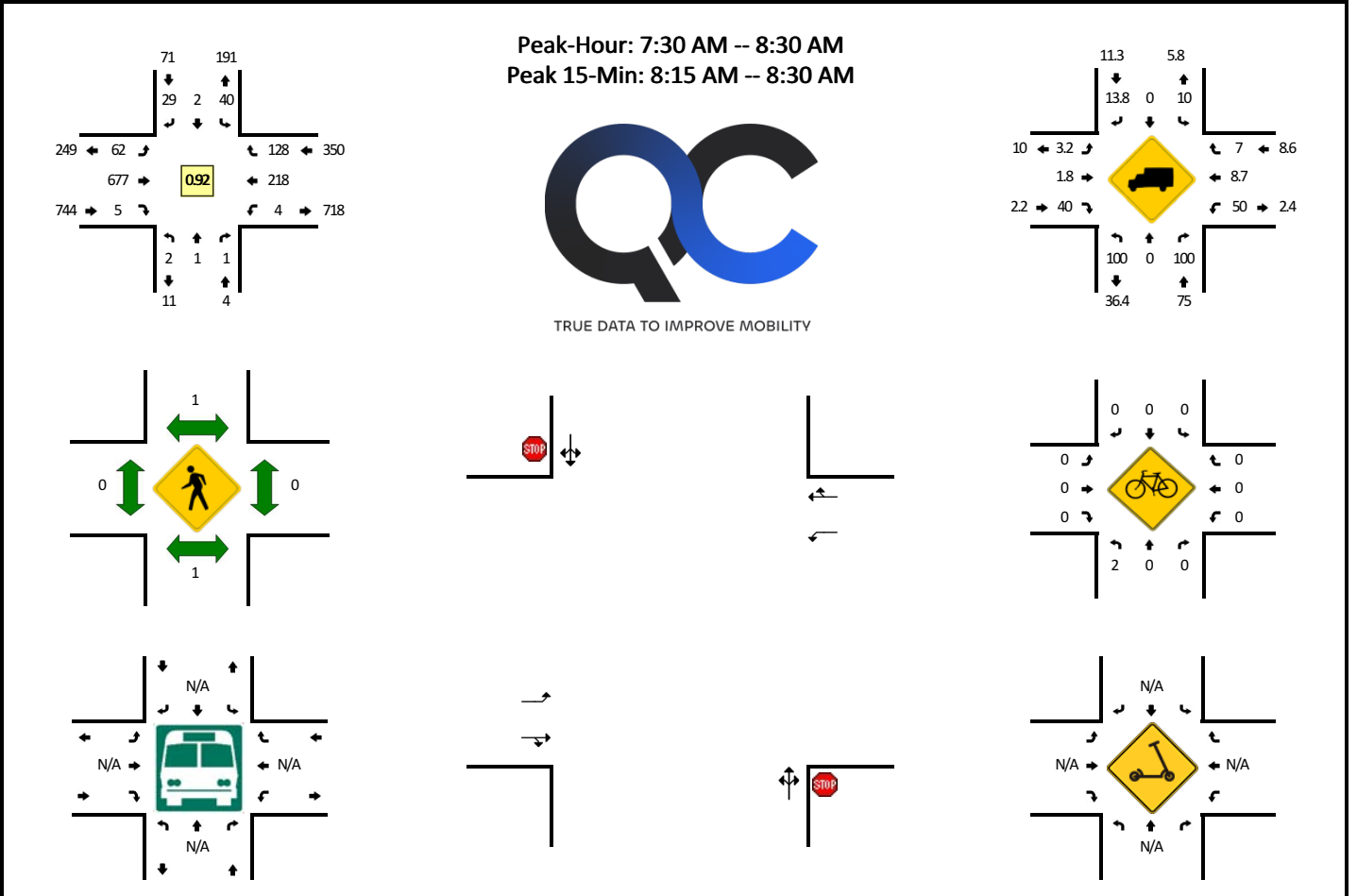


15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	166	11	0	78	86	0	0	0	0	0	0	6	0	121	0	468	
3:15 PM	0	132	12	0	99	108	0	0	0	0	0	0	18	0	141	0	510	
3:30 PM	0	222	10	0	91	103	0	0	0	0	0	0	10	0	146	0	582	
3:45 PM	0	151	17	0	108	125	0	0	0	0	0	0	19	0	156	0	576	2136
4:00 PM	0	237	13	0	94	89	0	0	0	0	0	0	5	0	141	0	579	2247
4:15 PM	0	193	6	0	124	101	0	0	0	0	0	0	15	0	164	0	603	2340
4:30 PM	0	208	14	0	101	95	0	0	0	0	0	0	9	0	138	0	565	2323
4:45 PM	0	166	12	0	102	116	0	0	0	0	0	0	12	0	120	0	528	2275
5:00 PM	0	213	9	0	93	112	0	0	0	0	0	0	9	0	129	0	565	2261
5:15 PM	0	175	14	0	111	107	0	0	0	0	0	0	9	0	125	0	541	2199
5:30 PM	0	142	12	0	97	113	0	0	0	0	0	0	5	0	121	0	490	2124
5:45 PM	0	106	5	0	109	112	0	0	0	0	0	0	11	0	88	0	431	2027
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	852	36	0	372	448	0	0	0	0	0	0	36	0	516	0	2260	
Heavy Trucks	0	16	0	0	4	56	0	0	0	0	0	0	0	0	0	0	76	
Buses																	0	
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	0	4		0	0			0	0			0	0			4	
Scoters																		

Comments:

LOCATION: SW 115th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573223
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	3	0	8	110	0	0	3	21	16	0	163	
7:15 AM	0	0	0	0	6	1	5	0	10	142	0	0	0	27	13	0	204	
7:30 AM	0	1	0	0	10	0	5	0	3	181	1	0	1	53	21	0	276	
7:45 AM	1	0	0	0	11	1	4	0	11	184	2	0	0	60	28	0	302	945
8:00 AM	0	0	0	0	7	1	8	0	19	151	2	0	2	59	26	0	275	1057
8:15 AM	1	0	1	0	12	0	12	0	29	161	0	0	1	46	53	0	316	1169
8:30 AM	0	0	1	0	8	0	3	0	10	127	1	0	1	47	26	0	224	1117
8:45 AM	1	0	0	0	7	0	1	0	6	93	1	0	1	47	19	0	176	991
9:00 AM	0	0	0	0	1	0	1	0	3	78	0	0	1	34	33	0	151	867
9:15 AM	0	0	0	0	2	0	1	0	2	73	0	0	1	54	18	0	151	702
9:30 AM	0	1	0	0	2	0	4	0	2	68	1	0	0	57	18	0	153	631
9:45 AM	1	0	0	0	3	0	3	0	6	58	0	0	0	33	12	0	116	571
10:00 AM	0	0	2	0	2	0	2	0	7	78	1	0	0	29	19	0	140	560
10:15 AM	0	0	0	0	6	0	4	0	6	49	0	0	1	30	17	0	113	522
10:30 AM	0	0	0	0	2	0	4	0	10	58	0	0	1	44	16	0	135	504
10:45 AM	1	1	0	0	2	0	3	0	5	63	1	0	0	57	31	0	164	552
11:00 AM	1	0	0	0	7	1	4	0	5	57	1	0	0	43	26	0	145	557
11:15 AM	0	0	1	0	2	0	2	0	3	56	1	0	0	59	28	0	152	596
11:30 AM	0	2	1	0	5	0	7	0	10	68	0	0	1	65	22	0	181	642
11:45 AM	0	0	1	0	4	0	3	0	4	75	1	0	1	52	15	0	156	634
12:00 PM	1	0	2	0	0	0	7	0	13	66	2	0	1	59	15	0	166	655
12:15 PM	1	0	1	0	4	0	2	0	7	82	0	0	0	62	28	0	187	690
12:30 PM	0	0	3	0	4	0	6	0	4	78	1	0	2	67	17	0	182	691
12:45 PM	1	0	0	0	1	0	6	0	8	76	1	0	0	56	22	0	171	706
1:00 PM	1	1	1	0	2	1	7	0	5	66	0	0	1	64	30	0	179	719
1:15 PM	0	0	2	0	1	0	7	0	10	79	1	0	0	65	26	0	191	723
1:30 PM	0	0	0	0	6	0	4	0	5	71	0	0	0	77	24	0	187	728
1:45 PM	0	0	0	0	6	0	1	0	7	68	0	0	0	54	33	0	169	726
2:00 PM	1	0	0	0	3	0	3	0	4	76	1	0	0	56	30	0	174	721
2:15 PM	0	0	1	0	4	0	5	0	5	76	0	0	0	64	37	0	192	722
2:30 PM	0	1	2	0	8	0	5	0	11	85	4	0	2	77	68	0	263	798
2:45 PM	0	0	4	0	2	0	4	0	11	89	0	0	0	98	52	0	260	889
3:00 PM	0	0	0	0	6	0	2	0	23	63	0	0	0	84	45	0	223	938
3:15 PM	0	0	0	0	19	0	24	0	8	89	0	0	3	107	44	0	294	1040
3:30 PM	1	1	2	0	5	0	3	0	7	94	1	0	0	128	59	0	301	1078
3:45 PM	0	0	1	0	6	0	4	0	8	88	0	0	1	101	68	0	277	1095
4:00 PM	0	0	4	0	2	1	7	0	10	81	0	0	1	160	80	0	346	1218
4:15 PM	0	1	2	0	4	2	7	0	12	85	0	0	2	142	58	0	315	1239

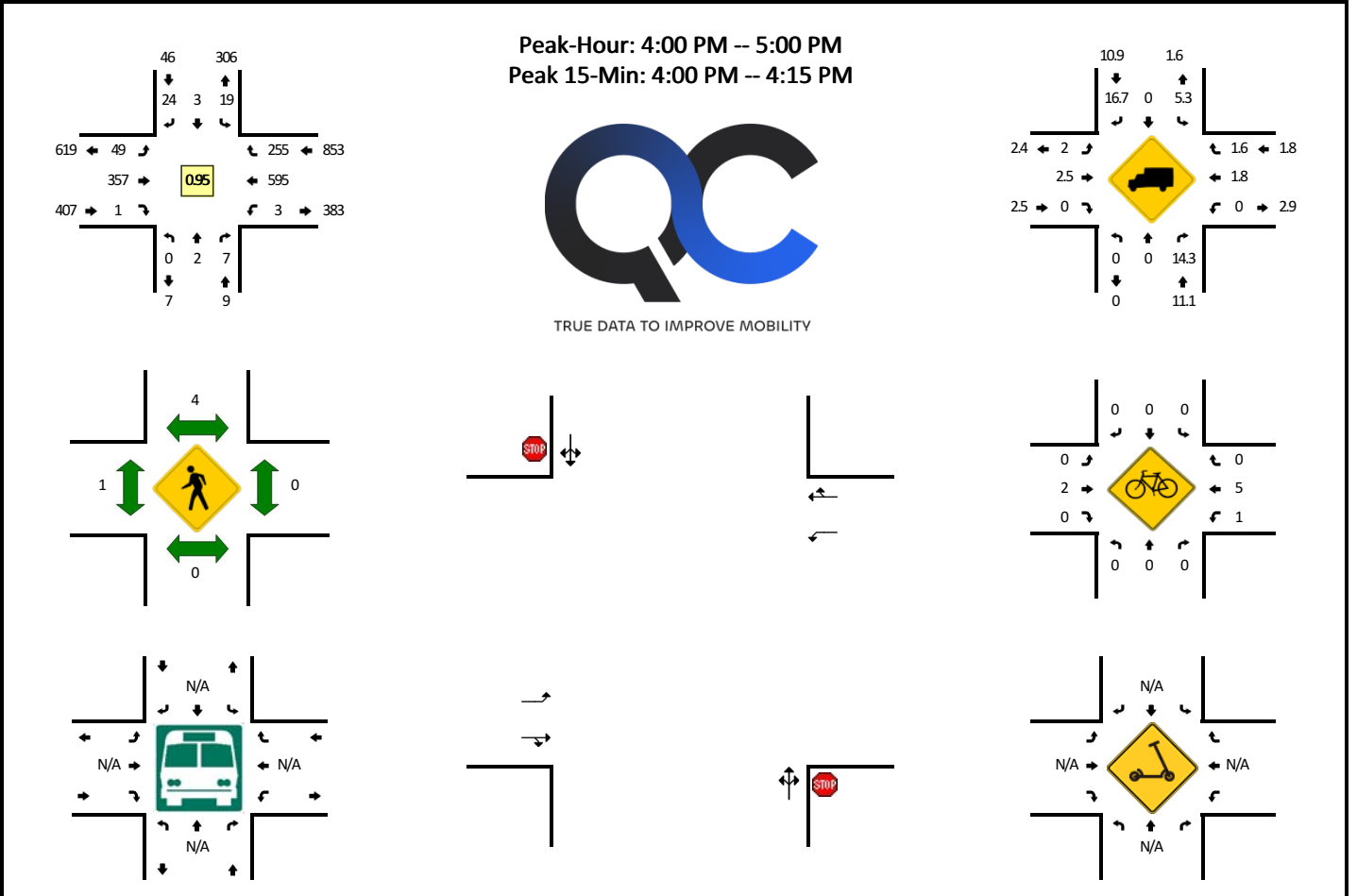
15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	1	1	0	4	0	3	0	8	94	0	0	0	164	68	0	343	1281
4:45 PM	0	0	0	0	9	0	7	0	19	97	1	0	0	129	49	0	311	1315
5:00 PM	0	1	1	0	2	0	5	0	9	90	0	0	2	159	66	0	335	1304
5:15 PM	0	1	2	0	4	0	4	0	17	71	1	0	1	165	58	0	324	1313
5:30 PM	0	0	0	0	4	0	3	0	9	103	1	0	0	139	54	0	313	1283
5:45 PM	0	1	1	0	3	0	4	0	10	85	2	0	0	98	47	0	251	1223
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	0	4	0	48	0	48	0	116	644	0	0	4	184	212	0	1264	
Heavy Trucks	4	0	4		12	0	4		4	12	0		4	12	20		76	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4	
Scoters																		
<i>Comments:</i>																		

Report generated on 6/20/2024 10:17 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: SW 115th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573223
DATE: Tue, Apr 23 2024



15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	3	0	8	110	0	0	3	21	16	0	163	
7:15 AM	0	0	0	0	6	1	5	0	10	142	0	0	0	27	13	0	204	
7:30 AM	0	1	0	0	10	0	5	0	3	181	1	0	1	53	21	0	276	
7:45 AM	1	0	0	0	11	1	4	0	11	184	2	0	0	60	28	0	302	945
8:00 AM	0	0	0	0	7	1	8	0	19	151	2	0	2	59	26	0	275	1057
8:15 AM	1	0	1	0	12	0	12	0	29	161	0	0	1	46	53	0	316	1169
8:30 AM	0	0	1	0	8	0	3	0	10	127	1	0	1	47	26	0	224	1117
8:45 AM	1	0	0	0	7	0	1	0	6	93	1	0	1	47	19	0	176	991
9:00 AM	0	0	0	0	1	0	1	0	3	78	0	0	1	34	33	0	151	867
9:15 AM	0	0	0	0	2	0	1	0	2	73	0	0	1	54	18	0	151	702
9:30 AM	0	1	0	0	2	0	4	0	2	68	1	0	0	57	18	0	153	631
9:45 AM	1	0	0	0	3	0	3	0	6	58	0	0	0	33	12	0	116	571
10:00 AM	0	0	2	0	2	0	2	0	7	78	1	0	0	29	19	0	140	560
10:15 AM	0	0	0	0	6	0	4	0	6	49	0	0	1	30	17	0	113	522
10:30 AM	0	0	0	0	2	0	4	0	10	58	0	0	1	44	16	0	135	504
10:45 AM	1	1	0	0	2	0	3	0	5	63	1	0	0	57	31	0	164	552
11:00 AM	1	0	0	0	7	1	4	0	5	57	1	0	0	43	26	0	145	557
11:15 AM	0	0	1	0	2	0	2	0	3	56	1	0	0	59	28	0	152	596
11:30 AM	0	2	1	0	5	0	7	0	10	68	0	0	1	65	22	0	181	642
11:45 AM	0	0	1	0	4	0	3	0	4	75	1	0	1	52	15	0	156	634
12:00 PM	1	0	2	0	0	0	7	0	13	66	2	0	1	59	15	0	166	655
12:15 PM	1	0	1	0	4	0	2	0	7	82	0	0	0	62	28	0	187	690
12:30 PM	0	0	3	0	4	0	6	0	4	78	1	0	2	67	17	0	182	691
12:45 PM	1	0	0	0	1	0	6	0	8	76	1	0	0	56	22	0	171	706
1:00 PM	1	1	1	0	2	1	7	0	5	66	0	0	1	64	30	0	179	719
1:15 PM	0	0	2	0	1	0	7	0	10	79	1	0	0	65	26	0	191	723
1:30 PM	0	0	0	0	6	0	4	0	5	71	0	0	0	77	24	0	187	728
1:45 PM	0	0	0	0	6	0	1	0	7	68	0	0	0	54	33	0	169	726
2:00 PM	1	0	0	0	3	0	3	0	4	76	1	0	0	56	30	0	174	721
2:15 PM	0	0	1	0	4	0	5	0	5	76	0	0	0	64	37	0	192	722
2:30 PM	0	1	2	0	8	0	5	0	11	85	4	0	2	77	68	0	263	798
2:45 PM	0	0	4	0	2	0	4	0	11	89	0	0	0	98	52	0	260	889
3:00 PM	0	0	0	0	6	0	2	0	23	63	0	0	0	84	45	0	223	938
3:15 PM	0	0	0	0	19	0	24	0	8	89	0	0	3	107	44	0	294	1040
3:30 PM	1	1	2	0	5	0	3	0	7	94	1	0	0	128	59	0	301	1078
3:45 PM	0	0	1	0	6	0	4	0	8	88	0	0	1	101	68	0	277	1095
4:00 PM	0	0	4	0	2	1	7	0	10	81	0	0	1	160	80	0	346	1218
4:15 PM	0	1	2	0	4	2	7	0	12	85	0	0	2	142	58	0	315	1239

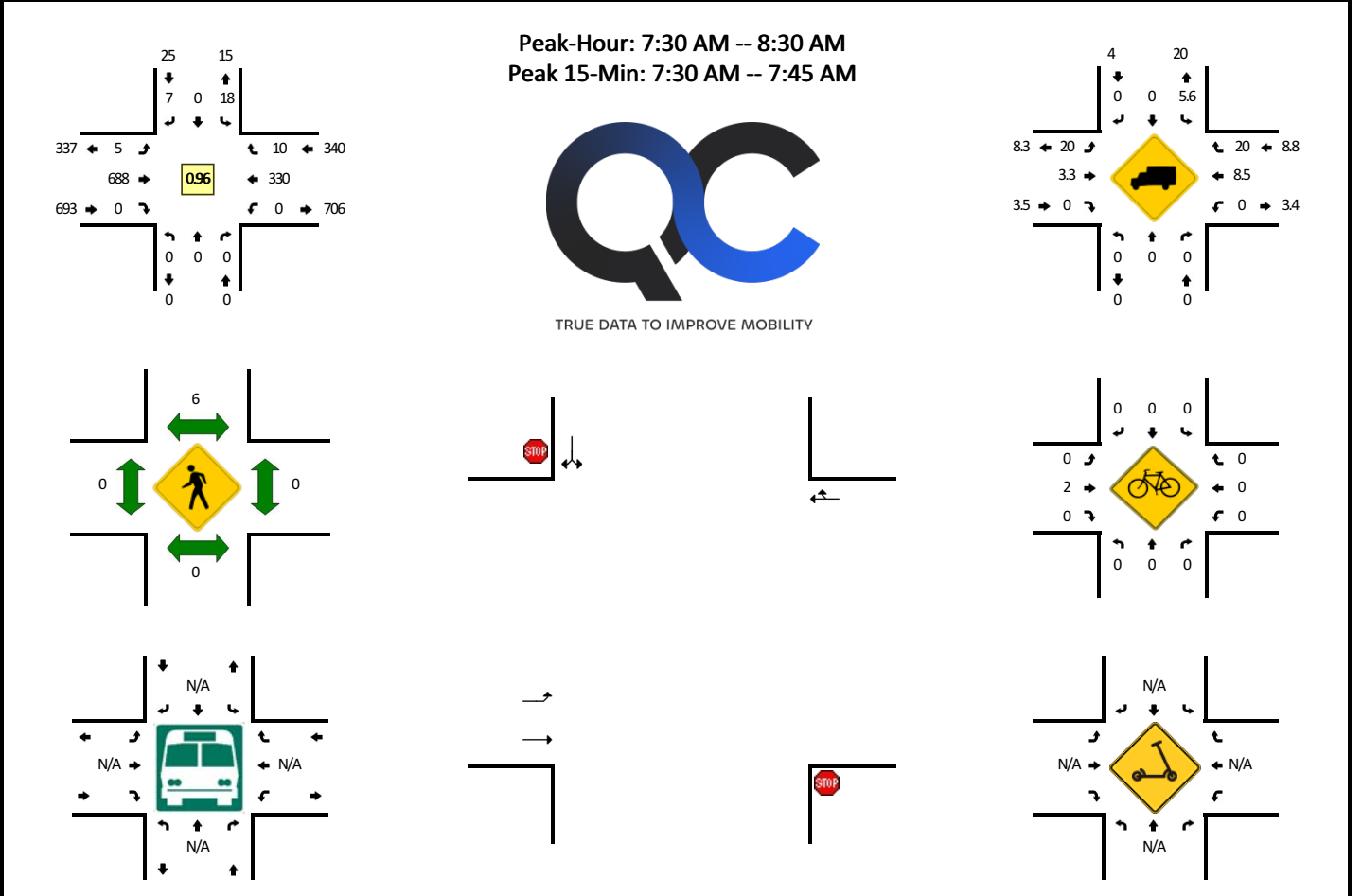
15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	1	1	0	4	0	3	0	8	94	0	0	0	164	68	0	343	1281
4:45 PM	0	0	0	0	9	0	7	0	19	97	1	0	0	129	49	0	311	1315
5:00 PM	0	1	1	0	2	0	5	0	9	90	0	0	2	159	66	0	335	1304
5:15 PM	0	1	2	0	4	0	4	0	17	71	1	0	1	165	58	0	324	1313
5:30 PM	0	0	0	0	4	0	3	0	9	103	1	0	0	139	54	0	313	1283
5:45 PM	0	1	1	0	3	0	4	0	10	85	2	0	0	98	47	0	251	1223
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	16	0	8	4	28	0	40	324	0	0	4	640	320	0	1384	
Heavy Trucks	0	0	0		0	0	4		0	4	0		0	20	12		40	
Buses																		
Pedestrians		0				12				0				0			12	
Bicycles	0	0	0		0	0	0		0	4	0		4	8	0		16	
Scooters																		
<i>Comments:</i>																		

Report generated on 6/20/2024 10:15 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: SW 112th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16614101
DATE: Tue, May 14 2024

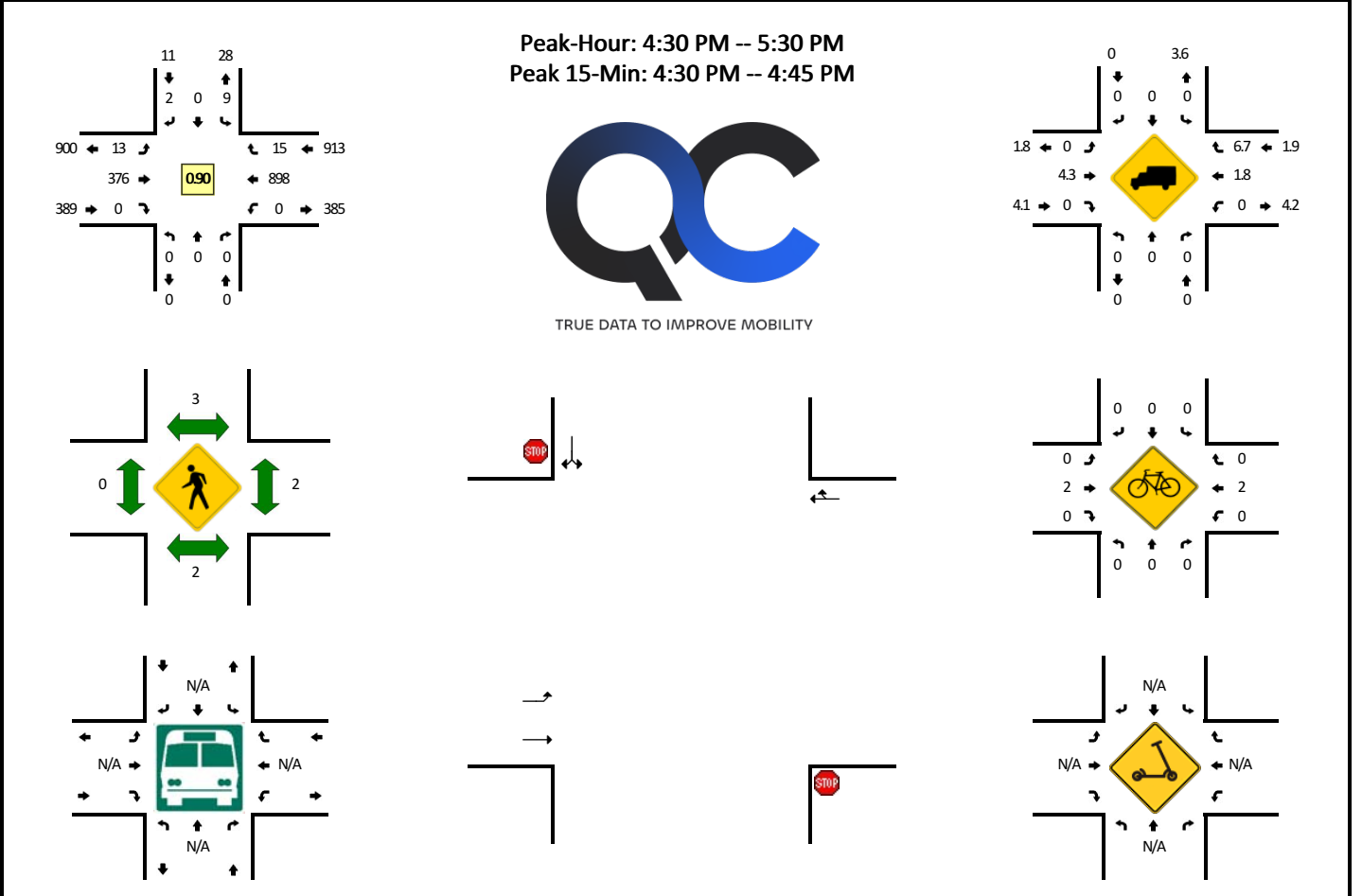


15-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	3	0	1	0	1	105	0	0	0	35	1	0	146	
7:15 AM	0	0	0	0	8	0	1	0	0	149	0	0	0	42	0	0	200	
7:30 AM	0	0	0	0	11	0	1	0	0	190	0	0	0	71	2	0	275	
7:45 AM	0	0	0	0	1	0	1	0	1	191	0	0	0	76	5	0	275	896
8:00 AM	0	0	0	0	1	0	3	0	3	158	0	0	0	87	0	0	252	1002
8:15 AM	0	0	0	0	5	0	2	0	1	149	0	0	0	96	3	0	256	1058
8:30 AM	0	0	0	0	6	0	1	0	3	164	0	0	0	64	1	0	239	1022
8:45 AM	0	0	0	0	1	0	2	0	2	131	0	0	0	78	1	0	215	962
9:00 AM	0	0	0	0	3	0	1	0	1	97	0	0	0	78	3	0	183	893
9:15 AM	0	0	0	0	6	0	0	0	2	74	0	0	0	67	2	0	151	788
9:30 AM	0	0	0	0	2	0	0	0	0	69	0	0	0	58	0	0	129	678
9:45 AM	0	0	0	0	1	0	2	0	0	59	0	0	0	72	3	0	137	600
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	44	0	4	0	0	760	0	0	0	284	8	0	1100	
Heavy Trucks	0	0	0	0	0	0	0	0	0	32	0	0	0	36	0	0	68	
Buses																		
Pedestrians		0				4				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: SW 112th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16614102
DATE: Tue, May 14 2024

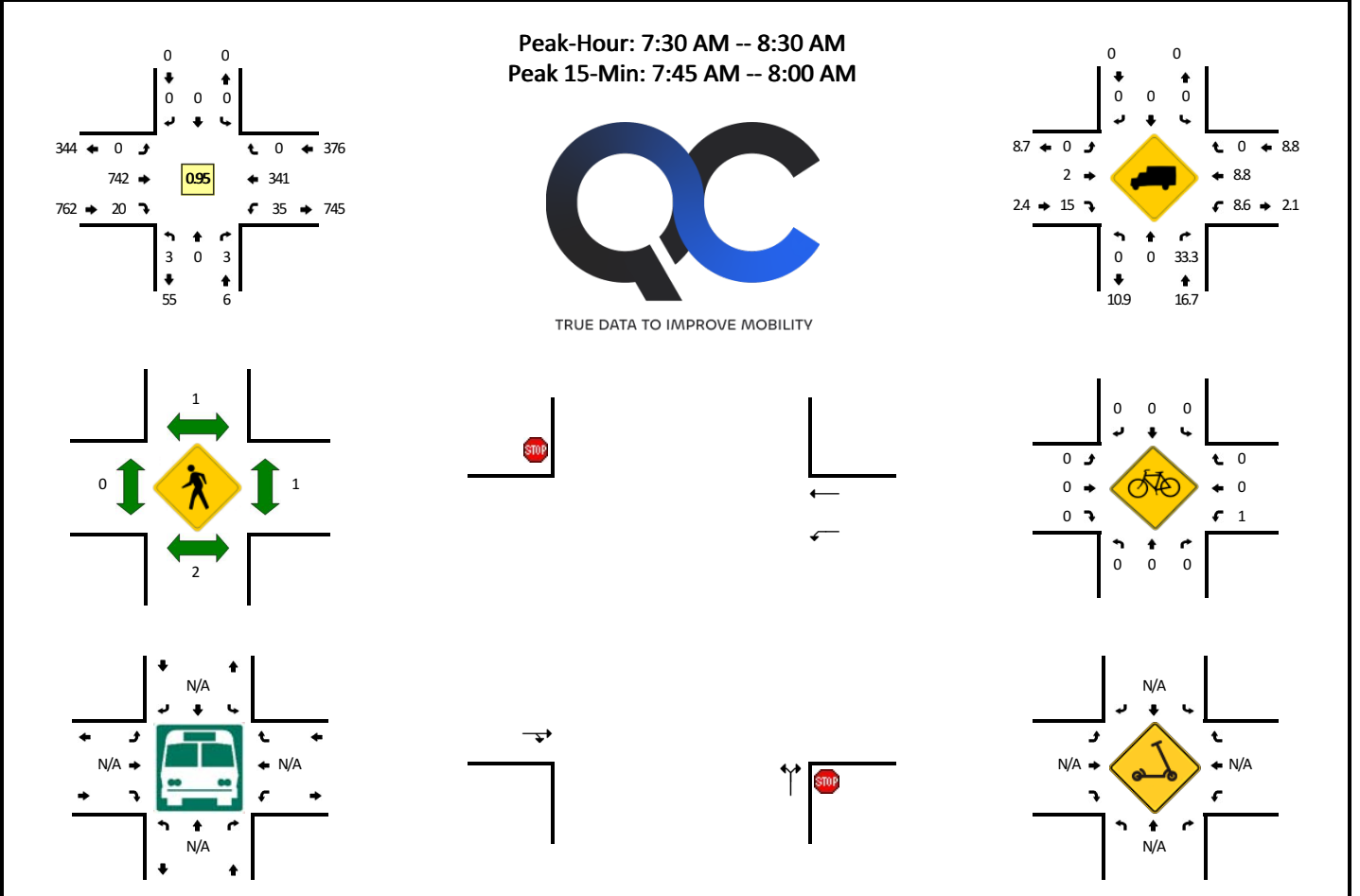


15-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	1	0	3	102	0	0	0	219	6	0	332	
4:15 PM	0	0	0	0	0	0	0	0	2	101	0	0	0	192	2	0	297	
4:30 PM	0	0	0	0	2	0	1	0	3	101	0	0	0	251	5	0	363	
4:45 PM	0	0	0	0	4	0	0	0	4	86	0	0	0	204	2	0	300	1292
5:00 PM	0	0	0	0	2	0	0	0	3	95	0	0	0	238	2	0	340	1300
5:15 PM	0	0	0	0	1	0	1	0	3	94	0	0	0	205	6	0	310	1313
5:30 PM	0	0	0	0	2	0	0	0	7	87	0	0	0	200	3	0	299	1249
5:45 PM	0	0	0	0	3	0	1	0	2	70	0	0	0	149	5	0	230	1179
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	8	0	4	0	12	404	0	0	0	1004	20	0	1452	
Heavy Trucks	0	0	0	0	0	0	0	0	0	12	0	0	0	12	4	0	28	
Buses																		
Pedestrians		0				4				0				4			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4	
Scooters																		

Comments:

LOCATION: SW 108th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573205
DATE: Tue, Apr 23 2024

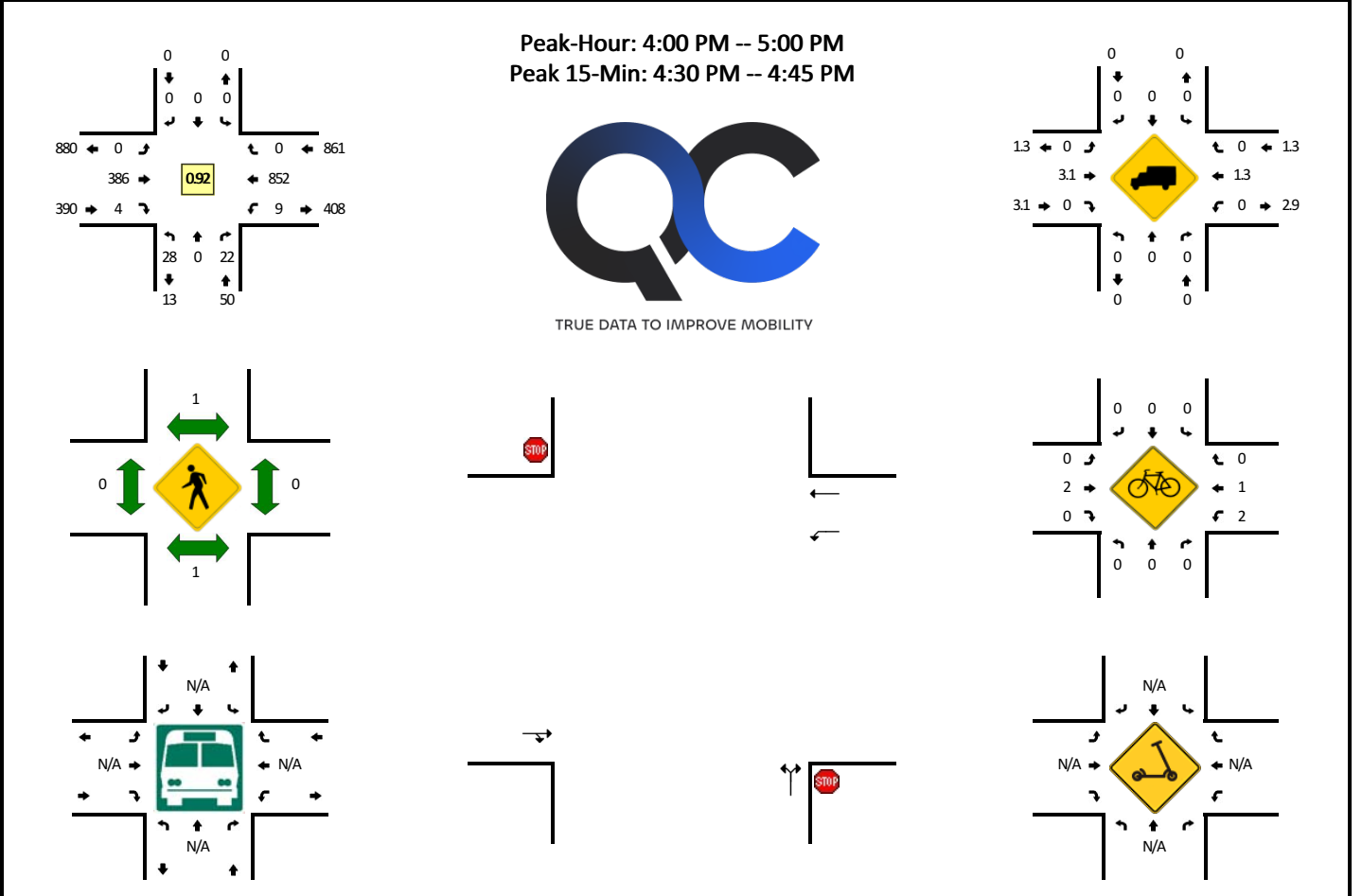


15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	1	0	0	0	0	0	0	117	3	0	5	36	0	0	163	
7:15 AM	3	0	2	0	0	0	0	0	0	152	5	0	5	39	0	0	206	
7:30 AM	0	0	1	0	0	0	0	0	0	205	3	0	7	74	0	0	290	
7:45 AM	1	0	0	0	0	0	0	0	0	196	4	0	13	86	0	0	300	959
8:00 AM	1	0	1	0	0	0	0	0	0	166	4	0	10	87	0	0	269	1065
8:15 AM	1	0	1	0	0	0	0	0	0	175	9	0	5	94	0	0	285	1144
8:30 AM	0	0	1	0	0	0	0	0	0	133	2	0	8	71	0	0	215	1069
8:45 AM	1	0	4	0	0	0	0	0	0	111	2	0	8	71	0	0	197	966
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	0	0	0	0	0	0	0	0	784	16	0	52	344	0	0	1200	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	24	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: SW 108th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573206
DATE: Tue, Apr 23 2024



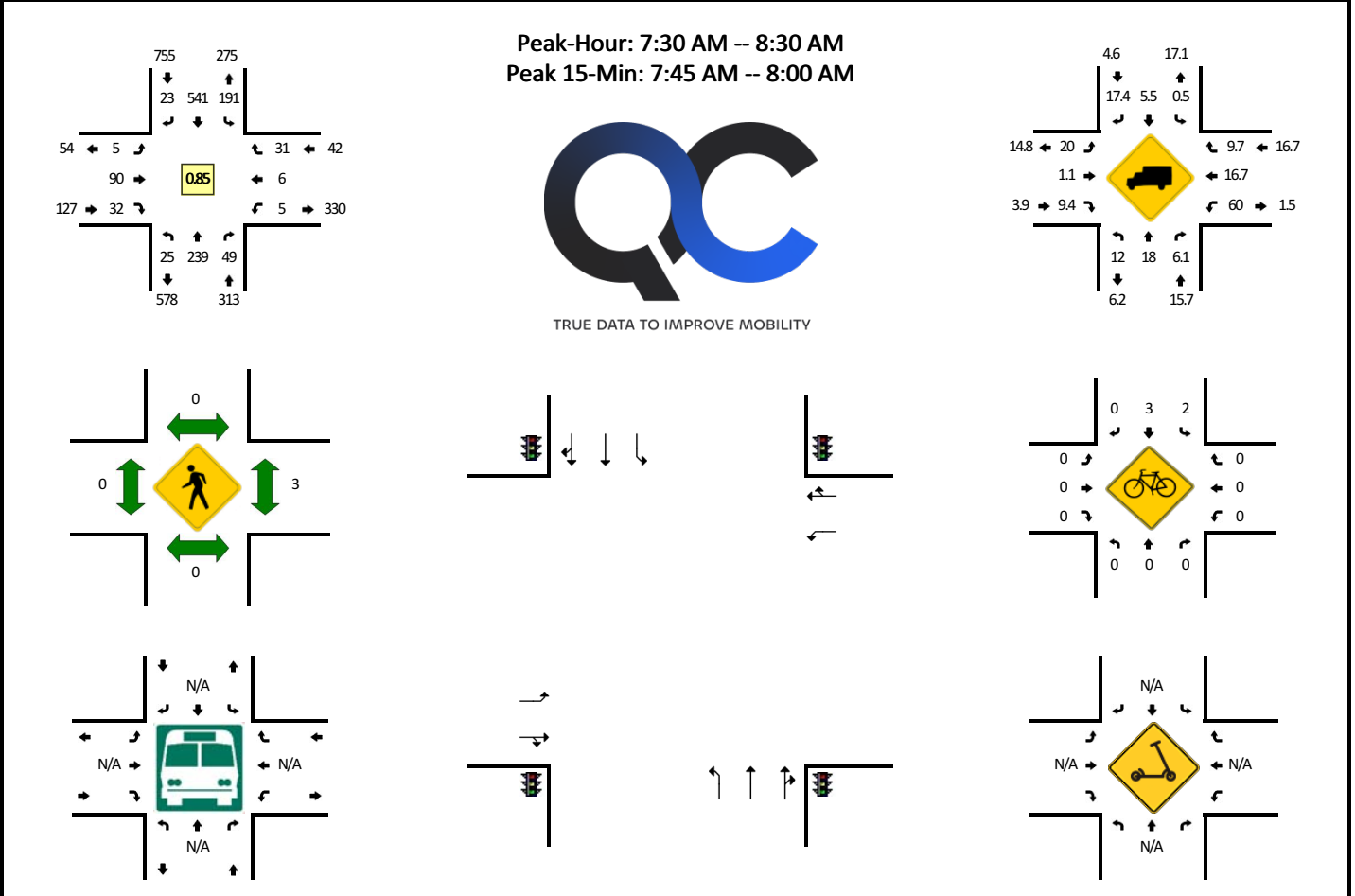
15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	0	4	0	0	0	0	0	0	80	2	0	3	248	0	0	344	
4:15 PM	5	0	3	0	0	0	0	0	0	99	0	0	2	200	0	0	309	
4:30 PM	12	0	11	0	0	0	0	0	0	103	1	0	0	225	0	0	352	
4:45 PM	4	0	4	0	0	0	0	0	0	104	1	0	4	179	0	0	296	1301
5:00 PM	14	0	9	0	0	0	0	0	0	83	1	0	0	220	0	0	327	1284
5:15 PM	4	0	2	0	0	0	0	0	0	72	2	0	2	230	0	0	312	1287
5:30 PM	5	0	5	0	0	0	0	0	0	98	2	0	1	199	0	0	310	1245
5:45 PM	7	0	4	0	0	0	0	0	0	88	3	0	0	132	0	0	234	1183

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	48	0	44	0	0	0	0	0	0	412	4	0	0	900	0	0	1408
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	12	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scoters																	

Comments:

LOCATION: SW 124th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573207
DATE: Tue, Apr 23 2024

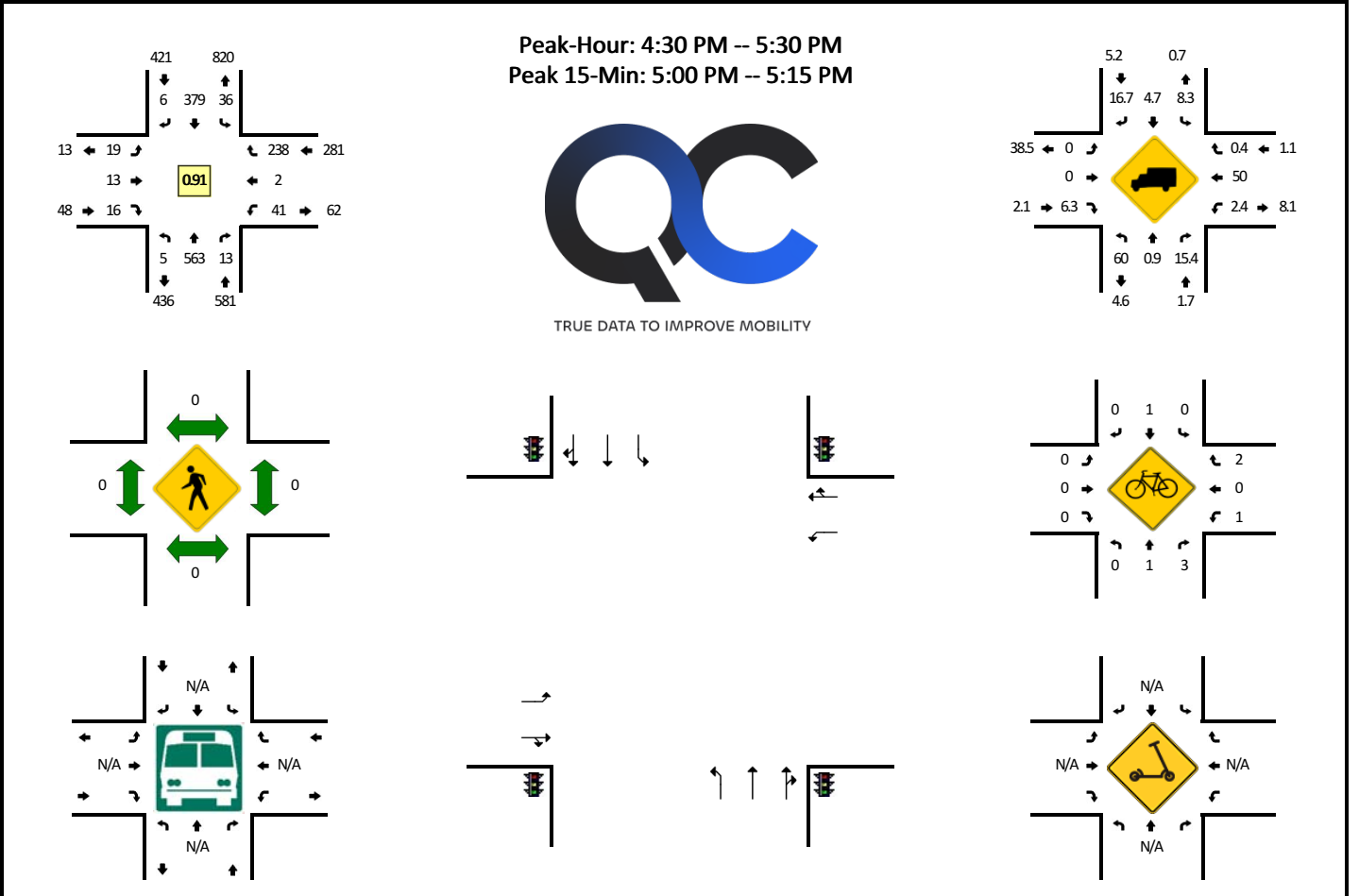


15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	38	9	0	29	83	5	0	6	7	3	0	2	0	7	0	199	
7:15 AM	6	50	4	0	33	125	9	0	4	10	10	0	1	2	5	0	259	
7:30 AM	4	55	6	0	42	130	5	0	4	27	9	0	2	1	10	0	295	
7:45 AM	9	61	14	0	54	175	5	0	0	27	9	0	1	2	6	0	363	1116
8:00 AM	9	66	18	0	51	119	8	0	1	25	6	0	2	2	12	0	319	1236
8:15 AM	3	57	11	0	44	117	5	0	0	11	8	0	0	1	3	0	260	1237
8:30 AM	4	53	8	0	41	138	6	0	2	9	6	0	3	2	2	0	274	1216
8:45 AM	6	67	9	0	57	111	10	0	1	10	7	0	2	1	1	0	282	1135
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	36	244	56	0	216	700	20	0	0	108	36	0	4	8	24	0	1452	
Heavy Trucks	0	52	4		0	28	4		0	0	4		4	0	4		100	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4	
Scoters																		

Comments:

LOCATION: SW 124th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573208
DATE: Tue, Apr 23 2024



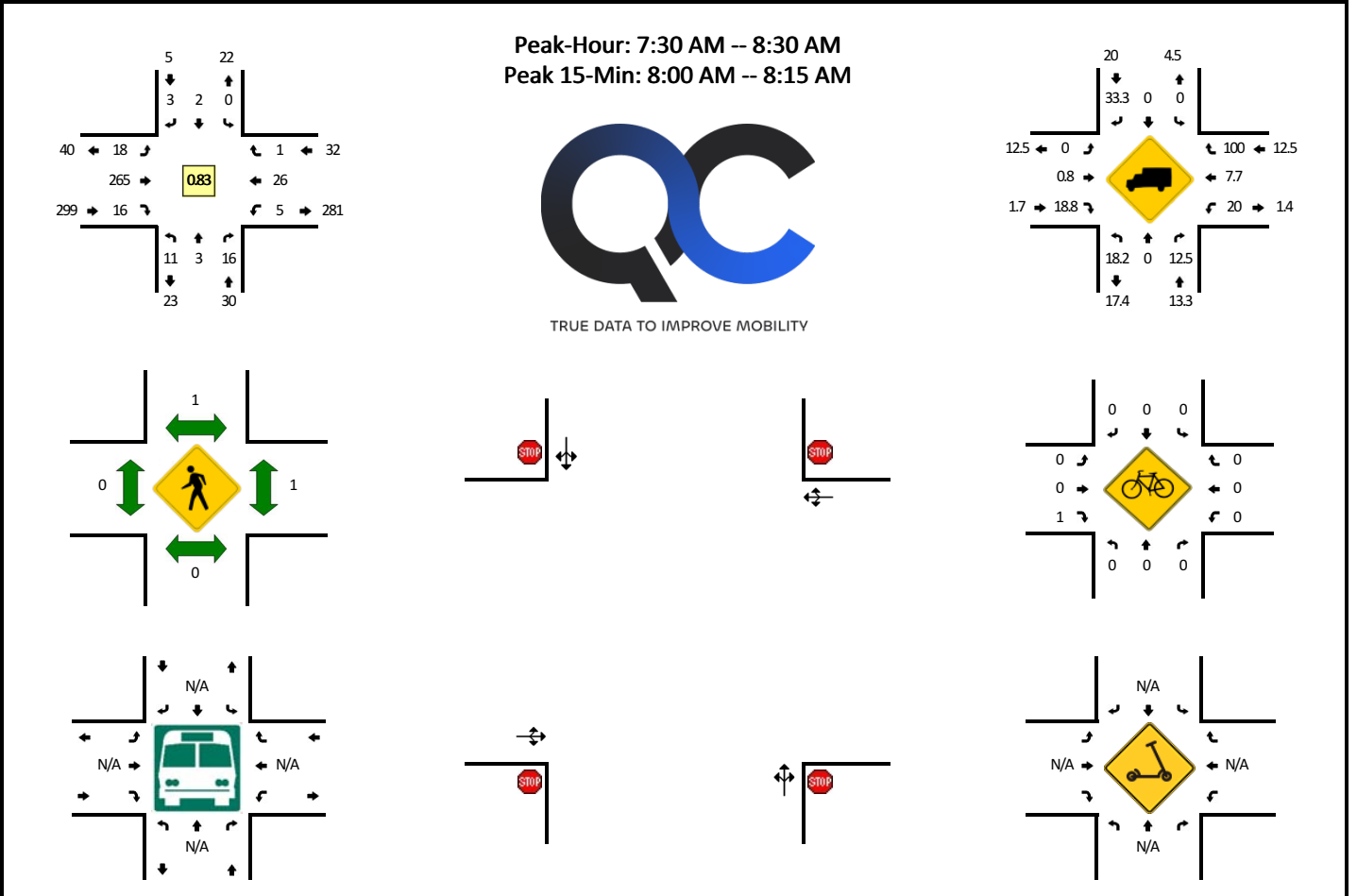
15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	195	3	0	4	61	3	0	7	4	12	0	8	1	54	0	354	
4:15 PM	4	120	4	0	5	87	6	0	5	4	6	0	5	0	41	0	287	
4:30 PM	2	161	4	0	10	94	1	0	4	4	6	0	8	0	45	0	339	
4:45 PM	1	133	5	0	10	84	2	0	7	1	3	0	9	1	43	0	299	1279
5:00 PM	1	131	2	0	9	112	2	0	4	5	1	0	13	1	84	0	365	1290
5:15 PM	1	138	2	0	7	89	1	0	4	3	6	0	11	0	66	0	328	1331
5:30 PM	0	120	0	0	7	53	1	0	5	1	3	0	11	0	59	0	260	1252
5:45 PM	0	108	1	0	5	84	2	0	3	2	2	0	4	0	38	0	249	1202

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	524	8	0	36	448	8	0	16	20	4	0	52	4	336	0	1460
Heavy Trucks	0	4	0		4	16	0		0	0	0		0	0	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scoters																	

Comments:

LOCATION: SW 118th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573209
DATE: Tue, Apr 23 2024

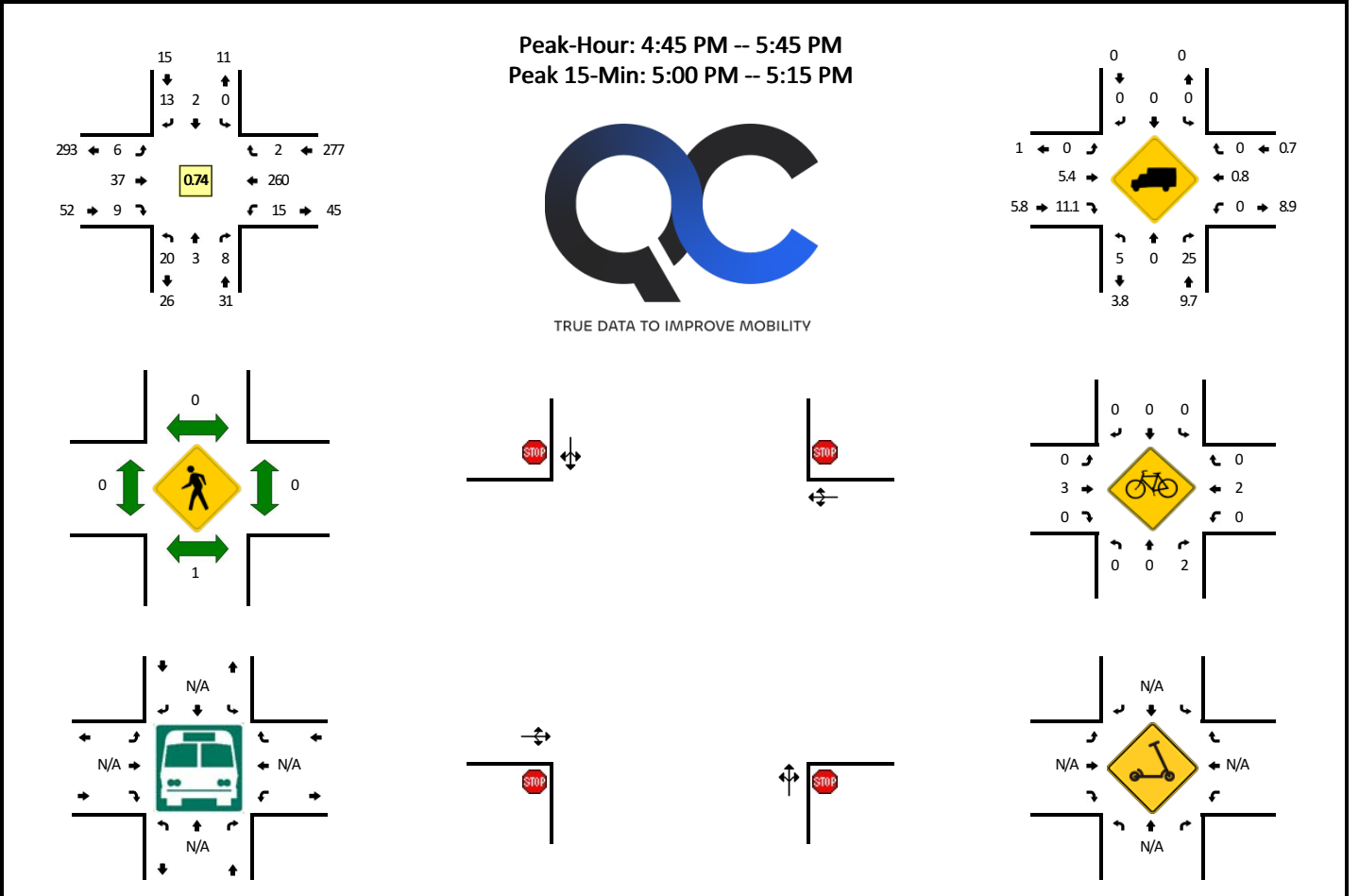


15-Min Count Period Beginning At	SW 118th Ave (Northbound)				SW 118th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	2	0	0	0	0	0	2	34	6	0	4	8	1	0	58	
7:15 AM	1	2	5	0	0	1	2	0	2	37	6	0	0	5	4	0	65	
7:30 AM	3	2	2	0	0	1	0	0	7	47	7	0	2	11	0	0	82	
7:45 AM	2	1	3	0	0	0	0	0	4	75	3	0	1	6	1	0	96	301
8:00 AM	5	0	3	0	0	1	1	0	2	85	4	0	1	8	0	0	110	353
8:15 AM	1	0	8	0	0	0	2	0	5	58	2	0	1	1	0	0	78	366
8:30 AM	0	0	1	0	0	0	0	0	2	52	3	0	1	6	0	0	65	349
8:45 AM	1	0	1	0	0	0	0	0	2	68	1	0	0	5	1	0	79	332
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	20	0	12	0	0	4	4	0	8	340	16	0	4	32	0	0	440	
Heavy Trucks	4	0	4		0	0	0		0	8	4		0	4	0		24	
Buses																		
Pedestrians		0				4				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	4		0	0	0		4	
Scooters																		

Comments:

LOCATION: SW 118th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573210
DATE: Tue, Apr 23 2024

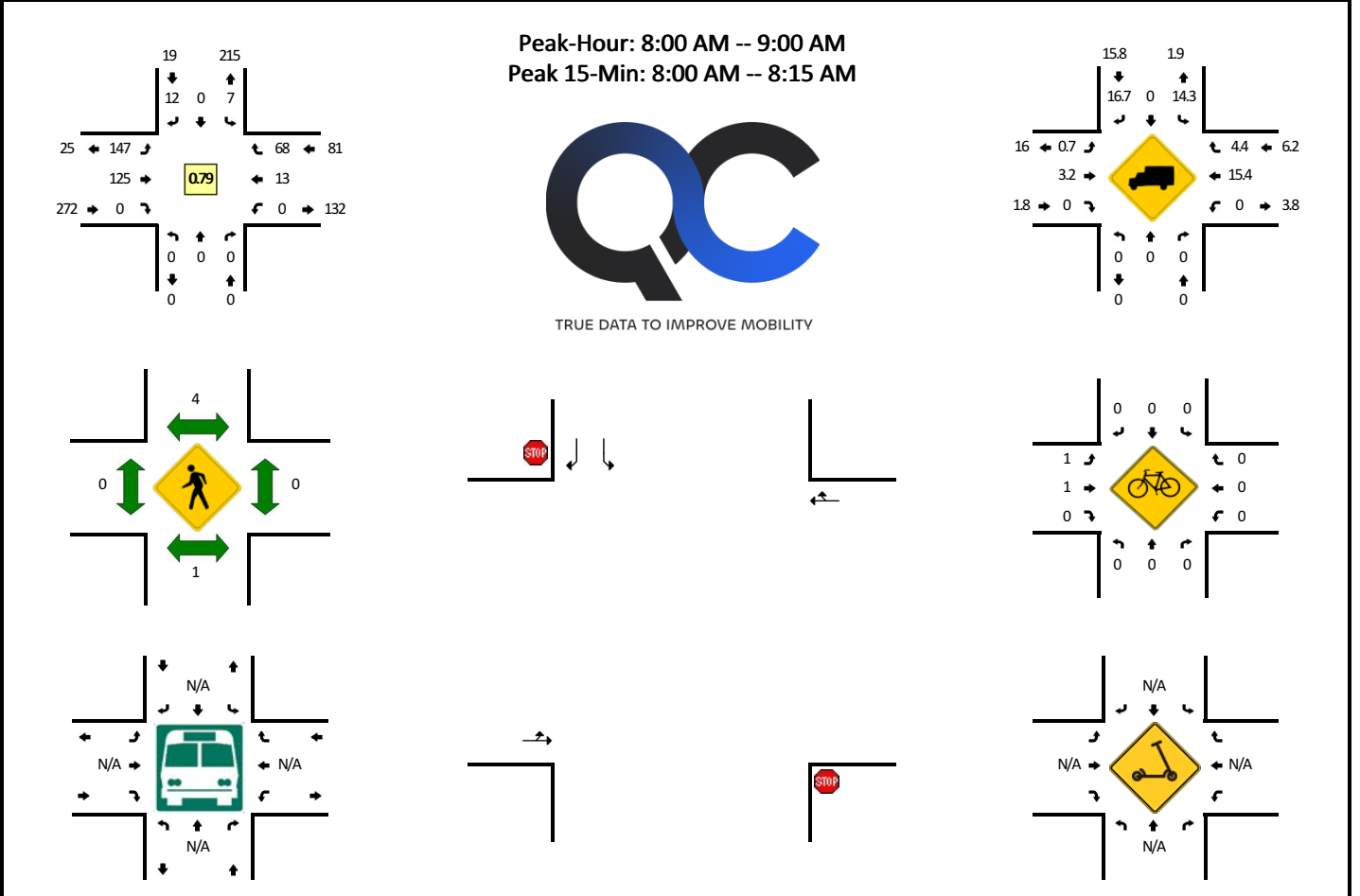


15-Min Count Period Beginning At	SW 118th Ave (Northbound)				SW 118th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	1	0	0	2	1	5	0	0	7	1	0	2	49	0	0	78	
4:15 PM	9	0	1	0	0	2	4	0	1	13	0	0	1	30	1	0	62	
4:30 PM	7	0	2	0	0	1	1	0	0	15	6	0	4	41	0	0	77	
4:45 PM	3	1	2	0	0	0	5	0	0	11	3	0	3	43	2	0	73	290
5:00 PM	10	1	2	0	0	1	3	0	1	15	0	0	4	89	0	0	126	338
5:15 PM	1	0	2	0	0	1	1	0	3	6	3	0	3	69	0	0	89	365
5:30 PM	6	1	2	0	0	0	4	0	2	5	3	0	5	59	0	0	87	375
5:45 PM	3	0	3	0	0	2	2	0	2	6	3	0	3	32	0	0	56	358
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	40	4	8	0	0	4	12	0	4	60	0	0	16	356	0	0	504	
Heavy Trucks	0	0	4	0	0	0	0	0	0	4	0	0	0	0	0	0	8	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	4		0	0	0		0	0	0		0	4	0		8	
Scoters																		

Comments:

LOCATION: West LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573211
DATE: Tue, Apr 23 2024



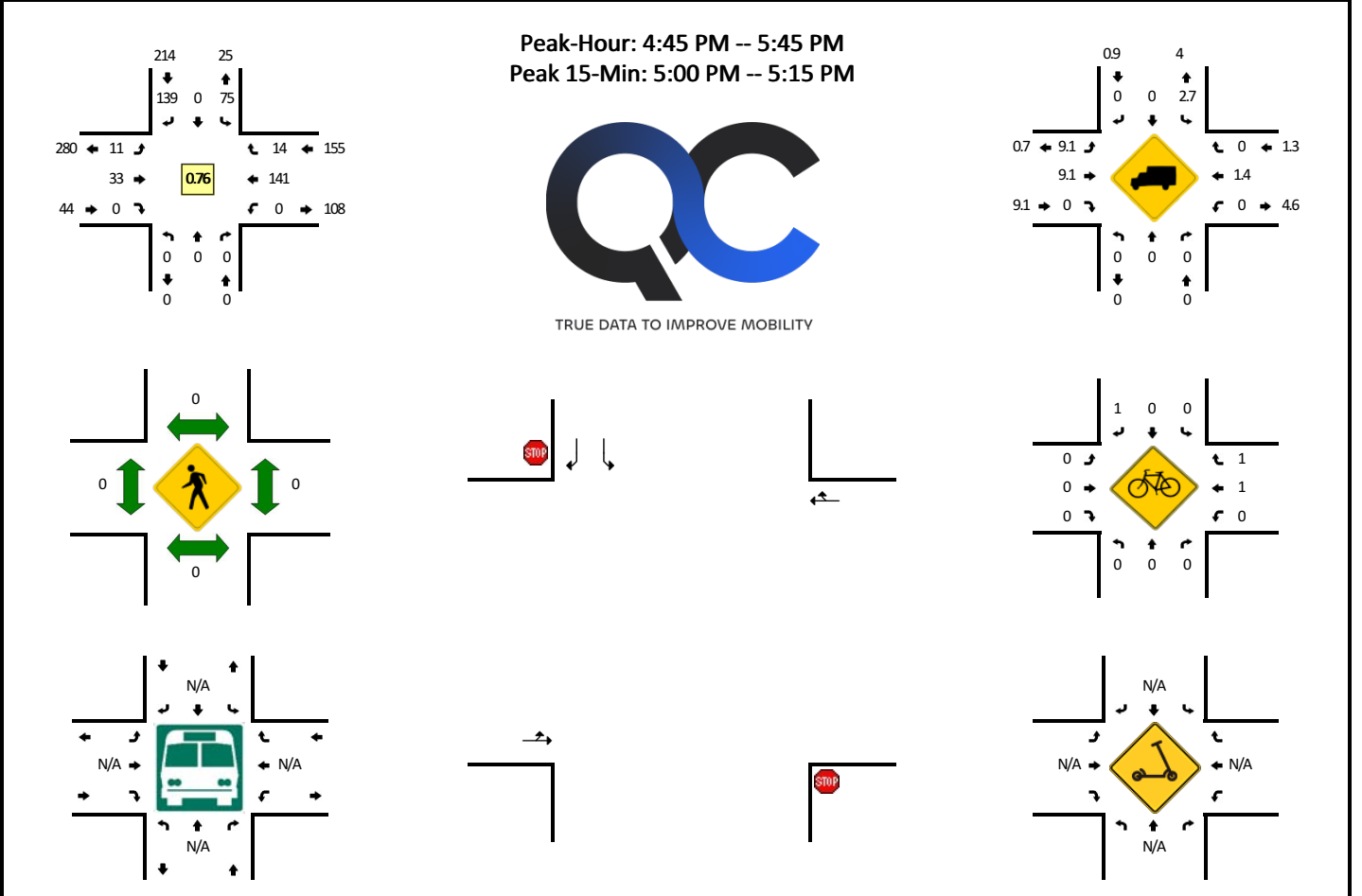
15-Min Count Period Beginning At	West LAM Access (Northbound)				West LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	7	0	15	25	0	0	0	6	11	0	64	
7:15 AM	0	0	0	0	0	0	3	0	21	20	0	0	0	6	7	0	57	
7:30 AM	0	0	0	0	3	0	4	0	14	34	0	0	0	10	12	0	77	
7:45 AM	0	0	0	0	0	0	3	0	29	50	0	0	0	4	13	0	99	297
8:00 AM	0	0	0	0	2	0	4	0	40	44	0	0	0	5	23	0	118	351
8:15 AM	0	0	0	0	1	0	1	0	42	26	0	0	0	1	19	0	90	384
8:30 AM	0	0	0	0	2	0	3	0	25	24	0	0	0	4	12	0	70	377
8:45 AM	0	0	0	0	2	0	4	0	40	31	0	0	0	3	14	0	94	372

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	8	0	16	0	160	176	0	0	0	20	92	0	472
Heavy Trucks	0	0	0	0	0	0	4	0	4	8	0	0	0	0	0	0	16
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scoters																	

Comments:

LOCATION: West LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573212
DATE: Tue, Apr 23 2024

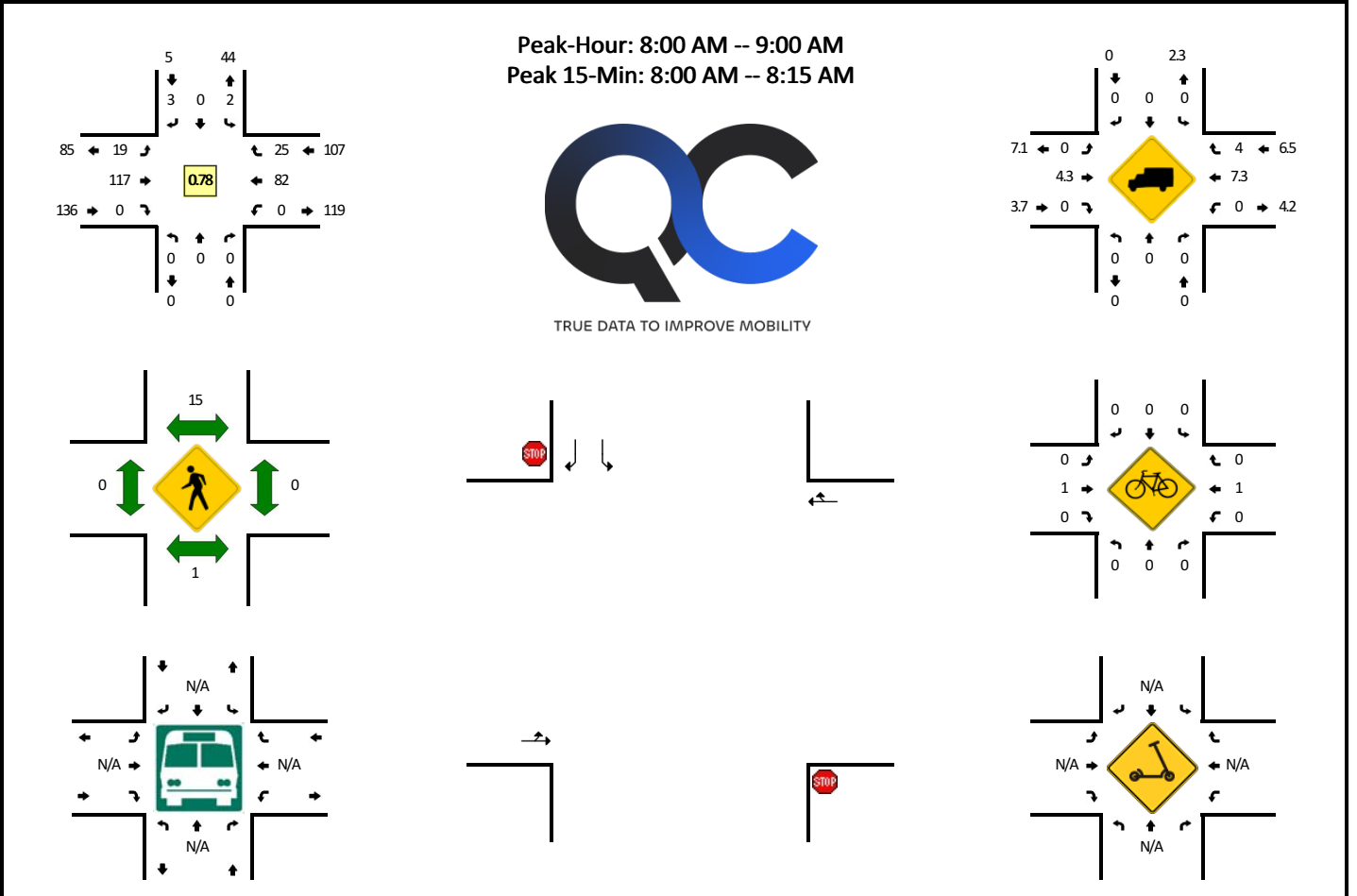


15-Min Count Period Beginning At	West LAM Access (Northbound)				West LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	7	0	28	0	2	7	0	0	0	25	4	0	73	
4:15 PM	0	0	0	0	9	0	17	0	5	9	0	0	0	12	4	0	56	
4:30 PM	0	0	0	0	12	0	20	0	5	12	0	0	0	25	2	0	76	
4:45 PM	0	0	0	0	9	0	23	0	6	8	0	0	0	24	7	0	77	282
5:00 PM	0	0	0	0	18	0	45	0	3	14	0	0	0	51	5	0	136	345
5:15 PM	0	0	0	0	27	0	35	0	1	7	0	0	0	34	1	0	105	394
5:30 PM	0	0	0	0	21	0	36	0	1	4	0	0	0	32	1	0	95	413
5:45 PM	0	0	0	0	15	0	16	0	2	8	0	0	0	16	0	0	57	393
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	72	0	180	0	12	56	0	0	0	204	20	0	544	
Heavy Trucks	0	0	0	0	4	0	0	0	4	4	0	0	0	0	0	0	12	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4	
Scoters																		

Comments:

LOCATION: Center LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573213
DATE: Tue, Apr 23 2024

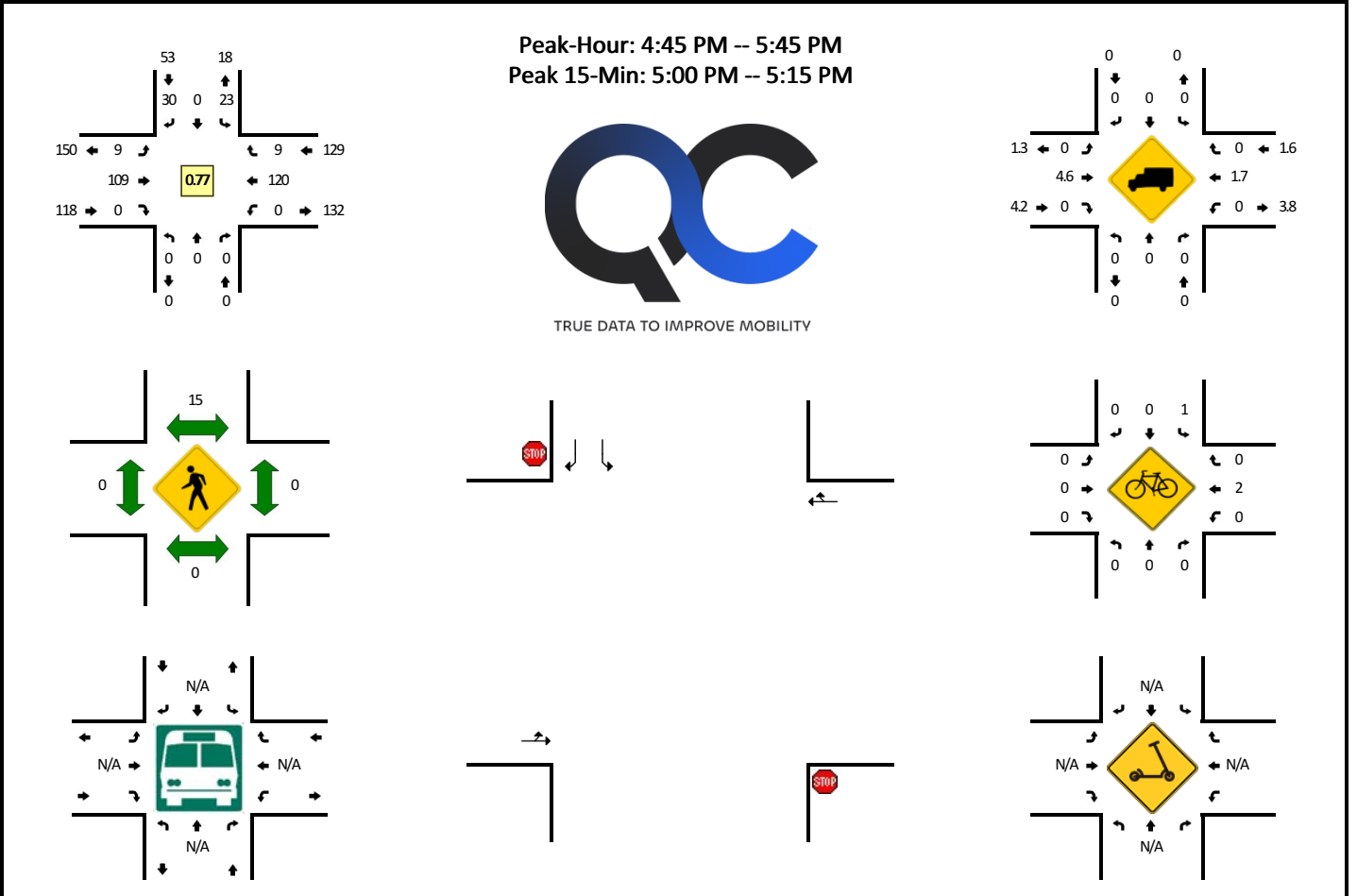


15-Min Count Period Beginning At	Center LAM Access (Northbound)				Center LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	6	0	2	0	6	22	0	0	0	15	4	0	55	
7:15 AM	0	0	0	0	5	0	0	0	3	19	0	0	0	15	1	0	43	
7:30 AM	0	0	0	0	2	0	4	0	6	33	0	0	0	18	2	0	65	
7:45 AM	0	0	0	0	1	0	1	0	8	42	0	0	0	18	7	0	77	240
8:00 AM	0	0	0	0	0	0	3	0	5	41	0	0	0	24	6	0	79	264
8:15 AM	0	0	0	0	1	0	0	0	6	21	0	0	0	23	3	0	54	275
8:30 AM	0	0	0	0	1	0	0	0	3	24	0	0	0	15	7	0	50	260
8:45 AM	0	0	0	0	0	0	0	0	5	31	0	0	0	20	9	0	65	248
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	0	0	12	0	20	164	0	0	0	96	24	0	316	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	
Buses																		
Pedestrians		4				4				0				0			8	
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4	
Scoters																		

Comments:

LOCATION: Center LAM Access -- SW Leveton Drive
CITY/STATE: Tualatin, OR

QC JOB #: 16573214
DATE: Tue, Apr 23 2024



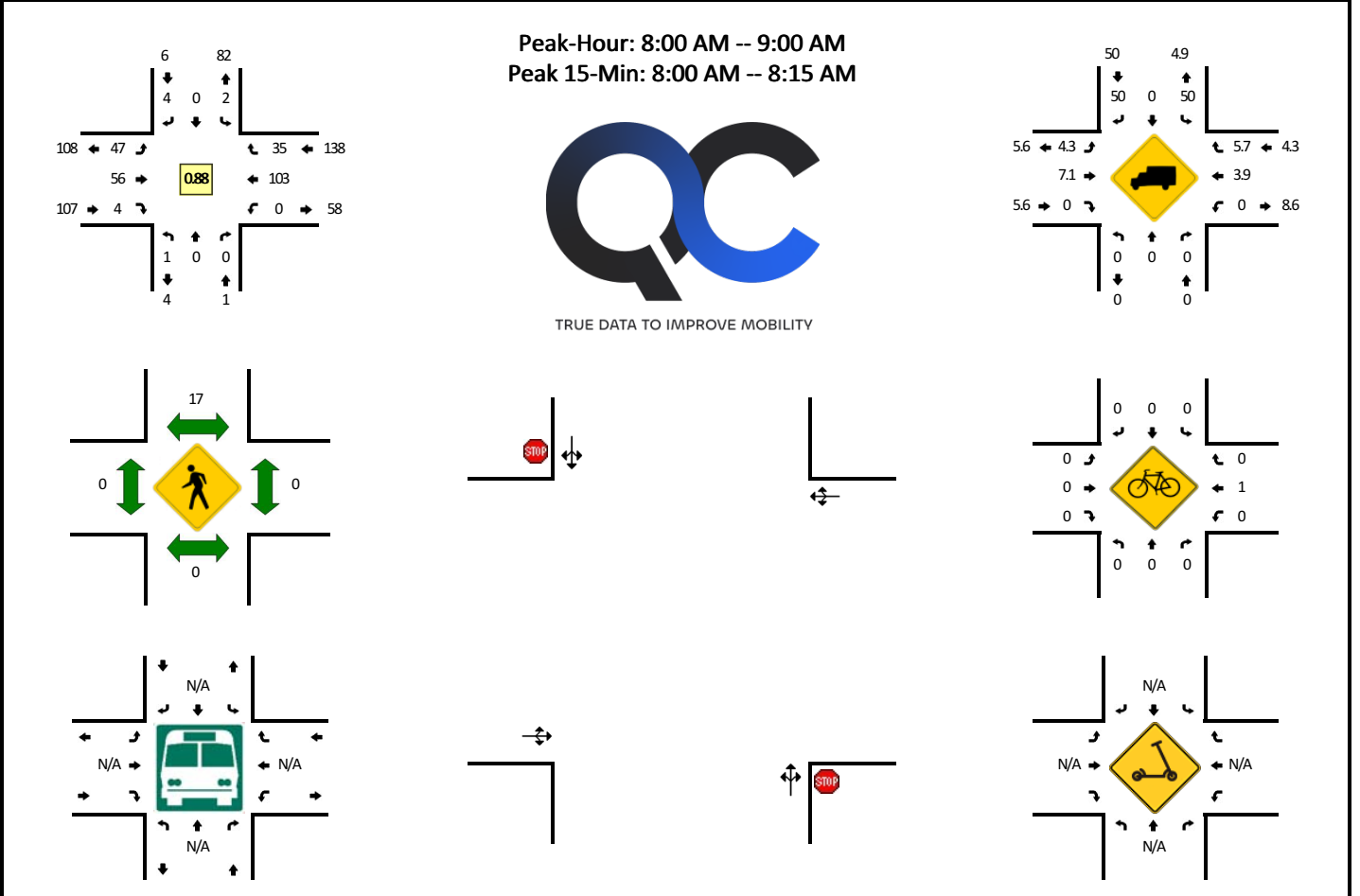
15-Min Count Period Beginning At	Center LAM Access (Northbound)				Center LAM Access (Southbound)				SW Leveton Drive (Eastbound)				SW Leveton Drive (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	7	0	0	14	0	0	0	21	1	0	46	
4:15 PM	0	0	0	0	3	0	5	0	2	13	0	0	0	12	3	0	38	
4:30 PM	0	0	0	0	5	0	4	0	1	24	0	0	0	16	3	0	53	
4:45 PM	0	0	0	0	3	0	8	0	3	16	0	0	0	23	3	0	56	193
5:00 PM	0	0	0	0	6	0	6	0	4	30	0	0	0	48	3	0	97	244
5:15 PM	0	0	0	0	7	0	12	0	2	35	0	0	0	22	2	0	80	286
5:30 PM	0	0	0	0	7	0	4	0	0	28	0	0	0	27	1	0	67	300
5:45 PM	0	0	0	0	4	0	2	0	0	24	0	0	0	13	3	0	46	290

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	24	0	24	0	16	120	0	0	0	192	12	0	388
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

LOCATION: East LAM Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573221
DATE: Tue, Apr 23 2024



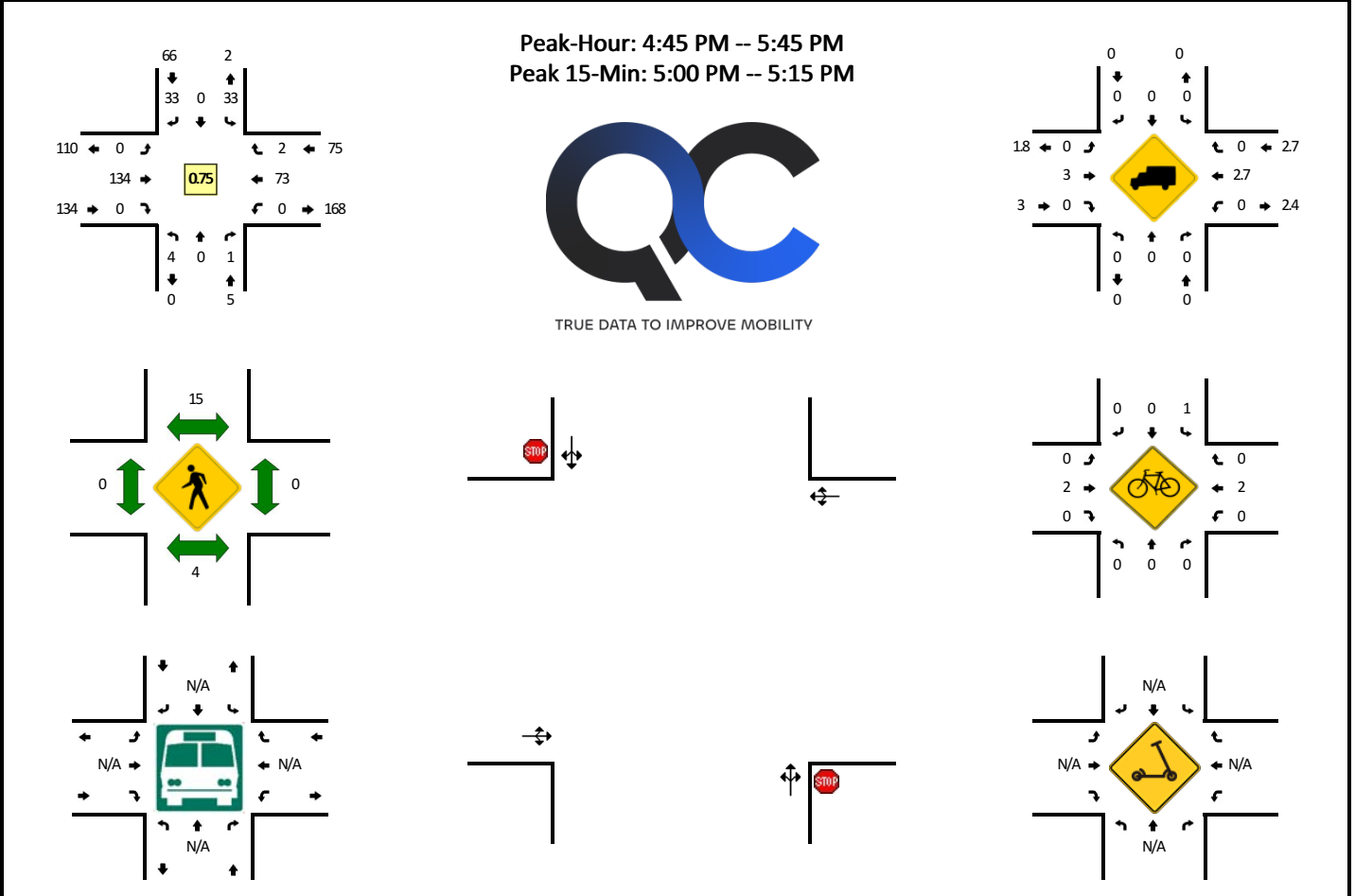
15-Min Count Period Beginning At	East LAM Access (Northbound)				East LAM Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	20	3	0	0	22	4	0	50	
7:15 AM	0	0	0	0	0	0	0	0	0	24	1	0	0	15	5	0	45	
7:30 AM	0	0	0	0	1	0	1	0	5	18	1	0	0	22	4	0	52	
7:45 AM	0	0	0	0	0	0	0	0	9	31	0	0	0	33	8	0	81	228
8:00 AM	0	0	0	0	2	0	0	0	16	19	1	0	0	28	6	0	72	250
8:15 AM	1	0	0	0	0	0	0	0	4	18	0	0	0	26	8	0	57	262
8:30 AM	0	0	0	0	0	0	1	0	10	10	3	0	0	22	7	0	53	263
8:45 AM	0	0	0	0	0	0	3	0	17	9	0	0	0	27	14	0	70	252

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	8	0	0	0	64	76	4	0	0	112	24	0	288
Heavy Trucks	0	0	0	0	4	0	0	0	4	8	0	0	0	0	4	0	20
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scoters																	

Comments:

LOCATION: East LAM Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573222
DATE: Tue, Apr 23 2024



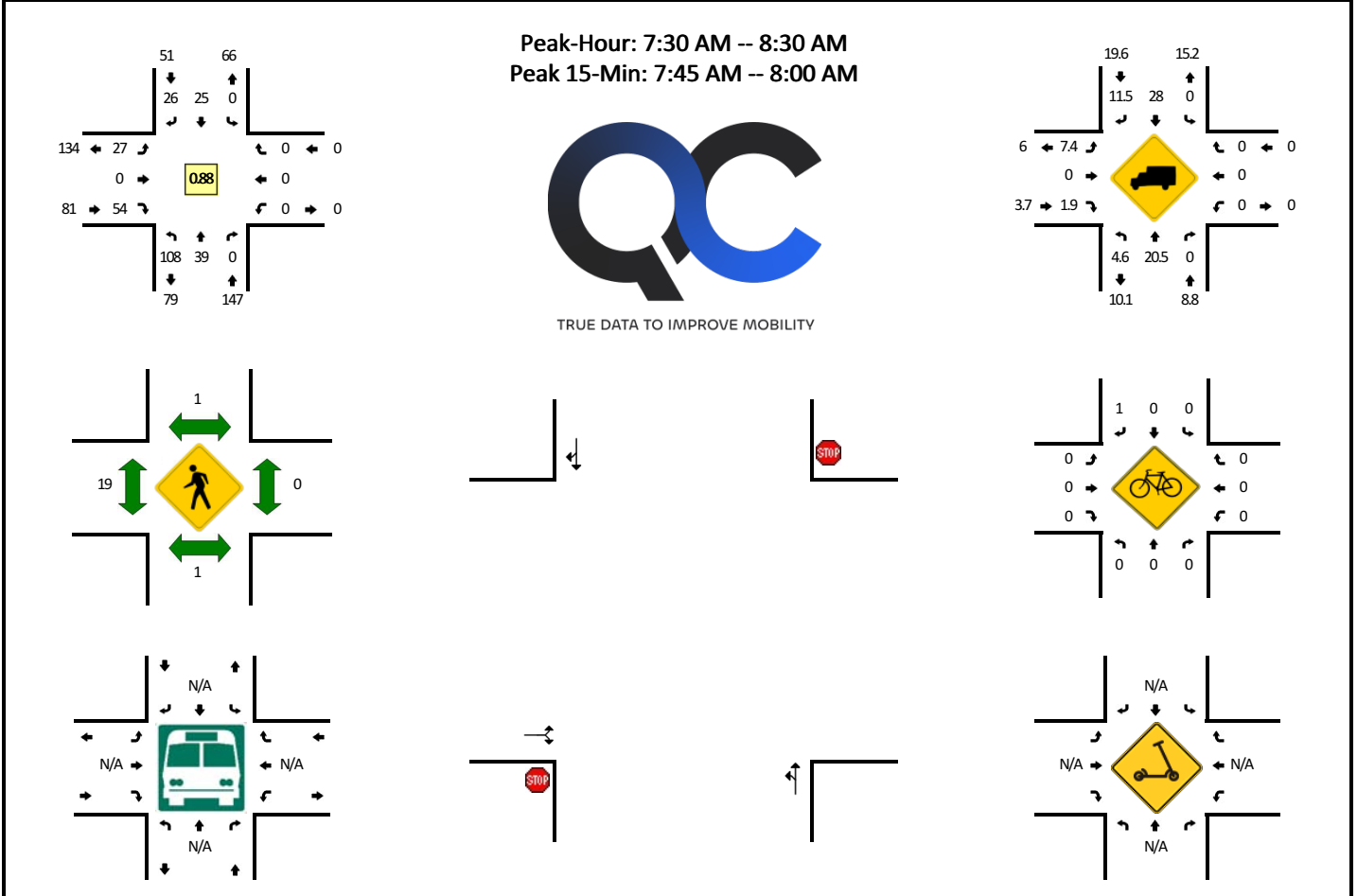
15-Min Count Period Beginning At	East LAM Access (Northbound)				East LAM Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	6	0	7	0	0	19	0	0	0	13	1	0	46	
4:15 PM	0	0	0	0	3	0	3	0	0	19	1	0	0	12	0	0	38	
4:30 PM	1	0	0	0	5	0	3	0	0	28	0	0	0	14	0	0	51	
4:45 PM	1	0	0	0	6	0	5	0	0	21	0	0	0	18	1	0	52	187
5:00 PM	3	0	0	0	12	0	13	0	0	35	0	0	0	30	0	0	93	234
5:15 PM	0	0	1	0	6	0	7	0	0	41	0	0	0	13	0	0	68	264
5:30 PM	0	0	0	0	9	0	8	0	0	37	0	0	0	12	1	0	67	280
5:45 PM	0	0	1	0	13	0	8	0	0	27	0	0	0	6	0	0	55	283

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	0	0	0	48	0	52	0	0	140	0	0	0	120	0	0	372
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
Buses																	
Pedestrians		4				12				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	8	0		8
Scoters																	

Comments:

LOCATION: SW 108th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573215
DATE: Tue, Apr 23 2024

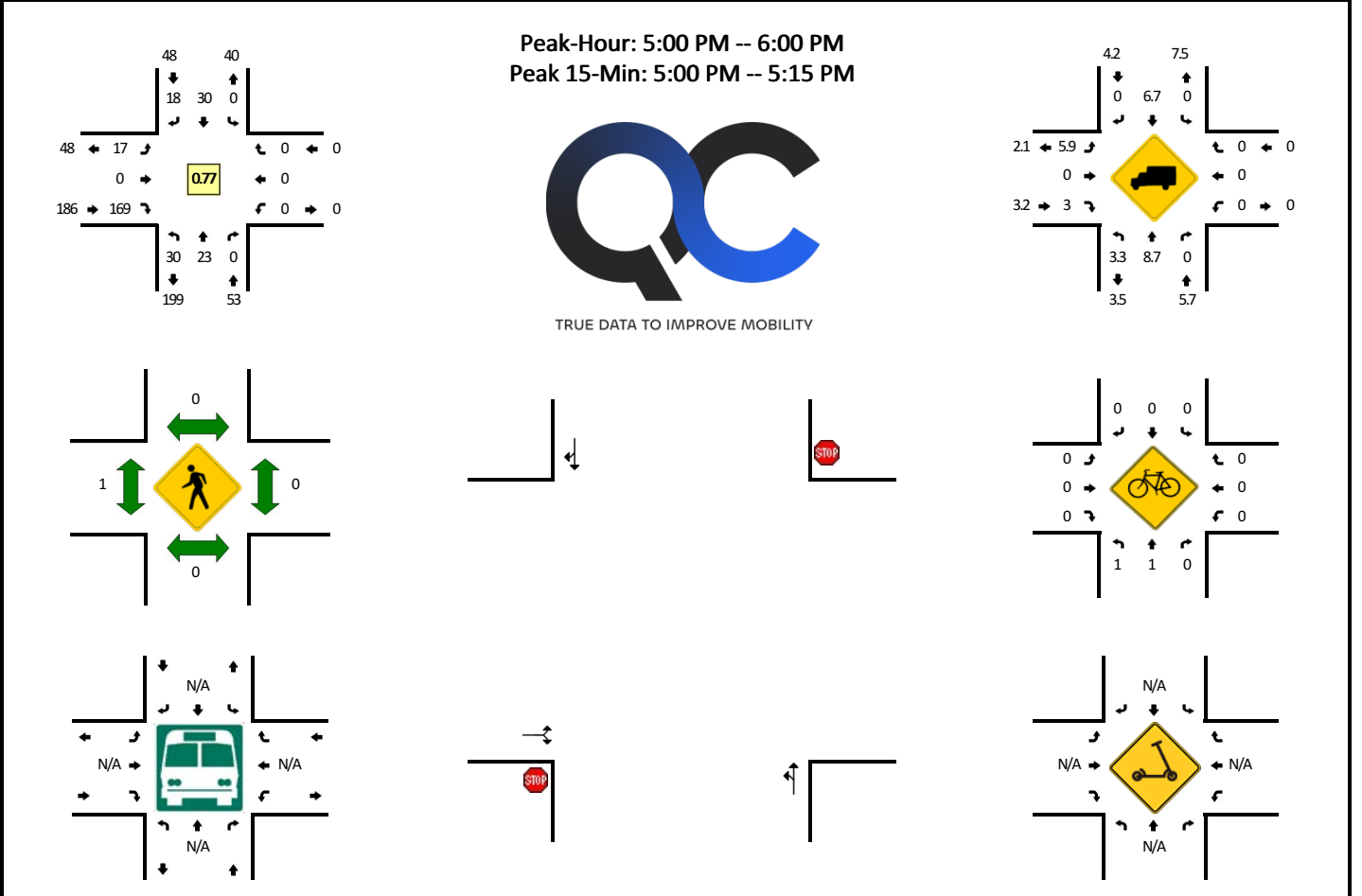


15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	23	3	0	0	0	5	4	0	6	0	12	0	0	0	0	0	53	
7:15 AM	17	9	0	0	0	6	4	0	7	0	15	0	0	0	0	0	58	
7:30 AM	24	11	0	0	0	5	3	0	2	0	17	0	0	0	0	0	62	
7:45 AM	28	10	0	0	0	4	11	0	13	0	13	0	0	0	0	0	79	252
8:00 AM	30	12	0	0	0	5	7	0	7	0	13	0	0	0	0	0	74	273
8:15 AM	26	6	0	0	0	11	5	0	5	0	11	0	0	0	0	0	64	279
8:30 AM	24	3	0	0	0	5	8	0	3	0	4	0	0	0	0	0	47	264
8:45 AM	29	7	0	0	0	4	8	0	5	0	3	0	0	0	0	0	56	241
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	112	40	0	0	0	16	44	0	52	0	52	0	0	0	0	0	316	
Heavy Trucks	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
Buses																		
Pedestrians		0				0				32				0			32	
Bicycles	0	0	0		0	0	4		0	0	0		0	0	0		4	
Scoters																		

Comments:

LOCATION: SW 108th Ave -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 16573216
DATE: Tue, Apr 23 2024



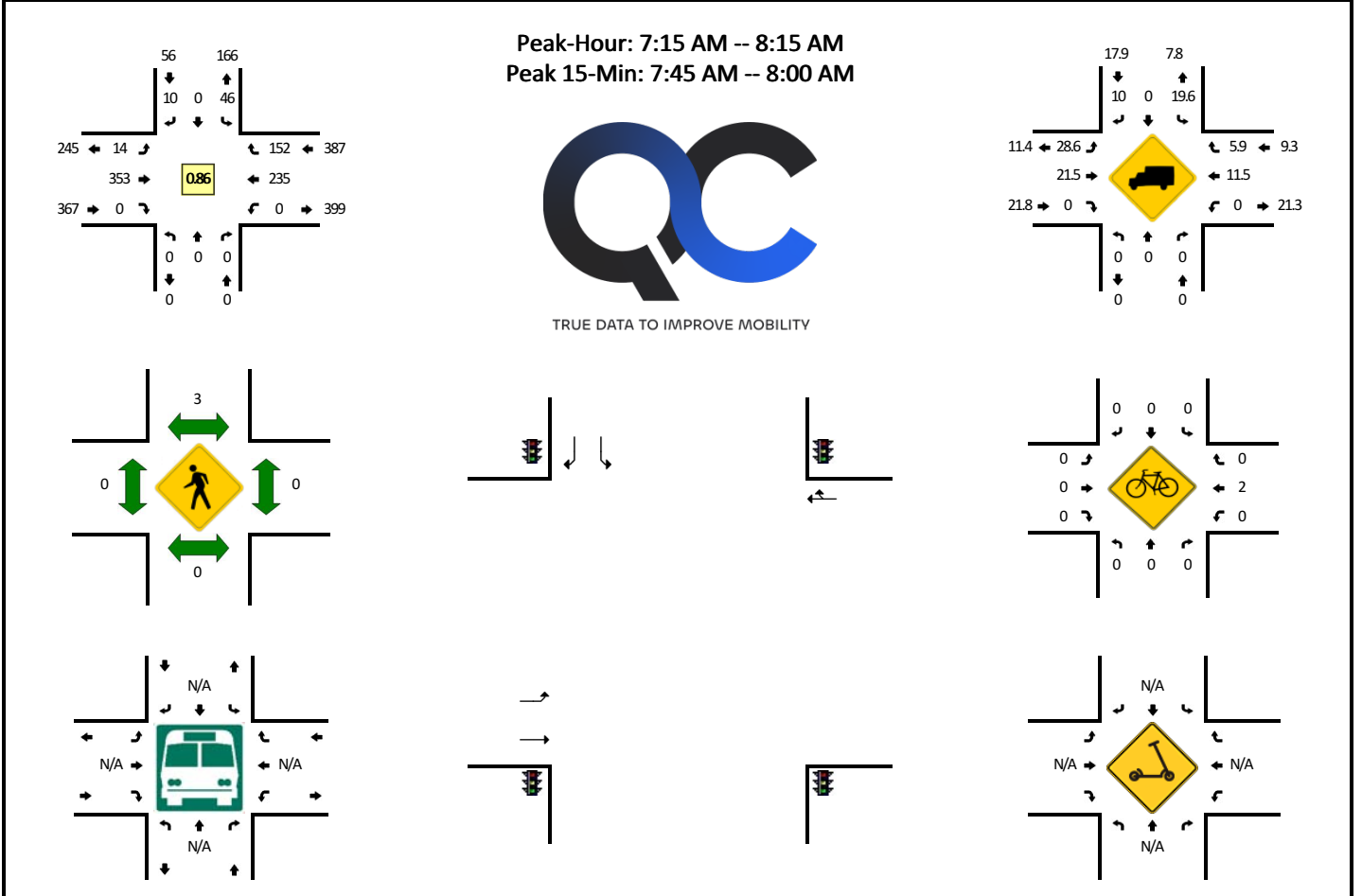
15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	5	0	0	0	14	4	0	2	0	23	0	0	0	0	0	56	
4:15 PM	8	2	0	0	0	5	2	0	2	0	21	0	0	0	0	0	40	
4:30 PM	9	8	0	0	0	6	3	0	5	0	29	0	0	0	0	0	60	
4:45 PM	14	5	0	0	0	6	4	0	3	0	23	0	0	0	0	0	55	211
5:00 PM	15	10	0	0	0	10	10	0	6	0	42	0	0	0	0	0	93	248
5:15 PM	6	5	0	0	0	9	2	0	1	0	46	0	0	0	0	0	69	277
5:30 PM	6	3	0	0	0	4	4	0	4	0	46	0	0	0	0	0	67	284
5:45 PM	3	5	0	0	0	7	2	0	6	0	35	0	0	0	0	0	58	287

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	60	40	0	0	0	40	40	0	24	0	168	0	0	0	0	0	372
Heavy Trucks	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	8
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

LOCATION: SW 108th Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573217
DATE: Tue, Apr 23 2024

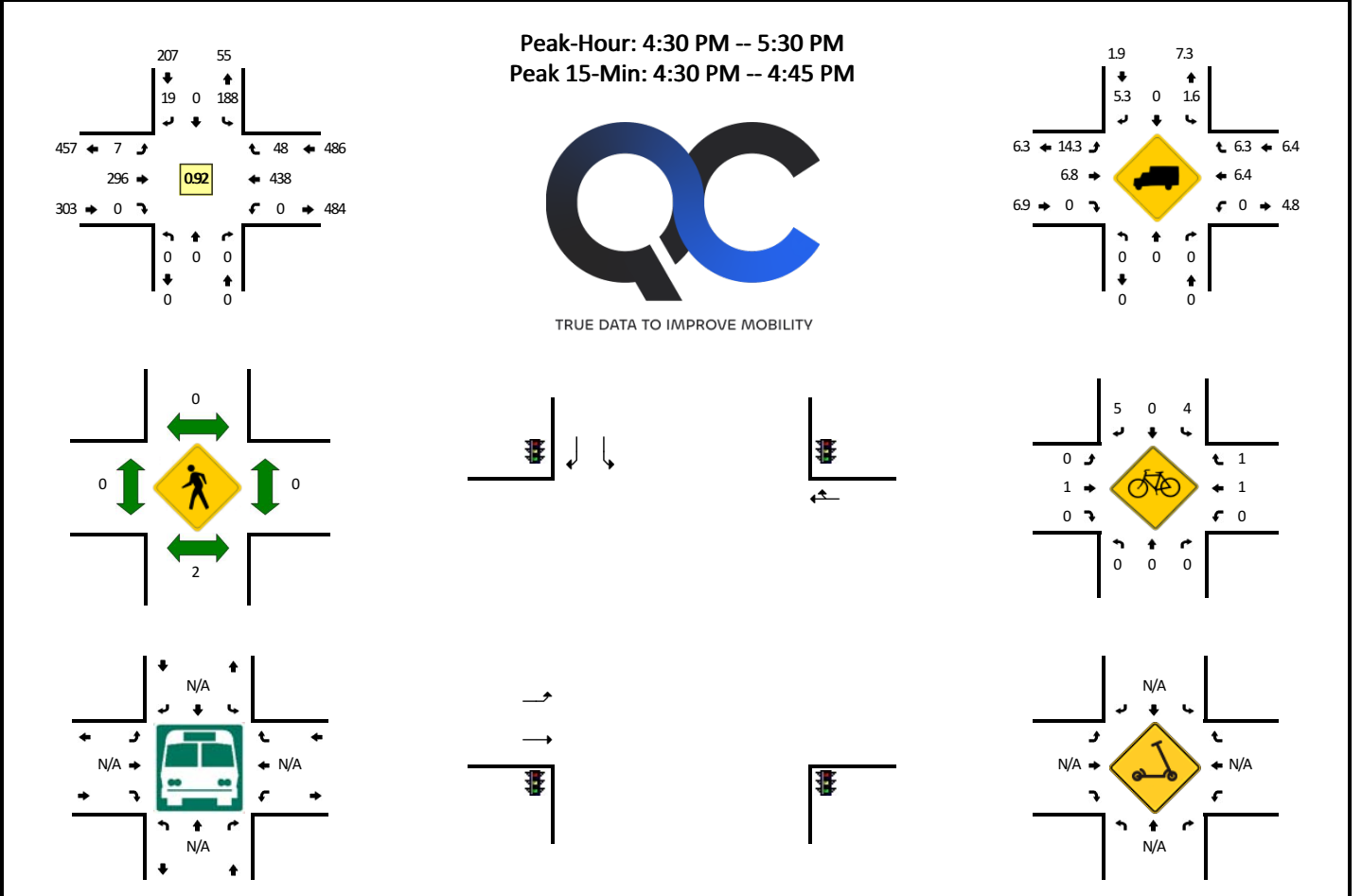


15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	13	0	2	0	4	44	0	0	0	52	28	0	143	
7:15 AM	0	0	0	0	19	0	5	0	1	87	0	0	0	59	25	0	196	
7:30 AM	0	0	0	0	14	0	3	0	6	92	0	0	0	58	35	0	208	
7:45 AM	0	0	0	0	7	0	2	0	3	97	0	0	0	76	50	0	235	782
8:00 AM	0	0	0	0	6	0	0	0	4	77	0	0	0	42	42	0	171	810
8:15 AM	0	0	0	0	11	0	3	0	1	81	0	0	0	27	40	0	163	777
8:30 AM	0	0	0	0	3	0	3	0	3	54	0	0	0	51	34	0	148	717
8:45 AM	0	0	0	0	4	0	0	0	1	60	0	0	0	46	39	0	150	632
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	28	0	8	0	12	388	0	0	0	304	200	0	940	
Heavy Trucks	0	0	0	0	0	0	0	0	0	60	0	0	0	32	8	0	100	
Buses																		
Pedestrians		0				8				0				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4	
Scoters																		

Comments:

LOCATION: SW 108th Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573218
DATE: Tue, Apr 23 2024

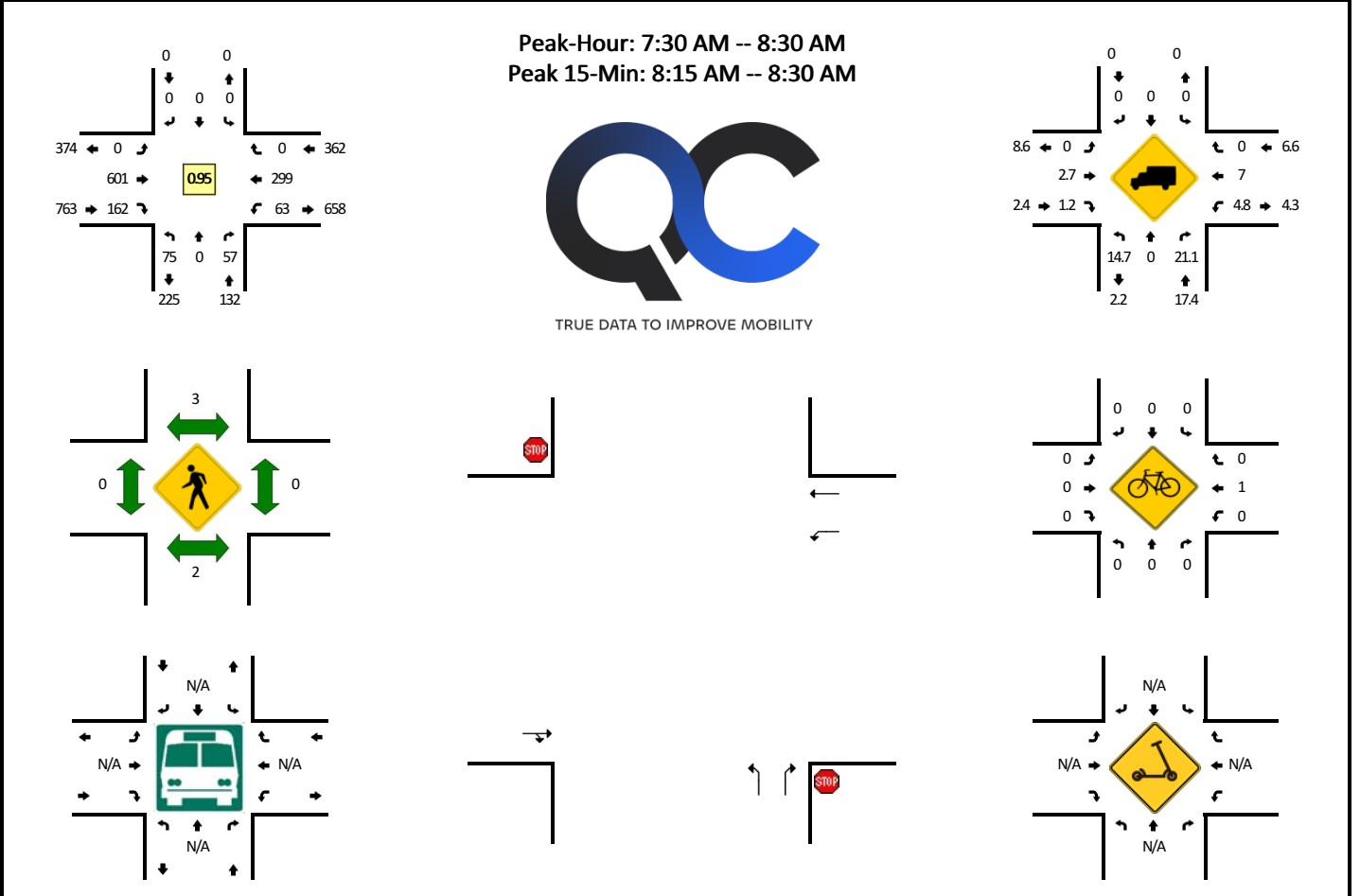


15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	40	0	5	0	2	76	0	0	0	120	12	0	255	
4:15 PM	0	0	0	0	26	0	3	0	2	78	0	0	0	121	5	0	235	
4:30 PM	0	0	0	0	38	0	4	0	4	84	0	0	0	132	10	0	272	
4:45 PM	0	0	0	0	32	0	4	0	0	63	0	0	0	101	16	0	216	978
5:00 PM	0	0	0	0	50	0	6	0	1	85	0	0	0	99	14	0	255	978
5:15 PM	0	0	0	0	68	0	5	0	2	64	0	0	0	106	8	0	253	996
5:30 PM	0	0	0	0	52	0	5	0	0	53	0	0	0	66	8	0	184	908
5:45 PM	0	0	0	0	49	0	7	0	0	45	0	0	0	46	5	0	152	844
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	152	0	16	0	16	336	0	0	0	528	40	0	1088	
Heavy Trucks	0	0	0	0	0	0	0	0	0	20	0	0	0	28	0	0	48	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	4		0	0	0		0	0	0		4	
Scooters																		

Comments:

LOCATION: Teton Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573219
DATE: Tue, Apr 23 2024

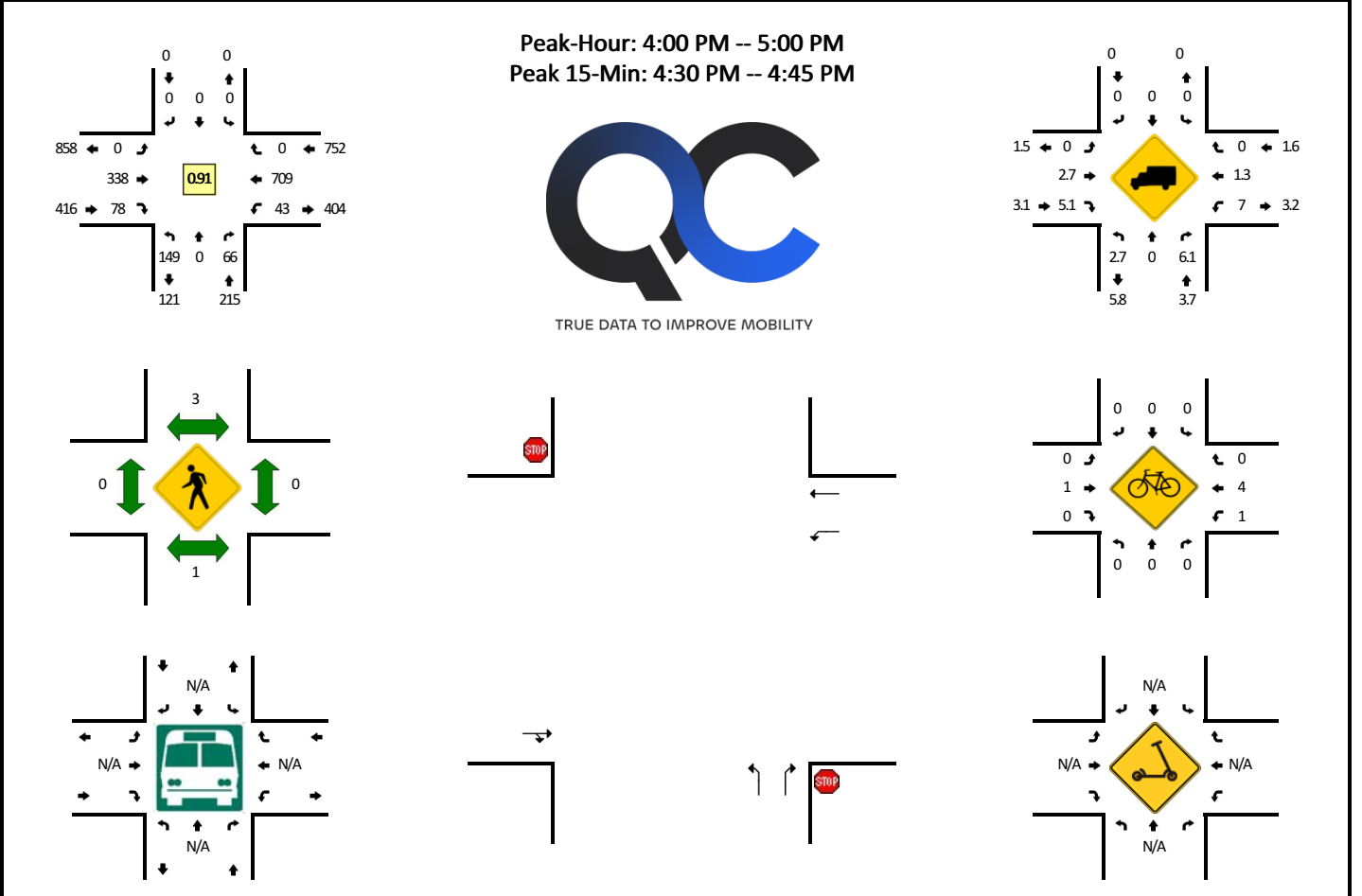


15-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	7	0	4	0	0	0	0	0	0	76	39	0	5	37	0	0	168		
7:15 AM	16	0	5	0	0	0	0	0	0	128	25	0	8	28	0	0	210		
7:30 AM	12	0	6	0	0	0	0	0	0	160	50	0	5	70	0	0	303		
7:45 AM	17	0	4	0	0	0	0	0	0	153	51	0	4	83	0	0	312	993	
8:00 AM	25	0	26	0	0	0	0	0	0	138	33	0	18	72	0	0	312	1137	
8:15 AM	21	0	21	0	0	0	0	0	0	150	28	0	36	74	0	0	330	1257	
8:30 AM	12	0	8	0	0	0	0	0	0	90	50	0	18	67	0	0	245	1199	
8:45 AM	22	0	8	0	0	0	0	0	0	96	25	0	7	55	0	0	213	1100	
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	84	0	84	0	0	0	0	0	0	600	112	0	144	296	0	0	1320		
Heavy Trucks	8	0	12		0	0	0		0	20	4		8	28	0		80		
Buses																			
Pedestrians		0				8				0				0			8		
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0		
Scooters																			

Comments:

LOCATION: Teton Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16573220
DATE: Tue, Apr 23 2024

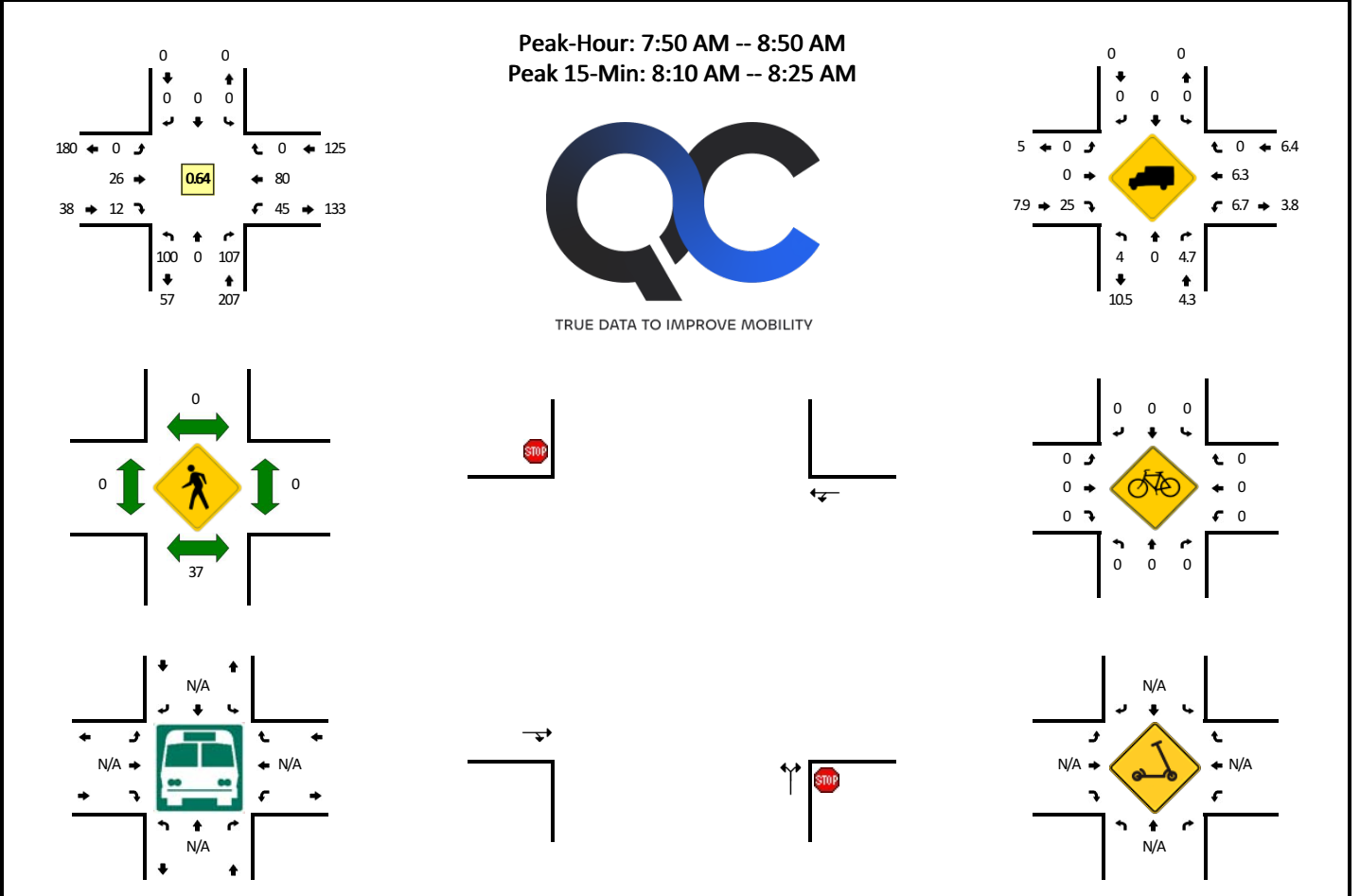


15-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	47	0	23	0	0	0	0	0	0	69	12	0	5	200	0	0	356		
4:15 PM	36	0	10	0	0	0	0	0	0	88	21	0	17	166	0	0	338		
4:30 PM	39	0	25	0	0	0	0	0	0	86	28	0	11	189	0	0	378		
4:45 PM	27	0	8	0	0	0	0	0	0	95	17	0	10	154	0	0	311	1383	
5:00 PM	45	0	13	0	0	0	0	0	0	74	15	0	10	182	0	0	339	1366	
5:15 PM	36	0	3	0	0	0	0	0	0	62	13	0	6	196	0	0	316	1344	
5:30 PM	24	0	7	0	0	0	0	0	0	79	21	0	2	174	0	0	307	1273	
5:45 PM	22	0	5	0	0	0	0	0	0	74	12	0	4	115	0	0	232	1194	
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	156	0	100	0	0	0	0	0	0	344	112	0	44	756	0	0	1512		
Heavy Trucks	0	0	0		0	0	0		0	16	8		4	12	0		40		
Buses																			
Pedestrians		0				4				0				0			4		
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0		
Scoters																			

Comments:

LOCATION: SW 115th Ave -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16651303
DATE: Tue, Jun 11 2024

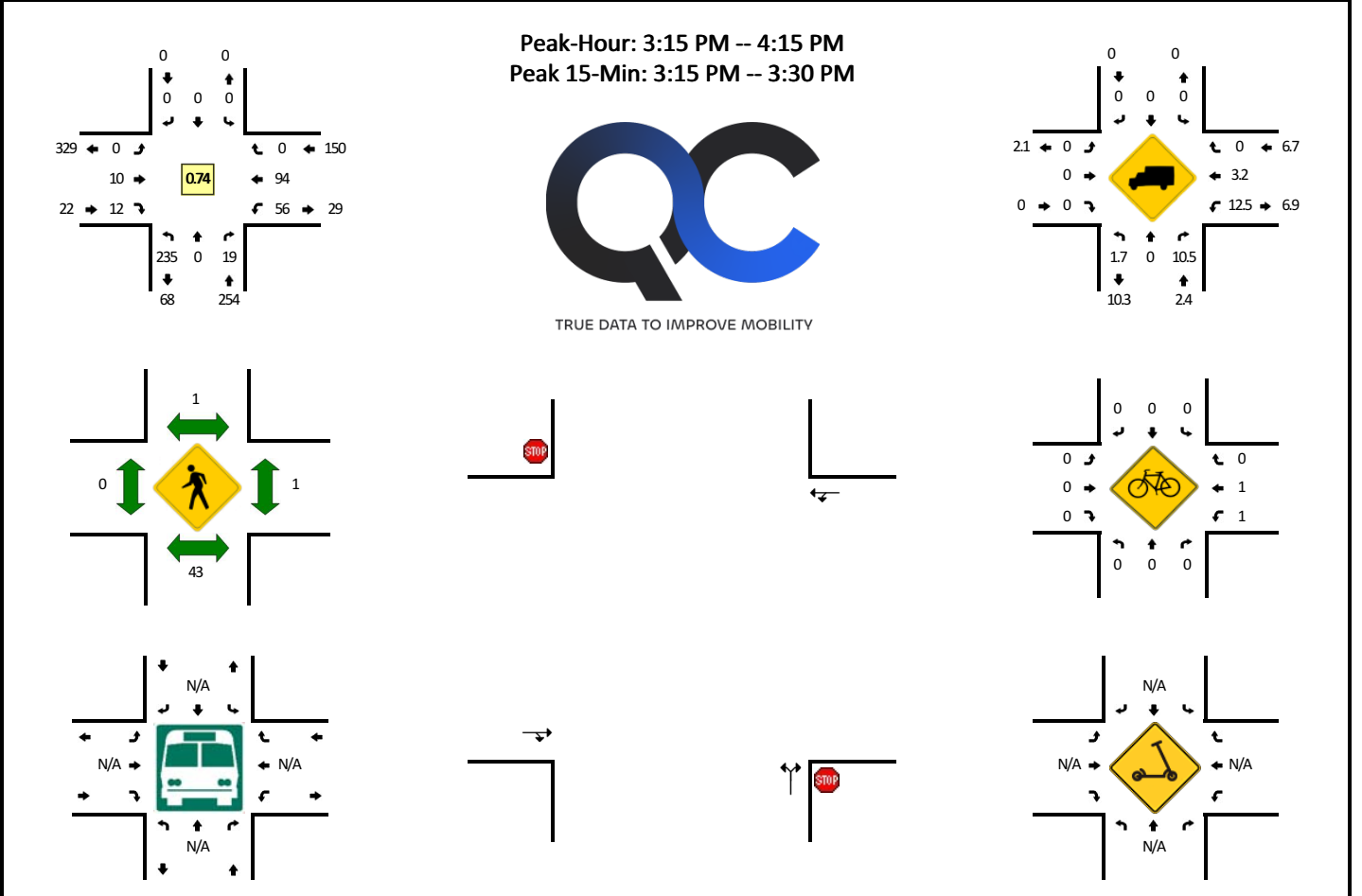


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	0	2	0	0	0	0	0	0	0	0	0	1	3	0	0	10	
7:05 AM	8	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	11	
7:10 AM	6	0	1	0	0	0	0	0	0	2	0	0	0	5	0	0	14	
7:15 AM	6	0	1	0	0	0	0	0	0	1	1	0	0	2	0	0	11	
7:20 AM	6	0	3	0	0	0	0	0	0	1	0	0	0	5	0	0	15	
7:25 AM	9	0	2	0	0	0	0	0	0	1	1	0	1	4	0	0	18	
7:30 AM	7	0	7	0	0	0	0	0	0	3	2	0	0	6	0	0	25	
7:35 AM	10	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	12	
7:40 AM	7	0	1	0	0	0	0	0	0	3	1	0	0	7	0	0	19	
7:45 AM	8	0	4	0	0	0	0	0	0	3	1	0	0	3	0	0	19	
7:50 AM	9	0	6	0	0	0	0	0	0	5	1	0	0	0	0	0	21	191
7:55 AM	7	0	1	0	0	0	0	0	0	3	0	0	2	3	0	0	16	210
8:00 AM	13	0	10	0	0	0	0	0	0	0	2	0	1	3	0	0	29	238
8:05 AM	9	0	18	0	0	0	0	0	0	2	0	0	5	5	0	0	39	262
8:10 AM	5	0	11	0	0	0	0	0	0	3	2	0	8	9	0	0	38	296
8:15 AM	6	0	17	0	0	0	0	0	0	1	0	0	12	9	0	0	45	342
8:20 AM	12	0	22	0	0	0	0	0	0	4	1	0	4	18	0	0	61	351
8:25 AM	8	0	6	0	0	0	0	0	0	3	0	0	3	7	0	0	27	355
8:30 AM	8	0	6	0	0	0	0	0	0	2	2	0	3	8	0	0	29	356
8:35 AM	2	0	2	0	0	0	0	0	0	0	2	0	2	5	0	0	13	362
8:40 AM	9	0	3	0	0	0	0	0	0	2	2	0	1	8	0	0	25	370
8:45 AM	12	0	5	0	0	0	0	0	0	1	0	0	4	5	0	0	27	358
8:50 AM	4	0	1	0	0	0	0	0	0	0	1	0	0	3	0	0	9	360
8:55 AM	12	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	18	
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	92	0	200	0	0	0	0	0	0	32	12	0	96	144	0	0	576	
Heavy Trucks	4	0	16	0	0	0	0	0	0	0	4	0	12	8	0	0	44	
Buses																		
Pedestrians		100				0				0				0			100	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																	0	

Comments:

LOCATION: SW 115th Ave -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16651304
DATE: Tue, Jun 11 2024



5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
2:00 PM	12	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	16	
2:05 PM	10	0	1	0	0	0	0	0	0	0	2	2	0	1	2	0	0	18	
2:10 PM	11	0	1	0	0	0	0	0	0	0	2	0	0	0	7	0	0	21	
2:15 PM	9	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	11	
2:20 PM	12	0	1	0	0	0	0	0	0	0	0	0	0	1	4	0	0	18	
2:25 PM	10	0	4	0	0	0	0	0	0	0	1	4	0	1	5	0	0	25	
2:30 PM	14	0	1	0	0	0	0	0	0	0	1	0	0	0	3	0	0	19	
2:35 PM	13	0	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	19	
2:40 PM	19	0	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	24	
2:45 PM	15	0	6	0	0	0	0	0	0	0	3	0	0	1	4	0	0	29	
2:50 PM	10	0	8	0	0	0	0	0	0	0	2	0	0	0	4	0	0	24	
2:55 PM	18	0	5	0	0	0	0	0	0	0	0	1	0	1	3	0	0	28	252
3:00 PM	19	0	10	0	0	0	0	0	0	0	2	1	0	1	2	0	0	35	271
3:05 PM	10	0	8	0	0	0	0	0	0	0	1	0	0	1	5	0	0	25	278
3:10 PM	13	0	9	0	0	0	0	0	0	0	4	1	0	6	4	0	0	37	294
3:15 PM	5	0	3	0	0	0	0	0	0	0	1	0	0	23	22	0	0	54	337
3:20 PM	18	0	6	0	0	0	0	0	0	0	2	0	0	12	16	0	0	54	373
3:25 PM	19	0	1	0	0	0	0	0	0	0	0	3	0	3	9	0	0	35	383
3:30 PM	21	0	0	0	0	0	0	0	0	0	0	2	0	4	6	0	0	33	397
3:35 PM	19	0	0	0	0	0	0	0	0	0	1	1	0	2	3	0	0	26	404
3:40 PM	19	0	2	0	0	0	0	0	0	0	0	0	0	1	4	0	0	26	406
3:45 PM	25	0	2	0	0	0	0	0	0	0	2	1	0	3	5	0	0	38	415
3:50 PM	20	0	1	0	0	0	0	0	0	0	3	1	0	4	5	0	0	34	425
3:55 PM	16	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	24	421
4:00 PM	25	0	0	0	0	0	0	0	0	0	1	1	0	1	6	0	0	34	420
4:05 PM	17	0	3	0	0	0	0	0	0	0	0	1	0	1	5	0	0	27	422
4:10 PM	31	0	1	0	0	0	0	0	0	0	0	2	0	2	5	0	0	41	426
4:15 PM	21	0	0	0	0	0	0	0	0	0	2	1	0	0	2	0	0	26	398
4:20 PM	18	0	1	0	0	0	0	0	0	0	0	1	0	2	2	0	0	24	368
4:25 PM	17	0	2	0	0	0	0	0	0	0	1	0	0	2	7	0	0	29	362
4:30 PM	20	0	0	0	0	0	0	0	0	0	1	1	0	0	5	0	0	27	356
4:35 PM	32	0	0	0	0	0	0	0	0	0	2	0	0	0	12	0	0	46	376
4:40 PM	23	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	0	33	383
4:45 PM	19	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	22	367
4:50 PM	19	0	0	0	0	0	0	0	0	0	1	1	0	2	10	0	0	33	366
4:55 PM	13	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	17	359
5:00 PM	21	0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	26	351
5:05 PM	23	0	3	0	0	0	0	0	0	0	0	1	0	0	5	0	0	32	356

5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:10 PM	19	0	0	0	0	0	0	0	0	3	0	0	0	8	0	0	30	345
5:15 PM	21	0	0	0	0	0	0	0	0	1	0	0	1	4	0	0	27	346
5:20 PM	22	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	25	347
5:25 PM	18	0	1	0	0	0	0	0	0	1	1	0	3	2	0	0	26	344
5:30 PM	27	0	0	0	0	0	0	0	0	0	1	0	1	3	0	0	32	349
5:35 PM	22	0	1	0	0	0	0	0	0	0	1	0	0	4	0	0	28	331
5:40 PM	18	0	2	0	0	0	0	0	0	2	1	0	0	4	0	0	27	325
5:45 PM	18	0	1	0	0	0	0	0	0	5	0	0	1	3	0	0	28	331
5:50 PM	16	0	2	0	0	0	0	0	0	1	1	0	0	2	0	0	22	320
5:55 PM	15	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	18	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	168	0	40	0	0	0	0	0	0	12	12	0	152	188	0	0	572	
Heavy Trucks	0	0	0		0	0	0		0	0	0		28	4	0		32	
Buses																		
Pedestrians		164				0				0				0			164	
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4	
Scoters																		

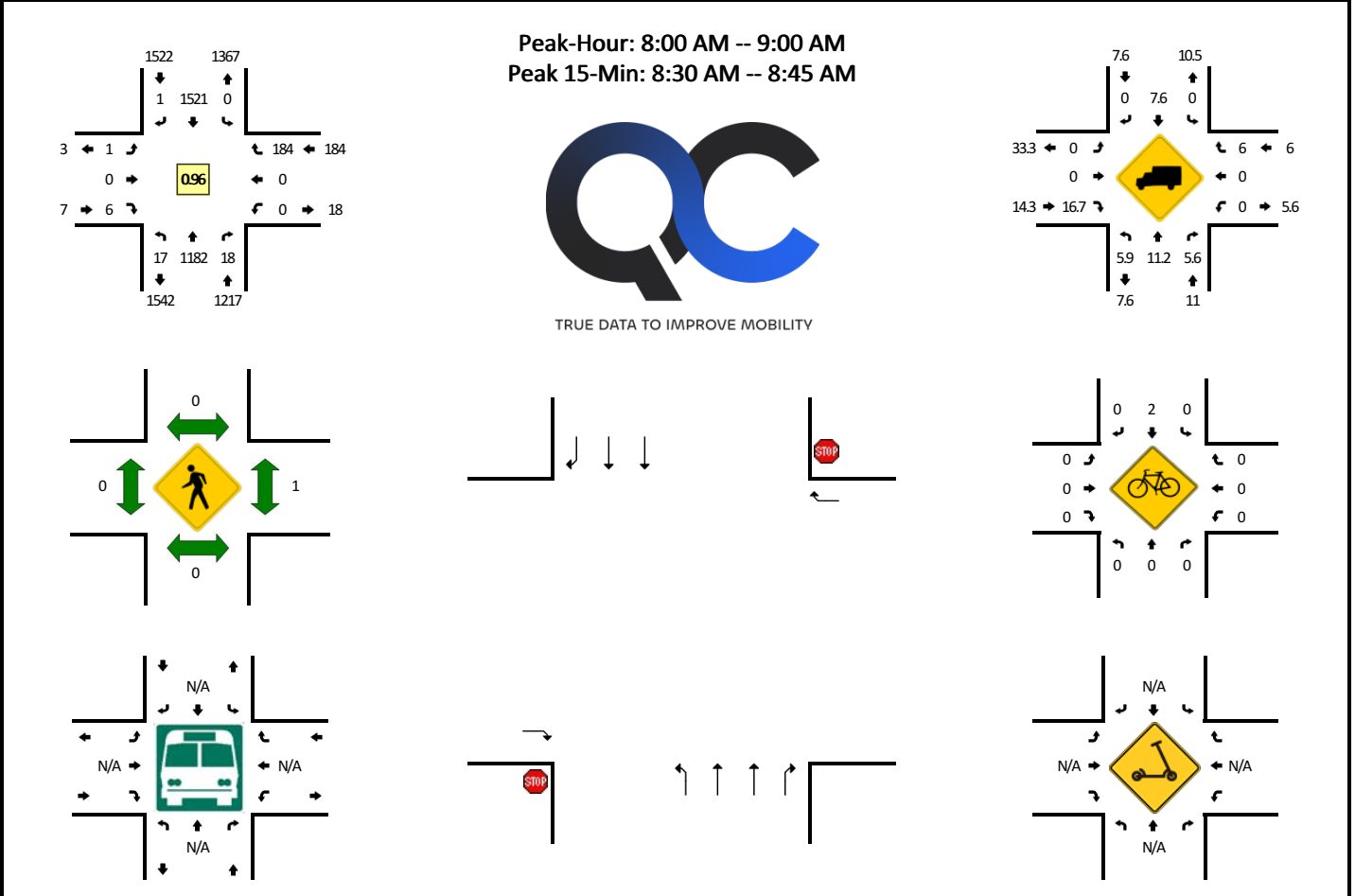
Comments:

Report generated on 6/17/2024 10:33 AM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>) 1-877-580-2212

LOCATION: Pacific Hwy W -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16751103
DATE: Thu, Sep 12 2024

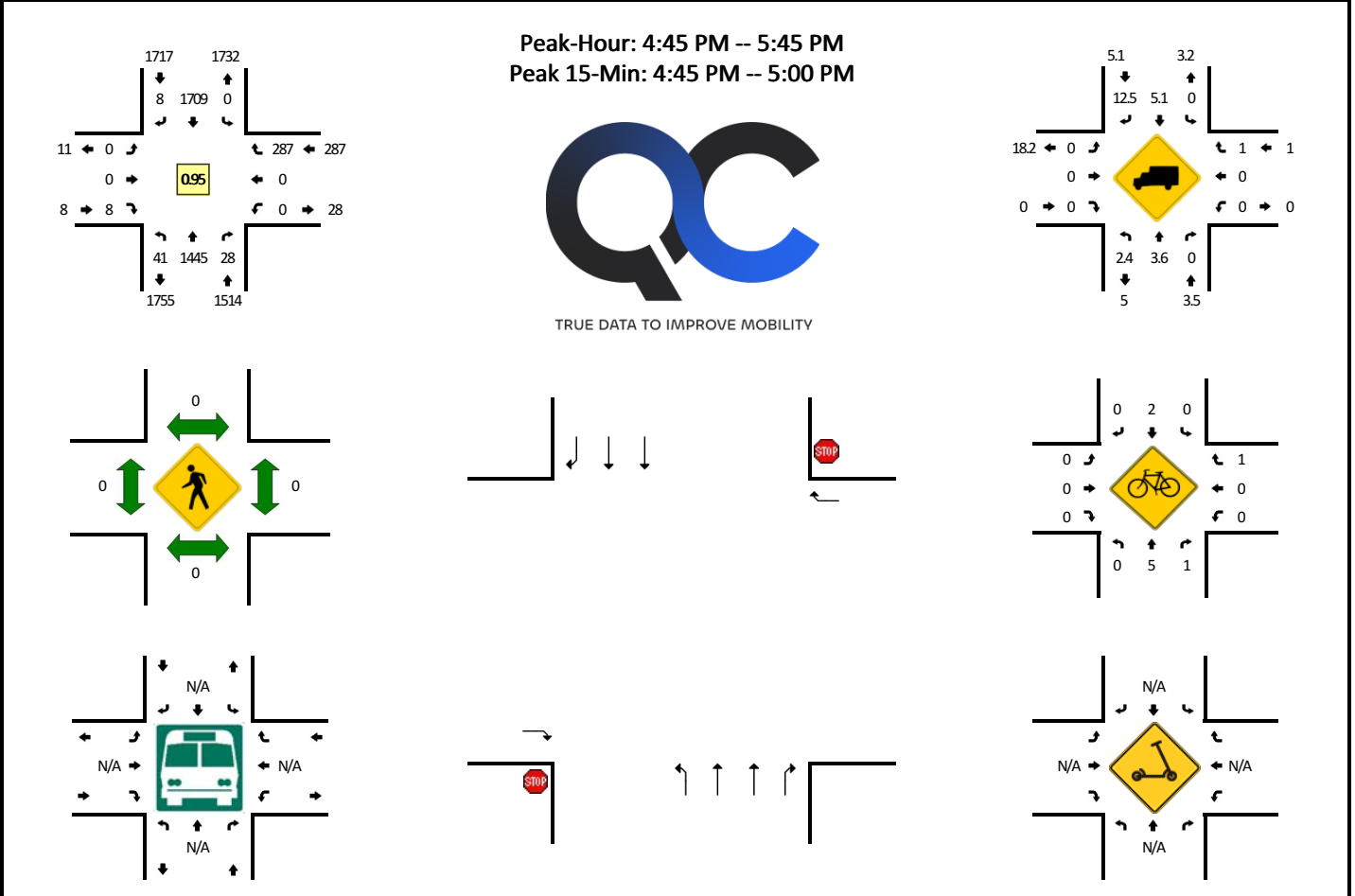


15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	361	1	3	0	308	0	0	0	0	1	0	0	0	37	0	712	
7:15 AM	0	420	12	2	0	392	0	0	0	0	1	0	0	0	31	0	858	
7:30 AM	0	405	7	3	0	449	0	0	0	0	2	0	0	0	44	0	910	
7:45 AM	0	295	6	2	0	482	1	0	0	0	0	0	0	0	45	0	831	3311
8:00 AM	0	271	5	3	0	429	0	0	1	0	0	0	0	0	41	0	750	3349
8:15 AM	0	292	8	5	0	361	1	0	0	0	1	0	0	0	70	0	738	3229
8:30 AM	2	321	5	4	0	395	0	0	0	0	3	0	0	0	36	0	766	3085
8:45 AM	0	298	0	3	0	336	0	0	0	0	2	0	0	0	37	0	676	2930
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	8	1284	20	16	0	1580	0	0	0	0	12	0	0	0	144	0	3064	
Heavy Trucks	4	168	0		0	112	0		0	0	0		0	0	4		288	
Buses																		
Pedestrians		0				0					0			4			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: Pacific Hwy W -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16751104
DATE: Thu, Sep 12 2024

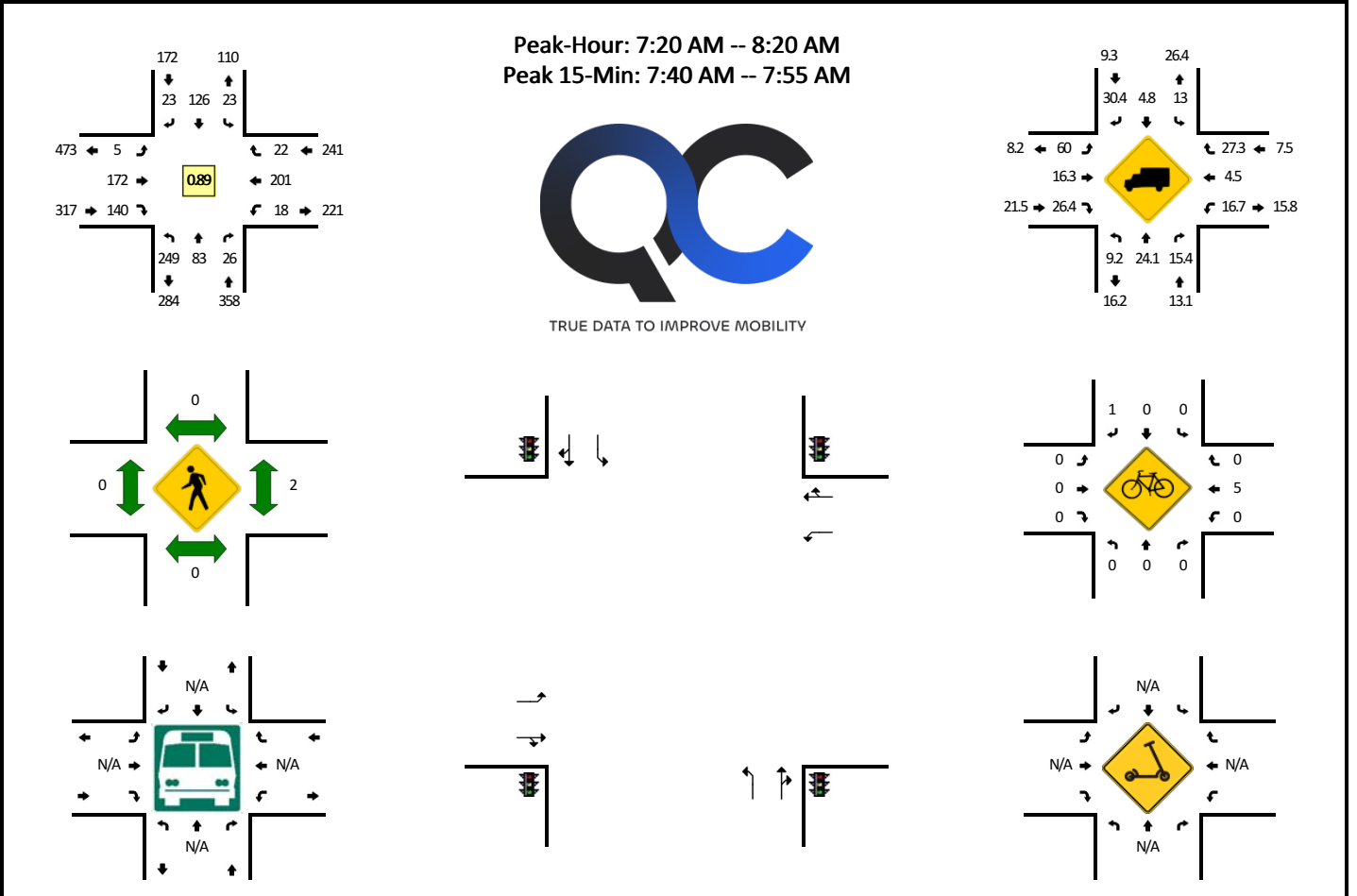


15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	3	358	9	5	0	350	3	0	0	0	2	0	0	0	50	0	780	
3:15 PM	0	335	6	5	0	446	1	0	0	0	1	0	0	0	78	0	872	
3:30 PM	1	408	2	5	0	389	0	0	0	0	2	0	0	0	102	0	909	
3:45 PM	2	369	4	7	0	454	0	0	0	0	0	0	0	0	82	0	918	3479
4:00 PM	2	356	5	8	0	393	0	0	0	0	3	0	0	0	73	0	840	3539
4:15 PM	4	361	5	9	0	414	0	0	0	0	2	0	0	0	108	0	903	3570
4:30 PM	0	333	8	10	0	374	3	0	0	0	6	0	0	0	87	0	821	3482
4:45 PM	2	391	9	10	0	441	4	0	0	0	3	0	0	0	64	0	924	3488
5:00 PM	1	403	6	10	0	404	1	0	0	0	2	0	0	0	81	0	908	3556
5:15 PM	0	351	8	9	0	415	2	0	0	0	2	0	0	0	64	0	851	3504
5:30 PM	0	300	5	9	0	449	1	0	0	0	1	0	0	0	78	0	843	3526
5:45 PM	2	300	5	5	0	427	2	0	0	0	0	0	0	0	60	0	801	3403
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	8	1564	36	40	0	1764	16	0	0	0	12	0	0	0	256	0	3696	
Heavy Trucks	4	60	0		0	88	4		0	0	0		0	0	0		156	
Buses																		
Pedestrians	0	0			0	0			0	0			0	0			0	
Bicycles	0	4	0		0	4	0		0	0	0		0	0	0		8	
Scoters																		

Comments:

LOCATION: Teton Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16670601
DATE: Tue, Jul 9 2024

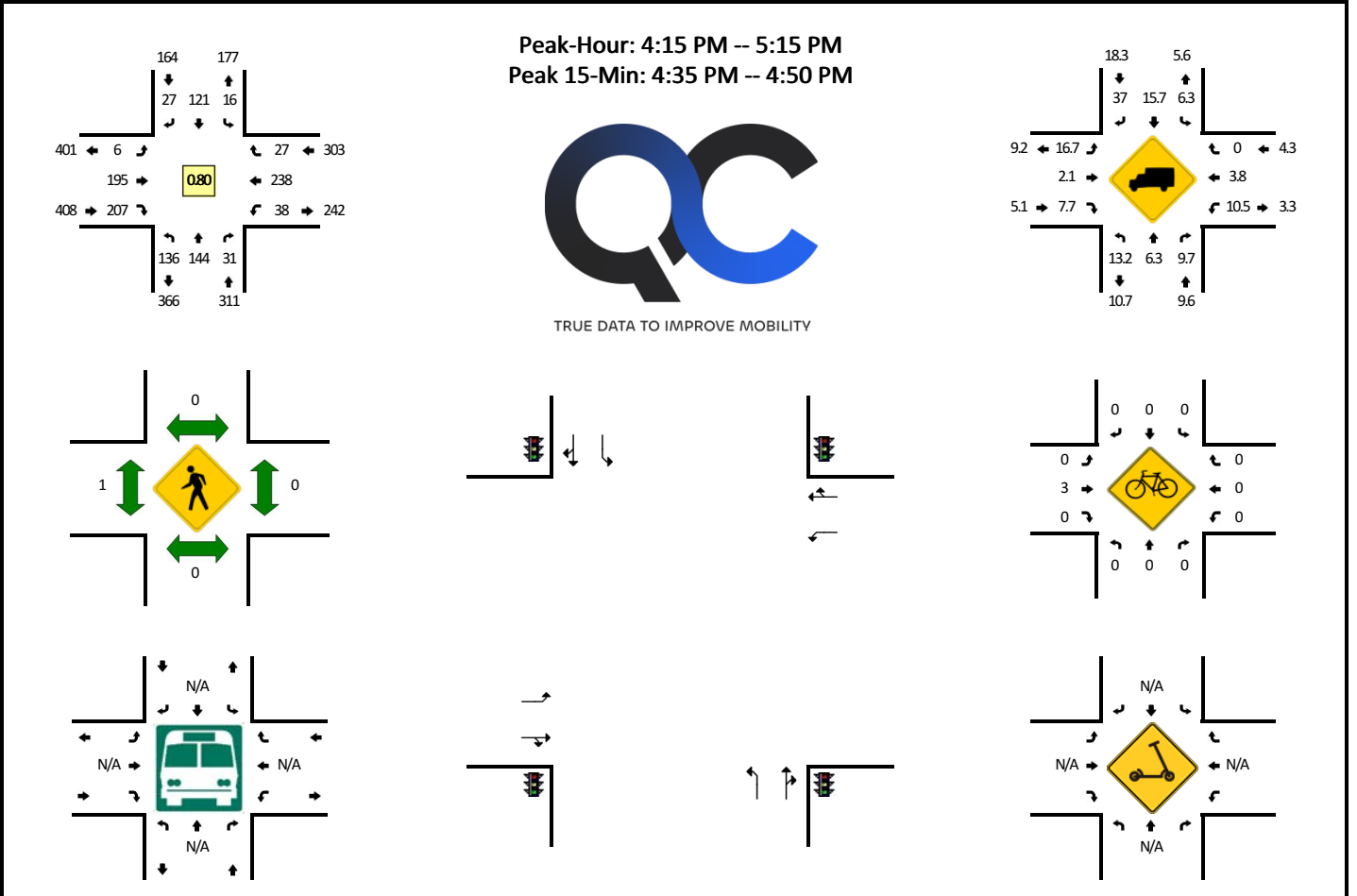


5-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	23	6	1	0	1	8	1	0	0	10	10	0	1	14	0	0	75	
7:05 AM	17	6	4	0	2	9	1	0	0	7	9	0	2	11	0	0	68	
7:10 AM	20	8	3	0	0	11	0	0	2	14	5	0	2	9	2	0	76	
7:15 AM	15	5	1	0	0	6	1	0	1	12	10	0	1	8	0	0	60	
7:20 AM	13	8	3	0	2	10	2	0	2	7	9	0	3	14	1	0	74	
7:25 AM	18	6	4	0	1	10	2	0	1	19	12	0	2	18	0	0	93	
7:30 AM	30	3	0	0	2	6	4	0	0	14	12	0	2	12	4	0	89	
7:35 AM	21	4	0	0	0	10	0	0	0	13	14	0	2	12	2	0	78	
7:40 AM	21	8	2	0	5	13	0	0	0	19	15	0	1	18	4	0	106	
7:45 AM	21	9	3	0	1	14	1	0	0	10	11	0	1	14	1	0	86	
7:50 AM	31	4	2	0	1	8	6	0	2	18	14	0	0	23	3	0	112	
7:55 AM	19	7	6	0	2	12	1	0	0	16	16	0	1	24	0	0	104	1021
8:00 AM	17	8	1	0	1	12	1	0	0	9	5	0	1	21	2	0	78	1024
8:05 AM	28	11	1	0	3	9	3	0	0	12	10	0	2	20	2	0	101	1057
8:10 AM	14	8	2	0	3	12	0	0	0	14	13	0	2	6	1	0	75	1056
8:15 AM	16	7	2	0	2	10	3	0	0	21	9	0	1	19	2	0	92	1088
8:20 AM	14	7	2	0	1	14	2	0	1	8	9	0	2	12	1	0	73	1087
8:25 AM	16	10	2	0	0	11	2	0	0	7	10	0	2	14	1	0	75	1069
8:30 AM	21	10	3	0	0	7	0	0	0	10	12	0	2	15	3	0	83	1063
8:35 AM	14	4	0	0	0	11	1	0	0	16	8	0	0	12	1	0	67	1052
8:40 AM	12	3	3	0	0	8	1	0	2	20	8	0	3	16	0	0	76	1022
8:45 AM	19	6	7	0	1	9	0	0	1	16	7	0	0	20	1	0	87	1023
8:50 AM	18	7	1	0	2	10	2	0	0	11	6	0	1	19	2	0	79	990
8:55 AM	19	8	4	0	0	7	0	0	0	11	5	0	0	14	2	0	70	956
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	292	84	28	0	28	140	28	0	8	188	160	0	8	220	32	0	1216	
Heavy Trucks	16	16	4		0	12	4		8	20	48		4	8	8		148	
Buses																		
Pedestrians	0	0			0	0			0	0			4				4	
Bicycles	0	0			0	0			0	0			4	0			4	
Scoters																		

Comments:

LOCATION: Teton Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 16670602
DATE: Tue, Jul 9 2024

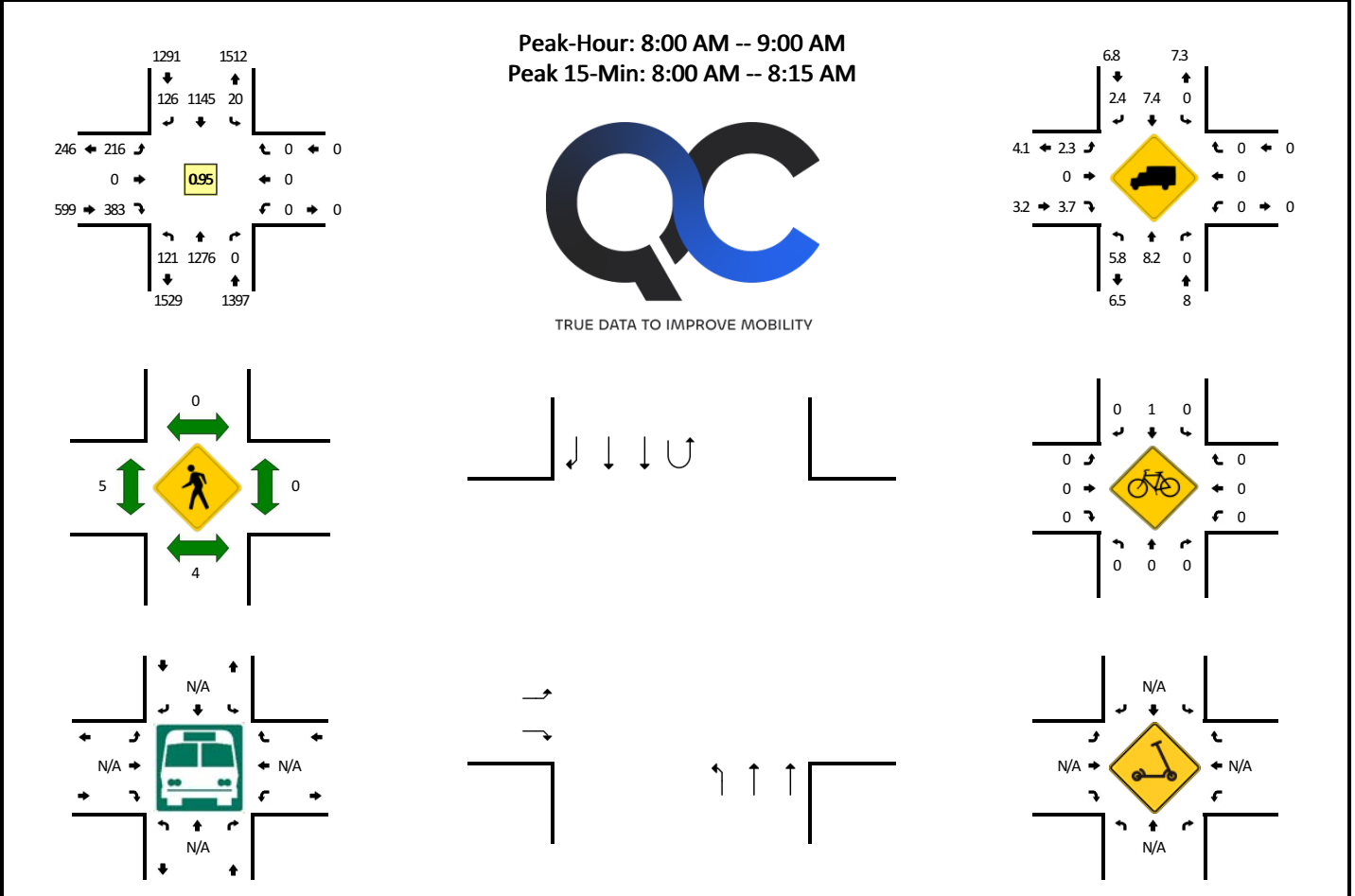


5-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	9	3	0	1	8	1	0	1	17	15	0	3	18	3	0	88	
4:05 PM	17	15	5	0	3	3	1	0	0	16	17	0	3	17	2	0	99	
4:10 PM	15	9	2	0	0	4	0	0	0	12	26	0	3	18	2	0	91	
4:15 PM	14	14	4	0	0	11	3	0	1	25	22	0	3	22	2	0	121	
4:20 PM	10	6	1	0	0	5	0	0	0	14	18	0	1	5	1	0	61	
4:25 PM	19	17	2	0	2	12	2	0	2	11	18	0	2	16	3	0	106	
4:30 PM	8	11	4	0	3	12	3	0	2	14	13	0	6	20	2	0	98	
4:35 PM	13	13	4	0	2	15	5	0	0	23	24	0	10	39	3	0	151	
4:40 PM	12	11	1	0	2	18	4	0	0	14	22	0	6	20	3	0	113	
4:45 PM	11	12	2	0	1	11	4	0	0	19	7	0	2	32	4	0	105	
4:50 PM	12	13	3	0	0	4	2	0	1	13	4	0	2	12	2	0	68	
4:55 PM	5	9	1	0	1	9	0	0	0	13	17	0	0	16	3	0	74	1175
5:00 PM	9	11	3	0	1	9	2	0	0	16	16	0	3	19	0	0	89	1176
5:05 PM	15	16	4	0	2	6	1	0	0	12	21	0	2	17	3	0	99	1176
5:10 PM	8	11	2	0	2	9	1	0	0	21	25	0	1	20	1	0	101	1186
5:15 PM	11	9	2	0	0	4	1	0	1	17	25	0	1	14	0	0	85	1150
5:20 PM	11	7	1	0	1	12	1	0	1	18	25	0	0	16	0	0	93	1182
5:25 PM	13	14	3	0	0	4	0	0	0	12	13	0	1	9	0	0	69	1145
5:30 PM	6	8	2	0	1	7	0	0	0	20	14	0	0	19	2	0	79	1126
5:35 PM	5	11	2	0	1	3	1	0	0	16	14	0	2	9	0	0	64	1039
5:40 PM	9	7	2	0	0	6	0	0	0	18	13	0	1	16	0	0	72	998
5:45 PM	6	11	0	0	1	10	1	0	0	9	11	0	1	8	0	0	58	951
5:50 PM	6	6	2	0	0	9	1	0	0	10	10	0	1	15	1	0	61	944
5:55 PM	6	6	1	0	0	6	0	0	0	7	17	0	2	12	1	0	58	928
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	144	144	28	0	20	176	52	0	0	224	212	0	72	364	40	0	1476	
Heavy Trucks	20	8	4		0	12	12		0	0	12		4	20	0		92	
Buses																		
Pedestrians	0	0				0				0				0			0	
Bicycles	0	0			0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: Pacific Hwy W -- SW Fischer Rd
CITY/STATE: Washington County, OR

QC JOB #: 16751109
DATE: Thu, Sep 12 2024

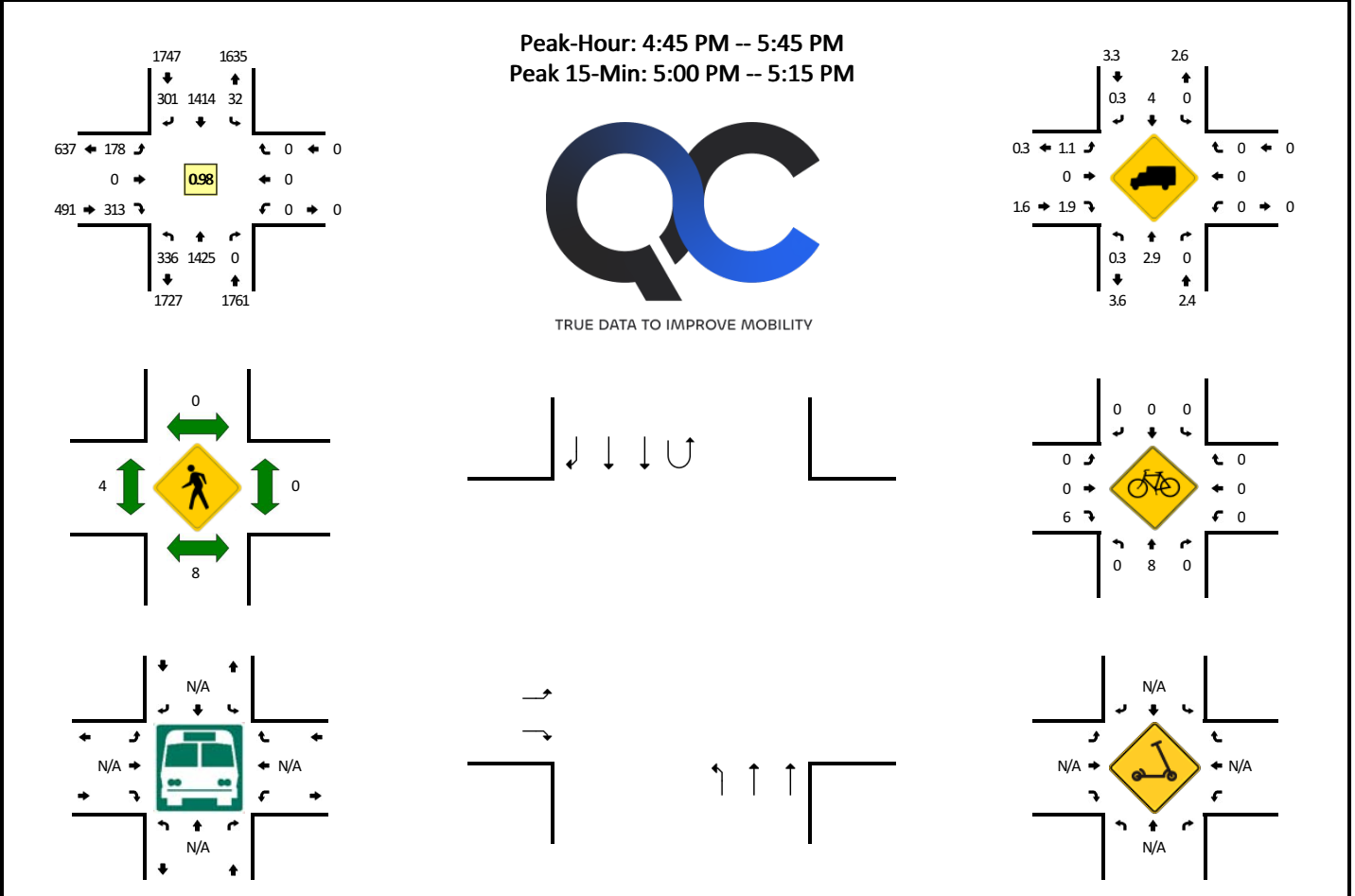


15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW Fischer Rd (Eastbound)				SW Fischer Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	24	377	0	0	0	263	16	2	42	0	51	0	0	0	0	0	775	
7:15 AM	33	373	0	0	0	319	14	5	58	0	81	0	0	0	0	0	883	
7:30 AM	47	442	0	0	0	323	22	2	50	0	101	0	0	0	0	0	987	
7:45 AM	28	333	0	0	0	372	34	1	58	0	114	0	0	0	0	0	940	3585
8:00 AM	24	306	0	0	0	316	24	7	68	0	118	0	0	0	0	0	863	3673
8:15 AM	32	333	0	0	0	287	36	2	47	0	89	0	0	0	0	0	826	3616
8:30 AM	33	313	0	0	0	280	32	5	57	0	114	0	0	0	0	0	834	3463
8:45 AM	31	324	0	1	0	262	34	6	44	0	62	0	0	0	0	0	764	3287
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	1224	0	0	0	1264	96	28	272	0	472	0	0	0	0	0	3452	
Heavy Trucks	4	96	0	0	0	88	0	0	4	0	16	0	0	0	0	0	208	
Buses																	0	
Pedestrians		0				0					0						0	
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4	
Scoters																		

Comments:

LOCATION: Pacific Hwy W -- SW Fischer Rd
CITY/STATE: Washington County, OR

QC JOB #: 16751110
DATE: Thu, Sep 12 2024

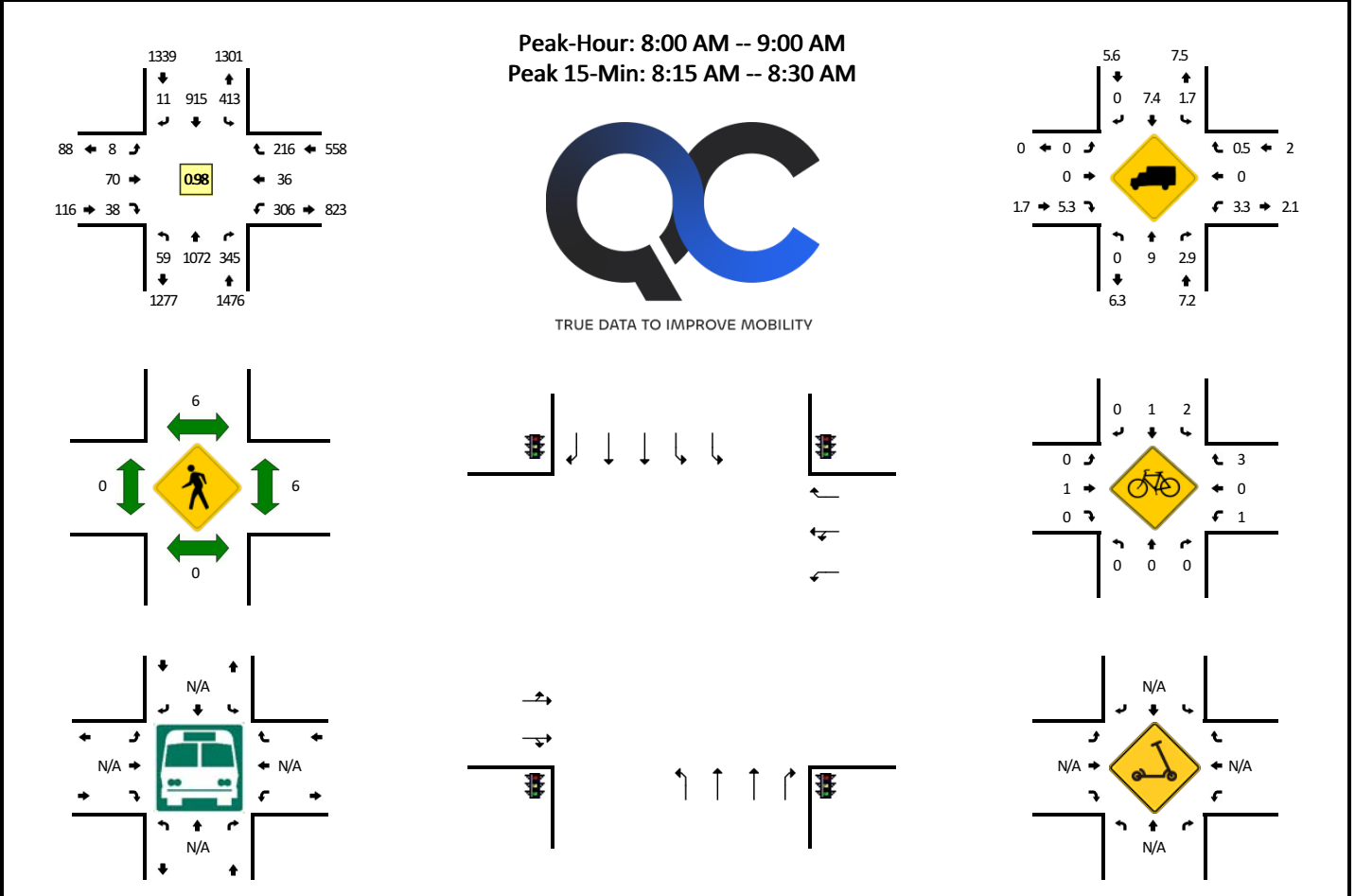


15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW Fischer Rd (Eastbound)				SW Fischer Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	70	328	0	0	0	319	56	17	39	0	58	0	0	0	0	0	887	
3:15 PM	67	341	0	0	0	366	71	7	34	0	75	0	0	0	0	0	961	
3:30 PM	82	376	0	0	0	326	64	9	55	0	59	0	0	0	0	0	978	
3:45 PM	85	335	0	0	0	371	60	8	38	0	81	0	0	0	0	0	978	3797
4:00 PM	72	361	0	0	0	361	61	12	36	0	57	0	0	0	0	0	960	3870
4:15 PM	97	372	0	0	0	354	65	6	24	0	62	0	0	0	0	0	980	3889
4:30 PM	85	365	0	0	0	301	83	10	36	0	94	0	0	0	0	0	974	3892
4:45 PM	90	340	0	0	0	349	70	12	46	0	84	0	0	0	0	0	991	3905
5:00 PM	79	402	0	0	0	330	75	4	55	0	74	0	0	0	0	0	1019	3964
5:15 PM	104	340	0	0	0	349	74	8	42	0	70	0	0	0	0	0	987	3971
5:30 PM	63	343	0	0	0	386	82	8	35	0	85	0	0	0	0	0	1002	3999
5:45 PM	76	317	0	0	0	390	59	8	42	0	72	0	0	0	0	0	964	3972
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	316	1608	0	0	0	1320	300	16	220	0	296	0	0	0	0	0	4076	
Heavy Trucks	4	40	0	0	0	48	0	0	0	0	12	0	0	0	0	0	104	
Buses																		
Pedestrians	0	12	0	0	0	0	0	0	0	4	0	0	0	0	0	0	16	
Bicycles																		
Scoters	0	8	0	0	0	0	0	0	0	0	16	0	0	0	0	0	24	

Comments:

LOCATION: Pacific Hwy W -- SW 116th Ave/SW Durham Rd
CITY/STATE: King City, OR

QC JOB #: 16751107
DATE: Thu, Sep 12 2024



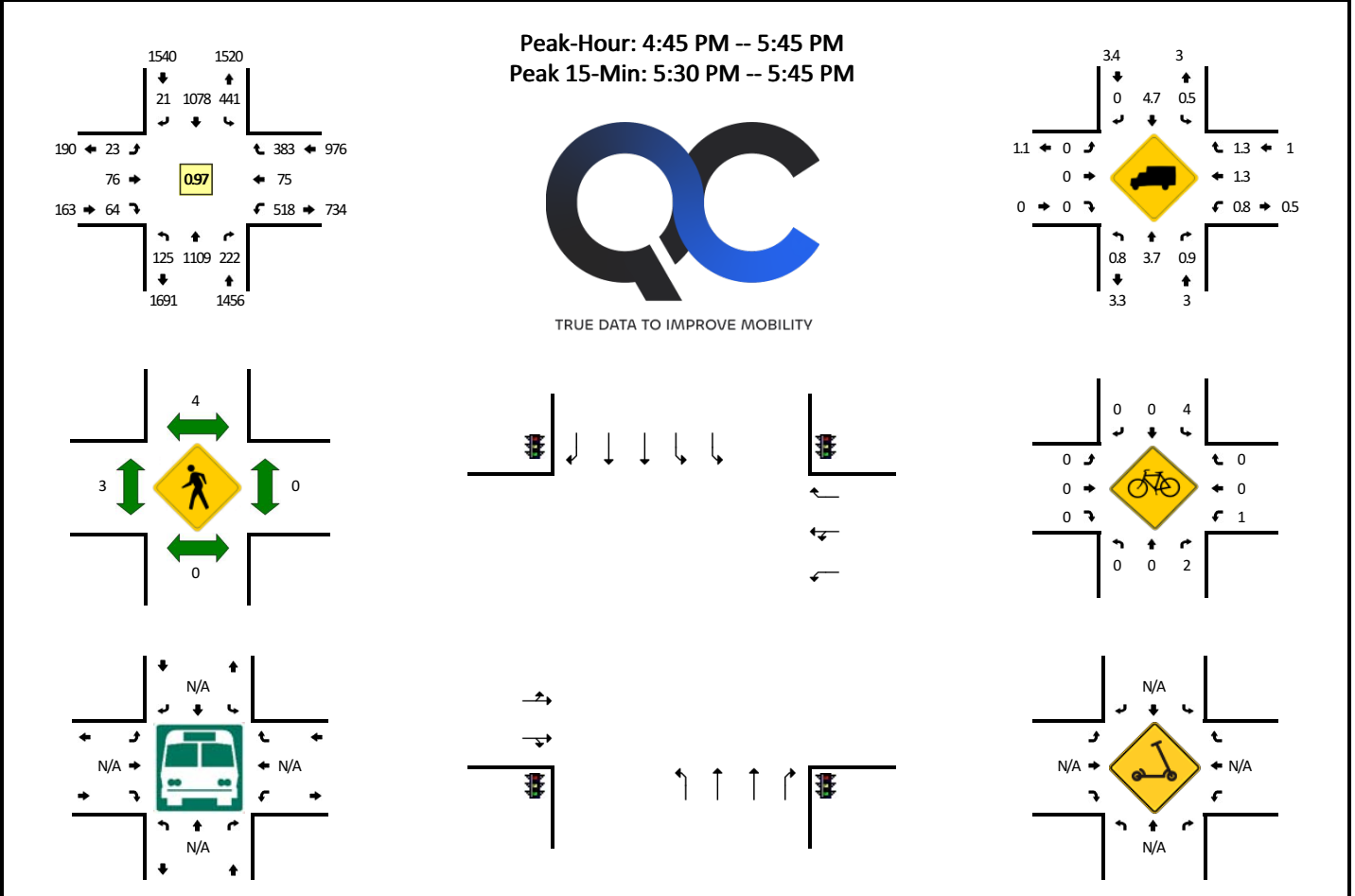
15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW 116th Ave/SW Durham Rd (Eastbound)				SW 116th Ave/SW Durham Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	295	110	8	52	231	0	2	0	9	1	0	42	5	26	0	784	
7:15 AM	4	262	109	5	76	250	0	4	1	12	4	0	57	6	43	0	833	
7:30 AM	12	339	137	9	61	277	4	11	1	8	6	0	76	4	34	0	979	
7:45 AM	16	289	90	9	87	319	1	4	3	12	11	0	85	9	41	0	976	3572
8:00 AM	8	252	85	7	79	216	2	1	1	17	11	0	87	4	54	0	824	3612
8:15 AM	11	278	99	4	92	252	3	1	2	15	5	0	76	8	47	0	893	3672
8:30 AM	11	240	79	2	158	218	5	2	3	24	14	0	67	10	46	0	879	3572
8:45 AM	11	302	82	5	79	229	1	1	2	14	8	0	76	14	69	0	893	3489

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	44	1112	396	16	368	1008	12	4	8	60	20	0	304	32	188	0	3572
Heavy Trucks	0	84	12		8	92	0		0	0	4	0	12	0	0		212
Buses																	
Pedestrians		0				4				0				8			12
Bicycles	0	0	0		4	0	0		0	0	0		0	0	8		12
Scoters																	

Comments:

LOCATION: Pacific Hwy W -- SW 116th Ave/SW Durham Rd
CITY/STATE: King City, OR

QC JOB #: 16751108
DATE: Thu, Sep 12 2024



15-Min Count Period Beginning At	Pacific Hwy W (Northbound)				Pacific Hwy W (Southbound)				SW 116th Ave/SW Durham Rd (Eastbound)				SW 116th Ave/SW Durham Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	15	248	80	6	56	232	7	2	5	24	23	0	133	16	80	0	927	
3:15 PM	20	288	83	15	106	283	8	8	7	17	19	0	131	17	66	0	1068	
3:30 PM	15	265	75	6	91	245	8	4	6	16	15	0	151	18	68	0	983	
3:45 PM	18	254	59	9	98	262	6	3	7	17	18	0	142	25	95	0	1013	3991
4:00 PM	27	272	58	4	85	283	7	3	10	23	15	0	103	18	90	0	998	4062
4:15 PM	26	270	34	6	92	249	8	3	6	18	16	0	145	28	90	0	991	3985
4:30 PM	24	294	53	4	81	291	9	4	7	17	13	0	121	15	80	0	1013	4015
4:45 PM	20	268	48	9	97	251	8	1	5	25	16	0	144	18	97	0	1007	4009
5:00 PM	26	292	55	9	114	249	2	1	3	19	16	0	113	18	87	0	1004	4015
5:15 PM	20	296	49	7	120	258	2	1	8	21	17	0	142	16	97	0	1054	4078
5:30 PM	28	253	70	6	105	320	9	2	7	11	15	0	119	23	102	0	1070	4135
5:45 PM	19	291	83	7	92	337	3	0	5	18	18	0	113	21	79	0	1086	4214
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	112	1012	280	24	420	1280	36	8	28	44	60	0	476	92	408	0	4280	
Heavy Trucks	0	40	0		0	44	0		0	0	0		4	0	0		88	
Buses																		
Pedestrians	0	0				4			0	0			0	0			4	
Bicycles	0	0	0		12	0	0		0	0	0		0	0	0		12	
Scoters																		

Comments:

APPENDIX E.
**SEASONAL
ADJUSTMENT DATA**

SEASONAL TREND TABLE (Updated: 11/08/2023)

TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Seasonal Trend Peak Period Factor
INTERSTATE URBANIZED	1.0869	1.1041	1.0688	1.0335	1.0182	1.0028	0.9995	0.9962	0.9901	0.9840	0.9641	0.9443	0.9502	0.9562	0.9510	0.9458	0.9575	0.9692	0.9791	0.9891	1.0107	1.0324	1.0532	1.0739	0.9443
INTERSTATE NONURBANIZED	1.2459	1.2915	1.2286	1.1657	1.0907	1.0158	1.0059	0.9960	0.9728	0.9496	0.9128	0.8760	0.8650	0.8540	0.8612	0.8684	0.8905	0.9126	0.9488	0.9850	1.0336	1.0822	1.1717	1.2612	0.8540
COMMUTER	1.0905	1.0986	1.0636	1.0285	1.0162	1.0038	0.9959	0.9879	0.9814	0.9749	0.9631	0.9512	0.9614	0.9717	0.9608	0.9500	0.9548	0.9595	0.9634	0.9673	1.0090	1.0507	1.0733	1.0958	0.9500
COASTAL DESTINATION	1.2064	1.1715	1.1234	1.0753	1.0545	1.0337	1.0372	1.0407	1.0216	1.0024	0.9586	0.9147	0.8760	0.8372	0.8371	0.8370	0.8678	0.8985	0.9578	1.0170	1.0730	1.1290	1.1823	1.2357	0.8370
COASTAL DESTINATION ROUTE	1.3937	1.2897	1.2245	1.1594	1.1247	1.0901	1.0911	1.0921	1.0516	1.0111	0.9493	0.8875	0.8172	0.7469	0.7455	0.7440	0.7916	0.8391	0.9274	1.0158	1.1126	1.2094	1.3193	1.4291	0.7440
AGRICULTURE	1.4537	1.4624	1.3705	1.2786	1.2139	1.1492	1.1207	1.0923	1.0075	0.9226	0.8742	0.8258	0.8348	0.8439	0.8422	0.8405	0.7976	0.7547	0.8073	0.8598	1.0041	1.1484	1.3339	1.5194	0.7547
RECREATIONAL SUMMER	1.6049	1.5814	1.4924	1.4034	1.3208	1.2382	1.2380	1.2377	1.0939	0.9500	0.8669	0.7839	0.7392	0.6945	0.7065	0.7185	0.7404	0.7624	0.8468	0.9311	1.1270	1.3230	1.5054	1.6879	0.6945
RECREATIONAL SUMMER WINTER	1.0075	0.9570	0.9184	0.8799	0.9701	1.0603	1.0675	1.0747	1.0843	1.0939	1.0045	0.9151	0.8244	0.7336	0.7795	0.8254	0.9368	1.0482	1.1794	1.3105	1.4969	1.6833	1.3470	1.0108	0.7336
RECREATIONAL WINTER**	0.8059	0.6710	0.6475	0.6240	0.7462	0.8685	0.9307	0.9928	1.1496	1.3064	1.2173	1.1282	0.9996	0.8709	0.9526	1.0342	1.1225	1.2108	1.4061	1.6013	1.9826	2.3639	1.6332	0.9026	0.6240
SUMMER	1.2374	1.2352	1.1733	1.1114	1.0786	1.0459	1.0330	1.0202	0.9851	0.9500	0.9160	0.8819	0.8660	0.8501	0.8561	0.8620	0.8891	0.9161	0.9430	0.9698	1.0525	1.1352	1.2002	1.2653	0.8501
SUMMER < 2500	1.2836	1.2576	1.1943	1.1310	1.1011	1.0712	1.0448	1.0184	0.9633	0.9082	0.8861	0.8641	0.8609	0.8578	0.8695	0.8813	0.8874	0.8936	0.9165	0.9394	1.0500	1.1607	1.2535	1.3463	0.8578

Sept 12th

* Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.

* Grey shading indicates months where seasonal factor is greater than or less than 30%

**Use Recreation Winter Trend with Caution! ATR site was down for most of of 2022 due to loop issues and was estimated while the site was down

Seasonal Adjustment Factor (September 12th):	1.01
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APPENDIX F.
CRASH DATA

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

124TH AVE at PACIFIC HY 99W, City of Tualatin, Washington County, 01/01/2018 to 12/31/2022

10 - 14 of 15 Crash records shown.

SER#	P	S D M				DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	SPCL USE			A S															
		R	J	S	W							TRLR	QTY	MOVE	P	T	I	G	E	L	P	E	C	A	S					
INVEST	E	A	U	I	C	O	DIST	FIRST STREET	DIRECT	(MEDIAN)	TRAFFIC	RANDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE				
RD DPT	E	L	G	N	H	R	FROM	SECOND STREET	LOCTN	(#LANES)	CONTR	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE		
UNLOC?	D	C	S	V	L	K	LONG	LRS																						
05702	N	N	N	N	N	N	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLD	S-OTHER	01	NONE	9	TURN-L												
CITY						FR		SW 124TH AVE	SW				TRF SIGNAL	N			WET	TURN	N/A						000		00			
N						5A			05	1		N	DLIT	PDO						01	DRVR	NONE	00	Unk	UNK	000	000	00		
N						45 23 20.82 19.67	-122 48	009100200S00																						
															02	NONE	9	TURN-L												
															N/A										000		00			
															PSNGR	CAR					01	DRVR	NONE	00	Unk	UNK	000	000	00	
03539	N	N	N	N	N	N	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE	9	STRGHT												
CITY						MO		SW 124TH AVE	SW				TRF SIGNAL	N			DRY	REAR	N/A						000		00			
N						6P			06	0		N	DAY	PDO							01	DRVR	NONE	00	Unk	UNK	000	000	00	
N						45 23 20.58 20.24	-122 48	009100200S00																						
															02	NONE	9	STOP												
															N/A										011		00			
															PSNGR	CAR					01	DRVR	NONE	00	Unk	UNK	000	000	00	
04216	N	N	N	N	N	N	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT												
CITY						WE		SW 124TH AVE	CN				TRF SIGNAL	N			DRY	TURN	PRVTE						000		00			
N						5P			02	1		N	DAY	INJ								01	DRVR	NONE	82	M	OR-Y	020	000	04
N						45 23 21.44 20.25	-122 48	009100100S00																						
															02	NONE	0	TURN-L												
															PRVTE											000		00		
															PSNGR	CAR						01	DRVR	INJC	71	M	OR-Y	000	000	00
07122	N	N	N	N	N	N	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE	0	STRGHT												
CITY						SU		SW 124TH AVE	CN				TRF SIGNAL	N			WET	TURN	PRVTE						000		00			
N						6A			03	1		N	DAWN	INJ								01	DRVR	NONE	18	M	OR-Y	020	000	04
N						45 23 20.82 19.67	-122 48	009100200S00																						
															02	NONE	0	TURN-L												
															PRVTE											000		00		
															PSNGR	CAR						01	DRVR	INJC	69	F	OR-Y	000	000	00
04025	N	N	N	N	N	N	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT												
CITY						TU		SW 124TH AVE	CN				TRF SIGNAL	N			DRY	TURN	PRVTE						019		00			
N						8A			02	1		Y	DAY	INJ								01	DRVR	NONE	68	F	OR-Y	000	000	00
N						45 23 21.44 20.25	-122 48	009100100S00																						
															02	NONE	0	TURN-L												
															PRVTE											000		00		
															PSNGR	CAR						01	DRVR	INJC	40	M	OR-Y	003	000	04

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

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

CITY OF TUALATIN, WASHINGTON COUNTY

124TH AVE at TUALATIN RD, City of Tualatin, Washington County, 01/01/2018 to 12/31/2022

11 - 13 of 15 Crash records shown.

SER#	P	R J S W DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	MOVE	A S														
INVEST	E A U I C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN) INT-REL	OFFRD WTHR CRASH	TRLR QTY	MOVE														
RD DPT	E L G N H R TIME	FROM	SECOND STREET	DIRECT	LEGS TRAF-	RNDBT SURF COLL	OWNER	FROM	PRTC INJ	G E LICNS	PED											
UNLOC?	D C S V L K LAT	LONG	LRS	LOCTN	(#LANES) CONTL	DRVWY LIGHT SVRTY	V# TYPE	TO	P# TYPE SVRTY	E X RES	LOC	ERROR	ACT	EVENT	CAUSE							
03078	N N N N N N	07/11/2022	18	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01 NONE	0	STRGHT									
CITY		MO	0	SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN	PRVTE		S -N				000			00		
N		2P			04	0		N	DAY	INJ	PSNGR CAR			01 DRVR	INJB	42 M	OR-Y		000	000	00	
N		45 23 16.36	-122 48														OR<25					
			15.23										01 NONE		STRGHT							
											PRVTE		S -N							000	00	
											PSNGR CAR			02 PSNG	INJB	51 F			000	000	00	
											02 NONE		TURN-L									
											PRVTE		N -E							000	00	
											PSNGR CAR			01 DRVR	INJA	92 F	OR-Y		004,028	000	00	
																	OR<25				02	
03835	N Y N N N N	08/24/2022	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01 NONE	0	STRGHT									
CITY		WE	0	SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN	PRVTE		S -N							000	00	
N		8P			04	0		N	DUSK	INJ	PSNGR CAR			01 DRVR	NONE	33 M	OR-Y		000	000	00	
N		45 23 16.36	-122 48														OR<25					
			15.23										02 NONE		TURN-L							
											PRVTE		N -E							000	00	
											PSNGR CAR			01 DRVR	NONE	29 M	SUSP		028,004,020	000	00	
																	OR<25				02,04	
											02 NONE		TURN-L									
											PRVTE		N -E							000	00	
											PSNGR CAR			02 PSNG	INJB	29 F			000	000	00	
04348	N N N N N N	09/23/2022	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01 NONE	0	TURN-L								013	02,04
CITY		FR	0	SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN	PRVTE		N -E							000	00	
N		3P			04	0		N	DAY	INJ	PSNGR CAR			01 DRVR	INJB	43 F	OR-Y		028,004,020	000	00	02,04
N		45 23 16.36	-122 48														OR<25					
			15.23										02 NONE		STRGHT							
											PRVTE		S -N							000	013	00
											PSNGR CAR			01 DRVR	INJB	49 M	OR-Y		000	000		00
																	OR<25					
											02 NONE		STRGHT									
											PRVTE		S -N							000	013	00
											PSNGR CAR			02 PSNG	INJB	29 F			000	000		00
											03 NONE		STOP									
											PRVTE		E -W							011		00
											PSNGR CAR			01 DRVR	INJB	31 M	OR-Y		000	000		00
																	OR<25					

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

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

CITY OF TUALATIN, WASHINGTON COUNTY

124TH AVE at TUALATIN RD, City of Tualatin, Washington County, 01/01/2018 to 12/31/2022

14 - 15 of 15 Crash records shown.

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																										
INVEST	E	A	U	I	C	O	DAY	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE		A	S																	
RD DPT	E	L	G	N	H	R	TIME	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM		PRTC	INJ	G	E	LICNS	PED													
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE							
00497	N	N	N	N	N	N	02/01/2022	16	SW TUALATIN RD	INTER	3-LEG	N	N	RAIN	0-1	L-TURN	01	NONE	9	STRGHT															02,04	
CITY							TU	0	SW 124TH AVE	CN		TRF	SIGNAL	N	WET	TURN	N/A	S	-N								000							00		
N							6P		04	0			N	DLIT	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	000	000							00		
N							45 23 16.36 15.23	-122 48 15.23																												
																	02	NONE	9	TURN-L																
																	N/A	N	-E									000						00		
																	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	000	000							00		
05431	N	N	N	N	N	N	11/16/2022	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	0-1	L-TURN	01	NONE	0	STRGHT															02,04	
CITY							WE	0	SW 124TH AVE	CN		TRF	SIGNAL	N	DRY	TURN	PRVTE	S	-N								000							00		
N							5A		04	0			N	DLIT	INJ		PSNGR	CAR		01	DRVR	INJB	50	F	OR-Y	000	000							00		
N							45 23 16.36 15.23	-122 48 15.23																												
																	02	NONE	0	TURN-L																
																	PRVTE	N	-E									000						00		
																	PSNGR	CAR		01	DRVR	INJC	22	M	OR-Y	028,004,020	000	000						02,04		

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

CITY OF TUALATIN, WASHINGTON COUNTY

124TH AVE at LEVETON DR, City of Tualatin, Washington County, 01/01/2018 to 12/31/2022

1 - 5 of 7 Crash records shown.

SER#	S	D	M	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																			
INVEST	P	R	J	S	W	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A	S											
RD DPT	E	L	G	N	H	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED							
UNLOC?	D	C	S	V	L	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE	
05935	N	N	N	N	N	11/12/2019	16	SW LEVETON DR	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE	9	STRGHT									
NONE			TU			0	124TH AVE	N			TRF SIGNAL	N	WET	REAR	N/A	N	-S							000		00	
N			8A				06	0		N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000		000	00	
N			45 23 5.63	-122 48	14.95																						
													02	NONE	9	STOP											
													N/A	N	-S									011		00	
													PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000		000	00	
04719	N	N	N	N	N	12/22/2020	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	9	STRGHT									
NONE			TU			0	124TH AVE	N			TRF SIGNAL	N	DRY	REAR	N/A	N	-S							000		00	
N			12P				06	0		N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000		000	00	
N			45 23 5.63	-122 48	14.95																						
													02	NONE	9	STOP											
													N/A	N	-S									011		00	
													PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000		000	00	
02597	N	N	N	N	N	05/23/2018	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	9	STRGHT									
CITY			WE			0	124TH AVE	E			TRF SIGNAL	N	DRY	REAR	N/A	E	-W							000		00	
N			5P				06	0		N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000		000	00	
N			45 23 5.63	-122 48	14.95																						
													02	NONE	9	STOP											
													N/A	E	-W									011		00	
													PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000		000	00	
04159	Y	N	N	N	N	08/16/2019	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	OVERTURN	01	NONE	0	TURN-L									
CITY			FR			0	124TH AVE	E			TRF SIGNAL	N	DRY	NCOL	PRVTE	N	-E							000		00	
N			6P				05	0		N	DAY	INJ	TRUCK			01	DRVR	INJB	25	M	OTH-Y		047		000	01	
N			45 23 5.63	-122 48	14.95																						
05424	N	N	N	N	N	10/04/2019	16	SW LEVETON DR	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE	0	STRGHT									
NO RPT			FR			0	124TH AVE	CN			TRF SIGNAL	N	WET	TURN	PRVTE	N	-E								000		00
N			11A				04	0		N	DAY	INJ	PSNGR	CAR		01	DRVR	INJC	57	M	OR-Y		020		000	04	
N			45 23 5.63	-122 48	14.95																						
													02	NONE	0	TURN-L											
													PRVTE	S	-W										000		00
													PSNGR	CAR		01	DRVR	INJC	63	F	OR-Y		000		000	00	

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

CITY OF TUALATIN, WASHINGTON COUNTY

108TH AVE at HERMAN RD, City of Tualatin, Washington County, 01/01/2018 to 12/31/2022

1 - 1 of 1 Crash records shown.

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																							
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE											A	S							
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED													
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE							
00130	N	N	N	N			01/07/2020	17	SW HERMAN RD	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE	9	STRGHT																	
NONE							TU	0	SW 108TH AVE	NE		TRF SIGNAL	N	WET	REAR	N/A	NE-SW											000		00						
N							4P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00							
N							45 23 1.12	-122 47 15.52																												
																02	NONE	9	STOP											011		00				
																N/A	NE-SW		01	DRVR	NONE	00	Unk	UNK		000	000		00							
																PSNGR CAR																				

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2018 to 12/31/2022, Both Add and Non-Add mileage

1 - 4 of 27 Crash records shown.

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	ACT	EVENT	CAUSE															
INVEST	E	A	U	I	C	O	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY																		
RD DPT	E	L	G	N	H	R	URBAN AREA	MLG	TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED										
UNLOC?	D	C	S	V	L	K	LONG	MILEPNT	LRS		(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR								
00635	N	N	N	N	N	N	WASHINGTON	1	14		INTER	CROSS	N	CLR	S-1STOP	01	NONE	STRGHT											013	07,27				
CITY						WE	TIGARD	MN	0	SW PACIFIC HY 99W	NE	TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW									000		00					
N						7P	PORTLAND UA	11.46		SW 116TH AVE	05		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	31	M	OR-Y		026	000		07,27					
N						45 24 16.39	-122 47 49.13			009100100S00																								
																	02	NONE	STOP															
																	PRVTE	NE-SW										012	013	00				
																	PSNGR CAR		01	DRVR	INJC	83	F	OR-Y		000	000	000		00				
																	03	NONE	STOP									022		00				
																	PRVTE	NE-SW									000	000	000		00			
																	PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000	000		00				
01773	N	N	N	N	N	N	WASHINGTON	1	14		INTER	CROSS	N	CLD	S-1STOP	01	NONE	STRGHT													29			
COUNTY						WE	TIGARD	MN	0	SW PACIFIC HY 99W	NE	TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW										000		00				
N						4P	PORTLAND UA	11.46		SW 116TH AVE	06		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	32	M	SUSP		026	000		29					
N						45 24 16.38	-122 47 49.12			009100100S00																								
																	02	NONE	STOP										011		00			
																	PRVTE	NE-SW										000	000	000		00		
																	PSNGR CAR		01	DRVR	NONE	34	M	OTH-Y		000	000	000		00				
																	02	NONE	STOP									011		00				
																	PRVTE	NE-SW									000	000	000		00			
																	PSNGR CAR		02	PSNG	INJC	29	F			000	000	000		00				
07094	N	N	N	N	N	N	WASHINGTON	1	14		INTER	CROSS	N	FOG	S-1STOP	01	NONE	STRGHT														29		
CITY						FR	TIGARD	MN	0	SW PACIFIC HY 99W	NE	TRF SIGNAL	N	WET	REAR		N/A	NE-SW									000		00					
N						6A	PORTLAND UA	11.46		SW 116TH AVE	06		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00					
N						45 24 16.36	-122 47 49.12			009100100S00																								
																	02	NONE	STOP															
																	N/A	NE-SW										011		00				
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	000		00				
03418	N	N	N	N	N	N	WASHINGTON	1	14		INTER	CROSS	N	CLR	S-1STOP	01	NONE	STRGHT															29	
NONE						WE	TIGARD	MN	0	SW PACIFIC HY 99W	NE	TRF SIGNAL	N	DRY	REAR		N/A	NE-SW									000		00					
N						8A	PORTLAND UA	11.46		SW 116TH AVE	06		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00					
N						45 24 16.38	-122 47 49.12			009100100S00																								
																	02	NONE	STOP															
																	N/A	NE-SW										012		00				
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	000		00				

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2018 to 12/31/2022, Both Add and Non-Add mileage

5 - 8 of 27 Crash records shown.

Table with columns: SER#, S D M, INVEST, RD DPT, UNLOC?, COUNTY, RD# FC, CONN#, RD CHAR, INT-TYPE, SPCL USE, MOVE, PRTC, INJ, G E LICNS, PED, ERROR, ACT, EVENT, CAUSE. Contains multiple rows of crash data for various dates and locations like WASHINGTON and TIGARD.

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

091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2018 to 12/31/2022, Both Add and Non-Add mileage

18 - 21 of 27 Crash records shown.

SER#	S D M	P R J S W DATE	COUNTY	RD# FC CONN#	RD CHAR	INT-TYPE	SPCL USE															
INVEST	E A U I C O DAY	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE										
RD DPT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E LICNS	PED						
UNLOC?	D C S V L K LAT	LONG	MILEPNT	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E X RES	LOC	ERROR	ACT	EVENT	CAUSE	
00175	N N N N	01/09/2020	WASHINGTON	2 14	INTER	CROSS	N	N	CLR	O-OTHER	01 NONE	9	TURN-L								02	
NO RPT	TH		TIGARD	MN 0	SW PACIFIC HY 99W	CN			DRY	TURN	N/A		SE-SW							000	00	
N		3P	PORTLAND UA	11.46	SW 116TH AVE	03	0		DAY	PDO	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
N		45 24 16.02	-122 47 47.92		009100200S00																	00
											02 NONE	9	TURN-R								000	00
											N/A		TURN-R								000	00
											PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																					000	00
																					000	00
01165	Y N N N	03/13/2022	WASHINGTON	2 14	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01 NONE		STRGHT								040,053	01,04
CITY	SU		TIGARD	MN 0	SW DURHAM RD	CN			WET	TURN	PRVTE		SW-NE							000	040,053	00
N		4A	PORTLAND UA	11.46	SW PACIFIC HY 99W	04	0		DLIT	INJ	PSNGR	CAR		01	DRVR	INJC	24	M	OR-Y	047,020	000	01,04
N		45 24 16.04	-122 47 47.93		009100200S00																	01,04
											02 NONE		TURN-L									
											PRVTE		NE-SE								000	00
											PSNGR	CAR		01	DRVR	INJB	20	F	OR-Y	000	000	00
																						00
											02 NONE		TURN-L								000	00
											PRVTE		NE-SE								000	00
											PSNGR	CAR		02	PSNG	INJA	20	F		000	000	00
06804	N N N N N N	12/11/2018	WASHINGTON	2 14	STRGHT		N	N	RAIN	S-STRGHT	01 NONE	0	STRGHT								013	07
CITY	TU			MN 0	UN	(DIVMD)	UNKNOWN	N	WET	REAR	PRVTE		S -N							000	000	00
N		3P	PORTLAND UA	11.48	03			N	DAY	INJ	PSNGR	CAR		01	DRVR	NONE	29	M	OR-Y	043	000	07
N		45 24 15.05	-122 47 48.48		009100200S00		(04)															07
											02 NONE	0	STRGHT									
											PRVTE		S -N								006	013
											PSNGR	CAR		01	DRVR	INJC	23	F	OTH-Y	000	000	00
																						00
											03 NONE	0	STOP									022
											PRVTE		S -N								000	00
											PSNGR	CAR		01	DRVR	INJC	19	M	OR-Y	000	000	00
																						00
																						00
05669	N N N N	10/30/2019	WASHINGTON	2 14	STRGHT		N	N	CLR	S-STRGHT	01 NONE	9	STRGHT									13
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N		3P	PORTLAND UA	11.48	03			N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
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NONE	WE			MN 0	UN	(DIVMD)	UNKNOWN	N	DRY	REAR	N/A		S -N							000	000	00
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N		45 24 15.06	-122 47 48.47		009100200S00		(04)															00
																						00

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

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2018 to 12/31/2022, Both Add and Non-Add mileage

27 - 27 of 27 Crash records shown.

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD	CHAR	INT-TYPE	SPCL	USE																		
INVEST	E	A	U	I	C	O	DAY	CITY	COMPNT	FIRST	STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE	A	S											
RD	DPT	E	L	G	N	H	R	TIME	URBAN	AREA	MLG	TYP	SECOND	STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED					
UNLOC?	D	C	S	V	L	K	LAT	LONG	MILEPNT	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE				
																02	NONE																
																	PRVTE															011	00
																	PSNGR	CAR			03	PSNG	INJC	03	F		000				000	00	

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

APPENDIX G.
IN-PROCESS DATA



lancaster
moble

124th Business Park

Transportation Impact Analysis

Tualatin, Oregon

Date:

April 18, 2023

Prepared for:

VLMK Engineering & Design

Prepared by:

Myla Cross

Jennifer Danziger, PE



RENEWS: 12/31/2023

Site Trips

Trip Generation

To estimate trips that will be generated by the development, trip rates from the *Trip Generation Manual*¹ were used. Specifically, data from the land use code 110, *General Light Industrial*, was used based on the square footage of the development. The 124th Business Park proposes to develop the site with three industrial buildings enclosing a total of 199,170 SF of gross floor area.

The trip generation calculations show that the 124th Business Park site is projected to generate 147 trips during the morning peak hour, 129 trips during the evening peak hour, and 970 trips during the average weekday. Table 3 summarizes the estimated net trip generation of the site with the land use assumptions discussed above.

Table 3: Trip Generation Summary

Land Use	ITE Code	Size	AM Peak Hour			PM Peak Hour			Weekday Total
			In	Out	Total	In	Out	Total	
General Light Industrial (All Vehicles)	110	199,170 SF	129	18	147	18	111	129	970
General Light Industrial (Trucks)	110	199,170 SF	1	1	2	1	1	2	50

Trip Distribution and Assignment

The directional distribution of site trips to/from the project site is necessary to identify intersections to be included in the study area of the TIA. The following trip distribution was estimated based on the locations of likely trip destinations and locations of major transportation facilities in the site vicinity:

- Approximately 30 percent of site trips will travel to/from the south along SW 124th Avenue
- Approximately 20 percent of site trips will travel to/from the west along SW Tualatin-Sherwood Road
- Approximately 30 percent of site trips will travel to/from the east along SW Tualatin-Sherwood Road
- Approximately 20 percent of site trips will travel to/from the north along SW 124th Avenue

To address the right-in/right-out access on SW 124th Avenue, some of the traffic will not be able to travel along the most direct route to the site. Inbound traffic from the north will need to travel southward to SW Tualatin-Sherwood Road by another route and then turn northward on SW 124th Avenue. Outbound traffic destined for locations south, west, or east of the site will need to travel northward on SW 124th Avenue and then travel southward to SW Tualatin-Sherwood Road by an alternate route.

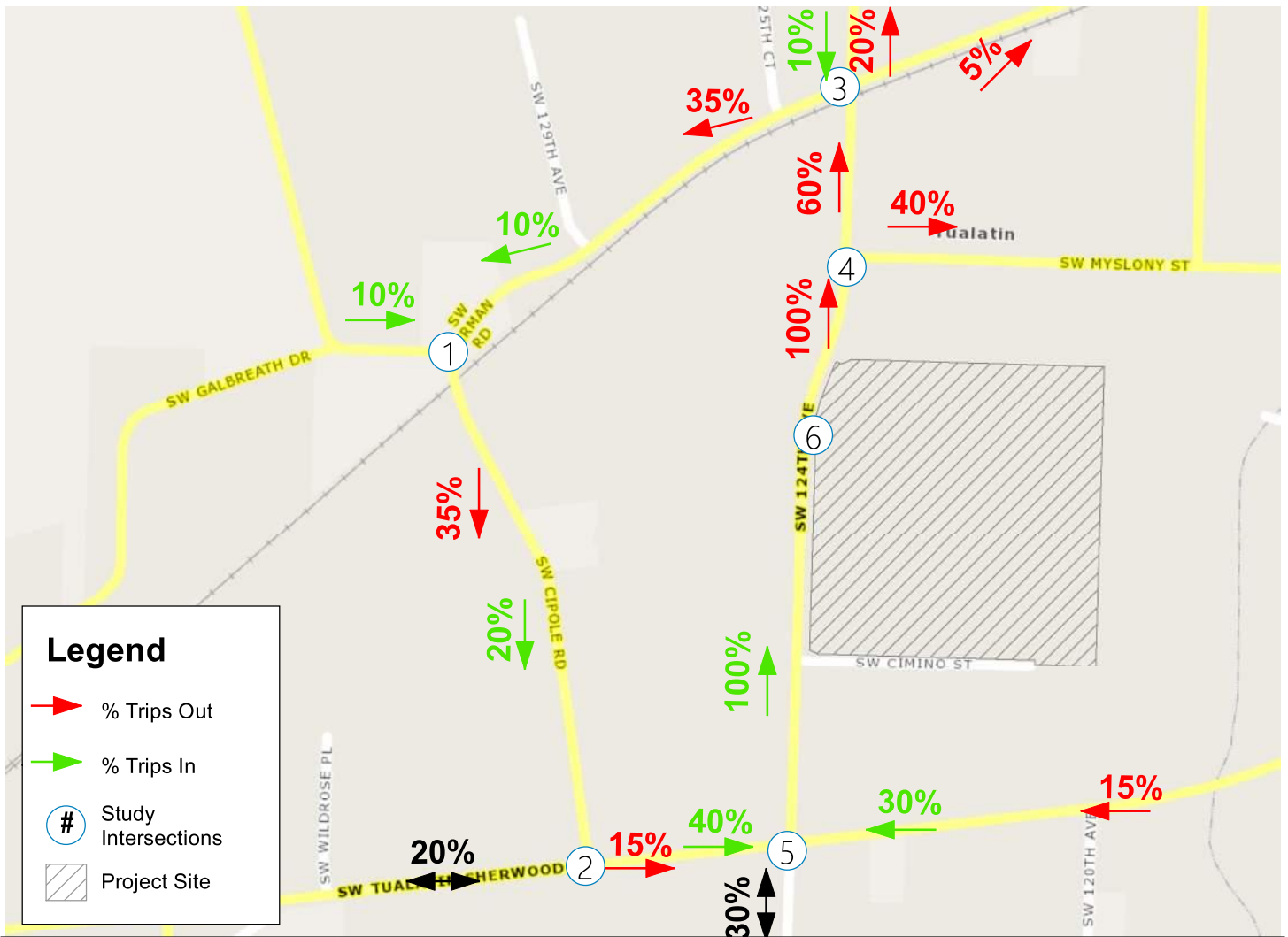
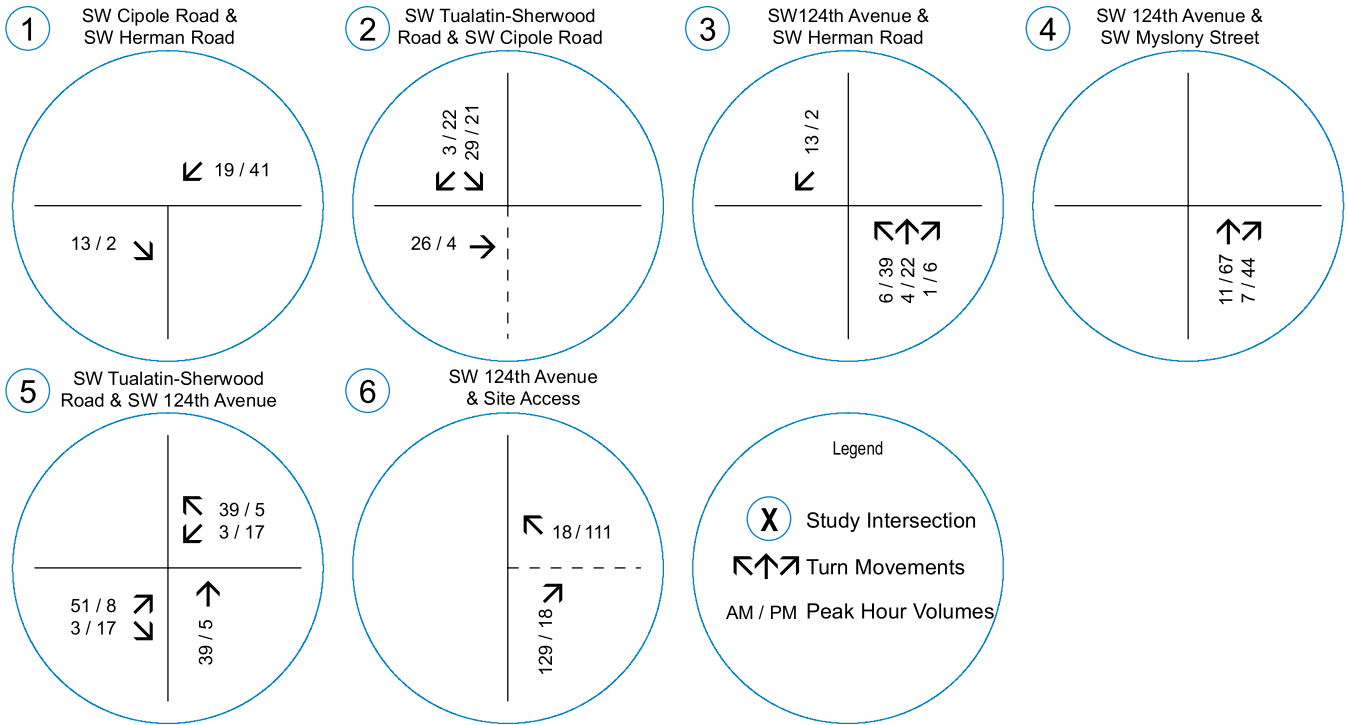
¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2022.

The following indirect routes are assumed:

- Approximately half, 10 percent, of the inbound traffic from the north is assumed to use to SW Cipole Road from OR 99E instead of SW 124th Avenue.
- The remaining 10 percent from the north is assumed to travel along SW 124th Avenue to SW Herman Road to SW Cipole Road.
- Approximately 40 percent of the outbound traffic is assumed to travel northward along SW 124th Avenue, turn right onto SW Myslony Street, and travel to SW Tualatin-Sherwood Road.
- Approximately 5 percent of the outbound traffic is assumed to travel northward on SW 124th Avenue and turn east on SW Herman Road to access SW Tualatin-Sherwood Road via SW Teton Avenue or other connecting roadways.
- Approximately 35 percent of the outbound traffic is assumed to travel northward on SW 124th Avenue and turn west on SW Herman Road and turn south on SW Cipole Road to SW Tualatin-Sherwood Road.

The resulting trip assignment is shown in Figure 3.





MACKENZIE.

September 14, 2023 (*Revised October 11, 2023*)

City of Tualatin
Attention: Tony Doran
18880 SW Martinazzi Avenue
Tualatin, OR 97062

Re: **Fujimi Facility Expansion**
Trip Generation and Distribution
Project Number 2210148.00

Dear Tony:

Mackenzie has prepared this trip generation letter for the proposed two-story, 70,000-square-foot (SF) expansion of the existing Fujimi facility located at 11200 SW Leveton Drive in Tualatin, Oregon.

PROJECT DESCRIPTION

The proposed building addition, located at the southeast corner of the existing Fujimi building, will be two stories with a gross floor area of up to 70,000 SF. The proposed addition will include manufacturing space, clean rooms, laboratories, and some office area. With the expansion, approximately 10-20 new employees will be added over time. This project will include associated site work, including approximately 30 additional parking spaces. The project will also add a new hammerhead fire turnaround at the southeast corner of the site. Per the City of Tualatin Traffic Study Requirements, a full Transportation Impact Analysis (TIA) is required for any development that generates 500 or more new daily trips. The proposed expansion is estimated to add approximately 333 new daily trips, so this letter presents the information required for a Trip Generation and Distribution Description letter.

TRIP GENERATION

Trip generation estimates were reviewed using trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition for the "General Light Industrial" (LUC 110) land use, as required by the "Tualatin Traffic Study Requirements" document (updated March 16, 2022). In addition, we surveyed the existing Fujimi site to better understand the site's actual trip generation compared with existing ITE data for not only the "General Light Industrial" use, but also the "Manufacturing" (LUC 140) use.

Existing Site Trips

The existing Fujimi site on SW Leveton Drive was surveyed for trip generation on Tuesday, October 3, 2023 during the AM and PM peak hours of the street. The generation summary for the existing 175,000 SF building is summarized in Table 1.



TABLE 1 – EXISTING TRIP GENERATION SUMMARY								
Trip Type	Size (KSF)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Total	175.0	40	6	46	10	24	34	238 ^a
Trucks		2	0	2	0	0	0	24 ^b
Passenger Cars		38	6	44	10	24	34	214

As presented in Table 1, the site currently generates 46 AM peak hour and 34 PM peak hour. A total daily trip estimate of 238 was derived by assuming a 7x ratio to the PM peak hour trips comparable to ITE trip data for the “General Light Industrial” and “Manufacturing” uses. Fujimi notes they have on average 8-12 trucks per day for deliveries. Based on the trip data above, the site-specific trip rates for all vehicles are 0.26 AM trips/KSF, 0.19 PM trips/KSF, and 1.36 daily trips/KSF.

Proposed Site Trips

We reviewed the proposed building expansion’s trip generation utilizing the site-specific trip rates noted above, as well as ITE trip rates for “General Light Industrial” and “Manufacturing” uses. The trip generation comparison is presented in Table 2 below.

TABLE 2 – TOTAL TRIP GENERATION COMPARISON FOR EXPANSION									
ITE Code	Land Use	Size (KSF)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
N/A	Fujimi Site	70.0	16	2	18	4	9	13	91
110	General Light Industrial		45	6	51	6	40	46	341
140	Manufacturing		40	12	52	13	30	43	333

As presented in Table 2, the ITE trip rates for the “General Light Industrial” and “Manufacturing” uses likely overestimate the site’s trip impact for the proposed expansion by a factor of 2-3 times. We note the ITE trip generation estimates grossly overestimate the expected trip generation with the expansion as only 10-20 employees will be added with the proposal; however, as a worst-case scenario, we propose estimating the site’s trip generation using ITE trip data for the “Manufacturing” (LUC 140) use for purposes of calculating the proposed expansion’s Transportation Development Tax (TDT) imposed by Washington County.

The existing site trip rates yield an expected impact of only 18 AM peak hour and 13 PM peak hour trips forecasted with the expansion. Therefore, a Transportation Impact Analysis (TIA) is not warranted with the approximately 70,000 SF addition.

^a Assumes total daily trips are 7x PM peak hour trips based on ITE data for “General Light Industrial” and “Manufacturing.”
^b Based on existing Fujimi delivery activity consisting of 8-12 trucks per day, on average.



Truck Trips

Table 3 presents the truck trip generation estimates associated with the proposed expansion utilizing ITE “Manufacturing” truck trip rates.

TABLE 3 – TRUCK TRIP GENERATION COMPARISON FOR EXPANSION									
ITE Code	Land Use	Size (KSF)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
110	General Light Industrial	70.0	0	1	1	0	1	1	18
140	Manufacturing		1	1	2	1	1	2	32

The additional truck trips associated with the expansion are estimated to be 2 AM peak hour, 2 PM peak hour, and 32 daily trips, per trip data for ITE’s “Manufacturing” land use. Note these truck trip estimates are included in the total trip estimates presented in Table 2 and are not in addition to those estimates. The truck trip generation estimates for the “Manufacturing” use are significantly higher than those based on ITE’s “General Light Industrial” use. Similar to the total site-specific trip estimates, ITE truck trip generation estimates grossly overestimate the expected growth in truck trips associated with the expansion. Therefore, we do not recommend further analysis based on truck trip generation.

Pedestrians, Bicycles, and Transit

Sidewalks are provided along the site’s SW Leveton Drive frontage. Sidewalks continue along SW 108th Avenue which provides a pedestrian connection to the nearby Hazelbrook neighborhood located north of SW Tualatin Road, and to SW Herman Road which has a Tualatin Ride Connection Blue Line Shuttle stop east of SW 108th Avenue. Data provided by Fujimi shows that their current workforce has a 0% pedestrian mode share. This is not expected to change with the proposed expansion.

The Tualatin Ride Connection Blue Line Shuttle provides transit service to the site, with a stop along the site’s SW Leveton Drive frontage. The Blue Line runs only during weekday peak hours, with a headway of approximately 45 minutes. Data provided by Fujimi shows that their current workforce has a 0% transit mode share. This is not expected to change with the proposed expansion.

Bike lanes are provided on all non-residential roads in the site vicinity. There is currently an outdoor 5-position bicycle rack on the site, in addition to available indoor bike parking. Data provided by Fujimi shows that their current workforce has a 5% bicycle mode share. This is not expected to change with the proposed expansion, which corresponds to a maximum of 2 additional daily bike trips with the addition of 20 employees. Based on this estimate, it is not expected the proposed expansion will have a significant impact on the bicycle infrastructure in the vicinity of the site.

TRIP DISTRIBUTION

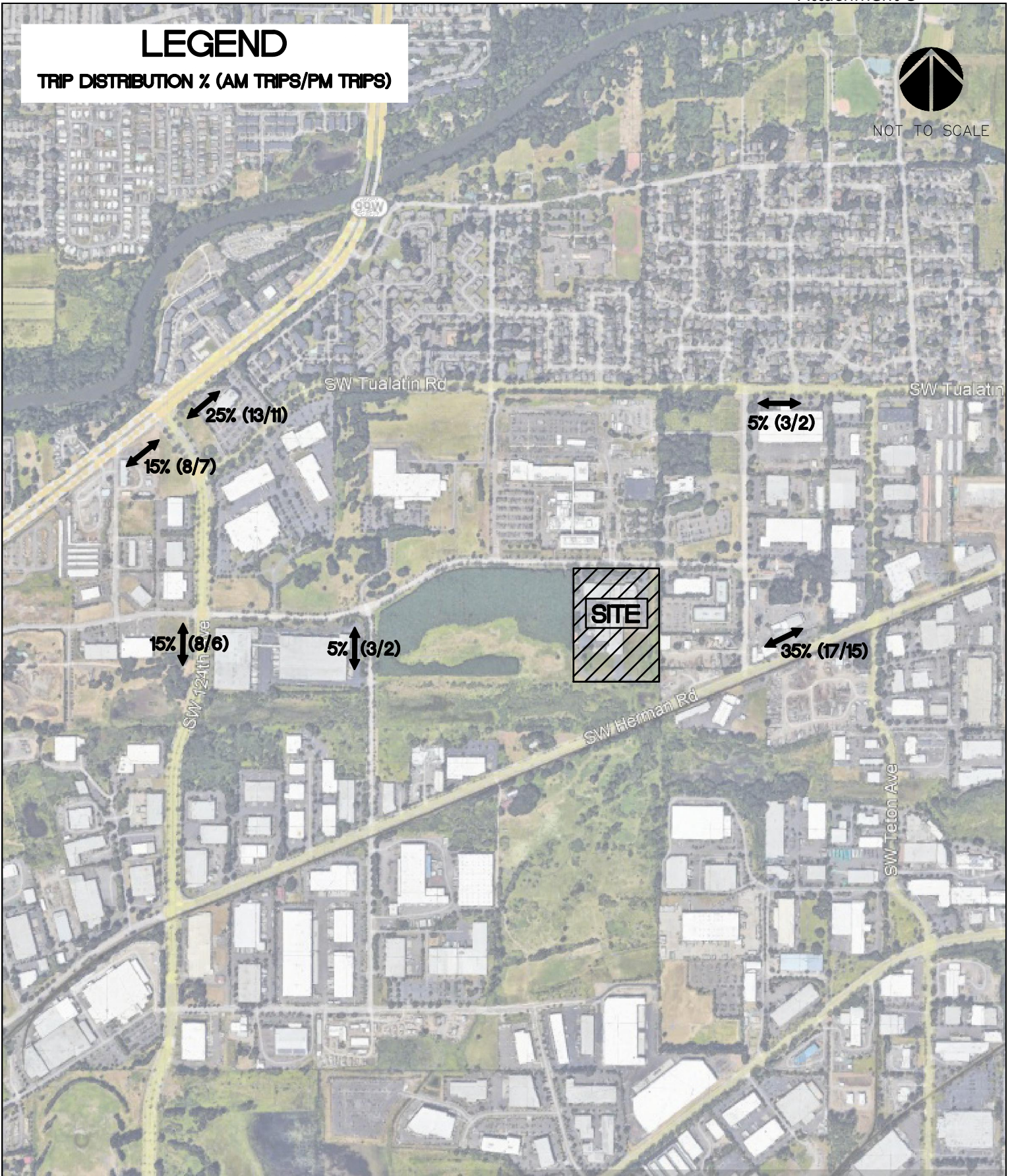
Trip distribution for the new trips generated by the proposed expansion was estimated by reviewing the existing distribution from recent and existing counts at surrounding intersections in conjunction with review of previous trip

LEGEND

TRIP DISTRIBUTION % (AM TRIPS/PM TRIPS)



NOT TO SCALE



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mackenzie.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 9.14.2023

DRAWN BY: LCB

CHECKED BY: JTJ

JOB NO:
 221014800

TRIP DISTRIBUTION + ASSIGNMENT

FUJIMI FACILITY EXPANSION
 TUALATIN, OR

FIGURE

1



lancaster
moble

124th Business Park

Transportation Impact Analysis

Tualatin, Oregon

Date:

April 18, 2023

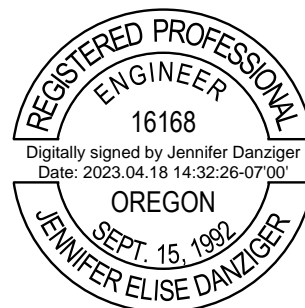
Prepared for:

VLMK Engineering & Design

Prepared by:

Myla Cross

Jennifer Danziger, PE



RENEWS: 12 / 31 / 2023

Site Trips

Trip Generation

To estimate trips that will be generated by the development, trip rates from the *Trip Generation Manual*¹ were used. Specifically, data from the land use code 110, *General Light Industrial*, was used based on the square footage of the development. The 124th Business Park proposes to develop the site with three industrial buildings enclosing a total of 199,170 SF of gross floor area.

The trip generation calculations show that the 124th Business Park site is projected to generate 147 trips during the morning peak hour, 129 trips during the evening peak hour, and 970 trips during the average weekday. Table 3 summarizes the estimated net trip generation of the site with the land use assumptions discussed above.

Table 3: Trip Generation Summary

Land Use	ITE Code	Size	AM Peak Hour			PM Peak Hour			Weekday Total
			In	Out	Total	In	Out	Total	
General Light Industrial (All Vehicles)	110	199,170 SF	129	18	147	18	111	129	970
General Light Industrial (Trucks)	110	199,170 SF	1	1	2	1	1	2	50

Trip Distribution and Assignment

The directional distribution of site trips to/from the project site is necessary to identify intersections to be included in the study area of the TIA. The following trip distribution was estimated based on the locations of likely trip destinations and locations of major transportation facilities in the site vicinity:

- Approximately 30 percent of site trips will travel to/from the south along SW 124th Avenue
- Approximately 20 percent of site trips will travel to/from the west along SW Tualatin-Sherwood Road
- Approximately 30 percent of site trips will travel to/from the east along SW Tualatin-Sherwood Road
- Approximately 20 percent of site trips will travel to/from the north along SW 124th Avenue

To address the right-in/right-out access on SW 124th Avenue, some of the traffic will not be able to travel along the most direct route to the site. Inbound traffic from the north will need to travel southward to SW Tualatin-Sherwood Road by another route and then turn northward on SW 124th Avenue. Outbound traffic destined for locations south, west, or east of the site will need to travel northward on SW 124th Avenue and then travel southward to SW Tualatin-Sherwood Road by an alternate route.

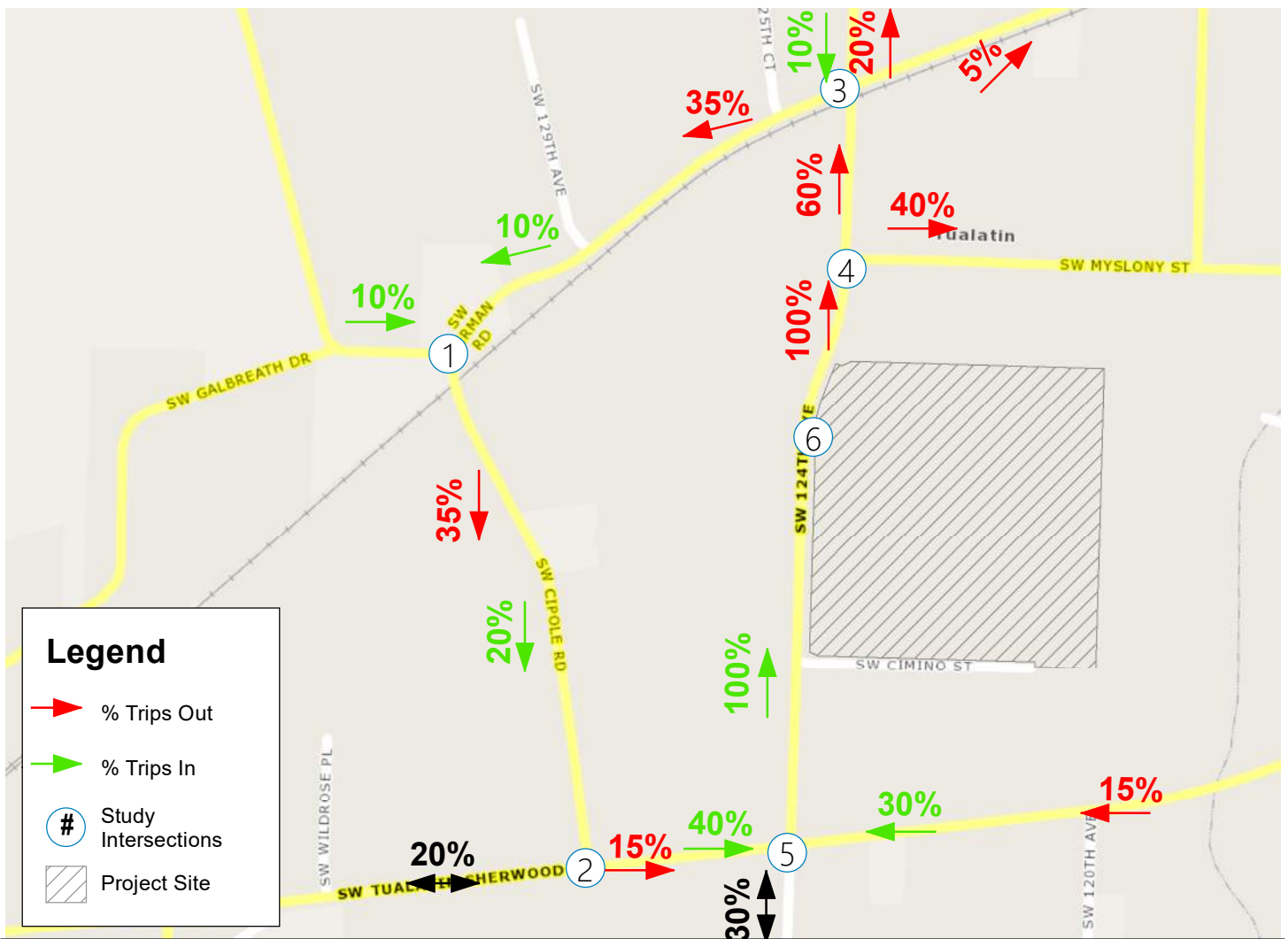
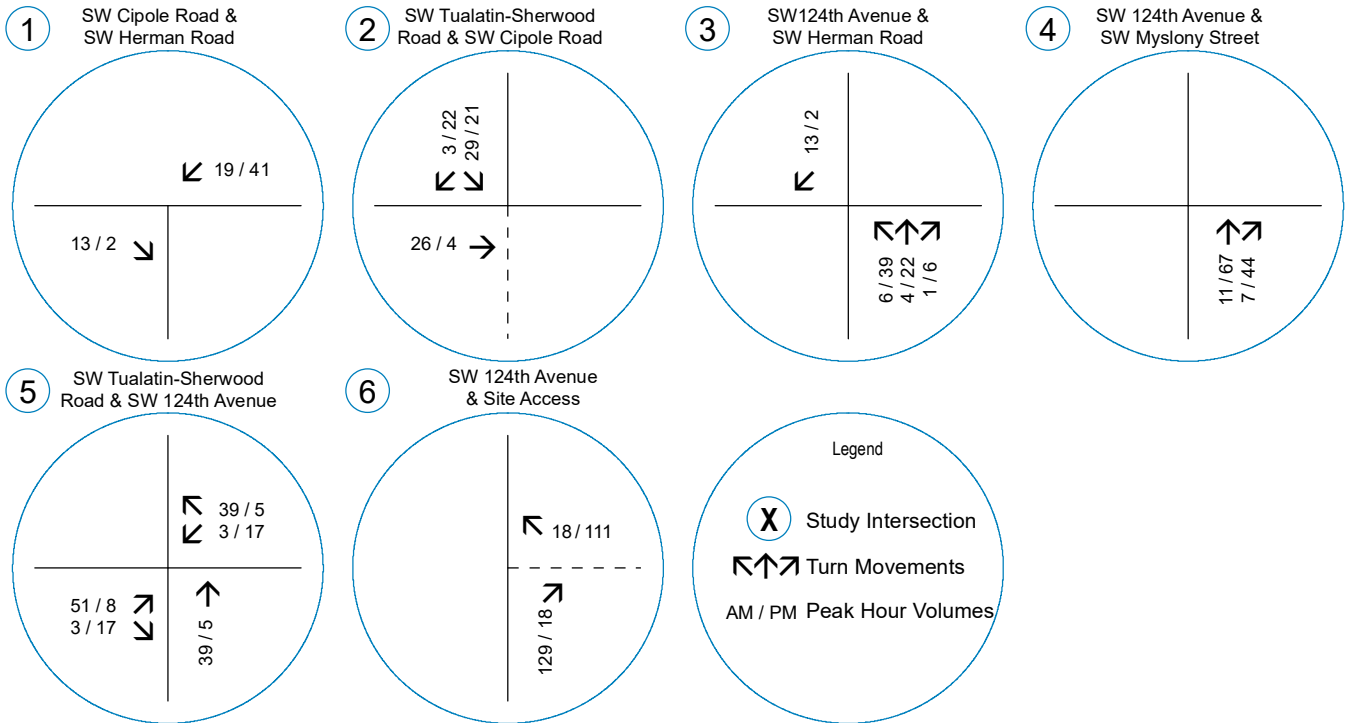
¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2022.

The following indirect routes are assumed:

- Approximately half, 10 percent, of the inbound traffic from the north is assumed to use to SW Cipole Road from OR 99E instead of SW 124th Avenue.
- The remaining 10 percent from the north is assumed to travel along SW 124th Avenue to SW Herman Road to SW Cipole Road.
- Approximately 40 percent of the outbound traffic is assumed to travel northward along SW 124th Avenue, turn right onto SW Myslony Street, and travel to SW Tualatin-Sherwood Road.
- Approximately 5 percent of the outbound traffic is assumed to travel northward on SW 124th Avenue and turn east on SW Herman Road to access SW Tualatin-Sherwood Road via SW Teton Avenue or other connecting roadways.
- Approximately 35 percent of the outbound traffic is assumed to travel northward on SW 124th Avenue and turn west on SW Herman Road and turn south on SW Cipole Road to SW Tualatin-Sherwood Road.

The resulting trip assignment is shown in Figure 3.







lancaster
moblely

Tualatin Logistics Park

Transportation Impact
Analysis

Tualatin, Oregon

Date:

December 15, 2021

Prepared for:

Peter Skei, Specht Development, Inc.

Prepared by:

Nick Mesler, EIT

Jennifer Danziger, PE

Table 4: Trip Generation Summary – Potential Industrial Land Uses

Land Use	ITE Code	AM Peak Hour			PM Peak Hour			Weekday Total	Employee Equivalent*
		In	Out	Total	In	Out	Total		
Total Vehicle Trips based on 452,795 SF Industrial Building									
General Light Industrial	110	295	40	335	41	253	294	2,206	636
Manufacturing	140	234	74	308	104	231	335	2,150	1,022
Warehousing	150	59	18	77	23	59	82	774	125
High-Cube Transload and Short-Term Storage Warehouse	154	28	8	36	13	32	45	634	NA
High-Cube Fulfillment Center Warehouse - Non-Sort	155	55	13	68	28	44	72	820	487
High-Cube Parcel Hub Warehouse	156	159	158	317	197	93	290	2,096	NA
Truck Trips based on 452,795 SF Industrial Building									
General Light Industrial	110	3	2	5	3	3	5	114	-
Manufacturing	140	8	6	14	6	8	14	204	-
Warehousing	150	5	4	9	7	7	14	272	-
High-Cube Transload and Short-Term Storage Warehouse	154	4	5	9	2	3	5	100	-
High-Cube Fulfillment Center Warehouse - Non-Sort	155	5	5	9	2	3	5	104	-
High-Cube Parcel Hub Warehouse	156	NA	NA	41	NA	NA	27	262	-

* Estimated as average number of employees needed to generate the equivalent number of vehicle trips based on KSF

Total Site Trip Generation

Table 5 summarizes the estimated net trip generation of the site with the assumptions discussed above.

Table 5: Trip Generation Summary (Warehousing)

Land Use	AM Peak Hour			PM Peak Hour			Weekday Total
	In	Out	Total	In	Out	Total	
Existing Land Use	-8	-6	-14	-21	-27	-48	-516
Proposed Land Use	295	40	335	41	253	294	2,206
Net Increase	287	34	321	20	227	246	1,690

The trip generation calculations show that the Tualatin Logistics site assuming general light industrial for the site is projected to generate an additional 321 net trips during the morning peak hour, 246 net trips during the evening peak hour, and 1,690 net trips during the average weekday.



Trip Distribution and Assignment

The directional distribution of site trips to/from the project site is necessary to identify intersections to be included in the study area of the TIA. The following trip distribution was estimated based on the locations of likely trip destinations and locations of major transportation facilities in the site vicinity:

- Approximately 30 percent of site trips will travel to/from the south along SW 124th Avenue
- Approximately 20 percent of site trips will travel to/from the west along SW Tualatin-Sherwood Road
- Approximately 30 percent of site trips will travel to/from the east along SW Tualatin-Sherwood Road
- Approximately 5 percent of site trips will travel to/from the north along SW Cipole Road
- Approximately 15 percent of site trips will travel to/from the north along SW 124th Avenue

Trip distribution at the site accesses will depend on the location and configuration of the accesses.

Access Scenario 1

With the first scenario assuming an access on SW 124th Avenue at the southeast corner of the site and an access on SW Cipole Road, the split of traffic between the two accesses is assumed to be 50 percent at each access. A detailed illustration of the distribution for this scenario was presented in the scoping memorandum, which has been included in Appendix A.

The resulting trip assignment is shown in Figure 2.

Access Scenario 2

With the second scenario assuming a limited access on SW 124th Avenue at the northeast corner of the site, the split of traffic is assumed to be 65 to 70 percent using the SW Cipole Road access while 30 to 35 percent using the limited access at SW 124th Avenue. A detailed illustration of the distribution for this scenario was presented in the scoping memorandum, which has been included in Appendix A.

The resulting trip assignment is shown in Figure 3.

Access Scenario 3

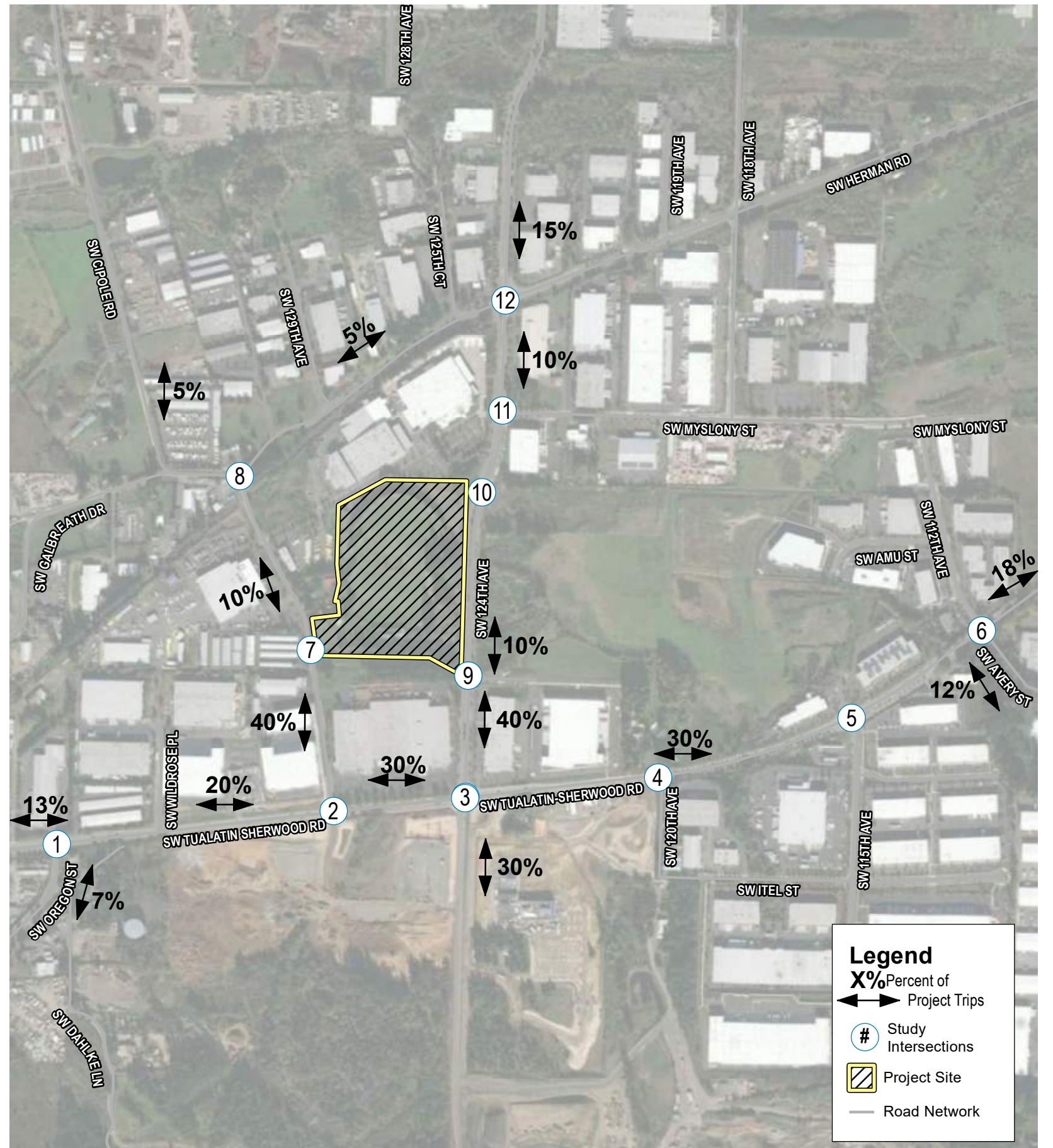
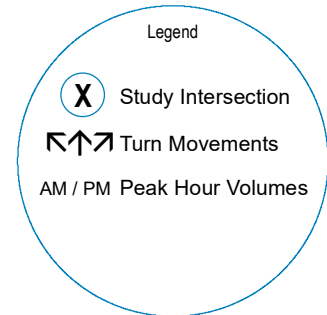
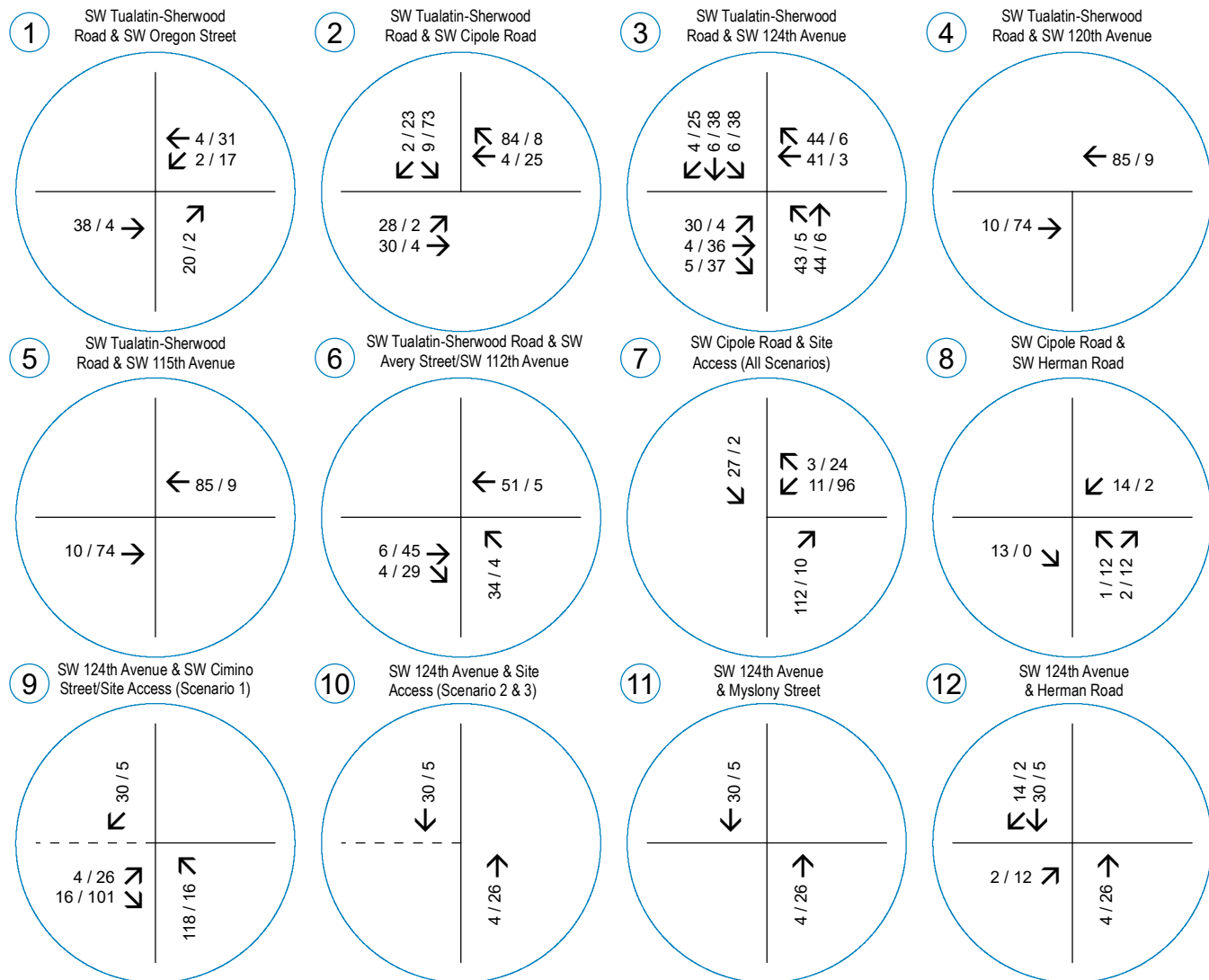
With the third scenario assuming a full access on SW 124th Avenue at the northeast corner of the site, the split of traffic is assumed to be approximately 65 percent using the SW Cipole Road access and 35 percent using the access on SW 124th Avenue.

The resulting trip assignment is shown in Figure 4.

Access Scenario 4

The fourth scenario assumes a full access on SW 124th Avenue at the southeast corner of the site and a limited access on SW 124th Avenue at the northeast corner of the site. The split of traffic is assumed to be approximately 35 percent using the SW Cipole Road access, 35 percent using the access on SW 124th Avenue opposite SW Cimino Street, and 30 percent using the limited access at the northeast corner of the site.

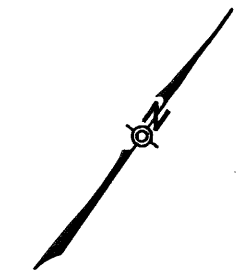
The resulting trip assignment is shown in Figure 5.



APPENDIX H.
**SIGNAL
INFORMATION**

SIGNAL MODIFICATION PLAN
PACIFIC HWY WEST AT SW 124TH AVE
OR 99W, M.P. 12.66

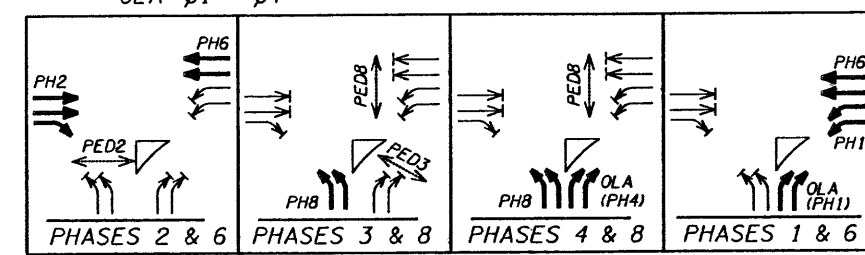
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING



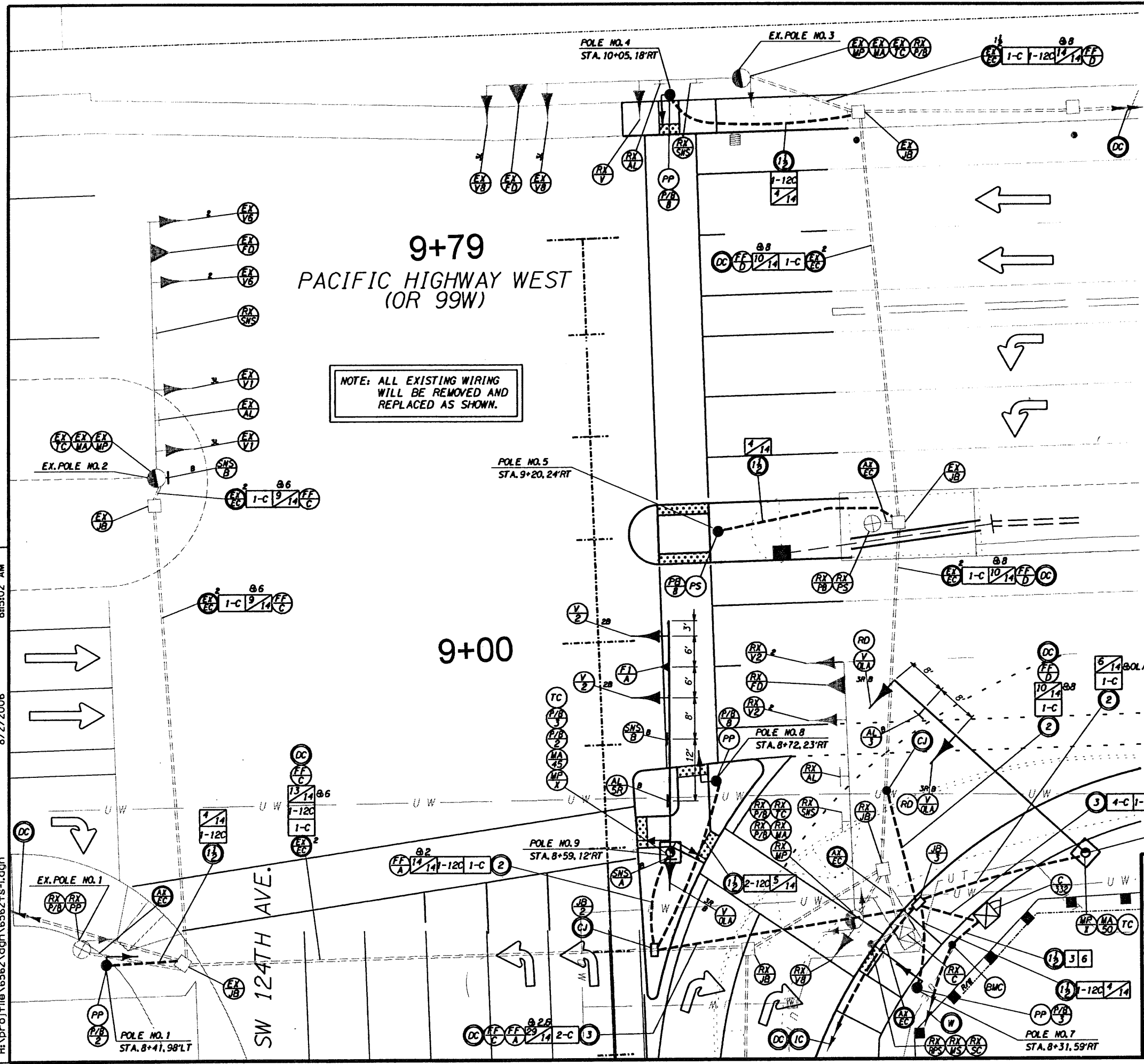
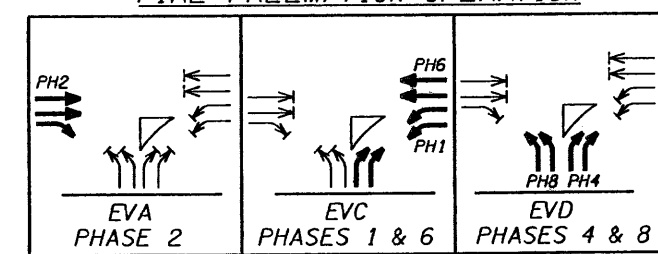
SCALE 0 10 20 40 FEET

NORMAL PHASE ROTATION
(STATE SUPPLIED WAKS SOFTWARE)

OLA = $\phi 1 + \phi 4$



FIRE PREEMPTION OPERATION



NOTE: ALL EXISTING WIRING WILL BE REMOVED AND REPLACED AS SHOWN.

Thomas Galvin
Traffic Engineering Operation Section Approval
OOOT TEOS DWG NO. 14329

REGISTERED PROFESSIONAL ENGINEER
19283PE
Charles W. Radosta
OREGON
JULY 17, 1997
CHARLES W. RADOSTA
EXPIRES 12/31/06

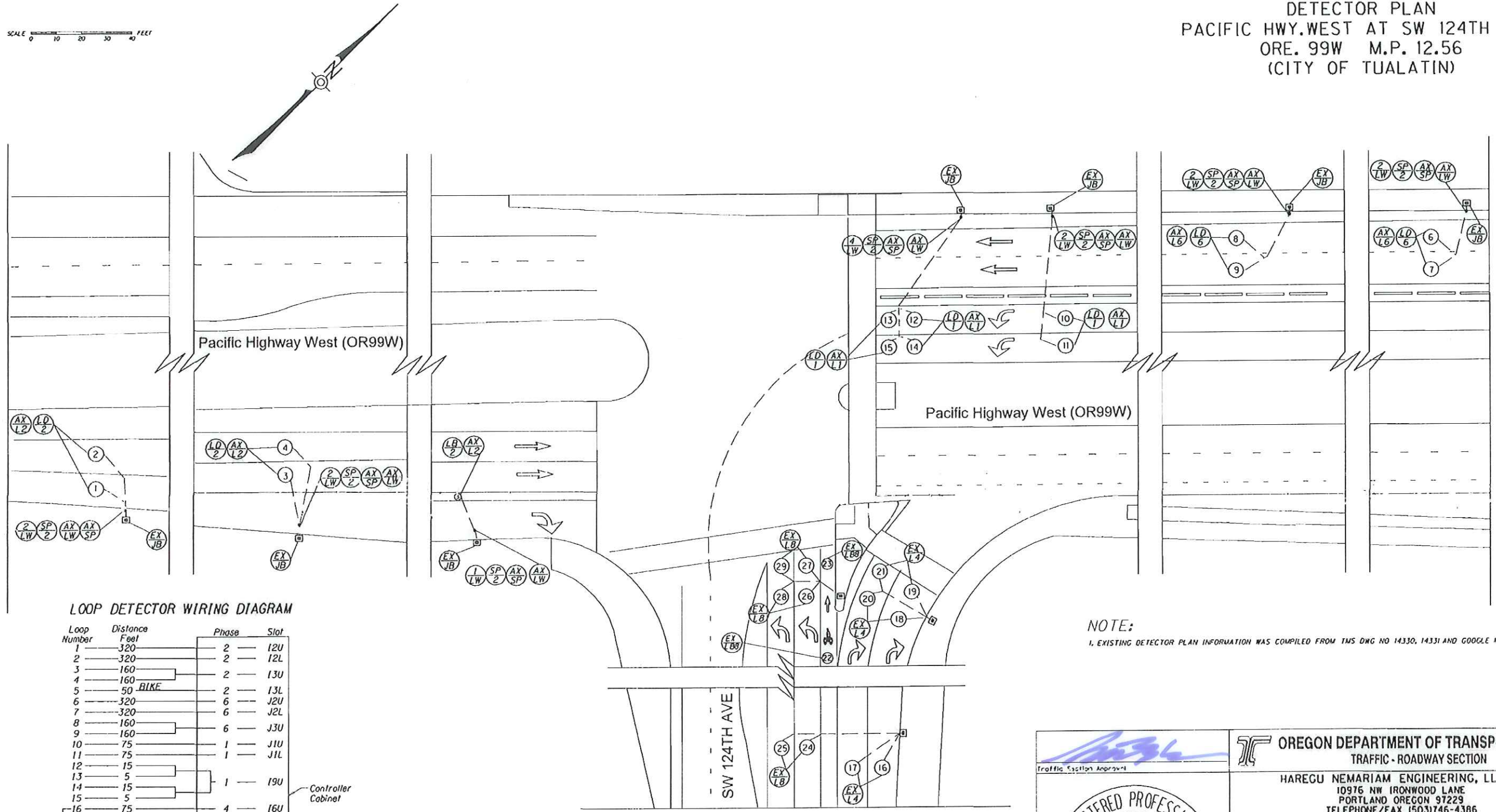
TUALATIN DEVELOPMENT COMMISSION
SW 124TH AVE TURN LANE AT 99W
CITY OF TUALATIN
WASHINGTON COUNTY
Reviewed By - C. Radosta
Designed By - M. Stansell
Drafted By - M. Stansell

SIGNAL MODIFICATION PLAN
SHEET NO. **S-2**

116698

DETECTOR PLAN
 PACIFIC HWY. WEST AT SW 124TH AVE.
 ORE. 99W M.P. 12.56
 (CITY OF TUALATIN)

SCALE 0 10 20 30 40 FEET



LOOP DETECTOR WIRING DIAGRAM

Loop Number	Distance Feet	Phase	Slot
1	320	2	12U
2	320	2	12L
3	160	2	13U
4	160	2	13L
5	50 BIKE	2	13L
6	320	6	J2U
7	320	6	J2L
8	160	6	J3U
9	160	6	J3L
10	75	1	J1U
11	75	1	J1L
12	15		
13	5		
14	15	1	19U
15	5		
16	75	4	16U
17	75	4	16L
18	15	4	17U
19	5		
20	15	4	17L
21	5		
22	50 BIKE	8	J7L
23	5		
24	75	8	J6U
25	75	8	J6L
26	15	8	J8U
27	5		
28	15	8	J7U
29	5		

Controller Cabinet

NOTE:

1. EXISTING DETECTOR PLAN INFORMATION WAS COMPILED FROM TMS DWG NO 14330, 14331 AND GOOGLE MAP.

"UTILITIES NOT SHOWN"
 Contractor to contact utility companies for field locations.

NOTE:
 See T.R.S. Dwg. 16697 for Legend

NOTE:
 Field Verify Measurements Before Construction

	OREGON DEPARTMENT OF TRANSPORTATION TRAFFIC - ROADWAY SECTION
	HAREGU NEMARIAM ENGINEERING, LLC. 10976 NW IRONWOOD LANE PORTLAND OREGON 97229 TELEPHONE/FAX 15031746-4386
OR99W: TUALATIN RIVER BR-SUNSET BLVD. SEC. PACIFIC HIGHWAY WEST WASHINGTON COUNTY	
DESIGNED BY: TN REVIEWED BY: HN DRAWN BY: TN P.C. 91 M.P. 12.56	DETECTOR PLAN
ISSU. No. _____ T.R.S. DWG. NO. 16698	

Table: Phase Timing Plans [Timing Plan: 1]

Phase	1	2	3	4	6	8
Walk	0	9	7	0	0	8
Ped Clear	0	22	6	0	0	27
Min Green	4	10	4	6	10	6
Passage	2.3	5.4	0.2	2.3	5.4	2.3
Max 1	30	50	10	20	50	20
Max 2	40	60	10	20	60	20
Max 3	0	0	0	0	0	0
Yellow Change	4.5	5	4	4	5	4
Red Clear	1.1	1	0	1	1	2
Added Initial	0	1.2	0	0	1.2	0
Maximum Initial	4	21	4	6	21	6
Time Before Reduction	8	10	0	8	10	8
Time To Reduce	3	20	0	3	20	3
Minimum Gap	0.5	3.4	0.2	0.5	3.4	0.5
Dynamic Max Limit	45	0	0	0	0	0
Dynamic Max Step	5	0	0	0	0	0

Table: Phase Options Plans [Phase Plan: 1]

Phase	1	2	3	4	5	6	7	8
Enable	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	FALSE	TRUE
Auto Flash Entry	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
Auto Flash Exit	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE
Non Actuated 1	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Non Actuated 2	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Non Lock Detector	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Min Vehicle Recall	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Max Vehicle Recall	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Ped Recall	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Soft Vehicle Recall	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Dual Entry	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE
Disable Simultaneous Gap	TRUE	FALSE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE
Guaranteed Passage	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Actuated Rest in Walk	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Conditional Service Enable	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Add Initial Calculation	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

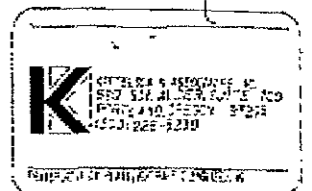
Table: Global Phase Recalls

Phase	2	6
Min	TRUE	TRUE
Max	FALSE	FALSE
Ped	FALSE	FALSE
Act. Walk Re:	FALSE	FALSE

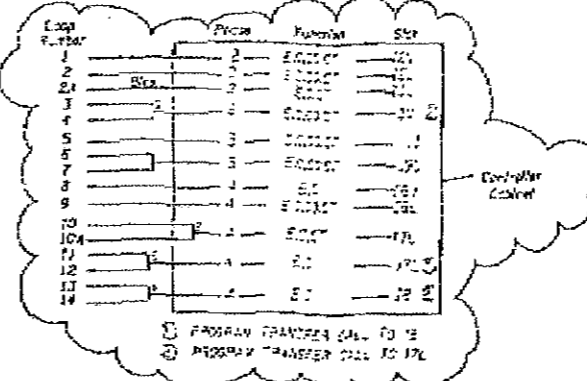
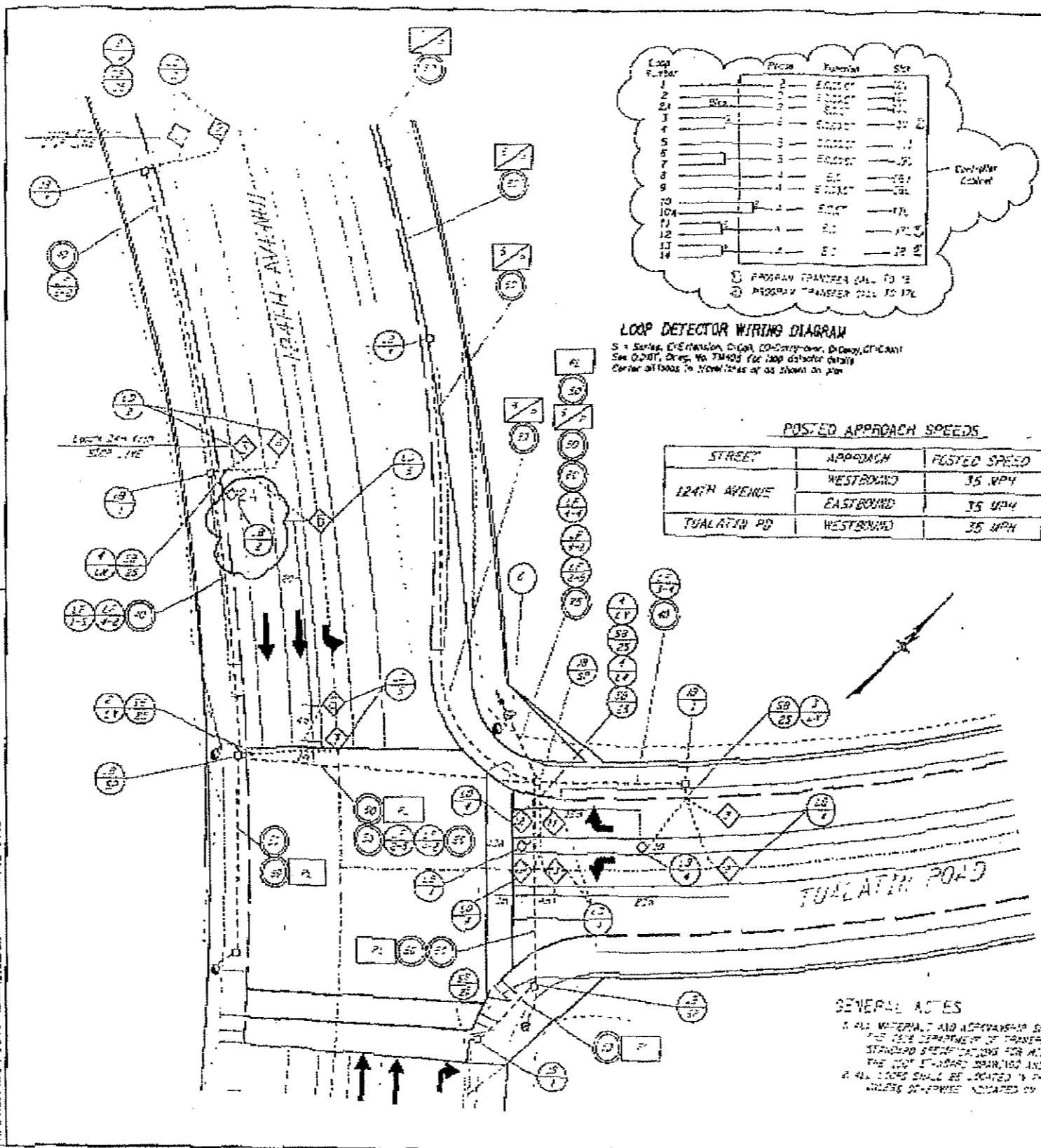
Table: Day Plan Events [Day Plan: 1]

Event	Hour	Minute	Action	Description
1	1	0	0	21 Coord Free - Max 1
2	2	5	45	22 Coord Free - Max 2
3	3	8	0	21 Coord Free - Max 1
4	4	15	0	22 Coord Free - Max 2
5	5	18	0	21 Coord Free - Max 1

124TH AT TUALATIN RD DETECTOR & INTERCONNECT PLAN



REVISED AS CONSTRUCTED
28-June-1999 CONTRACT 12044
8/16/99 Add Bure Loop

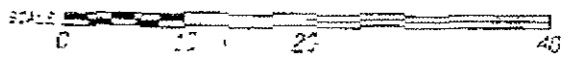
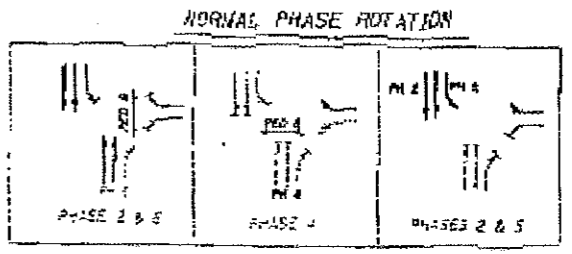


POSTED APPROACH SPEEDS

STREET	APPROACH	POSTED SPEED
124TH AVENUE	WESTBOUND	35 MPH
	EASTBOUND	35 MPH
TUALATIN RD	WESTBOUND	35 MPH

- LEGEND
- (C) CONTROLLER (See Signal Plan)
 - (S) Junction See Signal Plan
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S
 - (L) Loop #10 on 1.25S on 1.20S on 1.15S on 1.10S on 1.05S on 1.00S on 0.95S on 0.90S on 0.85S on 0.80S on 0.75S on 0.70S on 0.65S on 0.60S on 0.55S on 0.50S on 0.45S on 0.40S on 0.35S on 0.30S on 0.25S on 0.20S on 0.15S on 0.10S on 0.05S on 0.00S

- ABBREVIATIONS
- T = TYPE SHOWN
 - PH = P-AGE SHOWN
 - N = NUMBER OF CABLES SHOWN
 - E = ELEVATOR PLUMBER
 - H = HEIGHT SHOWN
 - A = NUMBER SHOWN
 - B = 1/4" SIZE SHOWN
 - S = SIZE SHOWN
 - A = STANDARD PLUMBER
 - CH = CHANNEL SHOWN
 - L = LENGTH SHOWN
 - PM = POLE MOUNTED



GENERAL NOTES

- ALL MATERIAL AND APPROVALS SHALL BE IN ACCORDANCE WITH THE OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE 2001 STANDARD DRAWINGS AND SPECIAL PROVISIONS.
- ALL LOTS SHALL BE LOCATED IN THE CENTER OF THE LANE UNLESS OTHERWISE NOTED ON THE DETECTOR PLAN.

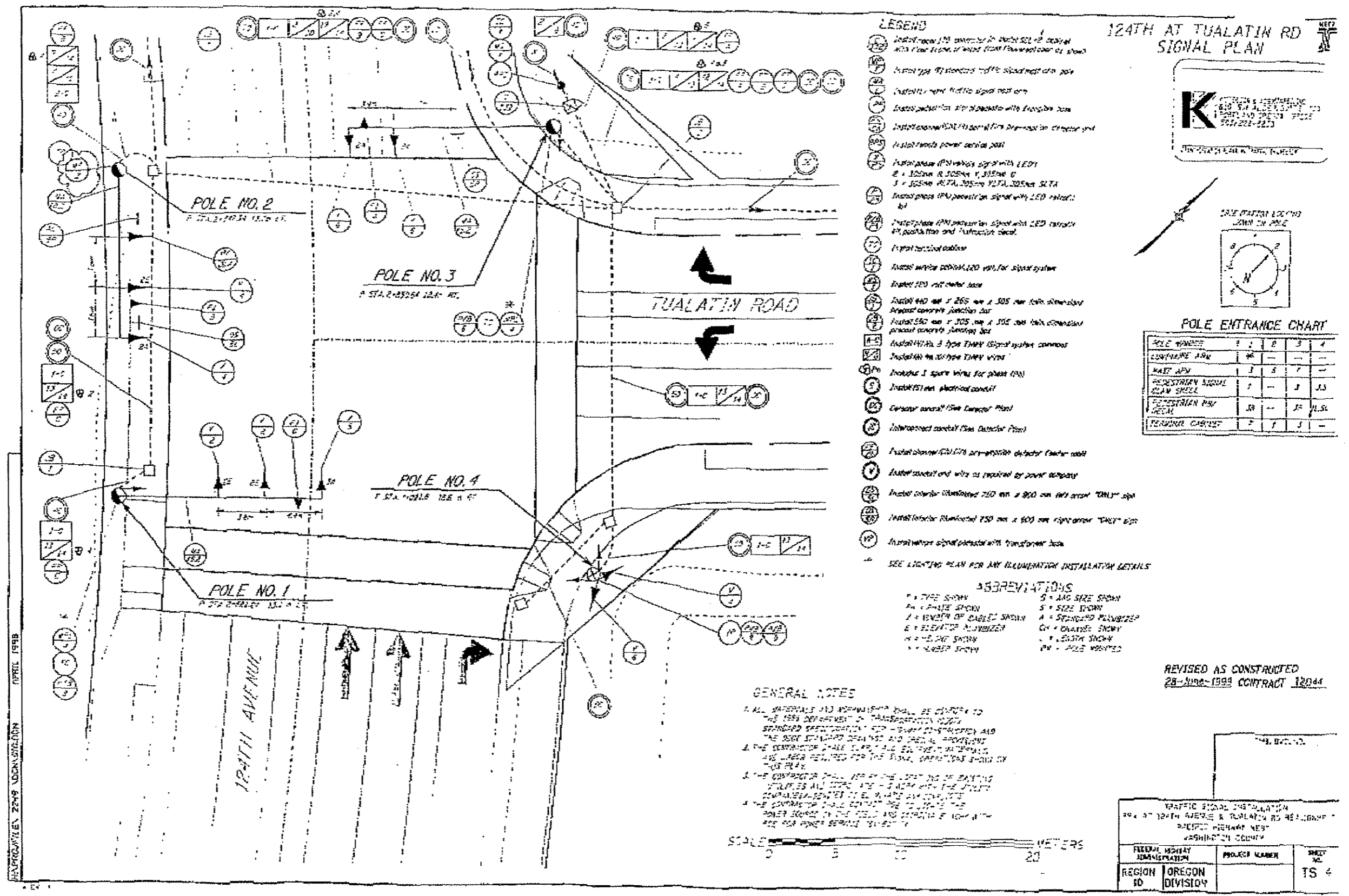
TUS-041-05

TRAFFIC SIGNAL INSTALLATION
35th AT 124TH AVENUE & TUALATIN RD, SEASIDE, OREGON
PACIFIC NORTHWEST
VARIABLE MESSAGE

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
REGION ID	OREGON DIVISION	TS 5

APRIL 1990
 PROJECT 2219 VISIONS/DIB

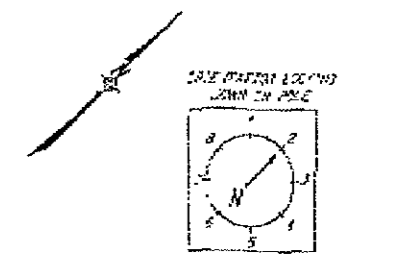
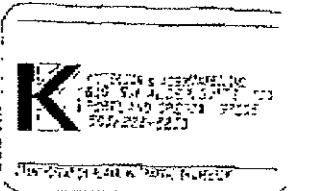
01/25/00 15:37 P.003/005



- LEGEND**
- 1. 20" - 2" dia. 10' galvanized iron pipe
 - 2. 20" - 1" dia. 10' galvanized iron pipe
 - 3. 20" - 1/2" dia. 10' galvanized iron pipe
 - 4. 20" - 1/4" dia. 10' galvanized iron pipe
 - 5. 20" - 1/8" dia. 10' galvanized iron pipe
 - 6. 20" - 3/16" dia. 10' galvanized iron pipe
 - 7. 20" - 1/4" dia. 10' galvanized iron pipe
 - 8. 20" - 3/8" dia. 10' galvanized iron pipe
 - 9. 20" - 1/2" dia. 10' galvanized iron pipe
 - 10. 20" - 3/4" dia. 10' galvanized iron pipe
 - 11. 20" - 1" dia. 10' galvanized iron pipe
 - 12. 20" - 1 1/4" dia. 10' galvanized iron pipe
 - 13. 20" - 1 1/2" dia. 10' galvanized iron pipe
 - 14. 20" - 2" dia. 10' galvanized iron pipe
 - 15. 20" - 2 1/2" dia. 10' galvanized iron pipe
 - 16. 20" - 3" dia. 10' galvanized iron pipe
 - 17. 20" - 3 1/2" dia. 10' galvanized iron pipe
 - 18. 20" - 4" dia. 10' galvanized iron pipe
 - 19. 20" - 4 1/2" dia. 10' galvanized iron pipe
 - 20. 20" - 5" dia. 10' galvanized iron pipe
 - 21. 20" - 5 1/2" dia. 10' galvanized iron pipe
 - 22. 20" - 6" dia. 10' galvanized iron pipe
 - 23. 20" - 6 1/2" dia. 10' galvanized iron pipe
 - 24. 20" - 7" dia. 10' galvanized iron pipe
 - 25. 20" - 7 1/2" dia. 10' galvanized iron pipe
 - 26. 20" - 8" dia. 10' galvanized iron pipe
 - 27. 20" - 8 1/2" dia. 10' galvanized iron pipe
 - 28. 20" - 9" dia. 10' galvanized iron pipe
 - 29. 20" - 9 1/2" dia. 10' galvanized iron pipe
 - 30. 20" - 10" dia. 10' galvanized iron pipe
 - 31. 20" - 10 1/2" dia. 10' galvanized iron pipe
 - 32. 20" - 11" dia. 10' galvanized iron pipe
 - 33. 20" - 11 1/2" dia. 10' galvanized iron pipe
 - 34. 20" - 12" dia. 10' galvanized iron pipe
 - 35. 20" - 12 1/2" dia. 10' galvanized iron pipe
 - 36. 20" - 13" dia. 10' galvanized iron pipe
 - 37. 20" - 13 1/2" dia. 10' galvanized iron pipe
 - 38. 20" - 14" dia. 10' galvanized iron pipe
 - 39. 20" - 14 1/2" dia. 10' galvanized iron pipe
 - 40. 20" - 15" dia. 10' galvanized iron pipe
 - 41. 20" - 15 1/2" dia. 10' galvanized iron pipe
 - 42. 20" - 16" dia. 10' galvanized iron pipe
 - 43. 20" - 16 1/2" dia. 10' galvanized iron pipe
 - 44. 20" - 17" dia. 10' galvanized iron pipe
 - 45. 20" - 17 1/2" dia. 10' galvanized iron pipe
 - 46. 20" - 18" dia. 10' galvanized iron pipe
 - 47. 20" - 18 1/2" dia. 10' galvanized iron pipe
 - 48. 20" - 19" dia. 10' galvanized iron pipe
 - 49. 20" - 19 1/2" dia. 10' galvanized iron pipe
 - 50. 20" - 20" dia. 10' galvanized iron pipe
- SEE LIGHTING PLAN FOR ANY ILLUMINATION INSTALLATION DETAILS

- ABBREVIATIONS**
- T - TYPE SHOWN
 - F - FACE SHOWN
 - L - LENGTH OF CABLE SHOWN
 - E - ELEVATION PLUMBLINE
 - H - HOLES SHOWN
 - B - BURIED SHOWN
 - S - AND SIZE SHOWN
 - 5 - SIZE SHOWN
 - A - STANDARD PLUMBLINE
 - CR - CHANGE SHOWN
 - L - LENGTH SHOWN
 - BY - POLE MARKED

- GENERAL NOTES**
1. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO THE 1994 DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARDS SPECIFICATION FOR TRAFFIC SIGNALS AND THE 1992 STANDARD DRAWINGS AND SPECIAL PROVISIONS.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LAIERS REQUIRED FOR THE WORK. OPERATIONS SHOULD BE DONE AS PER THE PLANS.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY NOTICES AND PERMITS FROM THE CITY OF TUALATIN AND OREGON POWER DIVISION.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY NOTICES AND PERMITS FROM THE CITY OF TUALATIN AND OREGON POWER DIVISION.



REVISED AS CONSTRUCTED
28-June-1999 CONTRACT 12044

REGION ID		OREGON DIVISION		PROJECT NUMBER		SHEET NO.	
							TS 4

01/25/00 15:36 P.002/005

Phase Parameters - Plan 1 (Extended Phases)

Options

Phases	9	10	11	12	13	14	15	16	Phases	9	10	11	12	13	14	15	16
Enable									Enable								
Walk Time	0	0	0	0	0	0	0	0	Auto Flash Ent.								
Clear Time	0	0	0	0	0	0	0	0	Auto Flash Exit								
Stdy Don't Walk	0	0	0	0	0	0	0	0	Non Actuated I								
Min Green	5	1	1	1	1	1	1	1	Non Actuated II								
Min Green 2	0	0	0	0	0	0	0	0	Non Lock Mem								
Min B4 FO	0	0	0	0	0	0	0	0	Min Veh Recall								
Passage	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Max Veh Recall								
Passage 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ped Recall								
Max 1	15	0	0	0	0	0	0	0	Soft Veh Recall								
Max 2	15	0	0	0	0	0	0	0	Dual Entry								
Max 3	0	0	0	0	0	0	0	0	Sim Gap Dis								
Conditional Max	0	0	0	0	0	0	0	0	Guaranteed Pass								
Yel Change	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	Act Rest Walk								
Red Clear	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Cond Service								
Add Red Clear	0	0	0	0	0	0	0	0	Add Initial								
Red Revert	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ped Clr During Yel								
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ped Clr During Red								
Max Initial	0	0	0	0	0	0	0	0	Cond Reservice								
Time B4 Reduce	0	0	0	0	0	0	0	0	Yel Min Override								
Cars B4 Reduce	0	0	0	0	0	0	0	0	No Startup Call								
Time To Reduce	0	0	0	0	0	0	0	0	Adv. Warn Flasher								
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	No Ped Str Up Call								
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ped Clr OVTG								
Dyn Max Limit	0	0	0	0	0	0	0	0	Flash Exit Call								
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Flash Exit Ped Call								
Advance Walk	0	0	0	0	0	0	0	0	MinGreen2								
Delayed Walk	0	0	0	0	0	0	0	0	MaxGreen2								
Alt Walk	0	0	0	0	0	0	0	0	MaxGreen3								
Alt Ped Clr	0	0	0	0	0	0	0	0	Ped2								
Ped Service Limit	0	0	0	0	0	0	0	0	Ped Clear Pre Clear								
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ped NA+ Mode								
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Red Rest								
Pre Clearance 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Serve Evy Oth Even								
Red Clear Ext Pass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Serve Evy Oth Odd								
Red Clear Ext Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Coord Ped Yield								
Queue Jump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ped Recycle								
Adv Warning Ext	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Coutdown								
Pri Walk	0	0	0	0	0	0	0	0	Simult Start								
Call Phases									Simult Ped Term								
Walk Ext	0	0	0	0	0	0	0	0									
Walk Max	0	0	0	0	0	0	0	0									
Wait Cars B4 Sev	0	0	0	0	0	0	0	0									
Ped Clear Thru	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									

IP Settings

Adapter	IP Address	Subnet Mask	Default Gateway	ARP	Mode
1				Disable	Static
2				Disable	Static

Default Free Parameters

	Phs	Det	Ped	Ovlp	Pri
Seq	Pln	Pln	Pln	Pln	Pln
1	1	1	1	1	1

Serial Ports

Port	Description	Function	Address	Baud	Bits	Stop	Parity	Flow	CTS	RTS
1	Port 2/C21S	None	1	9600	8	1	None	None	0	0
2	Aux P3/C22S	None	1	9600	8	1	None	None	0	0
3	SDLC Port 1	None	1	9600	8	1	None	None	0	0
4	Com A/C50S	None	1	9600	8	1	None	None	0	0
5	FIO	None	1	9600	8	1	None	None	0	0
6	DISPLAY/C60M	None	1	9600	8	1	None	None	0	0
7	SP7	None	1	9600	8	1	None	None	0	0
8	SP8/Com B	None	1	9600	8	1	None	None	0	0

Unit Parameters

Startup Parameters

Start Fls Mode	Cabinet
Start Fls Time	0
Clearce Hold	6
Start Yellow	0.0
Start Red	6.0

Timing/Freq Parameters

Backup Time	600
Red Revert	4.0
Master By TOD	Disable
Grn Flash Freq.	60
Yel Flash Freq.	60

Flash Parameters

All Red Entry	0
All Red Exit	8
Auto Flash CVM	Disable
AR Flsh Sense	Enable
Dk Flsh Sense	Disable

Other Parameters

Preempt Lock	0
3 Phs Dia Seq	
4 Phs Dia Seq	
Sep Dia Seq	

Manual Control

MCE Enab	Enable
MCE Seq.	1
Auto Ped	Enable

Sequence Configuration

Sequence 1

Ring	Phases
1	2,a,4,b
2	5,6,a,8,b
3	
4	

Sequence 2

Ring	Phases
1	2,a,4,b
2	6,5,a,8,b
3	
4	

Sequence 3

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,8,7,b
3	
4	

Sequence 4

Ring	Phases
1	2,1,a,4,3,b
2	5,6,a,7,8,b
3	
4	

Sequence 5

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,7,8,b
3	
4	

Sequence 6

Ring	Phases
1	2,1,a,4,b,8,c
2	6,5,a,b,c
3	
4	

Sequence 7

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,7,8,b
3	
4	

Sequence 8

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,7,8,b
3	
4	

Sequence 9

Ring	Phases
1	1,2,a,3,4,b
2	5,6,a,8,7,b
3	
4	

Sequence 10

Ring	Phases
1	2,1,a,3,4,b
2	5,6,a,8,7,b
3	
4	

Sequence 11

Ring	Phases
1	1,2,a,4,3,b
2	5,6,a,8,7,b
3	
4	

Sequence 12

Ring	Phases
1	2,1,a,4,3,b
2	5,6,a,8,7,b
3	
4	

Sequence 13

Ring	Phases
1	1,2,a,3,4,b
2	6,5,a,8,7,b
3	
4	

Sequence 14

Ring	Phases
1	2,1,a,3,4,b
2	6,5,a,8,7,b
3	
4	

Sequence 15

Ring	Phases
1	1,2,a,4,3,b
2	6,5,a,8,7,b
3	
4	

Sequence 16

Ring	Phases
1	2,1,a,4,3,b
2	6,5,a,8,7,b
3	
4	

Phase Configuration

Ph.	Startup	Ring	Concurrent	Startup Min	Description
1	Phase Not On	0		0	NBL
2	Green No Walk	1	5,6	0	SB
3	Phase Not On	0		0	EBL
4	Phase Not On	1	8	0	WB

5	Phase Not On	2	2	0	SBL
6	Green No Walk	2	2	0	NB
7	Phase Not On	0		0	WBL
8	Phase Not On	2	4	0	EB

No Serve Phases

Sequence 1		Sequence 2		Sequence 3		Sequence 4		Sequence 5		Sequence 6		Sequence 7		Sequence 8	
P	No Srv P	P	No Srv P	P	No Srv P	P	No Srv P	P	No Srv P	P	No Srv P	P	No Srv P	P	No Srv P
1		1		1		1		1		1		1		1	
2		2		2		2		2		2		2		2	
3		3		3		3		3		3		3		3	
4		4		4		4		4		4		4		4	
5		5		5		5		5		5		5		5	
6		6		6		6		6		6		6		6	
7		7		7		7		7		7		7		7	
8		8		8		8		8		8		8		8	

Backup Prevent

Sequence 1										Sequence 2										Sequence 3										Sequence 4																																									
No Backup Phase									Call	No Backup Phase									Call	No Backup Phase									Call	No Backup Phase									Call																																
1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8																																					
1																																																																							
2																																																																							
3																																																																							
4																																																																							
5																																																																							
6																																																																							
7																																																																							
8																																																																							
All Red 2 BU									No									All Red 2BU									No									All Red 2BU									No									All Red 2BU									No								

Global Phase Recalls

Phase	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	2	
Min	X					X																
Max																						
Ped																						
Act Walk Rest																						

Global Veh Det Diagnostics

Global No Activity	0
Global Max Presence	0
Global Erratic Count	0
Global Failed Recall	Max Recall
Detector Reset Enable	Enabled

Global Ped Det Diagnostics

Global No Activity	0
Global Max Pres	60
Global Err Count	0

Global Pri/Pre Det Diag

Global No Activity	0
Global Max Presence	0
Global Erratic Count	0

Data Collection

Vehicle Coll. Period	0
Comb. Veh Periods	1
Vehicle Period V3	0
Ped Coll. Period	0

Vehicle Detection Parameters

Plan 1

Det.	Call Phs	Call Ped	Call Ovl	Add Call Phases	Sw Phs	+Call Ovl	Dly Ovl	Delay	Extend	Queue Limit	Ext Hold	No Act.	Max Pres	Errat Count	Fail Time	Fail Recall	Fail Link	Description
1	1	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	I1U
2	2	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	I2U
3	2	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	I2L
4	2	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	I3U
5	2	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	I3L

6	2	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	I4U
7	3	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	I5U
8	4	0	0		0			8.0	0.0	0	0.0	0	0	0	0	0	None	0	I6U
9	4	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	I6L
10	4	0	0		0			8.0	0.0	0	0.0	0	0	0	0	0	None	0	I7U
11	4	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	I7L
12	4	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	I8U
13	1	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	I9U
14	3	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	I9L
15	5	0	0		0			10.0	0.0	0	0.0	0	0	0	0	0	None	0	J1U
16	6	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J2U
17	6	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J2L
18	6	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J3U
19	6	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J3L
20	6	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J4U
21	7	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J5U
22	8	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J6U
23	8	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J6L
24	8	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J7U
25	8	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J7L
26	8	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J8U
27	5	0	0		0			10.0	0.0	0	0.0	0	0	0	0	0	None	0	J9U
28	7	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	J9L
29	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
30	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
31	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
32	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
33	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
34	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
35	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
36	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
37	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
38	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
39	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
40	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
41	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
42	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
43	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
44	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
45	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
46	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
47	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	
48	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	0	None	0	

Vehicle Detectors (Continued) Plan 1

Det.	Call Phs	Call Ped	Call Ovl	Add Call Phases	Sw Phs	+Call Ovl	Dly Ovl	Delay	Extend	Queue Limit	Ext Hold	No Act.	Max Pres	Errat Cour	Fail Time	Fail Recal	Fail Link	Description
49	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	
50	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	
51	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	
52	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	
53	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	
54	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	
55	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0	

Disable Det Diag											
Passage 2											
Red Clear Ext											
Ovi Add Int Delay											
Ovi Gap Delay											
Wait Car Count											
Dly During Green											

Speed Detectors				Min	Max	Car	Det	Trail	Trap
Det	Enable	Type	Units	Log	Log	Length	Length	Det	Length
1		Single	Inches	5	80	0	0	0	0
2		Single	Inches	5	80	0	0	0	0
3		Single	Inches	5	80	0	0	0	0
4		Single	Inches	5	80	0	0	0	0
5		Single	Inches	5	80	0	0	0	0
6		Single	Inches	5	80	0	0	0	0
7		Single	Inches	5	80	0	0	0	0
8		Single	Inches	5	80	0	0	0	0

Pedestrian Detectors											
Det	Call Phs	Call Ovp	Cancel Phs	Add Call Phs	Add Call Ovp	Walk 2	Clear 2	No Act	Max Pres	Erratic Count	Walk Extension
1	0	0				0	0	0	0	0	
2	2	0				0	0	0	0	0	
3	0	0				0	0	0	0	0	
4	4	0				0	0	0	0	0	
5	0	0				0	0	0	0	0	
6	6	0				0	0	0	0	0	
7	0	0				0	0	0	0	0	
8	8	0				0	0	0	0	0	
9	0	0				0	0	0	0	0	
10	0	0				0	0	0	0	0	
11	0	0				0	0	0	0	0	
12	0	0				0	0	0	0	0	
13	0	0				0	0	0	0	0	
14	0	0				0	0	0	0	0	

Overlaps		Plan 1									
OLP	Enabled	Type	Included Phs	Modifier Phs	Modifier Ovps	Neg Phases	Description				
1	Disabled	FYA - 4 Sec	2	1			FYA - 4 Section				
2	Disabled	Thru FYA Ped	2		1		Thru FYA Ped				
3	Disabled	Off					FYA - 4 Section				
4	Disabled	Off					Thru FYA Ped				
5	Enabled	FYA - 4 Sec	6	5			FYA - 4 Section				
6	Enabled	Thru FYA Ped	6		5		Thru FYA Ped				
7	Disabled	Off									
8	Disabled	Off									
9	Enabled	Normal	4,5								
10	Disabled	Off									
11	Disabled	Off									
12	Disabled	Off									

	1	2	3	4	5	6	7	8	9	10	11	12
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Queue Jump Ext													
Disable Sim Gap													
Thru FYA Ped Term													

Custom Overlap Rules

Rule	Custom Ovlp	Incl. State	Mod. Phase State	Mod. OL State	Neg. State	Output	Flash
1	Cust 1	Green	Any	Any	Any	Blank	Not Set
2	Disable	Any	Any	Any	Any	Not Set	Not Set
3	Disable	Any	Any	Any	Any	Not Set	Not Set
4	Disable	Any	Any	Any	Any	Not Set	Not Set
5	Disable	Any	Any	Any	Any	Not Set	Not Set
6	Disable	Any	Any	Any	Any	Not Set	Not Set
7	Disable	Any	Any	Any	Any	Not Set	Not Set
8	Disable	Any	Any	Any	Any	Not Set	Not Set
9	Disable	Any	Any	Any	Any	Not Set	Not Set
10	Disable	Any	Any	Any	Any	Not Set	Not Set

Coordination Parameters

Operational Mode	Automatic	Maximum Mode	Per Pattern	Max Cyc Limit %	20
Coordination Mode	Auto Permissive	Force Mode	Fixed	Min Cyc Limit %	20
Correction Mode	Shortway (Auto)	Transition Cover Ped	Pattern	Max Dwell	0

Patt.	Cycle	Offset					Ref Col	Coord Mode	Force Mode	Max Mode	Trans Ped	Min Perm	Phs Pln	Det Pln	Ped Pln	Ovlp Pln	Pri Pln	Description
		1	2	3	Split	Seq												
1	0	0	0	0	1	1	Grn	Auto	Fixed	Max1	None	Phs Only	1	1	1	1	1	Standard Phasing
2	0	0	0	0	1	2	Grn	Auto	Fixed	Max1	None	Phs Only	1	1	1	1	1	Lag Ph5
3	0	0	0	0	3	1	Grn	Auto	Fixed	Max1	None	Phs Only	1	1	1	1	1	
4	0	0	0	0	4	1	Grn	Auto	Fixed	Max1	None	Phs Only	1	1	1	1	1	
5	0	0	0	0	5	1	Grn	Auto	Fixed	Max1	None	Phs Only	1	1	1	1	1	
6	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
7	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
8	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
9	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
10	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
11	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
12	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
13	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
14	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
15	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	

16	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
17	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
18	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
19	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	
20	0	0	0	0	0	0	Yel	Auto	Fixed	Inh	Phase	Phs Only	1	1	1	1	1	Free Operation

Split Parameters

Split 1

				Coord	Ref	Cover	Force Off				Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off		
1	0	0	0				Fix	None	0	0	Float		
2	0	0	0	X	X		Fix	Min Rcl	0	0	Float		
3	0	0	0				Fix	None	0	0	Float		
4	0	0	0				Fix	None	0	0	Float		
5	0	0	0				Fix	None	0	0	Float		
6	0	0	0	X	X		Fix	Min Rcl	0	0	Float		
7	0	0	0				Fix	None	0	0	Float		
8	0	0	0				Fix	None	0	0	Float		

Split 2

				Coord	Ref	Cover	Force Off				Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off		
1	0	0	0				Fix	None	0	0	Float		
2	0	0	0				Fix	Min Rcl	0	0	Float		
3	0	0	0				Fix	None	0	0	Float		
4	0	0	0	X	X		Fix	None	0	0	Float		
5	0	0	0				Fix	None	0	0	Float		
6	0	0	0				Fix	Min Rcl	0	0	Float		
7	0	0	0				Fix	None	0	0	Float		
8	0	0	0	X	X		Fix	None	0	0	Float		

Split Tables (continued)

Split 3

				Coord	Ref	Cover	Force Off				Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off		
1	0	0	0				Fix	None	0	0	Float		
2	0	0	0	X	X		Fix	Min Rcl	0	0	Float		
3	0	0	0				Fix	None	0	0	Float		
4	0	0	0				Fix	None	0	0	Float		
5	0	0	0				Fix	None	0	0	Float		
6	0	0	0	X	X		Fix	Min Rcl	0	0	Float		
7	0	0	0				Fix	None	0	0	Float		
8	0	0	0				Fix	None	0	0	Float		

Split 4

				Coord	Ref	Cover	Force Off				Pri	Pri	Pri
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off		
1	0	0	0				Fix	None	0	0	Float		
2	0	0	0				Fix	None	0	0	Float		
3	0	0	0				Fix	None	0	0	Float		
4	0	0	0	X	X		Fix	None	0	0	Float		
5	0	0	0				Fix	None	0	0	Float		
6	0	0	0				Fix	None	0	0	Float		
7	0	0	0				Fix	None	0	0	Float		
8	0	0	0	X	X		Fix	None	0	0	Float		

Split 5

				Coord	Ref	Cover	Force Off				Pri	Pri	Pri
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PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	14	0	0				Fix	None	0	0	Float
2	38	0	0				Fix	None	0	0	Float
3	17	0	0				Fix	None	0	0	Float
4	31	0	0	X	X		Fix	Min Rcl	0	0	Float
5	14	0	0				Fix	None	0	0	Float
6	38	0	0				Fix	None	0	0	Float
7	14	0	0				Fix	None	0	0	Float
8	34	0	0	X	X		Fix	Min Rcl	0	0	Float

Split 6

Split 6				Coord	Ref	Cover	Force Off				
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Pri	Pri	Pri
				PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float

Split Tables (continued)

Split 7

Split 7				Coord	Ref	Cover	Force Off				
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Pri	Pri	Pri
				PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float

Split 8

Split 8				Coord	Ref	Cover	Force Off				
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Pri	Pri	Pri
				PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float

Split 9

Split 9				Coord	Ref	Cover	Force Off				
PH.	Time	Min	Max	PH	PH	Ped	Mode	Mode	Pri	Pri	Pri
				PH	PH	Ped	Mode	Mode	Min	Max	F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float

3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float

Split 10

PH.	Time	Min	Max	Coord PH	Ref PH	Cover Ped	Force Off Mode	Mode	Pri Min	Pri Max	Pri F. Off
1	0	0	0				Fix	None	0	0	Float
2	0	0	0				Fix	None	0	0	Float
3	0	0	0				Fix	None	0	0	Float
4	0	0	0				Fix	None	0	0	Float
5	0	0	0				Fix	None	0	0	Float
6	0	0	0				Fix	None	0	0	Float
7	0	0	0				Fix	None	0	0	Float
8	0	0	0				Fix	None	0	0	Float

Pattern Advanced Options

Pattern	1	2	3	4	5	6	7	8	9	10
Ring Plan	1	1	1	1	1	0	0	0	0	0
Allow Split Underrun	X	X	X	X	X					
Allow Split Overrun	X	X	X	X	X					
Allow No Coord Ph										
Coord Now										

Ring Plans

Plan 1

Ring	1	2	3	4
Offset	0	0	0	0
Early Coord Gap Out	0	0	0	0
Early Coord FO	0	0	0	0

Plan 2

Ring	1	2	3	4
Offset	0	0	0	0
Early Coord Gap Out	5	5	0	0
Early Coord FO	5	5	0	0

Plan 3

Ring	1	2	3	4
Offset	0	0	0	0
Early Coord Gap Out	7	7	0	0
Early Coord FO	7	0	0	0

Plan 4

Ring	1	2	3	4
Offset	0	0	0	0
Early Coord Gap Out	5	5	0	0
Early Coord FO	5	0	0	0

Schedules

Schedule 1 Enable On Day Plan 1 Description

Month of Year Days of Week Days of Month

J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Schedule 2 Enable On Day Plan 2 Description

Month of Year Days of Week Days of Month

J	F	M	A	M	J	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
J	A	S	O	N	D								17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Schedule 3 Enable On Day Plan 3 Description

J	F	M	A	M	J
X	X	X	X	X	X
J	A	S	O	N	D
X	X	X	X	X	X

S	M	T	W	T	F	S
X	X	X	X	X	X	X

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Schedule 11 Enable On Day Plan Description

J	F	M	A	M	J
J	A	S	O	N	D

S	M	T	W	T	F	S

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Schedule 12 Enable On Day Plan Description

J	F	M	A	M	J
J	A	S	O	N	D

S	M	T	W	T	F	S

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

Day Plan				<input type="text" value="1"/>
Event	Hour	Min.	Act	
1	6	0	20	
2	20	0	20	
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="2"/>
Event	Hour	Min.	Act	
1	6	0	2	
2	20	0	20	
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="3"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="4"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="5"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="6"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="7"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="8"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		
8	0	0		
9	0	0		
10	0	0		

Day Plan				<input type="text" value="9"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		

Day Plan				<input type="text" value="10"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		

Day Plan				<input type="text" value="11"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		

Day Plan				<input type="text" value="12"/>
Event	Hour	Min.	Act	
1	0	0		
2	0	0		
3	0	0		
4	0	0		
5	0	0		
6	0	0		
7	0	0		

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

8	0	0	
9	0	0	
10	0	0	

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1											
2	Pattern 2											
3	Pattern 3											
4	Pattern 4											
5	Pattern 5											
6	Pattern 6											
7	Pattern 7											
8	Pattern 8											
9	Pattern 9											
10	Pattern 10											

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
11	None											
12	None											
13	Free											
14	None											
15	None											
16	None											
17	None											
18	None											
19	None											
20	Free	X										

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
21	None											
22	None											
23	None											
24	None											
25	None											
26	None											
27	None											
28	None											
29	None											
30	None											
31	None											
32	None											
33	None											
34	None											
35	None											

Actions		Aux.			Special Functions							
Act	Pattern	1	2	3	1	2	3	4	5	6	7	8
36	None											
37	None											
38	None											
39	None											
40	None											
41	None											
42	None											
43	None											
44	None											
45	None											
46	None											
47	None											
48	None											
49	None											
50	None											

Action Commands

Action 1

Cmd	Command	Indexes
1	None	
2	None	
3	None	
4	None	
5	None	
6	None	
7	None	
8	None	

Action 2

Cmd	Command	Indexes
1	None	
2	None	
3	None	
4	None	
5	None	
6	None	
7	None	
8	None	

Action 3

Cmd	Command	Indexes
1	None	
2	None	
3	None	

Action 4

Cmd	Command	Indexes
1	None	
2	None	
3	None	

Cycling Overlaps								
Exit Phases			2,5	4	6	8		
Exit Overlaps					5,6			
Recovery Omit Phs								
Max Pres Action	255	255	255	255	255	255	0	0
Normal Input Fault	Flash	Flash	Flash	Flash	Flash	Flash	Flash	Flash
Exit Type	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases	Exit Phases
Exit Max Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Exit Veh Calls								
Exit Ped Calls								

Preemption Parameters (Continued)

Preempt	1	2	3	4	5	6	7	8
Link	0	0	0	0	0	0	0	0
Delay	0	0	0	0	0	0	0	0
Min Duration	1	1	1	1	1	1	0	0
Min Presence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Presence	255	255	255	255	255	255	0	0
Reservice Lockout	0	0	0	0	0	0	0	0
Sequence	0	0	0	0	0	0	0	0
Enter Min Green	5	5	5	5	5	5	0	0
Enter Walk	1	1	1	1	1	1	0	0
Ent. Ped Clear	255	255	255	255	255	255	255	255
Enter Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Ent. Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track Green	0	0	0	0	0	0	0	0
Max Track Grn	0	0	0	0	0	0	0	0
Track Walk	255	255	255	255	255	255	255	255
Track Ped Clr	255	255	255	255	255	255	255	255
Track Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5

Preempt	1	2	3	4	5	6	7	8
Hold Delay Time	0	0	0	0	0	0	0	0
Track 2 Green	0	0	0	0	0	0	0	0
Track 2 Walk	255	255	255	255	255	255	255	255
Track 2 Ped Clr	255	255	255	255	255	255	255	255
Track 2 Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track 2 Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Track Ext Gate Dn	0	0	0	0	0	0	0	0
Dwell Green	5	5	5	5	5	5	0	0
Exit Min Green	255	255	255	255	255	255	255	255
Exit Walk	255	255	255	255	255	255	255	255
Exit Ped Clear	255	255	255	255	255	255	255	255
Exit Yellow	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5
Dwell Ext Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exit Max Green	0	0	0	0	0	0	0	0
Exit Max Mode Time	0	0	0	0	0	0	0	0
Exit Free Time	0	0	0	0	0	0	0	0

Preemption Options

Preempt	1	2	3	4	5	6	7	8
Non Lock Mem	X	X	X	X	X	X		
Not Override Flash								
NotOverrideNextPre	X	X	X	X	X	X		
Flash Dwell								
Ped Recycle in Dwell								
Imm Ped Clear						X	X	
Dwell Only Status								
All Red Flash Dwell								
Allow All Overlaps								
Req All Red Entry								
Req Gate Dwn Trck Exit								
Req Gate Up Dwl Exit								
Normal On/Off Input								
Track Clear Override								
Non-Locking Gate Down								
Ped Clear During Yellow								

Aux Function 1								
Aux Function 2								
Aux Function 3								
Special Function 1								
Special Function 2								
Special Function 3								
Special Function 4								
Special Function 5								
Special Function 6								
Special Function 7								
Special Function 8								
Special Function 9								
Special Function 10								
Special Function 11								
Special Function 12								
Special Function 13								
Special Function 14								

Require CRC
Disabled

Entry Override All-Red									
Sep Entry Phase/Ped									
Latching Flash Dwell									
Entry Omit OLTG									

Special Function 15									
Special Function 16									

Channel Configuration

Channel	Control Type	Cntrl Src	Flash Ylw	Flash Red	Flash Alt	MMU Channel	Green Type	Grn Included
1	Phs Veh	1		X	X	1	Other	
2	Phs Veh	2		X		2	Other	
3	Phs Veh	3		X		3	Other	
4	Phs Veh	4		X	X	4	Other	
5	Olp	5		X	X	5	Other	
6	Olp	6		X		6	Other	
7	Phs Veh	7		X		7	Other	
8	Phs Veh	8		X	X	8	Other	
9	Olp	9		X	X	9	Other	
10	Olp	10		X		10	Other	
11	Olp	11		X	X	11	Other	
12	Olp	12		X		12	Other	
13	Phs Ped	2				13	Other	
14	Phs Ped	4				14	Other	
15	Phs Ped	6				15	Other	
16	Phs Ped	8				16	Other	

Cabinet Configuration

IO Modul	Type
1	ODOT 332
2	None
3	None
4	None
5	None
6	None
7	None
8	None
9	None
10	None

Advanced Cabinet Options

ITS Cabinet on Port 1	No	Enable TS2/ATC St Time	<input type="checkbox"/>
ITS Cabinet on Port C13S	No	Disable TS2 Startup Call	<input type="checkbox"/>
33X Input Leading Edge Filter	5	Disable TS2 Fault Flash	<input type="checkbox"/>
33X Input Trailing Edge Filter	5	Disable TS2 Cabinet Alarms	<input type="checkbox"/>
		Disable ATC Cabinet Alarms	<input type="checkbox"/>

Phase Intervals

Interval	Description	Red	Yel	Grn	Type
1	Not Act	On	Off	Off	Red
2	Adv Wlk	On	Off	Off	Red
3	Pre Grn	Off	Off	On	Green
4	Min Grn	Off	Off	On	Green
5	Grn Ext	Off	Off	On	Green
6	Grn Dwell	Off	Off	On	Green

Interval	Description	Red	Yel	Grn	Type
7	Pre Clr	Off	Off	On	Green
8	Yel Change	Off	On	Off	Yellow
9	Red Clr	On	Off	Off	Red
10	Red Dwell	On	Off	Off	Red
11	Barrier	On	Off	Off	Red
12	Pre Clr 2	Off	Off	Off	Not Def

Pedestrian Intervals

Interval	Description	DWK	CLR	Wlk	Type

Alarm Config

Alarm	Name	Alarm	Name

Peer Configuration

Ctrl	Peer ID	Device Type	IP address	IP Port	Http Port	Serial Port	Serial Addr.	Master Sect.	P2P TO	Description
1	0	Peer MaxTime		161	80	0	0	0	15	
2	0	Peer MaxTime		161	80	0	0	0	15	
3	0	Peer MaxTime		161	80	0	0	0	15	
4	0	Peer MaxTime		161	80	0	0	0	15	
5	0	Peer MaxTime		161	80	0	0	0	15	
6	0	Peer MaxTime		161	80	0	0	0	15	
7	0	Peer MaxTime		161	80	0	0	0	15	
8	0	Peer MaxTime		161	80	0	0	0	15	
9	0	Peer MaxTime		161	80	0	0	0	15	
10	0	Peer MaxTime		161	80	0	0	0	15	

Master Section Configuration

Section	Control	Poll	Req #	Fail Time	Algorithm Period	Description
1	None	60	1	300	240	
2	None	60	1	300	240	
3	None	60	1	300	240	
4	None	60	1	300	240	
5	None	60	1	300	240	
6	None	60	1	300	240	
7	None	60	1	300	240	
8	None	60	1	300	240	
9	None	60	1	300	240	
10	None	60	1	300	240	
11	None	60	1	300	240	
12	None	60	1	300	240	
13	None	60	1	300	240	
14	None	60	1	300	240	
15	None	60	1	300	240	
16	None	60	1	300	240	

User Program Info

Pgrm	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	

Pgrm	Description
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	

14	
15	
16	

30	
31	
32	

GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 1996 OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE ODOT STANDARD DRAWINGS.
2. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED FOR THE SIGNAL OPERATIONS SHOWN ON THIS PLAN.
3. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF EXISTING UTILITIES AND COORDINATE HIS WORK WITH THE UTILITY COMPANIES/AGENCIES TO ELIMINATE ANY CONFLICTS.
4. THE CONTRACTOR SHALL CONTACT PGE TO LOCATE THE POWER SOURCE IN THE FIELD AND COORDINATE WORK WITH PGE FOR POWER SERVICE CONNECTION.

SIGNAL PLAN

124TH AVENUE AT LEVETON DRIVE

WORK CHANGE DIRECTIVE NO. 1

POLE ENTRANCE CHART

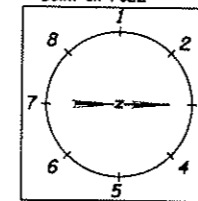
POLE NUMBER	1	2	3	4	5	6
LUMINAIRE ARM	3	5	-	7	1	-
MAST ARM	3	5	-	7	1	-
PEDESTRIAN SIGNAL CLAM SHELL	5,7	-	1,7	1,3	-	3,5
PEDESTRIAN PB/DECAL	1,3	-	3,5	5,7	-	1,7
TERMINAL CABINET	7	1	-	3	5	-

CH2MHILL

LEGEND

- Install model 170 controller in model 332 cabinet with riser frame, orient front(louvered) door as shown
- Install type (T) standard traffic signal mast arm pole with luminaire pole extension (40 ft. mounting ht.)
- Install (L) feet traffic signal mast arm
- Install (L) feet luminaire arm
- Install pedestrian signal pedestal
- Install remote power service post
- Install 400 watt high pressure sodium luminaire, type M-N-IV, 120, 208, 240, 277 multi-volt mag-regulator ballast
- Install photoelectric cell on pole (20' - 35' above pole base)
- Install terminal cabinet
- Install service cabinet, 120 volt, for both signal and illumination circuits
- Install 120 volt meter base
- Install phase (Ph) vehicle signal with LED's
2 = 12" R, 12" Y, 12" G
3 = 12" RLTA, 12" YLTA, 12" GLTA
- Includes 3 spare wires for phase (Ph) as per table
- Install phase (Ph) pedestrian signal with LED's, pushbutton and instruction decal
- Install 22" x 12" x 12" (min. dimension) precast concrete junction box
- Install 22" x 12" x 12" (min. dimension) precast concrete junction box with concrete apron
- Install 30" x 17" x 12" (min. dimension) precast concrete junction box with concrete apron
- Install (S) inch electrical conduit
- Detector conduit (See Detector Plan)
- Interconnect conduit (See Interconnect Plan)
- Install conduit and wire as required by power company
- Install (N) No. 8 type THWN (Signal system common)
- Install (N) No. 14 type THWN wires
- Install (N) No. (G) type THWN wires
- Install channel (Ch) fire pre-emption detector feeder cable
- Install channel (Ch), (N) barrel fire pre-emption detector unit

ORIENTATION LOOKING DOWN ON POLE



ABBREVIATIONS:

- T = Type shown
- Ph = Phase shown
- N = Number shown
- H = Height shown
- L = Length shown
- S = Size shown
- G = AWG size shown
- Ch = Channel shown
- A = Standard plumbizer
- E = Elevator plumbizer
- X = Number of cables shown

Pole No. 2
Sta. "P" 81+45, 50.9' LT

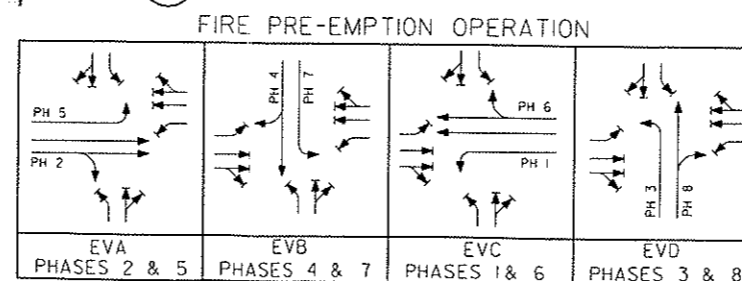
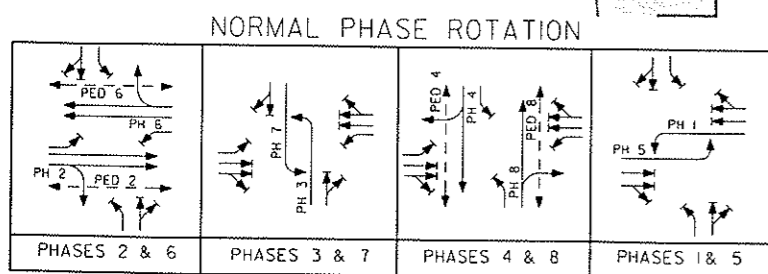
Pole No. 3
Sta. "P" 81+67, 56.3' LT

Pole No. 4
Sta. "P" 82+53, 57.1'

Pole No. 1
Sta. "P" 81+66, 56.0' RT

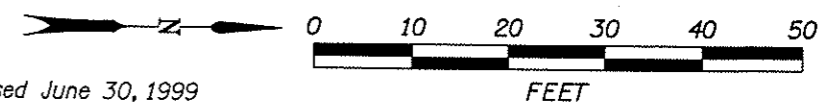
Pole No. 5
Sta. "P" 82+68, 50.8' RT

Pole No. 6
Sta. "P" 82+55, 57.3' RT



Revised June 30, 1999

SIGNAL PLANS & DETAILS		S.W. 124TH AVENUE / S.W. LEVETON DRIVE TRAFFIC SIGNAL PLAN	
The Contract Document Drawings are the printed documents dated May 1999 as subsequently officially amended, which define the scope, extent, and character of the work. This originally issued Contract Document Drawing was sealed and signed by Belying Wang, P.E. No. 17,041		S.W. 124TH AVENUE AND W. LEVETON DRIVE WASHINGTON COUNTY	
Jennifer Ringert - Designer	Gary D. Gray - Drafter		SHEET NO. 15
Belying Wang - Checked			



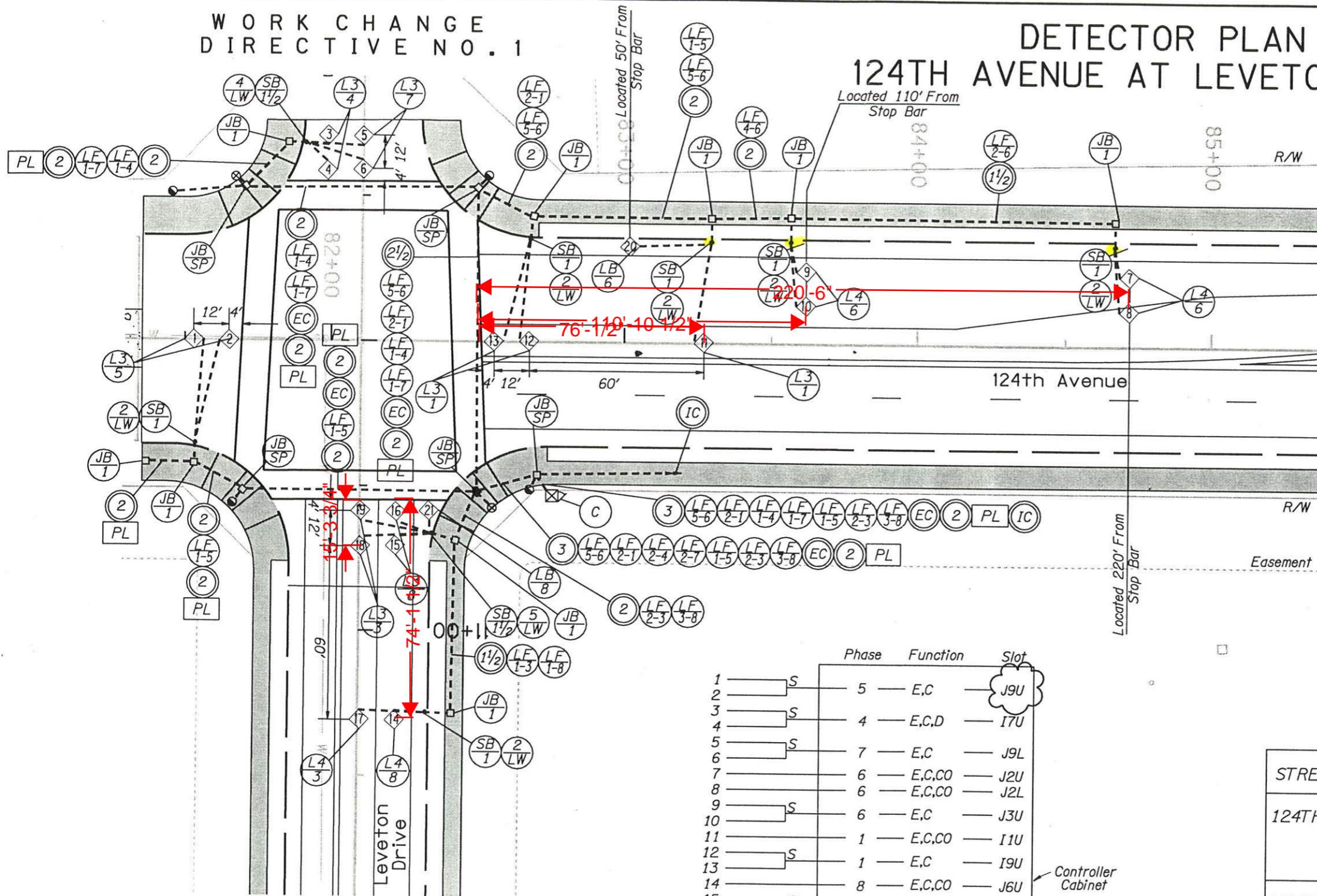
02-JUL-1999 10:35:37

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WORK CHANGE
DIRECTIVE NO. 1

DETECTOR PLAN
124TH AVENUE AT LEVETON DRIVE

CH2MHILL



LEGEND

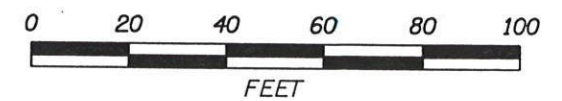
- (C) Controller (See Signal Plan)
- (S) Install (S) inch electrical conduit
- (EC) Electrical conduit (See Signal Plan)
- (IC) Interconnect conduit (See Interconnect Plan)
- (LB/Ph) Install phase (Ph) 2 1/2 FT. diamond bicycle detector loop
- (L3/Ph) Install phase (Ph) 3 FT. diamond vehicle detector loop
- (L4/Ph) Install phase (Ph) 4 FT. diamond vehicle detector loop
- (LF/X-Ph) Install (X) phase (Ph) loop feeder cables
- (N/LW) Install (N) pair of loop wires ?
- (SB/S) Install 4" x 4" x 4" galv. cast iron street box with (S) inch conduit to junction box
- (JB/I) Install 17" x 10" x 12" (min. dimension) precast concrete junction box
- (JB/1A) Install 17" x 10" x 12" (min. dimension) precast concrete junction box with concrete apron
- (JB/SP) Junction box (See Signal Plan)
- (PL) Install poly pull line (1 kn min-strength)

ABBREVIATIONS:

- PH= Phase Shown
- S = Size Shown
- X = Number Of Cables Shown
- N = Number Shown

POSTED APPROACH SPEEDS

STREET	APPROACH	POSTED SPEED
124TH AVENUE	NORTHBOUND	35 MPH
	SOUTHBOUND	35 MPH
LEVETON DRIVE	WESTBOUND	35 MPH



Revised June 30, 1999

TRAFFIC ENGINEER

The Contract Document Drawings are the printed documents dated May 1999 as subsequently officially amended, which define the scope, extent, and character of the work. This originally issued Contract Document Drawing was sealed and signed by Seiyung Wang, P.T.E. No. 17,047

S.W. 124TH AVENUE / S.W. LEVETON DRIVE
DETECTOR PLAN
S.W. 124TH AVE. AND W. LEVETON DRIVE
WASHINGTON COUNTY



TUALATIN DEVELOPMENT
COMMISSION

SHEET
NO.
15A

Phase	Function	Slot
1	S	5 — E,C — J9U
2	S	4 — E,C,D — I7U
3	S	7 — E,C — J9L
4	S	6 — E,C,CO — J2U
5	S	6 — E,C,CO — J2L
6	S	6 — E,C — J3U
7	S	1 — E,C,CO — I1U
8	S	1 — E,C — I9U
9	S	8 — E,C,CO — J6U
10	S	8 — E,C,D — J7U
11	S	3 — E,C,CO — I5U
12	S	3 — E,C — I9L
13	S	6 — E — J3L
14	S	8 — E,C — J7L*
15	S	
16	S	
17	S	
18	S	
19	S	
20	S	
21	S	

* PROGRAM TRANSFER CALL TO J8U

LOOP DETECTOR WIRING DIAGRAM

S = Series, E=Extension, C=Call, CO=Carry-over, D=Delay
See T.E.S. Drwg. No. TM408 for loop detector details
Center all loops in travel lanes or as shown on plan

GENERAL NOTES:

1. All Loops Are To Be Individually Wound Clockwise And Series Wired At Junction Boxes Or Controller, As Shown On The Loop Detector Wiring Diagram.
2. All Detector Loops Shall Be Located In The Center Of The Lane Unless Otherwise Indicated On The Detector Plan.
3. All Materials And Workmanship Shall Conform To The 1996 Oregon Department Of Transportation (ODOT) Standard Specifications For Highway Construction And The ODOT Standard Drawings And Special Provisions.

* STATE is using cold mix, epoxy boxes.

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DETECTOR PLAN 124TH AVENUE AT TUALATIN ROAD

GENERAL NOTES:

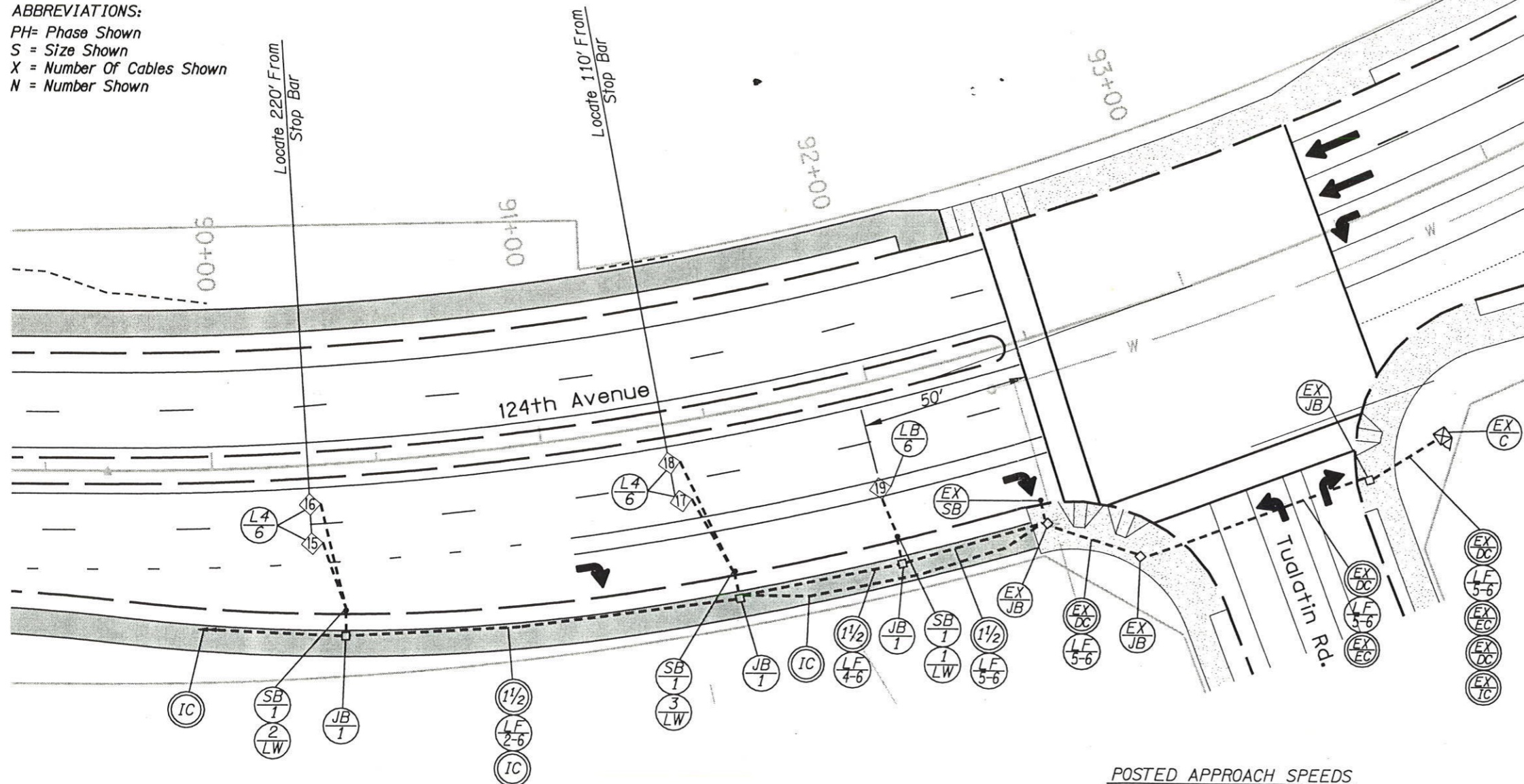
1. All Loops Are To Be Individually Wound Clockwise And Series Wired At Junction Boxes Or Controller, As Shown On The Loop Detector Wiring Diagram.
2. All Detector Loops Shall Be Located In The Center Of The Lane Unless Otherwise Indicated On The Detector Plan.
3. All Materials And Workmanship Shall Conform To The 1996 Oregon Department Of Transportation (ODOT) Standard Specifications For Highway Construction And The ODOT Standard Drawings And Special Provisions.

ABBREVIATIONS:

- PH= Phase Shown
 S = Size Shown
 X = Number Of Cables Shown
 N = Number Shown

LEGEND

- C Controller (See Signal Plan)
- S Install (S) inch electrical conduit
- IC Interconnect conduit (See Interconnect Plan)
- L3
Ph Install phase (Ph) 3 FT. diamond vehicle detector loop
- L4
Ph Install phase (Ph) 4 FT. diamond vehicle detector loop
- LF
X-Ph Install (X) phase (Ph) loop feeder cables
- N
LW Install (N) pair of loop wires
- SB
S Install 4" x 4" x 4" galv. cast iron street box with (S) inch conduit to junction box
- JB
1 Install 17" x 10" x 12" (min. dimension) precast concrete junction box
- JB
1A Install 17" x 10" x 12" (min. dimension) precast concrete junction box with concrete apron
- JB
SP Junction box (See Signal Plan)
- EX
JB Retain and protect existing junction box
- EX
C Retain and protect existing Model 170 controller and Model 332 cabinet
- EX
EC Retain and protect existing electrical conduit
- EX
DC Retain and protect existing detector conduit
- EX
IC Retain and protect existing interconnect conduit
- EX
SB Retain and protect existing galv. cast iron street box with 1" conduit to junction box



	Phase	Function	Slot
15	6	E,C,CO	J2U
16	6	E,C,CO	J2L
17	S	E,C	J3U
18	6	E	J3L
19	6	E	J3L

Controller Cabinet

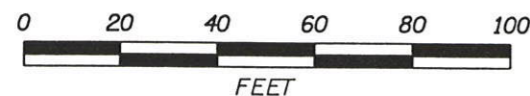
LOOP DETECTOR WIRING DIAGRAM

S = Series, E=Extension, C=Call, CO=Carry-over, D=Delay
 See T.E.S. Drwg. No. TM408 for loop detector details
 Center all loops in travel lanes or as shown on plan

Cold mix in Exopy Boxes?

POSTED APPROACH SPEEDS

STREET	APPROACH	POSTED SPEED
124TH AVENUE	NORTHBOUND	35 MPH
	SOUTHBOUND	35 MPH
TUALATIN ROAD	WESTBOUND	35 MPH



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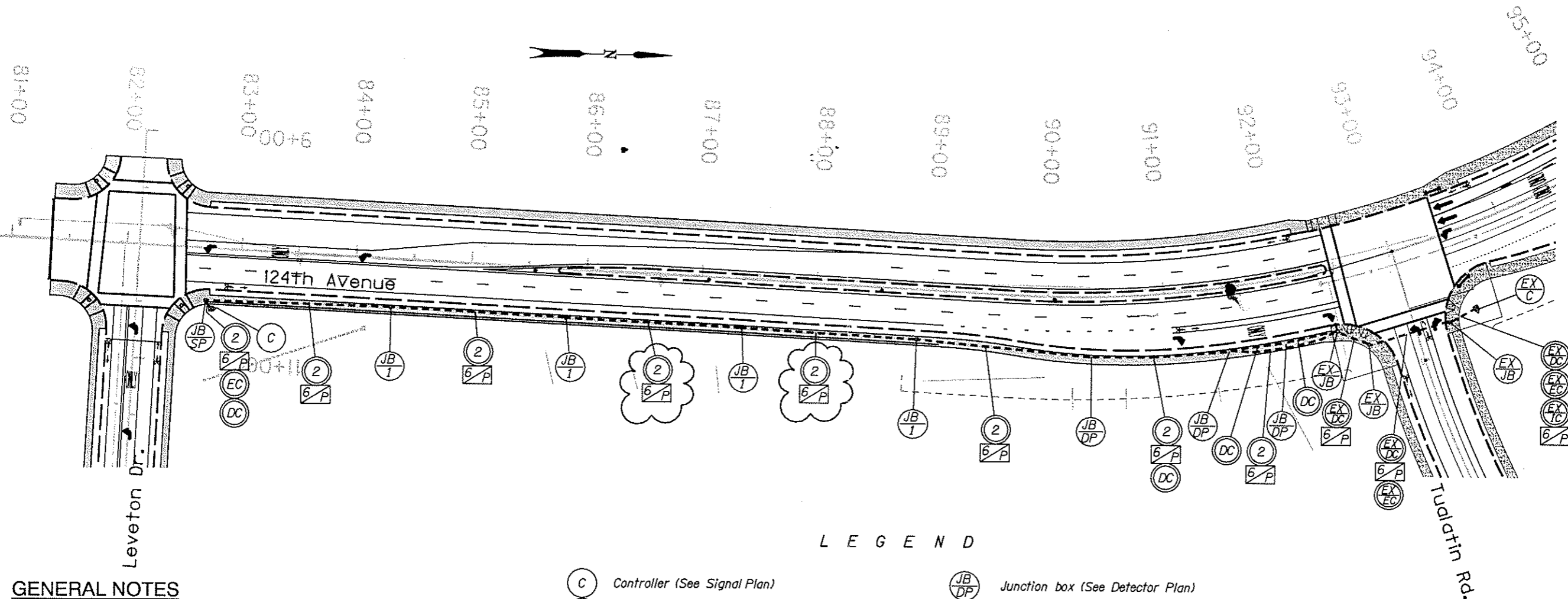
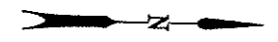
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	S.W. 124TH AVENUE / S.W. LEVETON DRIVE DETECTOR PLAN S.W. 124TH AVE. AND TUALATIN ROAD WASHINGTON COUNTY	
	TUALATIN DEVELOPMENT COMMISSION	SHEET NO. 15B

INTERCONNECT PLAN

124TH AVENUE AT LEVETON DRIVE

WORK CHANGE DIRECTIVE NO. 1



L E G E N D

- | | |
|--|--|
| <ul style="list-style-type: none"> Controller (See Signal Plan) Install (S) inch electrical conduit Detector conduit (See Detector Plan) Electrical conduit (See Signal Plan) Install 17" x 10" x 12" (min. dimension) precast concrete junction box Install 17" x 10" x 12" (min. dimension) precast concrete junction box with concrete apron Junction box (See Signal Plan) | <ul style="list-style-type: none"> Junction box (See Detector Plan) Retain and protect existing junction box Retain and protect existing electrical conduit Retain and protect existing detector conduit Retain and protect existing interconnect conduit Install (N) No. (G) type THWN wires Retain and protect existing controller and cabinet |
|--|--|

GENERAL NOTES

1. All Material And Workmanship Shall Conform To The 1996 Standard Specifications For Highway Construction Of The Oregon Department Of Transportation And The Special Provisions.
2. All Electrical Equipment Shall Conform To The Current Standards Of the National Electrical Manufacturers Association (NEMA) And The Underwriters Laboratories, Inc.(U.L.). Wherever Applicable. In Addition To The Requirements Of All The Plans,Standars Specifications, And The Special Provisions, All Materials and Workmanship Shall Conform To The Current Requirements Of The National Electrical Code (NEC) The National Electrical Safety Code, Standards Of The American National Standards Institute (ANSI), And Any Local Ordinances Which May Apply.
3. Location Of Interconnect Conduits And Junction Boxes Are Approximate. Contractor Shall Coordinate With Other Utilities To Proper Installation.
4. Rigid Non-metallic Electrical Conduit Shall Be Acceptable For Interconnect Conduit



Revised June 30, 1999

<p>TRAFFIC ENGINEER</p> <p>The Contract Document Drawings are the printed documents dated May 1999 as subsequently officially amended, which define the scope, extent, and character of the work. This originally issued Contract Document Drawing was sealed and signed by Beijing Wang P.T.E. No. 17,047</p>	<p>S.W. 124TH AVENUE / S.W. LEVETON DRIVE SYSTEM INTERCONNECT PLAN 124th AVE. @ LEVETON DR. WASHINGTON COUNTY</p>	<p>TUALATIN DEVELOPMENT COMMISSION</p>	<p>SHEET NO. 15C</p>
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LEGEND

CONTROLLERS

Retain and protect existing 332 cabinet

POLES

Retain and protect existing traffic signal mast arm pole

Retain and protect existing traffic signal mast arm pole with luminaire arm extension

Retain and protect existing traffic signal mast arm

Retain and protect existing luminaire arm

Remove and relocate existing pedestrian signal pedestal with frangible base

Remove and relocate existing pedestrian signal pedestal with frangible base

SIGNALS

Retain and protect existing phase (Ph=phase) vehicle signal

Retain and protect existing pedestrian signal, pushbutton and instructions

Install phase (Ph=phase) vehicle signal

Remove and relocate existing phase (Ph=phase) vehicle signal

Remove and relocate existing pedestrian signal, pushbutton and instructions

Reinstall existing phase (Ph=phase) vehicle signal

Reinstall existing pedestrian signal, pushbutton and instructions

SIGNS

Retain and protect existing aluminum sign

Retain and protect existing street name sign

CONSTRUCTION NOTES:

- ① Remove existing wiring for existing pedestrian post. Retain all other existing wiring.
- ② Install 4-#14 wires to operate the Eastbound left-turn signal.
- ③ Intercept existing conduit and install junction box. Relocate existing wiring into new conduit as shown. Abandon existing unused conduit.
- ④ Replace existing controller unit with a new 2070L unit.
- ⑤ Terminate phase 5 flashing yellow indication to phase 6 pedestrian yellow switchpack output. Terminate Conflict Monitor channel 11 (pin S) wire to Output File terminal 120.
- ⑥ Re-establish telephone connection with local company after completion of utility pole relocation.

LEGEND CONTINUED

CABINETS

Retain and protect existing remote power source

Retain and protect existing service cabinet

Retain and protect existing meter base

Retain and protect existing terminal cabinet

JUNCTION BOXES

Retain and protect existing junction box

Remove existing junction box

Install 22"x12"x12" (min. dimension) precast concrete junction box

Install 30"x17"x12" (min. dimension) precast concrete junction box with concrete apron

VIDEO DETECTION

Video detection zone for phase (PH).

Retain and protect existing video detection camera

WIRES

Retain and protect existing wiring

Remove existing wiring

Reinstall existing wiring

Install (N=number) No. 12 type THWN (Pedestrian signal system common)

Install (N=number) No. (G=AWG wire size) type THWN wires

LEGEND CONTINUED

CONDUITS

Retain and protect existing electrical conduit

Abandon existing electrical conduit

Install (S=size) inch electrical conduit

Interconnect conduit (See Interconnect Plan)

Splice new electrical conduit to existing electrical conduit

FIRE PREEMPTION

Retain and protect existing fire preemption detector

MISCELLANEOUS

Retain and protect existing high pressure sodium luminaire

Retain and protect existing photoelectric control

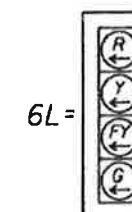
Install crosswalk closure barricades with signs (both sides of barricade)

SIGNAL MOUNTING OPTIONS

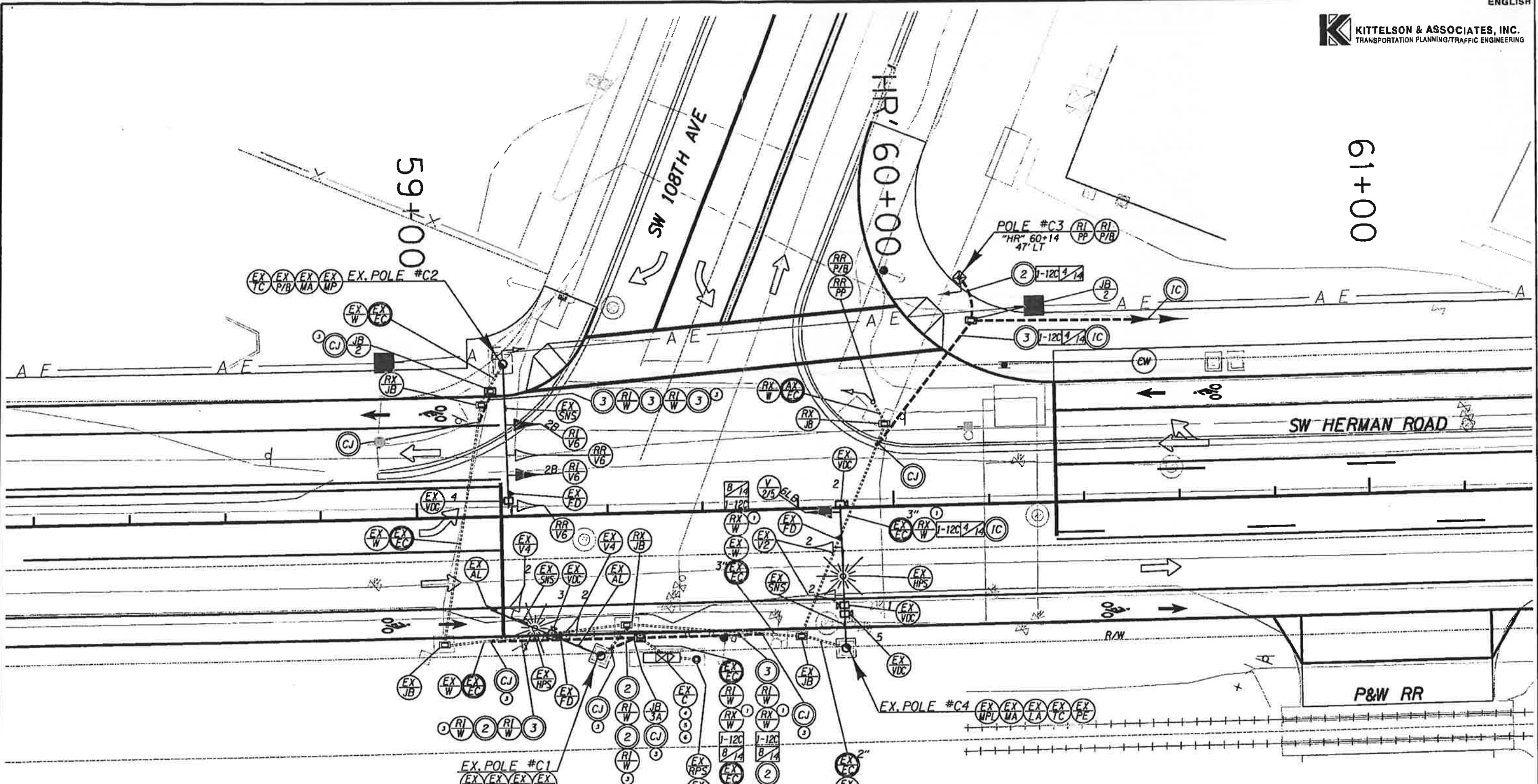
B = Adjustable bracket assembly w/rain cap(s) (install 1" metallic chase nipple in lieu of tenon when required for wiring)

SIGNAL HEAD TYPES

2 = 12" R, 12" Y, 12" G
6L = 12" GLTA, 12" YLTA, 12" FYLTA, 12" GLTA



	<p>TUALATIN DEVELOPMENT COMMISSION</p>
	<p>S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE.</p> <p>WASHINGTON COUNTY</p> <p>Reviewed By - C. Radosta Designed By - C. Tiester Drafted By - J. Henriksen</p>
<p>SW HERMAN RD/SW 108TH AVE LEGEND SHEET</p>	
<p>SHEET NO. TS-11</p>	



61+00

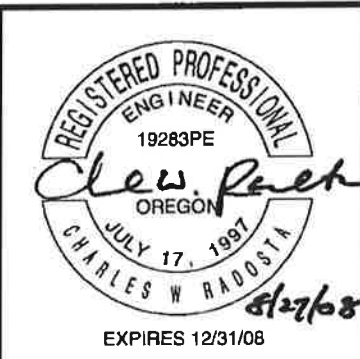
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HR' 60+00

SW 108TH AVE

SW HERMAN ROAD

P&W RR



TUALATIN DEVELOPMENT COMMISSION

S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE.

WASHINGTON COUNTY

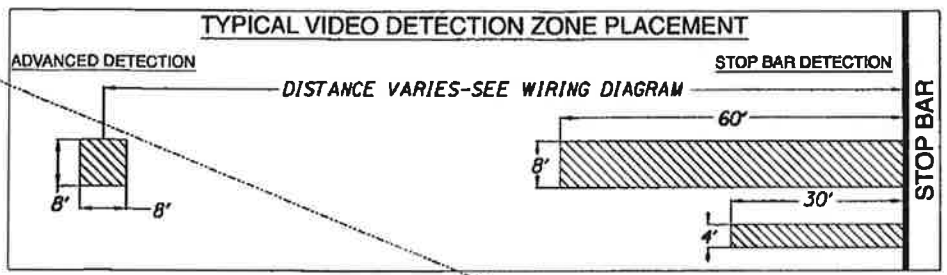
Reviewed By - C. Radosta

Designed By - C. Tiesler

Drafted By - J. Henriksen

SW HERMAN RD/SW 108TH AVE SIGNAL PLAN

SHEET NO. TS-12

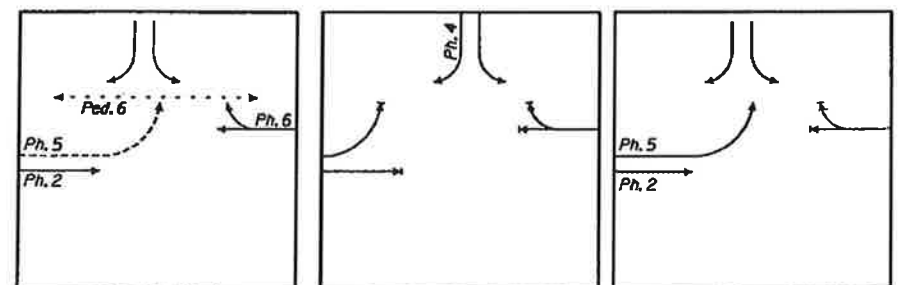
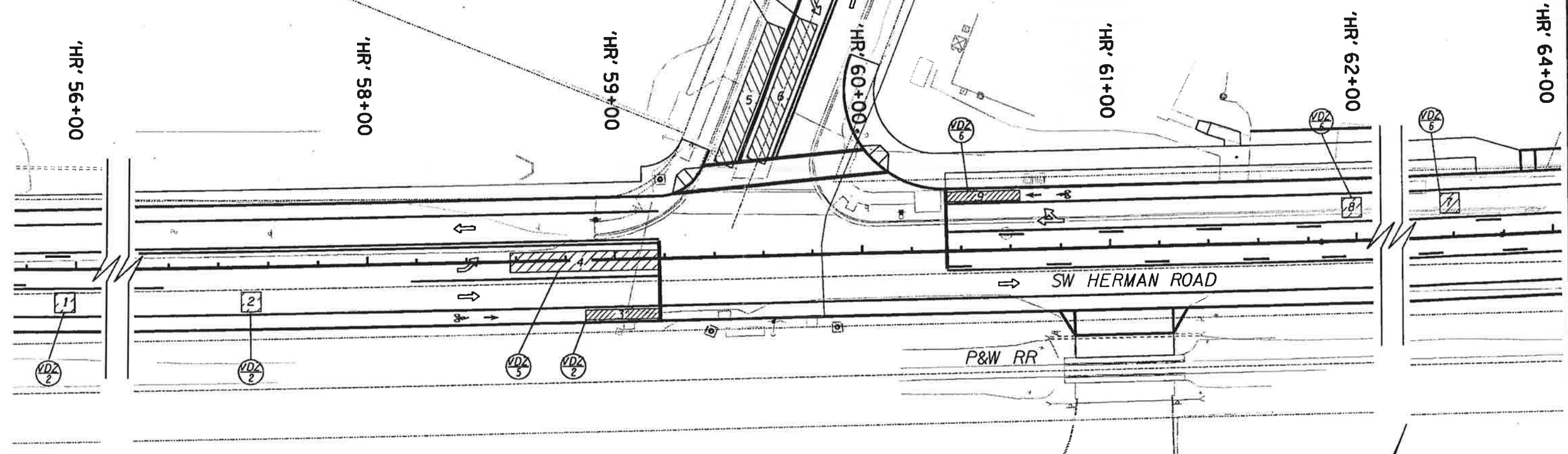


VIDEO DETECTION WIRING DIAGRAM

CAMERA	DETECTION ZONE	DISTANCE (FEET)	PHASE	SLOT
1	1	320	2	I2L1
2	2	180	2	I2L1
3	3		2	I3L1
4	4		5	I1L1
5	5		4	I6L1
6	6		4	I6L1
7	7	320	6	I2L1
8	8	180	6	I2L1
9	9		6	I3L1

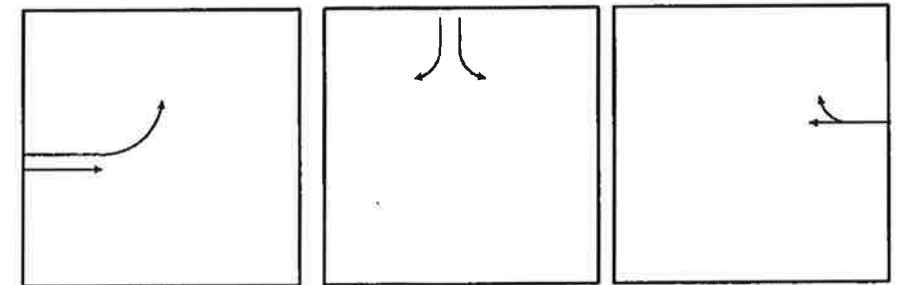
DESIGN APPROACH SPEEDS

STREET	APPROACH	OPERATING SPEED
HERMAN RD	EASTBOUND	45 M.P.H.
	WESTBOUND	45 M.P.H.
108TH AVE	SOUTHBOUND	35 M.P.H.



PHASES 2 & 6
PHASE 4
PHASES 2 & 5

NORMAL PHASE ROTATION



CHANNEL A PHASES 2 & 5
CHANNEL B PHASE 4
CHANNEL C PHASE 6

FIRE PREEMPTION DIAGRAM



TUALATIN DEVELOPMENT COMMISSION

S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE.

WASHINGTON COUNTY

Reviewed By - C. Radosta
Designed By - C. Tiesler
Drafted By - J. Henriksen

SW HERMAN RD/SW 108TH AVE
DETECTOR PLAN

SHEET NO. TS-13

(9+KEY)

FUNCTIONS	KEY	VALUE
Short Power Down	0	0
Long Power Down	1	0
EVA Delay Type	2	1
EVB Delay Type	3	1
EVC Delay Type	4	1
EVD Delay Type	5	0
RR Delay Type	6	0
Ped Inhibit	7	0
OLA Green	8	0.0
OLA Yellow	9	0.0
OLB Green	A	0.0
OLB Yellow	B	0.0
OLC Green	C	0.0
OLC Yellow	D	0.0
OLD Green	E	0.0
OLD Yellow	F	0.0

(C+F+KEY)

FUNCTIONS	KEY	VALUE
Page ID	0	0
Future	1	0
Future	2	0
Future	3	0
OLA Red	4	0.0
OLB Red	5	0.0
OLC Red	6	0.0
OLD Red	7	0.0
Overlap E	8	_____
Overlap F	9	_____
Red Rest	A	_____
Max Recall	B	_____
Flash Green	C	_____
Flash Walk	D	_____
Advance Walk	E	_____
Restrictive Phase	F	_____

(D+C+9+KEY)

FUNCTIONS	KEY	VALUE
Short Power Down	0	0
Long Power Down	1	0
EVA Delay Type	2	0
EVB Delay Type	3	0
EVC Delay Type	4	0
EVD Delay Type	5	0
RR Delay Type	6	0
Ped Inhibit	7	0
OLA Green	8	0.0
OLA Yellow	9	0.0
OLB Green	A	0.0
OLB Yellow	B	0.0
OLC Green	C	0.0
OLC Yellow	D	0.0
OLD Green	E	0.0
OLD Yellow	F	0.0

(D+C+B+KEY)

FUNCTIONS	KEY	VALUE
Page ID	0	1
Future	1	0
Future	2	0
Future	3	0
OLA Red	4	0.0
OLB Red	5	0.0
OLC Red	6	0.0
OLD Red	7	0.0
Overlap E	8	_____
Overlap F	9	_____
Red Rest	A	_____
Max Recall	B	_____
Flash Green	C	_____
Flash Walk	D	_____
Advance Walk	E	_____
Restrictive Phase	F	_____

(D+D+9+KEY)

FUNCTIONS	KEY	VALUE
Short Power Down	0	0
Long Power Down	1	0
EVA Delay Type	2	0
EVB Delay Type	3	0
EVC Delay Type	4	0
EVD Delay Type	5	0
RR Delay Type	6	0
Ped Inhibit	7	0
OLA Green	8	0.0
OLA Yellow	9	0.0
OLB Green	A	0.0
OLB Yellow	B	0.0
OLC Green	C	0.0
OLC Yellow	D	0.0
OLD Green	E	0.0
OLD Yellow	F	0.0

(D+D+B+KEY)

FUNCTIONS	KEY	VALUE
Page ID	0	2
Future	1	0
Future	2	0
Future	3	0
OLA Red	4	0.0
OLB Red	5	0.0
OLC Red	6	0.0
OLD Red	7	0.0
Overlap E	8	_____
Overlap F	9	_____
Red Rest	A	_____
Max Recall	B	_____
Flash Green	C	_____
Flash Walk	D	_____
Advance Walk	E	_____
Restrictive Phase	F	_____

W4IKS Table 3
 Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(C+KEY)

FUNCTIONS	KEY	VALUE
Year	0	12
Month	1	7
Day of Month	2	24
Day of Week	3	4
Hour	4	9
Minute	5	47
Second	6	13
Reserved	7	4
Trigs On In Flash	8	0
Startup Yellow	9	
EVA Phases	A	<u>2</u> <u>5</u>
EVB Phases	B	<u>4</u> <u>7</u>
EVC Phases	C	<u>1</u> <u>6</u>
EVD Phases	D	<u>3</u> <u>8</u>
Handicap Ped	E	

(E+KEY)

FUNCTIONS	KEY	VALUE
EVA Delay	0	0
EVA Min	1	1
EVB Delay	2	0
EVB Min	3	1
EVC Delay	4	0
EVC Min	5	1
EVD Delay	6	0
EVD Min	7	1
OL Red Revert	8	5.0
RR Delay	9	0
RR Clear	A	0
RR Clear Phases	B	
RR Permit	C	
RR OL Permit	D	
NEMA Hold Phases	E	

W4IKS Table 4 Part 1
 Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(D+COL+KEY)

DETECTOR TYPE	DELAY				CARRYOVER			
	2	3	4	5				
FUNCTIONSKEY	PH	TIME	PH	TIME	PH	TIME	PH	TIME
----- (1)0	1	0.0	5	10.0	1	0.0	5	0.0
Upper (9)1	1	0.0	5	5.0	1	0.0	5	0.0
Upper (2)2	2	0.0	6	0.0	2	2.0	6	2.0
Lower (2)3	2	0.0	6	0.0	2	0.0	6	0.0
Upper (3)4	2	0.0	6	0.0	2	0.0	6	0.0
Lower (3)5		0.0		0.0	2	0.0	6	0.0
----- (4)6	2	0.0	6	0.0	2*	0.0	6*	0.0
----- (5)7	3	0.0	7	0.0	3	0.0	7	0.0
Lower (9)8	3	0.0	7	0.0	3	0.0	7	0.0
Upper (6)9	4	0.0	8	0.0	4	1.6	8	0.0
Lower (6)A	4	0.0	8	0.0	4	0.0	8	0.0
Upper (7)B	4	0.0	8	0.0	4	0.0	8	0.0
Lower (7)C		0.0		0.0	4	0.0	8	0.0
----- (8)D	4	0.0	8	0.0	4*	0.0	8*	0.0
CABINET FILE	I		J		I		J	

Note: () = Slot Number * = Set Type 3 Detector

W4IKS Table 4 Part 2
 Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(D+9+4+KEY)

FUNCTIONS	KEY	VALUE
Detector Fail On	0	0
Detector Fail Off	1	0
Fail Det Backup	2	0
Max II In Delay	3	0
Max II In Carryover	4	0
Plan 9 In Delay	5	0
Plan 9 In Carryover	6	0
Plan 18 In Delay	7	0
Plan 18 In Carryover	8	0
TT Page 1 Delay	9	0
TT Page 1 Carryover	A	0
TT Page 2 Delay	B	0
TT Page 2 Carryover	C	0
NOVRAM	D	0
Computran	E	217
Release	F	0

(D+9+5+KEY)

FUNCTIONS	KEY	VALUE
DF 01 Min	0	0
DF 02 Min	1	0
DF 03 Min	2	0
DF 04 Min	3	0
DF 05 Min	4	0
DF 06 Min	5	0
DF 07 Min	6	0
DF 08 Min	7	0
DF 01 Max	8	0
DF 02 Max	9	0
DF 03 Max	A	0
DF 04 Max	B	0
DF 05 Max	C	0
DF 06 Max	D	0
DF 07 Max	E	0
DF 08 Max	F	0

W4IKS Table 5 Sheet 1

Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(A+CODE)

EVENT	1234567	HR	MIN	FUNC	CODE	EVENT	1234567	HR	MIN	FUNC	CODE
1		0	0	0	80-83	17		0	0	0	CO-C3
2		0	0	0	84-87	18		0	0	0	C4-C7
3		0	0	0	88-8B	19		0	0	0	C8-CB
4		0	0	0	8C-8F	20		0	0	0	CC-CF
5		0	0	0	90-93	21		0	0	0	D0-D3
6		0	0	0	94-97	22		0	0	0	D4-D7
7		0	0	0	98-9B	23		0	0	0	D8-DB
8		0	0	0	9C-9F	24		0	0	0	DC-DF
9		0	0	0	A0-A3	25		0	0	0	E0-E3
10		0	0	0	A4-A7	26		0	0	0	E4-E7
11		0	0	0	A8-AB	27		0	0	0	E8-EB
12		0	0	0	AC-AF	28		0	0	0	EC-EF
13		0	0	0	B0-B3	29		0	0	0	F0-F3
14		0	0	0	B4-B7	30		0	0	0	F4-F7
15		0	0	0	B8-BB	31		0	0	0	F8-FB
16		0	0	0	BC-BF	32		0	0	0	FC-FF

W4IKS Table 5 Sheet 2

Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(D+8+CODE)

EVENT	1234567	HR	MIN	FUNC	CODE	EVENT	1234567	HR	MIN	FUNC	CODE
33		0	0	0	80-83	49		0	0	0	CO-C3
34		0	0	0	84-87	50		0	0	0	C4-C7
35		0	0	0	88-8B	51		0	0	0	C8-CB
36		0	0	0	8C-8F	52		0	0	0	CC-CF
37		0	0	0	90-93	53		0	0	0	D0-D3
38		0	0	0	94-97	54		0	0	0	D4-D7
39		0	0	0	98-9B	55		0	0	0	D8-DB
40		0	0	0	9C-9F	56		0	0	0	DC-DF
41		0	0	0	A0-A3	57		0	0	0	E0-E3
42		0	0	0	A4-A7	58		0	0	0	E4-E7
43		0	0	0	A8-AB	59		0	0	0	E8-EB
44		0	0	0	AC-AF	60		0	0	0	EC-EF
45		0	0	0	B0-B3	61		0	0	0	F0-F3
46		0	0	0	B4-B7	62		0	0	0	F4-F7
47		0	0	0	B8-BB	63		0	0	0	F8-FB
48		0	0	0	BC-BF	64		0	0	0	FC-FF

W4IKS Table 6

Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(B+0+KEY)

FUNCTIONS	KEY	VALUE
Present Plan	0	0
TOD/DOW Plan	1	0
Hardwire Plan	2	0
Modem Plan	3	0
Mode (0-4)	4	0
Master (0-OFF)	5	0
Master Clock	6	0
Local Clock	7	0
Dwell Clock	8	0
Future	9	0
Future	A	0
Future	B	0
Future	C	
NEMA CNA Phases	D	
Adv Warning Phases	E	
MRI Phases	F	2 4 6

(D+KEY1+KEY2)

FUNCTIONS	KEY	VALUE
Floating Ped	2E	0
ID Number	2F	125
No Coord Ped Recall	3E	0
Rest In Walk	3F	0
Adv Warning EOG	4E	0
Adv Warning SOG	4F	0
RR Red Clear	5E	0
RR Clear Color	5F	0
Bus Delay	6D	0.0
Bus Free T1	6E	0
Bus Free T3	6F	0
EV Min Aft Clear	7E	0
EV Indicators	7F	0
NEMA Inputs	66	0.0

W4IKS Table 7 Sheet 1

Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(B+PLAN+KEY)

FUNCTION	KEY	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6	Plan 7	Plan 8	Plan 9
Cycle Length	0	0	0	0	0	0	0	0	0	0
Forceoff 01	1	0	0	0	0	0	0	0	0	0
Forceoff 02	2	0	0	0	0	0	0	0	0	0
Forceoff 03	3	0	0	0	0	0	0	0	0	0
Forceoff 04	4	0	0	0	0	0	0	0	0	0
Forceoff 05	5	0	0	0	0	0	0	0	0	0
Forceoff 06	6	0	0	0	0	0	0	0	0	0
Forceoff 07	7	0	0	0	0	0	0	0	0	0
Forceoff 08	8	0	0	0	0	0	0	0	0	0
Offset	9	0	0	0	0	0	0	0	0	0
Perm Length	A	0	0	0	0	0	0	0	0	0
Max Dwell	B	0	0	0	0	0	0	0	0	0
Lead Phases	C									
Coord Phases	D									
Perm 2 Phases	E									
Min Recall	F									

W4IKS Table 7 Sheet 2

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 Intersection #125 HERMAN RD @ 108TH

(B+D+KEY1+KEY2)

FUNCTION	KEY2	KEY1	7	8	9	A	B	C	D	E	F
		Plan 10	Plan 11	Plan 12	Plan 13	Plan 14	Plan 15	Plan 16	Plan 17	Plan 18	
Cycle Length	0	0	0	0	0	0	0	0	0	0	0
Forceoff 01	1	0	0	0	0	0	0	0	0	0	0
Forceoff 02	2	0	0	0	0	0	0	0	0	0	0
Forceoff 03	3	0	0	0	0	0	0	0	0	0	0
Forceoff 04	4	0	0	0	0	0	0	0	0	0	0
Forceoff 05	5	0	0	0	0	0	0	0	0	0	0
Forceoff 06	6	0	0	0	0	0	0	0	0	0	0
Forceoff 07	7	0	0	0	0	0	0	0	0	0	0
Forceoff 08	8	0	0	0	0	0	0	0	0	0	0
Offset	9	0	0	0	0	0	0	0	0	0	0
Perm Length	A	0	0	0	0	0	0	0	0	0	0
Max Dwell	B	0	0	0	0	0	0	0	0	0	0
Lead Phases	C										
Coord Phases	D										
Perm 2 Phases	E										
Min Recall	F										

W4IKS Table 8

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 Intersection #125 HERMAN RD @ 108TH

(B+A+KEY)

(B+B+KEY)

(B+C+KEY)

FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE
Bus P1 T1	0	0	Bus P4 T1	0	0	Bus P7 T1	0	0
Bus P1 T2	1	0	Bus P4 T2	1	0	Bus P7 T2	1	0
Bus P1 T3	2	0	Bus P4 T3	2	0	Bus P7 T3	2	0
Bus P2 T1	3	0	Bus P5 T1	3	0	Bus P8 T1	3	0
Bus P2 T2	4	0	Bus P5 T2	4	0	Bus P8 T2	4	0
Bus P2 T3	5	0	Bus P5 T3	5	0	Bus P8 T3	5	0
Bus P3 T1	6	0	Bus P6 T1	6	0	Bus P9 T1	6	0
Bus P3 T2	7	0	Bus P6 T2	7	0	Bus P9 T2	7	0
Bus P3 T3	8	0	Bus P6 T3	8	0	Bus P9 T3	8	0
Perm 2 P1	9	0	Perm 2 P4	9	0	Perm 2 P7	9	0
Perm 2 P2	A	0	Perm 2 P5	A	0	Perm 2 P8	A	0
Perm 2 P3	B	0	Perm 2 P6	B	0	Perm 2 P9	B	0
Flash Yellow	C		OL Flash Yellow	C		Coord Max	C	
Flash Circuit	D		OL Flash Clear	D		TOD Red Rest	D	
TOD/DOW Max	E		TOD/DOW Ped	E		OLA Switchpack	E	
OLB Switchpack	F		OLC Switchpack	F		OLD Switchpack	F	

W4IKS Table 9 Page 0
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 Intersection #125 HERMAN RD @ 108TH

(A+4+KEY)

C1	PIN	KEY	CODE
39		0	0
40		1	0
41		2	0
42		3	0
43		4	0
44		5	0
45		6	0
46		7	0
47		8	0
48		9	0
49		A	0
50		B	0
51		C	0
52		D	0
53		E	0
54		F	0

(A+5+KEY)

C1	PIN	KEY	CODE
55		0	0
56		1	0
57		2	0
58		3	0
59		4	0
60		5	0
61		6	0
62		7	0
		8	0
		9	0
		A	0
		B	0
63		C	0
64		D	0
65		E	0
66		F	0

(A+6+KEY)

C1	PIN	KEY	CODE
67		0	0
68		1	0
69		2	0
70		3	0
71		4	0
72		5	0
73		6	0
74		7	0
75		8	0
76		9	0
77		A	0
78		B	0
79		C	0
80		D	0
81		E	0
82		F	0

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 Intersection #125 HERMAN RD @ 108TH

(D+A+4+KEY)

C1	PIN	KEY	CODE
39		0	0
40		1	0
41		2	0
42		3	0
43		4	0
44		5	0
45		6	0
46		7	0
47		8	0
48		9	0
49		A	0
50		B	0
51		C	0
52		D	0
53		E	0
54		F	0

(D+A+5+KEY)

C1	PIN	KEY	CODE
55		0	0
56		1	0
57		2	0
58		3	0
59		4	0
60		5	0
61		6	0
62		7	0
		8	0
		9	0
		A	0
		B	0
63		C	0
64		D	0
65		E	0
66		F	0

(D+A+6+KEY)

C1	PIN	KEY	CODE
67		0	0
68		1	0
69		2	0
70		3	0
71		4	0
72		5	0
73		6	0
74		7	0
75		8	0
76		9	0
77		A	0
78		B	0
79		C	0
80		D	0
81		E	0
82		F	0

W4IKS Table 9 Page 2
 Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(D+A+B+KEY)

C1	PIN	KEY	CODE
39		0	0
40		1	0
41		2	0
42		3	0
43		4	0
44		5	0
45		6	0
46		7	0
47		8	0
48		9	0
49		A	0
50		B	0
51		C	0
52		D	0
53		E	0
54		F	0

(D+A+C+KEY)

C1	PIN	KEY	CODE
55		0	0
56		1	0
57		2	0
58		3	0
59		4	0
60		5	0
61		6	0
62		7	0
		8	0
		9	0
		A	0
		B	0
63		C	0
64		D	0
65		E	0
66		F	0

(D+A+D+KEY)

C1	PIN	KEY	CODE
67		0	0
68		1	0
69		2	0
70		3	0
71		4	0
72		5	0
73		6	0
74		7	0
75		8	0
76		9	0
77		A	0
78		B	0
79		C	0
80		D	0
81		E	0
82		F	0

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 Intersection #125 HERMAN RD @ 108TH

(A+0+KEY)			(A+1+KEY)			(A+2+KEY)			(A+3+KEY)		
FUNCTION	KEY	CODE	FUNCTION	KEY	CODE	FUNCTION	KEY	CODE	FUNCTION	KEY	CODE
04 D/W	0	0	08 D/W	0	0	02 Ped Y	0	0	01 D/W	0	0
04 Walk	1	0	08 Walk	1	0	06 Ped Y	1	99	01 Walk	1	0
04 Red	2	0	08 Red	2	0	04 Ped Y	2	0	OLB Red	2	0
04 Yellow	3	0	08 Yellow	3	0	08 Ped Y	3	0	OLB Yellow	3	0
04 Green	4	0	08 Green	4	0	03 Ped Y	4	0	OLB Green	4	0
03 Red	5	0	07 Red	5	0	01 Ped Y	5	0	OLA Red	5	0
03 Yellow	6	0	07 Yellow	6	0	Flash	6	0	OLA Yellow	6	0
03 Green	7	0	07 Green	7	0	Watchdog	7	0	OLA Green	7	0
02 D/W	8	0	06 D/W	8	0	03 D/W	8	0		8	0
02 Walk	9	0	06 Walk	9	0	03 Walk	9	0	SD	9	0
02 Red	A	0	06 Red	A	0	OLD Red	A	0	LTT	A	0
02 Yellow	B	0	06 Yellow	B	0	OLD Yellow	B	0			
02 Green	C	0	06 Green	C	0	OLD Green	C	0	High Byte IDC		0
01 Red	D	0	05 Red	D	99	OLC Red	D	0			
01 Yellow	E	0	05 Yellow	E	99	OLC Yellow	E	0			
01 Green	F	0	05 Green	F	99	OLC Green	F	0			

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 Intersection #125 HERMAN RD @ 108TH

(D+A+0+KEY)			(D+A+1+KEY)			(D+A+2+KEY)			(D+A+3+KEY)		
FUNCTION	KEY	CODE	FUNCTION	KEY	CODE	FUNCTION	KEY	CODE	FUNCTION	KEY	CODE
04 D/W	0	0	08 D/W	0	0	02 Ped Y	0	0	01 D/W	0	0
04 Walk	1	0	08 Walk	1	0	06 Ped Y	1	0	01 Walk	1	0
04 Red	2	0	08 Red	2	0	04 Ped Y	2	0	OLB Red	2	0
04 Yellow	3	0	08 Yellow	3	0	08 Ped Y	3	0	OLB Yellow	3	0
04 Green	4	0	08 Green	4	0	03 Ped Y	4	0	OLB Green	4	0
03 Red	5	0	07 Red	5	0	01 Ped Y	5	0	OLA Red	5	0
03 Yellow	6	0	07 Yellow	6	0	Flash	6	0	OLA Yellow	6	0
03 Green	7	0	07 Green	7	0	Watchdog	7	0	OLA Green	7	0
02 D/W	8	0	06 D/W	8	0	03 D/W	8	0		8	0
02 Walk	9	0	06 Walk	9	0	03 Walk	9	0	SD	9	0
02 Red	A	0	06 Red	A	0	OLD Red	A	0	LTT	A	0
02 Yellow	B	0	06 Yellow	B	0	OLD Yellow	B	0			
02 Green	C	0	06 Green	C	0	OLD Green	C	0			
01 Red	D	0	05 Red	D	0	OLC Red	D	0			
01 Yellow	E	0	05 Yellow	E	0	OLC Yellow	E	0			
01 Green	F	0	05 Green	F	0	OLC Green	F	0			

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 Intersection #125 HERMAN RD @ 108TH

(D+A+7+KEY)			(D+A+8+KEY)			(D+A+9+KEY)			(D+A+A+KEY)		
FUNCTION	KEY	CODE	FUNCTION	KEY	CODE	FUNCTION	KEY	CODE	FUNCTION	KEY	CODE
04 D/W	0	0	08 D/W	0	0	02 Ped Y	0	0	01 D/W	0	0
04 Walk	1	0	08 Walk	1	0	06 Ped Y	1	0	01 Walk	1	0
04 Red	2	0	08 Red	2	0	04 Ped Y	2	0	OLB Red	2	0
04 Yellow	3	0	08 Yellow	3	0	08 Ped Y	3	0	OLB Yellow	3	0
04 Green	4	0	08 Green	4	0	03 Ped Y	4	0	OLB Green	4	0
03 Red	5	0	07 Red	5	0	01 Ped Y	5	0	OLA Red	5	0
03 Yellow	6	0	07 Yellow	6	0	Flash	6	0	OLA Yellow	6	0
03 Green	7	0	07 Green	7	0	Watchdog	7	0	OLA Green	7	0
02 D/W	8	0	06 D/W	8	0	03 D/W	8	0		8	0
02 Walk	9	0	06 Walk	9	0	03 Walk	9	0	SD	9	0
02 Red	A	0	06 Red	A	0	OLD Red	A	0	LTT	A	0
02 Yellow	B	0	06 Yellow	B	0	OLD Yellow	B	0			
02 Green	C	0	06 Green	C	0	OLD Green	C	0			
01 Red	D	0	05 Red	D	0	OLC Red	D	0			
01 Yellow	E	0	05 Yellow	E	0	OLC Yellow	E	0			
01 Green	F	0	05 Green	F	0	OLC Green	F	0			

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 Intersection #125 HERMAN RD @ 108TH

(D+B+0+KEY)			(D+B+1+KEY)			(D+B+2+KEY)		
FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE
05 D/W	0	0	OLE Green	0	0	Cycle 2	0	0
05 Walk	1	0	OLF Green	1	0	Cycle 3	1	0
OLL Red	2	0	OLE Yellow	2	0	Offset 1	2	0
OLL Yellow	3	0	OLF Yellow	3	0	Offset 2	3	0
OLL Green	4	0	Adv Warning	4	0	Offset 3	4	0
OLK Red	5	0	RR Fl Yellow	5	0	-----	5	0
OLK Yellow	6	0	Det Reset	6	0	Free	6	0
OLK Green	7	0	RR On	7	0	Flash	7	0
07 D/W	8	0	EVA On	8	0	Coord Plan 1 2 3	8	0
07 Walk	9	0	EVB On	9	0	Coord Plan 4 5 6	9	0
OLJ Red	A	0	EVC On	A	0	Coord Plan 7 8 9	A	0
OLJ Yellow	B	0	EVD On	B	0	Coord Plan 10 11 12	B	0
OLJ Green	C	0	Ring 1 Bit B	C	0	Coord Plan 13 14 15	C	0
OLH Red	D	0	Ring 1 Bit C	D	0	Coord Plan 16 17 18	D	0
OLH Yellow	E	0	Ring 2 Bit B	E	0	Future	E	0
OLH Green	F	0	Ring 2 Bit C	F	0	Future	F	0

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 Intersection #125 HERMAN RD @ 108TH

(D+B+4+KEY)			(D+B+5+KEY)			(D+B+6+KEY)		
FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE
05 D/W	0	0	OLE Green	0	0	Cycle 2	0	0
05 Walk	1	0	OLF Green	1	0	Cycle 3	1	0
OLL Red	2	0	OLE Yellow	2	0	Offset 1	2	0
OLL Yellow	3	0	OLF Yellow	3	0	Offset 2	3	0
OLL Green	4	0	Adv Warning	4	0	Offset 3	4	0
OLK Red	5	0	RR Fl Yellow	5	0	-----	5	0
OLK Yellow	6	0	Det Reset	6	0	Free	6	0
OLK Green	7	0	RR On	7	0	Flash	7	0
07 D/W	8	0	EVA On	8	0	Coord Plan 1 2 3	8	0
07 Walk	9	0	EVB On	9	0	Coord Plan 4 5 6	9	0
OLJ Red	A	0	EVC On	A	0	Coord Plan 7 8 9	A	0
OLJ Yellow	B	0	EVD On	B	0	Coord Plan 10 11 12	B	0
OLJ Green	C	0	Ring 1 Bit B	C	0	Coord Plan 13 14 15	C	0
OLH Red	D	0	Ring 1 Bit C	D	0	Coord Plan 16 17 18	D	0
OLH Yellow	E	0	Ring 2 Bit B	E	0	Future	E	0
OLH Green	F	0	Ring 2 Bit C	F	0	Future	F	0

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 Intersection #125 HERMAN RD @ 108TH

(D+B+8+KEY)			(D+B+9+KEY)			(D+B+A+KEY)		
FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE	FUNCTIONS	KEY	VALUE
05 D/W	0	0	OLE Green	0	0	Cycle 2	0	0
05 Walk	1	0	OLF Green	1	0	Cycle 3	1	0
OLL Red	2	0	OLE Yellow	2	0	Offset 1	2	0
OLL Yellow	3	0	OLF Yellow	3	0	Offset 2	3	0
OLL Green	4	0	Adv Warning	4	0	Offset 3	4	0
OLK Red	5	0	RR Fl Yellow	5	0	-----	5	0
OLK Yellow	6	0	Det Reset	6	0	Free	6	0
OLK Green	7	0	RR On	7	0	Flash	7	0
07 D/W	8	0	EVA On	8	0	Coord Plan 1 2 3	8	0
07 Walk	9	0	EVB On	9	0	Coord Plan 4 5 6	9	0
OLJ Red	A	0	EVC On	A	0	Coord Plan 7 8 9	A	0
OLJ Yellow	B	0	EVD On	B	0	Coord Plan 10 11 12	B	0
OLJ Green	C	0	Ring 1 Bit B	C	0	Coord Plan 13 14 15	C	0
OLH Red	D	0	Ring 1 Bit C	D	0	Coord Plan 16 17 18	D	0
OLH Yellow	E	0	Ring 2 Bit B	E	0	Future	E	0
OLH Green	F	0	Ring 2 Bit C	F	0	Future	F	0

W4IKS Table 12
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 Intersection #125 HERMAN RD @ 108TH

(D+8+KEY1+KEY2)

KEY1 = 0			KEY1 = 1			KEY1 = 2			KEY1 = 3		
FUNCTION	KEY2	VALUE	FUNCTION	KEY2	VALUE	FUNCTION	KEY2	VALUE	FUNCTION	KEY2	VALUE
1/Month	0	0	3/Hour On	0	0	5/Hour Off	0	0	7/Plan	0	0
1/DOM	1	0	3/Min On	1	0	5/Min Off	1	0	8/Month	1	0
1/Hour On	2	0	3/Hour Off	2	0	5/Plan	2	0	8/DOM	2	0
1/Min On	3	0	3/Min Off	3	0	6/Month	3	0	8/Hour On	3	0
1/Hour Off	4	0	3/Plan	4	0	6/DOM	4	0	8/Min On	4	0
1/Min Off	5	0	4/Month	5	0	6/Hour On	5	0	8/Hour Off	5	0
1/Plan	6	0	4/DOM	6	0	6/Min On	6	0	8/Min Off	6	0
2/Month	7	0	4/Hour On	7	0	6/Hour Off	7	0	8/Plan	7	0
2/DOM	8	0	4/Min On	8	0	6/Min Off	8	0	9/Month	8	0
2/Hour On	9	0	4/Hour Off	9	0	6/Plan	9	0	9/DOM	9	0
2/Min On	A	0	4/Min Off	A	0	7/Month	A	0	9/Hour On	A	0
2/Hour Off	B	0	4/Plan	B	0	7/DOM	B	0	9/Min On	B	0
2/Min Off	C	0	5/Month	C	0	7/Hour On	C	0	9/Hour Off	C	0
2/Plan	D	0	5/DOM	D	0	7/Min On	D	0	9/Min Off	D	61
3/Month	E	0	5/Hour On	E	0	7/Hour Off	E	0	9/Plan	E	0
3/DOM	F	0	5/Min On	F	0	7/Min Off	F	0			

W4IKS Table 13
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 Intersection #125 HERMAN RD @ 108TH

(D+9+0+KEY)

(D+9+3+KEY)

(E+F+KEY)

FUNCTION	KEY	VALUE	FUNCTION	KEY	VALUE	FUNCTION	KEY	VALUE
Overlap H	0	_____	OLH Green	0	0.0	RR Max II	0	0
Overlap J	1	_____	OLH Yellow	1	0.0	Ped Perm Pl 1	1	0
Overlap K	2	_____	OLH Red	2	0.0	Ped Perm Pl 2	2	0
Overlap L	3	_____	OLJ Green	3	0.0	Ped Perm Pl 3	3	0
OLH Switchpack	4	_____	OLJ Yellow	4	0.0	Ped Perm Pl 4	4	0
OLJ Switchpack	5	_____	OLJ Red	5	0.0	Ped Perm Pl 5	5	0
OLK Switchpack	6	_____	OLK Green	6	0.0	Ped Perm Pl 6	6	0
OLL Switchpack	7	_____	OLK Yellow	7	0.0	Ped Perm Pl 7	7	0
Reserved	8	_____	OLK Red	8	0.0	Ped Perm Pl 8	8	0
Reserved	9	_____	OLL Green	9	0.0	Ped Perm Pl 9	9	0
All Red Before EV	A	_____	OLL Yellow	A	0.0	# of Lng Pwrouts	A	0
			OLL Red	B	0.0	# pf Sht Pwrouts	B	0
						Failed Det	C	0
						Max II On	D	0
						No Daylite Save	E	0
						Revision Level	F	17

W4IKS Table 14 Sheet 1
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 Intersection #125 HERMAN RD @ 108TH

(D+9+KEY1+KEY2)

KEY1 = 8		KEY1 = 9		KEY1 = A		KEY1 = B	
KEY2	CODE	KEY2	CODE	KEY2	CODE	KEY	CODE
0	205	0	205	0	6	0	23
1	146	1	146	1	14	1	67
2	23	2	23	2	20	2	20
3	45	3	66	3	23	3	26
4	20	4	205	4	68	4	6
5	27	5	146	5	20	5	205
6	5	6	21	6	24	6	148
7	205	7	5	7	27	7	21
8	146	8	14	8	5	8	5
9	21	9	20	9	205	9	11
A	6	A	21	A	147	A	209
B	14	B	5	B	21	B	5
C	20	C	13	C	5	C	24
D	24	D	205	D	12	D	21
E	26	E	11	E	205	E	6
F	6	F	21	F	147	F	14

W4IKS Table 14 Sheet 2
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 Intersection #125 HERMAN RD @ 108TH

(D+9+KEY1+KEY2)

KEY1 = C		KEY1 = D		KEY1 = E		KEY1 = F	
KEY2	CODE	KEY2	CODE	KEY2	CODE	KEY	CODE
0	209	0	29	0	0	0	0
1	6	1	7	1	0	1	0
2	24	2	20	2	0	2	0
3	27	3	24	3	0	3	0
4	5	4	25	4	0	4	0
5	208	5	6	5	0	5	0
6	5	6	210	6	0	6	0
7	30	7	6	7	0	7	0
8	26	8	24	8	0	8	0
9	5	9	21	9	0	9	0
A	210	A	6	A	0	A	0
B	5	B	14	B	0	B	0
C	23	C	0	C	0	C	0
D	45	D	0	D	0	D	0
E	20	E	0	E	0	E	0
F	24	F	0	F	0	F	0

W4IKS Table 14 Sheet 3
 Date: Wednesday, July 25, 2012 Time: 09:52 AM
 Intersection #125 HERMAN RD @ 108TH

(D+E+KEY1+KEY2)

KEY1 = 0		KEY1 = 1		KEY1 = 2		KEY1 = 3	
KEY2	CODE	KEY2	CODE	KEY2	CODE	KEY	CODE
0	0	0	0	0	0	0	0
1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0
A	0	A	0	A	0	A	0
B	0	B	0	B	0	B	0
C	0	C	0	C	0	C	0
D	0	D	0	D	0	D	0
E	0	E	0	E	0	E	0
F	0	F	0	F	0	F	0

W4IKS Table 14 Sheet 4
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+E+KEY1+KEY2)

KEY1 = 4		KEY1 = 5		KEY1 = 6		KEY1 = 7	
KEY2	CODE	KEY2	CODE	KEY2	CODE	KEY	CODE
0	0	0	0	0	0	0	0
1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0
A	0	A	0	A	0	A	0
B	0	B	0	B	0	B	0
C	0	C	0	C	0	C	0
D	0	D	0	D	0	D	0
E	0	E	0	E	0	E	0
F	0	F	0	F	0	F	0

W4IKS Table 14 Sheet 5
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+E+KEY1+KEY2)

KEY1 = 8		KEY1 = 9		KEY1 = A		KEY1 = B	
KEY2	CODE	KEY2	CODE	KEY2	CODE	KEY	CODE
0	0	0	0	0	0	0	0
1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0
A	0	A	0	A	0	A	0
B	0	B	0	B	0	B	0
C	0	C	0	C	0	C	0
D	0	D	0	D	0	D	0
E	0	E	0	E	0	E	0
F	0	F	0	F	0	F	0

W4IKS Table 14 Sheet 6
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+E+KEY1+KEY2)

KEY1 = C		KEY1 = D		KEY1 = E		KEY1 = F	
KEY2	CODE	KEY2	CODE	KEY2	CODE	KEY	CODE
0	0	0	0	0	0	0	0
1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0
A	0	A	0	A	0	A	0
B	0	B	0	B	0	B	0
C	0	C	0	C	0	C	0
D	0	D	0	D	0	D	0
E	0	E	0	E	0	E	0
F	0	F	0	F	0	F	0

(D+B+3+KEY)

FUNCTION	KEY	VALUE
CB Output #1	0	0
CB Output #2	1	0
CB Output #3	2	0
CB Output #4	3	0
CB Output #5	4	0
CB Output #6	5	0
CB Output #7	6	0
CB Output #8	7	0
CB Flash Out #9	8	0
CB Flash Out #10	9	0
CB Flash Out #11	A	52
CB Flash Out #12	B	0

Page ID - 0

(D+B+7+KEY)

FUNCTION	KEY	VALUE
CB Output #1	0	0
CB Output #2	1	0
CB Output #3	2	0
CB Output #4	3	0
CB Output #5	4	0
CB Output #6	5	0
CB Output #7	6	0
CB Output #8	7	0
CB Flash Out #9	8	0
CB Flash Out #10	9	0
CB Flash Out #11	A	0
CB Flash Out #12	B	0

Page ID - 1

(D+B+B+KEY)

FUNCTION	KEY	VALUE
CB Output #1	0	0
CB Output #2	1	0
CB Output #3	2	0
CB Output #4	3	0
CB Output #5	4	0
CB Output #6	5	0
CB Output #7	6	0
CB Output #8	7	0
CB Flash Out #9	8	0
CB Flash Out #10	9	0
CB Flash Out #11	A	0
CB Flash Out #12	B	0

Page ID - 2

LEGEND

CONTROLLERS

C₃₃₂ Install model 2070L controller in model 332 cabinet & control equipment with riser frame, orient louvered door as shown

POLES

- MA**_L Install (L=length) foot mast arm
- MPL**_X Install special (X = non-standard) traffic signal mast arm pole with luminaire pole extension (See, "Pole Entrance Chart")
- LA**_L Install (L=length) foot luminaire arm
- VP** Install vehicle signal pedestal with transformer base
- PP** Install pedestrian signal pedestal with frangible base

SIGNALS

- V**_{Ph} Install phase (Ph=phase) vehicle signal
- C/B**_{Ph} Install phase (Ph=phase) countdown pedestrian signal with clamshell mount and pushbutton with 'H' mount

SIGNS

- AL**₃ Install aluminum (30"x36", type "W7") "NO TURN ON RED" sign
- PR**₃ Install (30" x 36") "NO RIGHT TURN" part time restriction sign
- SNS**_N Install street name sign (N) on mast arm pole, use 12" 0.125mm flat blade aluminum blanks mounted to mast arm with stainless steel bands and hardware (Diamond Grade Sheeting).
1 = SW Herman Rd 4 = SW Teton Ave

CONSTRUCTION NOTE:

- ① Terminate phase 1 flashing yellow indication to phase 2 pedestrian yellow switchpack output. Terminate Conflict Monitor channel 9 (pin 13) wire to Output File terminal 114.
- Terminate phase 3 flashing yellow indication to phase 4 pedestrian yellow switchpack output. Terminate Conflicting Monitor channel 10 (pin R) wire to Output File terminal 105.
- Terminate phase 5 flashing yellow indication to phase 6 pedestrian yellow switchpack output. Terminate Conflict Monitor channel 11 (pin S) wire to Output File terminal 120.
- Terminate phase 7 flashing yellow indication to phase 8 pedestrian yellow switchpack output. Terminate Conflicting Monitor channel 12 (pin V) wire to Output File terminal 111.

LEGEND CONTINUED

CABINETS

- TC** Install terminal cabinet
- BMCL** Install base mounted service cabinet, 120/240 volt metered, for signal and signal pole mounted illumination systems

JUNCTION BOXES

- JB**₂ Install 22"x12"x12" (min. dimension) precast concrete junction box
- JB**_{2A} Install 22"x12"x12" (min. dimension) precast concrete junction box with concrete apron
- JB**₃ Install 30"x17"x12" (min. dimension) precast concrete junction box

VIDEO DETECTION

- VDC**_N Install video camera (N), mounting bracket and post
- VDF**_N Install video camera feeder (N)
- VZ**_{PH} Video detection zone for phase (PH).

WIRES

- N-C** Install (N=number) No. 8 type THWN (Signal system common)
- N-12C** Install (N=number) No. 12 type THWN (Pedestrian signal system common)
- N/G** Install (N=number) No. (G=AWG wire size) type THWN wires
- N/G** Install (N=number) No. (G=AWG wire size) type XHHW wires
- Ph** Includes 3 spare wires for phase (Ph=phase) as per table

LEGEND CONTINUED

CONDUITS

- S** Install (S=size) inch electrical conduit
- IC** Interconnect conduit (See Interconnect Plan)

FIRE PREEMPTION

- FN**_{Ch} Install channel (Ch=channel), (N=number) barrel fire preemption detector unit
- FF**_{Ch} Install channel (Ch=channel) fire preemption detector feeder cable

MISCELLANEOUS

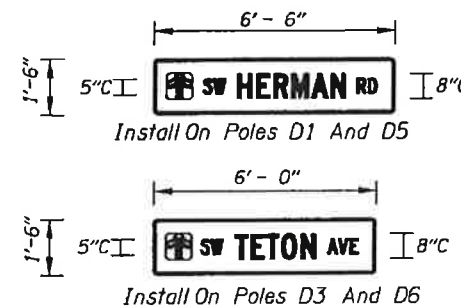
- PE**_T Install photocontrol electronic relay on pole, as per T.M.S. Drg. No. TM465
- HPS** Install 200 watt high pressure sodium luminaire, type M-C-111, 120/240 dual voltage ballast

SIGNAL MOUNTING OPTIONS
B = Adjustable bracket assembly w/rain caps) (install 1" metallic chase nipple in lieu of tenon when required for wiring)
P = Side pole mount
T = Pole top mount

SIGNAL HEAD TYPES
2 = 12" R, 12" Y, 12" G
6L = 12" FLTA, 12" YLTA, 12" FYLTA, 12" GLTA

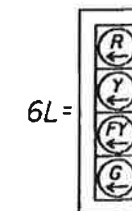
CAMERA MOUNTING OPTIONS
LA = Luminaire arm mount
MA = Mast arm mount

STREET NAME SIGNS



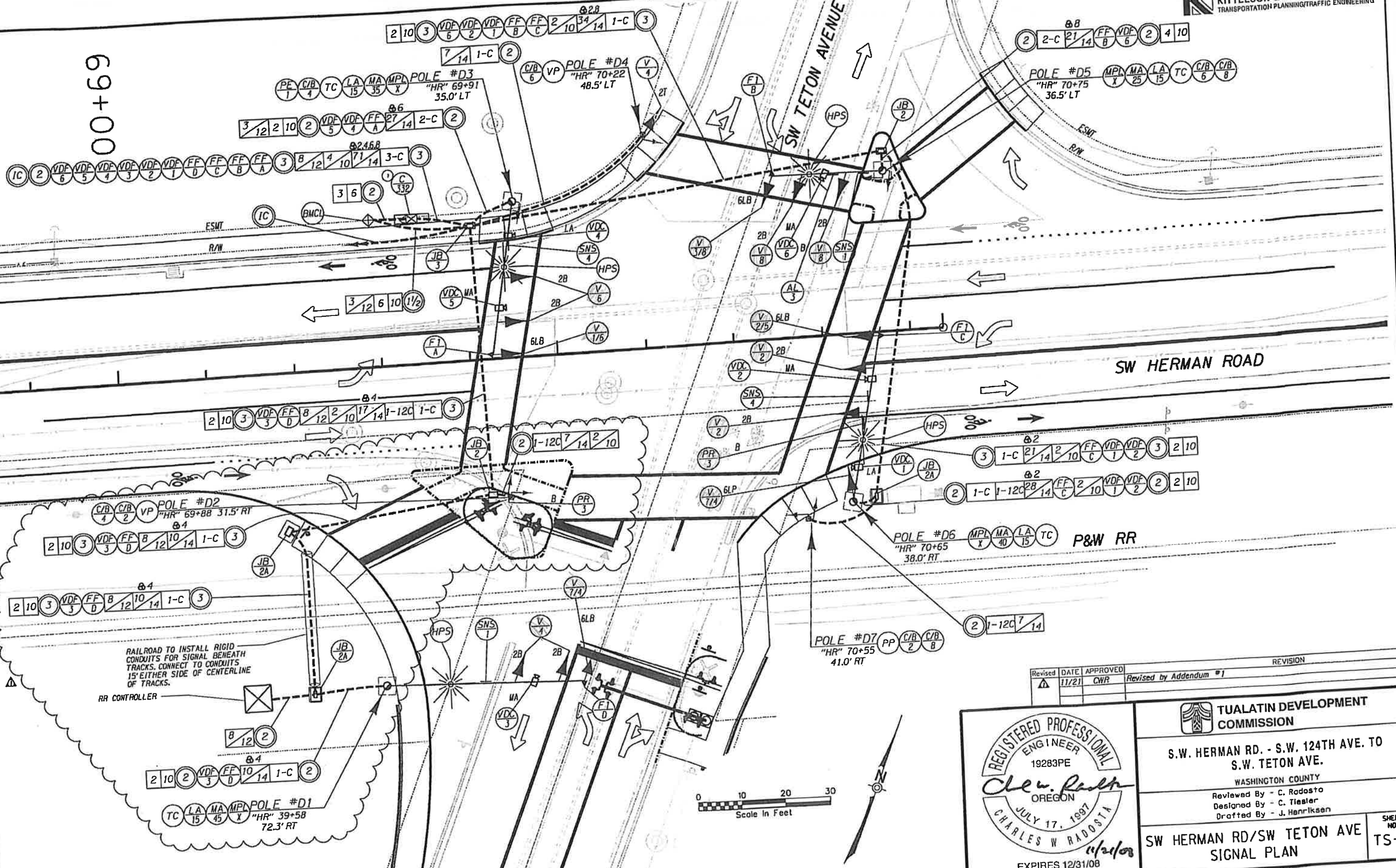
NOTES:

- 1. All signs shall be type "G2".
- 2. Contact Traffic Safety Supply Co. at (503)-235-8531 for size and layout information.



	TUALATIN DEVELOPMENT COMMISSION
	S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE. WASHINGTON COUNTY Reviewed By - C. Radosta Designed By - C. Tiesler Drafted By - J. Henriksen
SW HERMAN RD/SW TETON AVE LEGEND SHEET	SHEET NO. TS-15

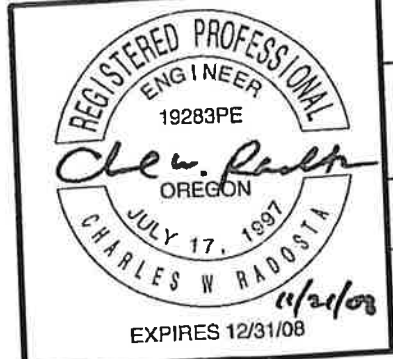
00+69



RAILROAD TO INSTALL RIGID CONDUITS FOR SIGNAL BENEATH TRACKS. CONNECT TO CONDUITS 15' EITHER SIDE OF CENTERLINE OF TRACKS.

RR CONTROLLER

Revised	DATE	APPROVED	REVISION
Δ	11/21	CWR	Revised by Addendum #1



TUALATIN DEVELOPMENT COMMISSION

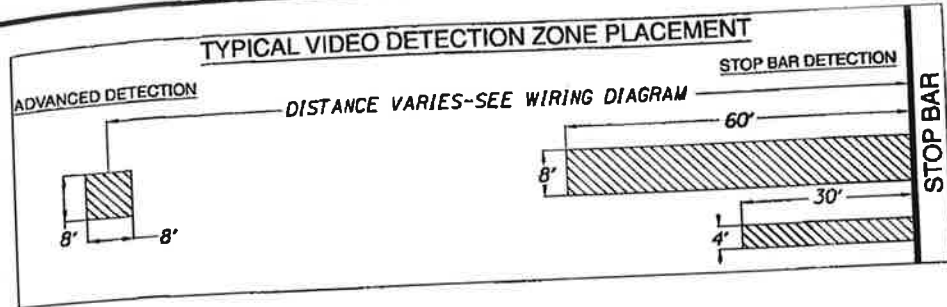
S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE.

WASHINGTON COUNTY

Reviewed By - C. Radosta
Designed By - C. Tiesler
Drafted By - J. Henriksen

SW HERMAN RD/SW TETON AVE SIGNAL PLAN

SHEET NO. TS-16

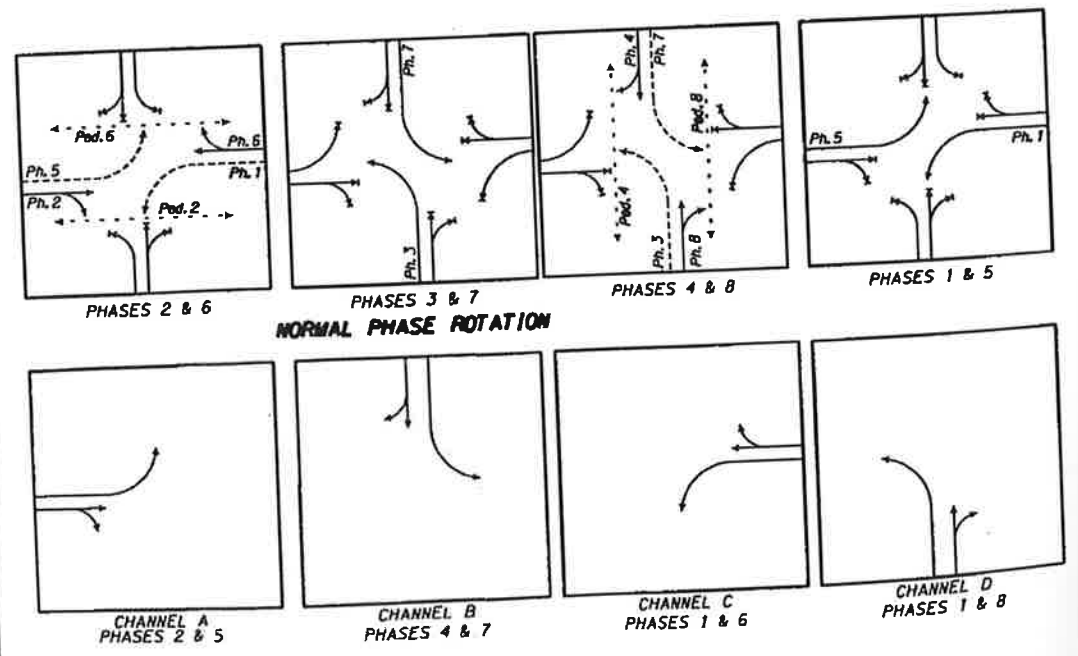
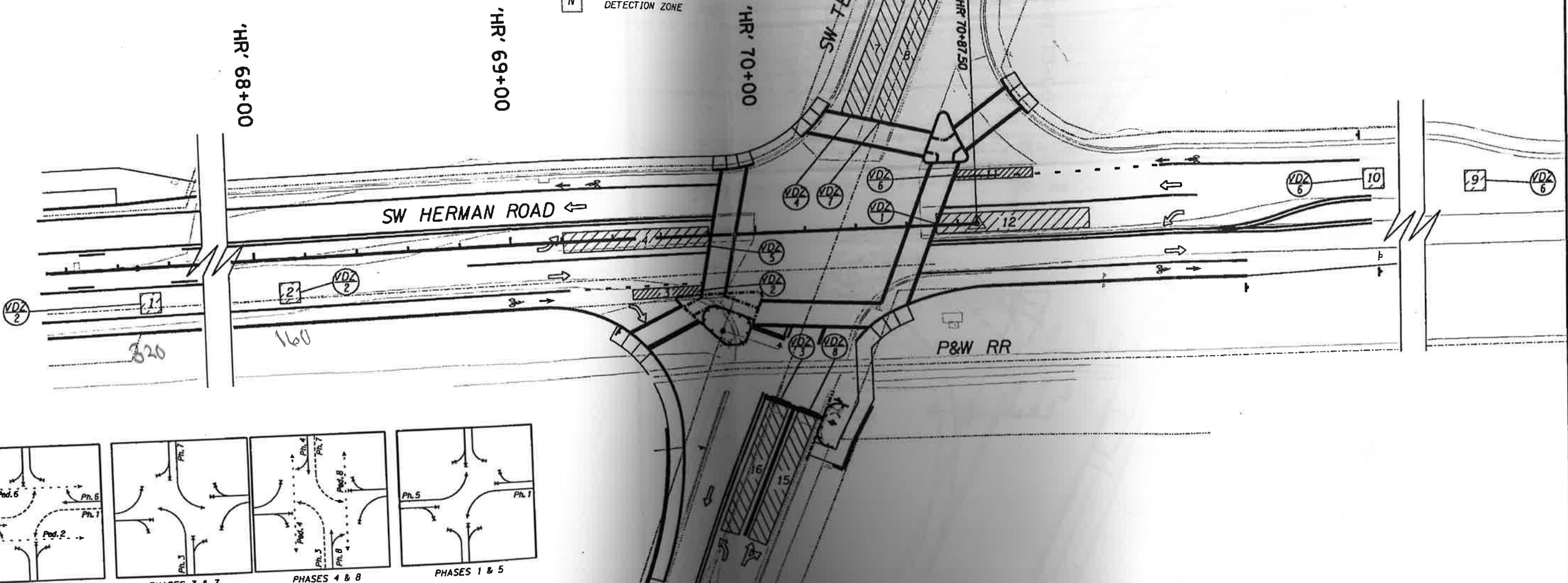


VIDEO DETECTION WIRING DIAGRAM

CAMERA	DETECTION ZONE	DISTANCE (FEET)	PHASE	SLOT
1	1	320	2	12U
2	2	160	2	13U
2	3		2	11
3	4		2	16U
3	5	220	5	17U
3	6	110	4	18U
3	7		4	15
3	8		4	12U
4	9	320	7	13U
5	10	180	8	11
5	11		8	16U
5	12		8	17U
6	13	220	1	18U
6	14	110	1	15
6	15		1	12U
6	16		3	13U
6	16		3	15

DESIGN APPROACH SPEEDS

STREET	APPROACH	OPERATING SPEED
HERMAN RD	EASTBOUND	45 M.P.H.
	WESTBOUND	45 M.P.H.
TETON AVE	NORTHBOUND	35 M.P.H.
	SOUTHBOUND	35 M.P.H.



REGISTERED PROFESSIONAL ENGINEER
19283PE
Charles W. Radosta
OREGON
JULY 17, 1997
CHARLES W. RADOSTA

EXPIRES 12/31/08

TUALATIN DEVELOPMENT COMMISSION

S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE.

WASHINGTON COUNTY

Reviewed By - C. Radosta
Designed By - C. Tiesler
Drafted By - J. Henriksen

SW HERMAN RD/SW TETON AVE
DETECTOR PLAN

SHEET NO. TS-17

RETURN TO NORMAL PHASE ROTATION AFTER PREEMPTION

Ph. No.	NORMAL PHASE ROTATION									
2	G	G	Y	R	R	R	R	R	R	R
6	G	G	Y	R	R	R	R	R	R	R
3	R	R	R	G	Y	FY	FY	Y	R	R
7	R	R	R	G	Y	FY	FY	Y	R	R
4	R	R	R	R	R	G	G	Y	R	R
8	R	R	R	R	R	G	G	Y	R	R
1	FY	FY	Y	R	R	R	R	R	G	Y
5	FY	FY	Y	R	R	R	R	R	G	Y
Ped. 2+6	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW
Ped. 4+8	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW
PTR	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

SIGNAL INDICATION ACTIVE WHEN RAILROAD PREEMPTION INITIATED

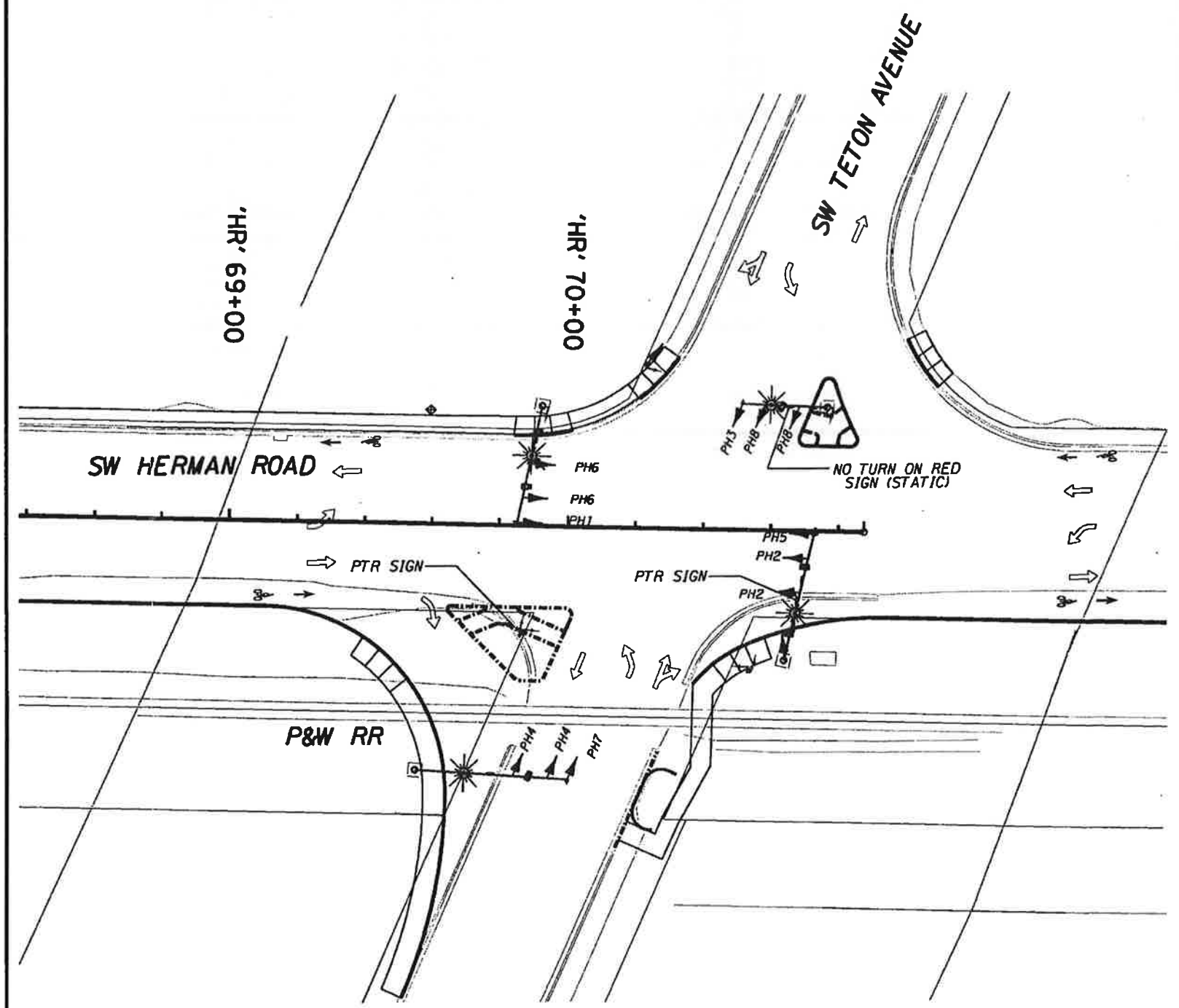
Ph. No.	RAILROAD PREEMPTION									
2	G	Y	R	R	R	R	R	R	R	R
6	G	Y	R	R	R	R	R	R	R	R
3	R	R	G	Y	FY	Y	R	R	R	R
7	R	R	G	Y	FY	Y	R	R	R	R
4	R	R	R	R	G	Y	R	R	R	R
8	R	R	R	R	G	Y	R	R	R	R
1	FY	Y	R	R	R	R	G	Y	R	R
5	FY	Y	R	R	R	R	G	Y	R	R
Ped. 2+6	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW
Ped. 4+8	DW	DW	DW	DW	FDW	DW	DW	DW	DW	DW
PTR	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

SERVE ALL NON-CONFLICTING PHASES (PHASES 2,5,6,&7). ALL FLASHING YELLOW ARROWS INHIBITED

SIGNAL INDICATION ACTIVE WHEN PED INHIBIT IS INITIATED

2	Y	R	R	R	R	R	R	R	R	R
6	Y	R	R	R	R	R	R	R	R	R
3	R	G	Y	R	R	R	R	R	R	R
7	R	R	R	G	Y	R	R	R	R	R
4	R	R	R	R	R	R	R	R	R	R
8	R	G	Y	R	R	R	R	R	R	R
1	Y	R	R	R	R	R	R	R	R	R
5	Y	R	R	R	R	R	R	R	R	R
Ped. 2+6	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
Ped. 4+8	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PTR	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

8 PHASE RAILROAD PREEMPTION MATRIX



P.C.D.I. Time Required: 14 Seconds



REGISTERED PROFESSIONAL ENGINEER
19283PE
Charles W. Radosta
OREGON
JULY 17, 1997
CHARLES W. RADOSTA
8/27/08
EXPIRES 12/31/08

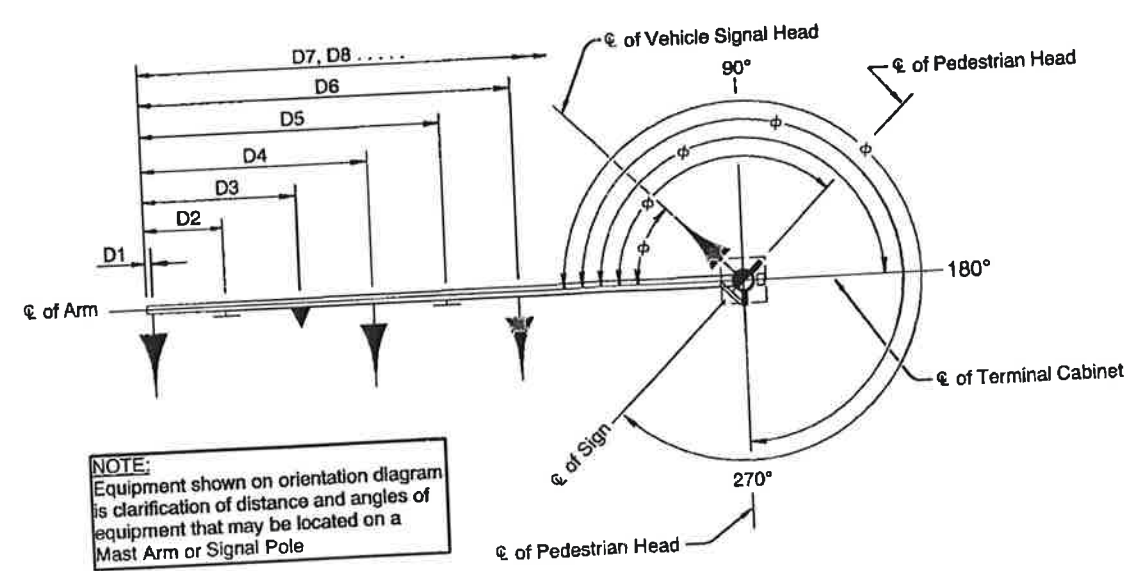
TUALATIN DEVELOPMENT COMMISSION
S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE.
WASHINGTON COUNTY
Reviewed By - C. Radosta
Designed By - C. Tiesler
Drafted By - J. Henriksen
SW HERMAN RD/SW TETON AVE RAILROAD PREEMPTION PLAN
SHEET NO. TS-18

POLE ENTRANCE CHART

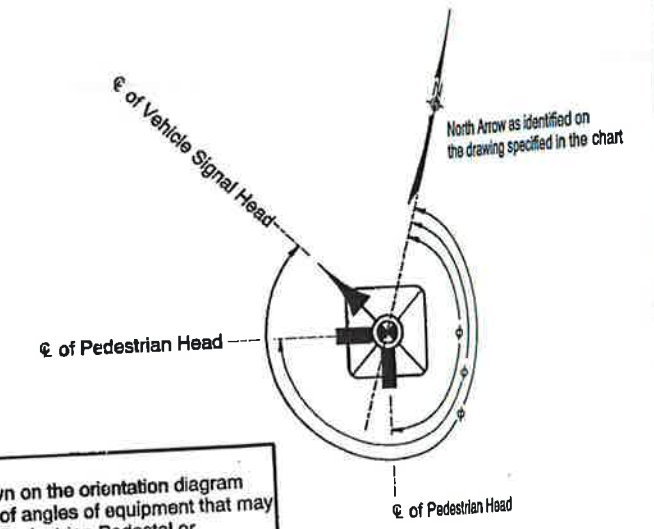
EQUIPMENT ON POLE					EQUIPMENT ON MAST ARM (Length in Feet and Equipment Type)								LUMINAIRES						
PED. SIGNAL DEG.	TERM. CABINET DEG.	SIGN DEG.	TRAFFIC SIGNAL DEG.	PHOTO ELECTRIC CELL	ARM LENGTH	D1	D2	D3	D4	D5	D6	D7	D8	ARM LENGTH	ARM DEG.	MOUNTING HEIGHT	TYPE	TYPE	WATTAGE
	180				45	0.5 V6L	0.5 F	8.0 V2	11.0 C	16.0 V2	22.5 ST			15	0	35	HPS	M-C-III	200
250 & 340		250												15	0	35	HPS	M-C-III	200
270	180			180	35	0.5 V6L	0.5 F	8.0 V2	11.0 C	18.0 V2	25.0 ST	27.5 C							
180			0											15	0	35	HPS	M-C-III	200
195 & 285	180				25	0.5 V6L	0.5 F	7.0 V2	12.0 C	14.0 SA	17.0 V2	21.0 ST		15	0	35	HPS	M-C-III	200
	180		345		40	0.5 F	2.0 V6L	9.0 V2	12.0 C	16.0 ST	19.0 V2	22.0 PR	32.0 C	15	0	35	HPS	M-C-III	200
90 & 345																			

Adjustable Bracket Mount Tenon Not Required (See Std. Dwg. TM462)
 Adjustable Bracket Mount Tenon Not Required (See Std. Dwg. TM462)
 Term w/Adjustable Bracket Mount Tenon Not Required (See Std Dwg TM465)
 Minimum w/Stainless Steel Bands

Dwg. TM465)
 S. Dwg. 00000)
 Sign (see Std. Dwg. TM465)



MAST ARM POLE ORIENTATION DIAGRAM



PEDESTRIAN PEDESTAL / VEHICLE PEDESTAL ORIENTATION DIAGRAM

	TUALATIN DEVELOPMENT COMMISSION S.W. HERMAN RD. - S.W. 124TH AVE. TO S.W. TETON AVE. WASHINGTON COUNTY
	Reviewed By - C. Rodosta Designed By - C. Tlesler Drafted By - J. Henriksen
SW HERMAN RD/SW TETON AVE SIGNAL PLAN DETAILS	SHEET NO. TS-19

WASHI

Wednesday, October 02, 2013 15:53

Intersection Name	6 - Herman_Teton		Local ID	6
Intersection Telephone Number				
System Name	102 - City of Tualatin		System ID	102
Controller Type	Voyage - C1-C11			
Controller Serial Number			Installation Date	
Programmed by			Programmed Date	

Graphic Map Background	Phase Rotation Diagram

Control Data (next/2/2)

Controller Function and Timing (next/2/1, next/2/2)

Security, Sequence, Initialization

Security Code	****	0 = disabled, or 1000-9999
Sequence	7	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag

	Lead Lag (next/2/2/3)			
	Phases 1 - 2	Phases 3 - 4	Phases 5 - 6	Phases 7 - 8
	0	0	0	0
0 = no reversal, 1 = reversal, 2 = by coord plan or clock				

Initialization and Flash (next/2/2/5)

	Initialization	Flash Entry	Flash Exit	
Ring 1 Phase	1	0	1	phase 1-8
Ring 2 Phase	5	0	5	phase 1-8
Interval	0	0	0	0 = red, 1 = yellow, 2 = green
Power up Flash	0.0	0.0 - 25.5 seconds	First All Red	6.0
				0.0 - 25.5 seconds

Soft Flash (next/2/2/5)

Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X		X	X	X		X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	0	0	8	0	0	0	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
Phase	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
			X : Y		Trap Protected Phase	Next Phase	Phase		
Phase 1	0	0	6 : 1	0	1		< (5)	1	
Phase 3	0	0	8 : 3	0	3		< (7)	3	
Phase 5	0	0	2 : 5	0	5		< (1)	5	
Phase 7	0	0	4 : 7	0	7		< (3)	7	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)								
	1	2	3	4	5	6	7	8
Movement								
Minimum Green	5	10	5	10	5	10	5	10
Passage	2.0	3.2	2.0	3.2	2.0	3.2	2.0	3.2
Yellow	3.0	4.5	3.0	4.0	3.0	4.5	3.0	4.0
Red Clearance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max 1	20	40	20	40	20	40	20	40
Max 2	20	40	20	40	20	40	20	40
Walk	0	5	0	5	0	5	0	5
Ped Clear	0	8	0	9	0	7	0	12
Seconds Per Actuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time Before Reduction	0	0	0	0	0	0	0	0
Time to Reduce	0	0	0	0	0	0	0	0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Variable Initial	0	0	0	0	0	0	0	0
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auto Max Limit	0	0	0	0	0	0	0	0
Inhibit Min Yellow								X = On
Red Decimal Off								X = On
Advance Walk	0	0	0	0	0	0	0	0
Other Controller Functions (next/2/2/9)								
Phase -->	1	2	3	4	5	6	7	8
Inhibit Simultaneous Gap Out	X		X		X		X	
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage						
Red Revert (+2 seconds)	3.0	0 - 25.5 sec						
Auto Ped Clear		X = On						
Flashing Don't Walk Into Yellow		X = On						
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec						
Ped Pushbutton	0	0 - 5 sec, 0 = disable						
Advance Flash Rate	0	0 = disable, 1 = 120 FPM						
Change Sequence		X = On (After a download with a power on - off cycle)						
Phase -->	1	2	3	4	5	6	7	8
Red Clear Extension Detector	0	0	0	0	0	0	0	0
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Local Detectors (next/2/2/4)

Detector Data

	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
Detector 1 - I1			1	1	0	0	0.0	0
Detector 2 - I9U			1	1	0	0	0.0	0
Detector 3 - I5			3	3	0	0	0.0	0
Detector 4 - I9L			3	3	0	0	0.0	0
Detector 5 - J1			5	5	0	0	0.0	0
Detector 6 - J9U			5	5	0	0	0.0	0
Detector 7 - J5			7	7	0	0	0.0	0
Detector 8 - J9L			7	7	0	0	0.0	0
Detector 9 - I2U			2	2	0	0	0.0	0
Detector 10 - I2L			2	2	0	0	0.0	0
Detector 11 - I3U			2	2	0	0	0.0	0
Detector 12 - I3L			0	2	0	0	0.0	0
Detector 13 - I4			2	0	0	0	0.0	0
Detector 14 - I6U			4	4	0	5	0.0	0
Detector 15 - I6L			4	4	0	0	0.0	0
Detector 16 - I7U			4	4	0	0	0.0	0
Detector 17 - I7L			0	4	0	0	0.0	0
Detector 18 - I8			4	0	0	0	0.0	0
Detector 19 - J2U			6	6	0	0	0.0	0
Detector 20 - J2L			6	6	0	0	0.0	0
Detector 21 - J3U			6	6	0	0	0.0	0
Detector 22 - J3L			0	6	0	0	0.0	0
Detector 23 - J4			6	0	0	0	0.0	0
Detector 24 - J6U			8	8	0	5	0.0	0
Detector 25 - J6L			8	8	0	0	0.0	0
Detector 26 - J7U			8	8	0	0	0.0	0
Detector 27 - J7L			0	8	0	0	0.0	0
Detector 28 - J8			8	0	0	0	0.0	0
Detector 29 -			0	0	0	0	0.0	0
Detector 30 -			0	0	0	0	0.0	0
Detector 31 -			0	0	0	0	0.0	0
Detector 32 -			0	0	0	0	0.0	0

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 - 13

Detector Plans (next/2/2/4/5)

Loop Number									
Plan Detectors		0	0	0	0	0	0	0	0 - 32, 0 = none, 1 - 3 2 = detectors 1 - 32
Detector Plan 1	Call Phase								0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	
	Stretch/Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Delay/ Disconnect Mode	0	0	0	0	0	0	0	
Plan Detectors		0	0	0	0	0	0	0	0 - 13
Detector Plan 2	Call Phase								0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	
	Stretch/Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Delay/ Disconnect Mode	0	0	0	0	0	0	0	
Plan Detectors		0	0	0	0	0	0	0	0 - 13
Detector Plan 3	Call Phase								0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	
	Stretch/Disconnect Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Delay/ Disconnect Mode	0	0	0	0	0	0	0	

Detector Fail Monitor (next/2/2/4/3)					Detectors 33-64 (next/2/2/4/6)					
	Fail Monitor Enable	Recall Phase	Min Counts	Max Counts		Call Phase	Extend Phase			
Detector 1 - I1		0	0	0	Detector 33 -	0	0			
Detector 2 - I9U		0	0	0	Detector 34 -	0	0			
Detector 3 - I5		0	0	0	Detector 35 -	0	0			
Detector 4 - I9L		0	0	0	Detector 36 -	0	0			
Detector 5 - J1		0	0	0	Detector 37 -	0	0			
Detector 6 - J9U		0	0	0	Detector 38 -	0	0			
Detector 7 - J5		0	0	0	Detector 39 -	0	0			
Detector 8 - J9L		0	0	0	Detector 40 -	0	0			
Detector 9 - I2U		0	0	0	Detector 41 -	0	0			
Detector 10 - I2L		0	0	0	Detector 42 -	0	0			
Detector 11 - I3U		0	0	0	Detector 43 -	0	0			
Detector 12 - I3L		0	0	0	Detector 44 -	0	0			
Detector 13 - I4		0	0	0	Detector 45 -	0	0			
Detector 14 - I6U		0	0	0	Detector 46 -	0	0			
Detector 15 - I6L		0	0	0	Detector 47 -	0	0			
Detector 16 - I7U		0	0	0	Detector 48 -	0	0			
Detector 17 - I7L		0	0	0	Detector 49 -	0	0			
Detector 18 - I8		0	0	0	Detector 50 -	0	0			
Detector 19 - J2U		0	0	0	Detector 51 -	0	0			
Detector 20 - J2L		0	0	0	Detector 52 -	0	0			
Detector 21 - J3U		0	0	0	Detector 53 -	0	0			
Detector 22 - J3L		0	0	0	Detector 54 -	0	0			
Detector 23 - J4		0	0	0	Detector 55 -	0	0			
Detector 24 - J6U		0	0	0	Detector 56 -	0	0			
Detector 25 - J6L		0	0	0	Detector 57 -	0	0			
Detector 26 - J7U		0	0	0	Detector 58 -	0	0			
Detector 27 - J7L		0	0	0	Detector 59 -	0	0			
Detector 28 - J8		0	0	0	Detector 60 -	0	0			
Detector 29 -		0	0	0	Detector 61 -	0	0			
Detector 30 -		0	0	0	Detector 62 -	0	0			
Detector 31 -		0	0	0	Detector 63 -	0	0			
Detector 32 -		0	0	0	Detector 64 -	0	0			
fail monitor enable - X = On, recall phase - 0 = none 1 - 8 = phase 1 - 8, min, max					call / extend phase - 0 = none 1 - 8 = phase 1 - 8					
Detector Fail Sample Period (all detectors)			0	0 - 255 minutes						
Video Fail Inputs (next/2/2/4/3) -->		1	2	3	4	5	6	7	8	0 = none, 1 - 8 = phase 1 - 8
Phase Recalled		0	0	0	0	0	0	0	0	
System Detectors (next/2/2/4/4)										
System Detectors -->		1	2	3	4	5	6	7	8	0 = none, 1 - 32 = phase 1 - 32
Local Detector		0	0	0	0	0	0	0	0	

Overlaps / FYLTA (next/2/2/8)														
Vehicle Overlaps		Phase or Movement	Phases								Extension Green	Clearance		A - D 0 = none 1 = overlap 2 = 60 FPM 3 = Not ped 4=Comp. Ph. 5=Prevent. Ext. 6=Not Veh. 7=Adv. FF E - L 0 = no Overlap 1 = Overlap Green, Yellow Red
			1	2	3	4	5	6	7	8		Yellow	Red	
Overlaps	A		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	B		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	C		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	D		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	E		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	F		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	G		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	H		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	I		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	J		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	K		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	
Not Ped - Ped Overlaps (next/2/2/8/5)														
Ped Overlaps -->		A	B	C	D	E	F	G	H					
Overlaps	A									X = Nor Ped Ped Overlap				
	B													
	C													
	D													
Advance Warning (next/2/2/8/3)														
					E	F	G	H	I	J	K	L		
Enable					0	0	0	0	0	0	0	0	0 = disabled, 1 = enabled	
1st Conditional Overlap					0	0	0	0	0	0	0	0	0 = none, 1 - overlap E, 2 = overlap F, etc.	
2nd Conditional Overlap					0	0	0	0	0	0	0			
Advance Deactivation Delay					0	0	0	0	0	0	0	0	0 - 99 seconds	
Ped Overlaps (next/2/2/8/5)														
Phase -->		1	2	3	4	5	6	7	8	Walk	Ped Clear	Ped Recall		
Ped Overlap	A									0	0		Phase, Ped Recall: X = on	
	B									0	0			
	C									0	0			
	D									0	0			
	E									0	0		Walk, Ped Clear: 0 - 255 seconds	
	F									0	0			
	G									0	0			
	H									0	0			
Flashing Yellow Left Turn Arrow (FYLTA) (next/2/2/8/6)														
Phase Pairs -->		1 - 2	3 - 4	5 - 6	7 - 8									
Enable		4	4	4	4	0 = off, 3 = 3 outputs, 4 = 4 outputs, 5 = 5 outputs								
Even Omits Odd		1	1	1	1	0 = off, 1 = on, 2 = on, place call across barrier								
Detector Switch Odd / Even		X	X	X	X	X = on, odd phase must be omitted								
Red Transition		3.0	3.0	3.0	3.0	0.0 or 2.0 - 25.5 sec								
Red Extension		3.0	3.0	3.0	3.0	0.0 - 25.5 sec								
Return to GLTA		0	0	0	0	0 = off, 1 = max out, 2 = yellow lock								
Flashing Yellow Left Turn Arrow (FYLTA) - Continued on last page														

Service Plans (next/2/2/6)

Phase -->		1	2	3	4	5	6	7	8	
Service Plan 1	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 2	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 3	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 4	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 5	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 6	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.	

Service Plans Cont.

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 7	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 8	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Max Plans (next/2/2/7)

Phase -->		1	2	3	4	5	6	7	8	
Max Plan 1	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 2	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 3	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 4	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 5	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 6	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 7	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 8	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	2	0=add only, 1=dwel, 2=fastway
Late Ped	0	0 = off, 1 = on
Coord Walk Rest	0	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	1	0=start of main street, 1=end of main street, 2=by TOD circuit 144

	Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service		0	0	0	0	0	0	0	0	
Auto Permissive Min Green		0	0	0	0	0	0	0	0	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
1-	2	6	90	0	0	0	0	0
2-	2	6	100	0	0	0	0	0
3-	2	6	110	0	0	0	0	0
4-	0	0	0	0	0	0	0	0
5-	0	0	0	0	0	0	0	0
6-	0	0	0	0	0	0	0	0
7-	0	0	0	0	0	0	0	0
8-	0	0	0	0	0	0	0	0
9-	0	0	0	0	0	0	0	0
10-	0	0	0	0	0	0	0	0
11-	0	0	0	0	0	0	0	0
12-	0	0	0	0	0	0	0	0
13-	0	0	0	0	0	0	0	0
14-	0	0	0	0	0	0	0	0
15-	0	0	0	0	0	0	0	0
16-	0	0	0	0	0	0	0	0
17-	0	0	0	0	0	0	0	0
18-	0	0	0	0	0	0	0	0
19-	0	0	0	0	0	0	0	0
20-	0	0	0	0	0	0	0	0
21-	0	0	0	0	0	0	0	0
22-	0	0	0	0	0	0	0	0
23-	0	0	0	0	0	0	0	0
24-	0	0	0	0	0	0	0	0
25-	0	0	0	0	0	0	0	0
26-	0	0	0	0	0	0	0	0
27-	0	0	0	0	0	0	0	0
28-	0	0	0	0	0	0	0	0
29-	0	0	0	0	0	0	0	0
30-	0	0	0	0	0	0	0	0
31-	0	0	0	0	0	0	0	0
32-	0	0	0	0	0	0	0	0
0 - 8			0 - 255 sec.			0 - 8		

Coordination Plans cont.

Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
	1-	12	32	19	27	12	32	19	27	0
2-	15	35	20	30	15	35	20	30	0	0
3-	16	40	21	33	16	40	21	33	0	0
4-	0	0	0	0	0	0	0	0	0	0
5-	0	0	0	0	0	0	0	0	0	0
6-	0	0	0	0	0	0	0	0	0	0
7-	0	0	0	0	0	0	0	0	0	0
8-	0	0	0	0	0	0	0	0	0	0
9-	0	0	0	0	0	0	0	0	0	0
10-	0	0	0	0	0	0	0	0	0	0
11-	0	0	0	0	0	0	0	0	0	0
12-	0	0	0	0	0	0	0	0	0	0
13-	0	0	0	0	0	0	0	0	0	0
14-	0	0	0	0	0	0	0	0	0	0
15-	0	0	0	0	0	0	0	0	0	0
16-	0	0	0	0	0	0	0	0	0	0
17-	0	0	0	0	0	0	0	0	0	0
18-	0	0	0	0	0	0	0	0	0	0
19-	0	0	0	0	0	0	0	0	0	0
20-	0	0	0	0	0	0	0	0	0	0
21-	0	0	0	0	0	0	0	0	0	0
22-	0	0	0	0	0	0	0	0	0	0
23-	0	0	0	0	0	0	0	0	0	0
24-	0	0	0	0	0	0	0	0	0	0
25-	0	0	0	0	0	0	0	0	0	0
26-	0	0	0	0	0	0	0	0	0	0
27-	0	0	0	0	0	0	0	0	0	0
28-	0	0	0	0	0	0	0	0	0	0
29-	0	0	0	0	0	0	0	0	0	0
30-	0	0	0	0	0	0	0	0	0	0
31-	0	0	0	0	0	0	0	0	0	0
32-	0	0	0	0	0	0	0	0	0	0
0 - 255 sec * = force offs and yield points										

Circuit Mapping (next/2/3/3)																	
Circuit Map	Coord Plan	Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit	
1	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
2	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
3	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
4	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
5	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
6	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
7	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
8	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
9	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
10	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
11	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
12	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
13	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
14	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
15	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
16	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
17	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
18	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
19	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
20	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U

coord plan - 0 = free, 1 - 32 = coord plan 1 - 32, 33 = any, 34 none selected
time clock circuits - 0 = not used, or circuits 6 - 196

Dynamic Phase Length (next/2/3/4/4)									
Phase -->	1	2	3	4	5	6	7	8	
Back Detector	0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Lane Factor	0	0	0	0	0	0	0	0	0 = none, 1.0 - 5.0
Check Out Detector	0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Coord Delta Force Off	Set A	0	0	0	0	0	0	0	0 - 255 sec
	Set B	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	
Free Delta Max	Set A	0	0	0	0	0	0	0	
	Set B	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	

Platoon Progression (next/2/3/4/5)					
Entry Local Only			Master Local Only		
Platoon Max	0	0 - 255 sec	Smoothing Factor	0.0	0.0 - 1.0
Min Platoon Green	0	0 - 255 sec			
Entry Detector Gap	0.0	0.0 - 25.5			
Min Platoon Cycle	0	0 - 255 sec			

Inbound			Outbound		
Only for Entry Inbound Local or Master Local			Only for Entry Outbound Local or Master Local		
Entry IB Local also Last OB Local	0	0 - 50	Entry OB Local also Last IB Local	0	0 - 50
Speed	0	0 - 55 mph	Speed	0	0 - 55 mph
Distance from Entry Local	0	0 - 65000 feet	Distance from Entry Local	0	0 - 65000 feet

Entry Local Only			Entry Local Only		
Distance from Entry Local Detector	0	0 - 999 feet	Distance from Entry Local Detector	0	0 - 999 feet
Entry Local Detector	0	0 - 32	Entry Local Detector	0	0 - 32

Master Local			Master Local		
Master Mid - System Critical Detectors	0	0 - 16	Master Mid - System Critical Detectors	0	0 - 16

Force Off Percents													
Inbound						Outbound							
	1	3	4	5	7	8		1	3	4	5	7	8
Split 1	0	0	0	0	0	0	Split 1	0	0	0	0	0	0
Split 2	0	0	0	0	0	0	Split 2	0	0	0	0	0	0
0 - 100 %						0 - 100 %							

Time of Day Data (next/2/4)

Day Program (next/2/4/1)												
	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On/Off	
1							51					
2							52					
3							53					
4							54					
5							55					
6							56					
7							57					
8							58					
9							59					
10							60					
11							61					
12							62					
13							63					
14							64					
15							65					
16							66					
17							67					
18							68					
19							69					
20							70					
21							71					
22							72					
23							73					
24							74					
25							75					
26							76					
27							77					
28							78					
29							79					
30							80					
31							81					
32							82					
33							83					
34							84					
35							85					
36							86					
37							87					
38							88					
39							89					
40							90					
41							91					
42							92					
43							93					
44							94					
45							95					
46							96					
47							97					
48							98					
49							99					
50							100					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on	

Day Program cont.

	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off
101							151				
102							152				
103							153				
104							154				
105							155				
106							156				
107							157				
108							158				
109							159				
110							160				
111							161				
112							162				
113							163				
114							164				
115							165				
116							166				
117							167				
118							168				
119							169				
120							170				
121							171				
122							172				
123							173				
124							174				
125							175				
126							176				
127							177				
128							178				
129							179				
130							180				
131							181				
132							182				
133							183				
134							184				
135							185				
136							186				
137							187				
138							188				
139							189				
140							190				
141							191				
142							192				
143							193				
144							194				
145							195				
146							196				
147							197				
148							198				
149							199				
150							200				
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on

Circuit Overrides (next/2/4/4)

1 - Coord Line 1	CL1	TOD		51 - Ped Omit 3	PO3	TOD	
2 - Coord Line 2	CL2	TOD		52 - Ped Omit 4	PO4	TOD	
3 - Coord Line 4	CL4	TOD		53 - Ped Omit 5	PO5	TOD	
4 - Coord Line 8	CL8	TOD		54 - Ped Omit 6	PO6	TOD	
5 - Coord Line 16	C16	TOD		55 - Ped Omit 7	PO7	TOD	
6 - Coord Operation	CRD	TOD		56 - Ped Omit 8	PO8	TOD	
7 - Soft Flash	SFL	TOD		57 - Conditional Service	CVS	TOD	
8 - Enable System Relays	ESR	TOD		58 - Inhibit Simultaneous Gap Out	ISG	On	
9 - Call to Non Act 1	CN1	TOD		59 - Inhibit Hardwire	HWI	TOD	
10 - Call to Non Act 2	CN2	TOD		60 - Ped Override Mode	POM	On	
11 - Walk Rest Modifier	WRM	TOD		61 - Dual Entry	DLE	On	
12 - Min Recall	MIN	TOD		62 - Exclusive Ped	EPD	TOD	
13 - Max 2 Both Rings	MX2	TOD		63 - Call to Time Clock Mode	CTC	TOD	
14 - Coord Inhibit Max Ring 1, 2	IMT	TOD		64 - Dual Enhanced Ped	DEP	TOD	
15 - Not Used	N/U	TOD		65 - Service Plan 1	SP1	TOD	
16 - Call to Free	CTF	TOD		66 - Service Plan 2	SP2	TOD	
17 - TOD Output 1	TO1	TOD		67 - Service Plan 3	SP3	TOD	
18 - TOD Output 2	TO2	TOD		68 - Service Plan 4	SP4	TOD	
19 - TOD Output 3	TO3	TOD		69 - Service Plan 5	SP5	TOD	
20 - TOD Output 4	TO4	TOD		70 - Service Plan 6	SP6	TOD	
21 - TOD Output 5	TO5	TOD		71 - Service Plan 7	SP7	TOD	
22 - TOD Output 6	TO6	TOD		72 - Service Plan 8	SP8	TOD	
23 - TOD Output 7	TO7	TOD		73 - Max Plan 1	MP1	TOD	
24 - TOD Output 8	TO8	TOD		74 - Max Plan 2	MP2	TOD	
25 - Vehicle Call Phase 1	VC1	TOD	On /	75 - Max Plan 3	MP3	TOD	On /
26 - Vehicle Call Phase 2	VC2	TOD	Off /	76 - Max Plan 4	MP4	TOD	Off /
27 - Vehicle Call Phase 3	VC3	TOD	TOD	77 - Max Plan 5	MP5	TOD	TOD
28 - Vehicle Call Phase 4	VC4	TOD		78 - Max Plan 6	MP6	TOD	
29 - Vehicle Call Phase 5	VC5	TOD		79 - Max Plan 7	MP7	TOD	
30 - Vehicle Call Phase 6	VC6	TOD		80 - Max Plan 8	MP8	TOD	
31 - Vehicle Call Phase 7	VC7	TOD		81 - Transit Priority Max Group 1	TG1	TOD	
32 - Vehicle Call Phase 8	VC8	TOD		82 - Transit Priority Max Group 2	TG2	TOD	
33 - Ped Call Phase 1	PC1	TOD		83 - Transit Priority Max Group 3	TG3	TOD	
34 - Ped Call Phase 2	PC2	TOD		84 - Transit Priority Max Group 4	TG4	TOD	
35 - Ped Call Phase 3	PC3	TOD		85 - Transit Priority Max Group 5	TG5	TOD	
36 - Ped Call Phase 4	PC4	TOD		86 - Transit Priority Max Group 6	TG6	TOD	
37 - Ped Call Phase 5	PC5	TOD		87 - Transit Priority Max Group 7	TG7	TOD	
38 - Ped Call Phase 6	PC6	TOD		88 - Transit Priority Max Group 8	TG8	TOD	
39 - Ped Call Phase 7	PC7	TOD		89 - Inhibit Volume Density 1	IV1	TOD	
40 - Ped Call Phase 8	PC8	TOD		90 - Inhibit Volume Density 2	IV2	TOD	
41 - Vehicle Omit 1	VO1	TOD		91 - Inhibit Volume Density 3	IV3	TOD	
42 - Vehicle Omit 2	VO2	TOD		92 - Inhibit Volume Density 4	IV4	TOD	
43 - Vehicle Omit 3	VO3	TOD		93 - Inhibit Volume Density 5	IV5	TOD	
44 - Vehicle Omit 4	VO4	TOD		94 - Inhibit Volume Density 6	IV6	TOD	
45 - Vehicle Omit 5	VO5	TOD		95 - Inhibit Volume Density 7	IV7	TOD	
46 - Vehicle Omit 6	VO6	TOD		96 - Inhibit Volume Density 8	IV8	TOD	
47 - Vehicle Omit 7	VO7	TOD		97 - Lag 1	LG1	TOD	
48 - Vehicle Omit 8	VO8	TOD		98 - Lag 3	LG3	TOD	
49 - Ped Omit 1	PO1	TOD		99 - Lag 5	LG5	TOD	
50 - Ped Omit 2	PO2	TOD		100 - Lag 7	LG7	TOD	

Circuit Overrides cont.

101 - Inhibit Overlap A	OLA	TOD		151 - Coord Hold 7	HD7	TOD	
102 - Inhibit Overlap B	OLB	TOD		152 - Coord Hold 8	HD8	TOD	
103 - Inhibit Overlap C	OLC	TOD		153 - PE Priority Return B	PRB	TOD	
104 - Inhibit Overlap D	OLD	TOD		154 - PE Priority Return C	PRC	TOD	
105 - Enable Schedule A Phone 1	AT1	TOD		155 - PE Priority Return D	PRD	TOD	
106 - Enable Schedule A Phone 2	AT2	TOD		156 - PE Priority Return E	PRE	TOD	
107 - Enable Schedule B Phone 1	BT1	TOD		157 - Platoon Inbound	PPI	TOD	
108 - Enable Schedule B Phone 2	BT2	TOD		158 - Platoon Outbound	PPO	TOD	
109 - Enable Schedule C Phone 1	CT1	TOD		159 - Platoon Spl 2	PS2	TOD	
110 - Enable Schedule C Phone 2	CT2	TOD		160 - Coord Walk Rest	CWR	TOD	
111 - Enable Volume to Call Phone 1	VT1	TOD		161 - Dynamic Phase Length Short Inhibit 1	SI1	TOD	
112 - Enable Volume to Call Phone 2	VT2	TOD		162 - Dynamic Phase Length Short Inhibit 2	SI2	TOD	
113 - Enable Volume Logging	EVL	On		163 - Dynamic Phase Length Short Inhibit 3	SI3	TOD	
114 - Enable MOE Logging	EML	On		164 - Dynamic Phase Length Short Inhibit 4	SI4	TOD	
115 - Detector Low Threshold Inhibit	DLI	TOD		165 - Dynamic Phase Length Short Inhibit 5	SI5	TOD	
116 - Detector Continue Presence Inhibit	DPI	TOD		166 - Dynamic Phase Length Short Inhibit 6	SI6	TOD	
117 - Inhibit Detector Based on Programming	IND	TOD		167 - Dynamic Phase Length Short Inhibit 7	SI7	TOD	
118 - Inhibit Detector Delay	IDD	TOD		168 - Dynamic Phase Length Short Inhibit 8	SI8	TOD	
119 - Inhibit Conditional Ped	ICP	TOD		169 - Coord Late Left Turn 1	CT1	TOD	
120 - Inhibit Transit Priority	ITP	TOD		170 - Coord Late Left Turn 3	CT3	TOD	
121 - Red Rest Ring 1,2	RRM	TOD		171 - Coord Late Left Turn 5	CT5	TOD	
122 - Not Used	N/U	TOD		172 - Coord Late Left Turn 7	CT7	TOD	
123 - Omit Red Clear Ring 1,2	ORC	TOD		173 - Dynamic Phase Length Enable A	DPA	TOD	
124 - Not Used	N/U	TOD		174 - Dynamic Phase Length Enable B	DPB	TOD	
125 - Ped Recycle Ring 1,2	PCY	TOD	On /	175 - Dynamic Phase Length Enable C	DPC	TOD	On /
126 - Not Used	N/U	TOD	Off /	176 - Dynamic Phase Length Enable D	DPD	TOD	TOD
127 - Enable MOE Log to Call Phone 1	MT1	TOD	TOD	177 - Proactive Plan Select Average	PSA	TOD	
128 - Enable MOE Log to Call Phone 2	MT2	TOD		178 - Proactive Plan Select Inbound	PSI	TOD	
129 - Transit Inhibit Short Time 1	IS1	TOD		179 - Proactive Plan Select Outbound	PSO	TOD	
130 - Transit Inhibit Short Time 2	IS2	TOD		180 - Split Variant Inbound	SVI	TOD	
131 - Transit Inhibit Short Time 3	IS3	TOD		181 - Split Variant Outbound	SVO	TOD	
132 - Transit Inhibit Short Time 4	IS4	TOD		182 - Disable Coord Walk Rest Ring 1	DW1	TOD	
133 - Transit Inhibit Short Time 5	IS5	TOD		183 - Disable Coord Walk Rest Ring 2	DW2	TOD	
134 - Transit Inhibit Short Time 6	IS6	TOD		184 - Proactive Plan Select New Look	NLK	TOD	
135 - Transit Inhibit Short Time 7	IS7	TOD		185 - Disable Red Clearance Extension	DRX	TOD	
136 - Transit Inhibit Short Time 8	IS8	TOD		186 - Detector Plan Line 1	DL1	TOD	
137 - Enable Transit Priority Logging	ETL	TOD		187 - Detector Plan Line 2	DL2	TOD	
138 - Disable Flashing Yellow Arrow 1	DF1	TOD		188 - Disable LRT 1 Vertical Flashing Bar	DV1	TOD	
139 - Disable Flashing Yellow Arrow 3	DF3	TOD		189 - Disable LRT 2 Vertical Flashing Bar	DV2	TOD	
140 - Disable Flashing Yellow Arrow 5	DF5	TOD		190 - Disable LRT 3 Vertical Flashing Bar	DV3	TOD	
141 - Disable Flashing Yellow Arrow 7	DF7	TOD		191 - Disable LRT 4 Vertical Flashing Bar	DV4	TOD	
142 - Disable Auto Max	DAM	TOD		192 - Datakey Enable	DKE	On	
143 - Disable Repeat Phase Service	DRS	TOD		193 - Dynamic Phase Reversal Enable 1	DR1	TOD	
144 - Coord End of Main Street	EMS	TOD		194 - Dynamic Phase Reversal Enable 3	DR3	TOD	
145 - Coord Hold 1	HD1	TOD		195 - Dynamic Phase Reversal Enable 5	DR5	TOD	
146 - Coord Hold 2	HD2	TOD		196 - Dynamic Phase Reversal Enable 7	DR7	TOD	
147 - Coord Hold 3	HD3	TOD		197 - Enable Coord Logging	ECL	On	
148 - Coord Hold 4	HD4	TOD		198 - Disable Gap FYLTA 1,3,5,7	DGF	TOD	
149 - Coord Hold 5	HD5	TOD		199 - Coordination Auto Walk	CAW	TOD	
150 - Coord Hold 6	HD6	TOD		200 - Enable Coordinated Auto Max	ECM	TOD	

Preemption Data (next/2/5)

Sequence (next/2/5/1 - 8)							Instructions 0 - Service Phases 1-9 = Special Interval 1-9 10 - Preempt Sequence Allows FYLTA 11 - Preempt Interval Disables FYLTA 15 - Alternate Trap Protection 90 - Go to all Red 91 - Soft Flash On 92 - Soft Flash Off 93 - Enable Ped 94 - Disable Peds 95 - Priority Return 96 - Enable Coordination with peds 97 - Enable Coordination without peds 98 - Return with NO Calls 99 - Return with Vehicle Calls 100 - jump to step in Interval Time 101 - Use Interval Time as Resettable Gap Timer 196 - Coord Re-synch with Peds 197 - Coord Re-synch without Peds 200 - Light Rail Train phase without Peds 201 - Light Rail Train phase with Peds 202 - Return to highest queue/delay phase (this uses the Dynamic Phase Length Back Detectors) 216 - Light Rail Train Coord Re-synch with Peds 217 - Light Rail Train Coord Re-synch without Peds
Sequences / Intervals	Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode	
1	1	0	25	0	X	0	
	2	98		0		0	
	3	0		0		0	
	4	0		0		0	
	5	0		0		0	
	6	0		0		0	
	7	0		0		0	
	8	0		0		0	
	9	0		0		0	
	10	0		0		0	
2	1	0	47	0	X	0	
	2	98		0		0	
	3	0		0		0	
	4	0		0		0	
	5	0		0		0	
	6	0		0		0	
	7	0		0		0	
	8	0		0		0	
	9	0		0		0	
	10	0		0		0	
3	1	0	16	0	X	0	
	2	98		0		0	
	3	0		0		0	
	4	0		0		0	
	5	0		0		0	
	6	0		0		0	
	7	0		0		0	
	8	0		0		0	
	9	0		0		0	
	10	0		0		0	
4	1	0	38	0	X	0	
	2	98		0		0	
	3	0		0		0	
	4	0		0		0	
	5	0		0		0	
	6	0		0		0	
	7	0		0		0	
	8	0		0		0	
	9	0		0		0	
	10	0		0		0	
5	1	0	38	8	X	0	
	2	0	256	0	X	0	
	3	98		0		0	
	4	0		0		0	
	5	0		0		0	
	6	0		0		0	
	7	0		0		0	
	8	0		0		0	
	9	0		0		0	
	10	0		0		0	

Phases Serviced - phases 1 - 8
Interval Time - 0 - 255 sec or interval 1 - 10
Hold on Input - X = on
Outputs On - output 1 - 8

Output Modes -
0 = all steady on
1 = all flash together
2 = odd flashes WIG, even flashes WAG
3 = 1 - 4 steady on, 5 - 8 all flash together

Sequence cont.							
Sequences / Intervals	Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode	
6	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
7	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
8	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0

Sequence Timing (next/2/5/0)									
Sequence -->	1	2	3	4	5	6	7	8	
Input Memory									X = on
Input Priority	6	6	6	6	8	0	0	0	0 = lowest, - 8 = highest
Min Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Walk	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0 would time the normal function time
Ped Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Overlap Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Overlap Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Delay to Preempt	0	0	0	0	0	0	0	0	
Delay Ped Omit	0	0	0	0	0	0	0	0	0 - 255 sec
Delay Phase Omit	0	0	0	0	0	0	0	0	
Min Reservice	0	0	0	0	0	0	0	0	0 - 255 min
Overlap Inhibits	A								X = inhibit
	B								
	C								
	D								
Exit Parameters	Exit to Coord Plan Offset by X	0	0	0	0	0	0	0	0 - 20
	Exit Coord Plan Time	0	0	0	0	0	0	0	0 - 60 min
	Exit to Max Plan	0	0	0	0	0	0	0	0 - 8
	Exit Free Time	0	0	0	0	0	0	0	0 - 60 min
	Override Time	0	0	0	0	0	0	0	
	Fail Time	0	0	0	0	0	0	0	
	Exit Mode Time	0	0	0	0	0	0	0	

Priority Return and Special Intervals (next/2/5/0/6, next/2/5/9)														
Phase / Overlap -->		1	2	3	4	5	6	7	8	A	B	C	D	
Priority Return	Enable	0	0 = disabled, 1 = enabled, 2 = enabled, skip preemption phases on exit											
	A (max)	0	0	0	0	0	0	0	0	0	0 - 100% of currently used max			
	B (max)	0	0	0	0	0	0	0	0					
	C (max)	0	0	0	0	0	0	0	0					
	D (max)	0	0	0	0	0	0	0	0					
	E (max)	0	0	0	0	0	0	0	0					
Ped Clear	0	0	0	0	0	0	0	0	0	0 - 100% of currently used ped clearance				
Queue Delay Recovery	0	0	0	0	0	0	0	0	0	0 - 255 sec.				
Special Intervals	1	0	0	0	0	0	0	0	0	0	0	0	0	0 = Dark 1 = green don't walk 2 = green walk 3 = green flashing don't walk 4 = yellow 5 = red 6 = flashing yellow WIG 7 = flashing yellow WAG 8 = flashing red WIG 9 = flashing red WAG 10 = walk only 11=flashing don't walk only
	2	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	0	
	6	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	
	8	0	0	0	0	0	0	0	0	0	0	0	0	
	9	0	0	0	0	0	0	0	0	0	0	0	0	
Light Rail Train (next/2/5/0/7)														
Light Rail Train -->		1	2	3	4									
Associated Preempt		0	0	0	0	0 = none, preempt 1 - 8								
Time to Green		0	0	0	0	0 - 255 sec								
Horizontal Bar Flash Time		0.0	0.0	0.0	0.0	0.0 - 25.5 sec								
Vertical Bar Flash Time		0.0	0.0	0.0	0.0	0 - 255 sec								
Min Duration		0	0	0	0	0 - 255 sec								

Communications Data (next/2/6)

1st Central Phone Number				2nd Central Phone Number			
Modem Setup String						Intersection Name	
						<i>Herman and Teton</i>	
Subnet Mask		<i>0.0.0.0</i>					
IP (ethernet) Port		<i>0</i>					
Central Port		<i>0</i>					
System Mode		<i>0</i>					
System Port		<i>1</i>		Alternate System Port		<i>0</i>	
System ID	<i>0</i>	AB3418e Physical Address	<i>0</i>		IP Address	<i>0.0.0.0</i>	
Local ID	<i>0</i>	AB3418e Group Address	<i>0</i>		Gateway Address	<i>0.0.0.0</i>	
Baud Rates		Flow Control		Port Use			
Port 1 (Slot A2 Upper)		<i>0</i>		<i>1</i>		<i>Suggested Use - FSK</i>	
Port 2 (Slot A2 Lower)		<i>0</i>		<i>1</i>		<i>Suggested Use - Not Used</i>	
Port 3 (Slot A1 Upper)		<i>0</i>		<i>0</i>		<i>Suggested Use - Modem to Central</i>	
Port 4 (Slot A1 Lower or C50S)		<i>2</i>		<i>NU</i>		<i>Suggested Use - RS232 to Laptop</i>	
0 = 1200, 1 = 2400, 2 = 9600, 3 = 19200 baud				0 = off, 1 = on			
Reports							
Volume Log Period		<i>15</i>		0-255 min. or below		MOE Log Period	
						<i>15</i> below	
0 = disabled, 1,2,3,4,5,6,10,12,15,20,30,60 minutes							
Function Schedule Mapping (next/2/6/7)							
Alarm 1		<i>0</i>				Soft Flash	
Alarm 2		<i>0</i>				<i>1</i>	
Alarm 3		<i>0</i>				Manual Control Enable (MCE)	
Alarm 4		<i>0</i>				<i>4</i>	
Alarm 5		<i>0</i>				Emergency or Railroad Preempt	
Not Used		<i>0</i>				<i>1</i>	
Not Used		<i>0</i>				Not Used	
Not Used		<i>0</i>				<i>0</i>	
Not Used		<i>0</i>				Cycle Failure	
Power On / Off		<i>1</i>				<i>2</i>	
Checksum Failure		<i>4</i>				Coordination Failure	
Video / Detector Failure		<i>4</i>				<i>2</i>	
Master to Local Comm Lost		<i>0</i>				Keyboard use / Data Changed	
						<i>3</i>	
						Coord Running / Free	
						<i>2</i>	
						Cabinet Door	
						<i>3</i>	
						Extended Ped Pushbutton	
						<i>0</i>	
						Monitor Status	
						<i>4</i>	

Miscellaneous Data

Transit Priority (next/2/7)

	1	2	3	4	5	6	7	8	
Phases									Phases 1 - 8 (max of 2 compatible phases)
PE Enable (6.25Hz TP call on PE)									X = 6.25 Hz signal will activate TP
Priority	0	0	0	0	0	0	0	0	0 - 8, 8 = highest
Memory									X = on
Delay Time	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Reservice Time (per input)	0	0	0	0	0	0	0	0	0 - 255 min
Override Time	0	0	0	0	0	0	0	0	0 - 255 sec
Bus Extend	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Reservice Time (all inputs)	0	0 - 255 min							
Free Operation Mode	0	0 = use shortest of max 1 or 2, 1 - 8 = use max time of group 1 - 8, 9 = use time of day							

Transit Priority Alternate Force Off Plans

Current Coord Plan	1	2	3	4	5	6	7	8	
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	0 = none
Current Coord Plan	9	10	11	12	13	14	15	16	
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	17 - 32 = coord plan 17 - 32

Group Timing

Phase -->		1	2	3	4	5	6	7	8	
Group 1	Max Times	0	0	0	0	0	0	0	0	0 - 255 sec 0 would time the normal function time
	Walk Times	0	0	0	0	0	0	0	0	
Group 2	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 3	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 4	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 5	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 6	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 7	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 8	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	

Truck Priority (next/2/7/9)

Truck Priority-->	1	2	3	4	
Associated Transit Priority	0	0	0	0	0 = none 1 - 8 = transit priority 1 - 8
Leading Detector	0	0	0	0	0 = none, 1 - 32 = detector 1 - 32
Trailing Detector	0	0	0	0	
Stop Bar Distance	0	0	0	0	0 - 999 feet
Trap Distance	0	0	0	0	0.0 - 99.9 feet
Minimum Speed	0	0	0	0	0 - 100 mph
Minimum Length	0	0	0	0	0 - 255 feet
Downhill Grade	0	0	0	0	0 - 20 %
Uphill Grade	0	0	0	0	
Undersized Vehicle					X = Enabled

Change I/O X = On (After a download with a power on - off cycle)

Inputs (Non Default I/O is offset to the right) (next/2/8/1)

C1-39	101	VD9	C1-55	15	VD5	C1-67	22	PED2	C11-15	254	N/U
C1-40	113	VD19	C1-56	11	VD1	C1-68	26	PED6	C11-16	254	N/U
C1-41	106	VD14	C1-57	17	VD7	C1-69	24	PED4	C11-17	254	N/U
C1-42	118	VD24	C1-58	13	VD3	C1-70	28	PED8	C11-18	254	N/U
C1-43	102	VD10	C1-59	16	VD6	C1-71	151	PE1	C11-19	254	N/U
C1-44	114	VD20	C1-60	12	VD2	C1-72	152	PE2	C11-20	254	N/U
C1-45	107	VD15	C1-61	18	VD8	C1-73	153	PE3	C11-21	254	N/U
C1-46	161	VD25	C1-62	14	VD4	C1-74	154	PE4	C11-22	254	N/U
C1-47	105	VD13	C11-10	254	N/U	C1-75	254	N/U	C11-23	254	N/U
C1-48	117	VD23	C11-11	254	N/U	C1-76	104	VD12	C11-24	254	N/U
C1-49	112	VD18	C11-12	254	N/U	C1-77	116	VD22	C11-25	254	N/U
C1-50	164	VD28	C11-13	254	N/U	C1-78	111	VD17	C11-26	254	N/U
C1-51	199	PEDI	C1-63	103	VD11	C1-79	163	VD27	C11-27	254	N/U
C1-52	155	PE5	C1-64	115	VD21	C1-80	82	IADV	C11-28	254	N/U
C1-53	85	MCE	C1-65	108	VD16	C1-81	137	MONS	C11-29	254	N/U
C1-54	254	N/U	C1-66	162	VD26	C1-82	62	ST1	C11-30	254	N/U

Outputs (Non Default I/O is offset to the right) (next/2/8/2)

C1-2	44	4DWK	C1-19	48	8DWK	C1-35	215	FYA1	C1-91	41	1DWK
C1-3	64	4WLK	C1-20	68	8WLK	C1-36	217	FYA5	C1-93	61	1WLK
C1-4	14	4RED	C1-21	18	8RED	C1-37	216	FYA3	C1-94	106	OLBR
C1-5	24	4YEL	C1-22	28	8YEL	C1-38	218	FYA7	C1-95	105	OLBY
C1-6	34	4GRN	C1-23	38	8GRN	C1-100	53	3PCL	C1-96	104	OLBG
C1-7	13	3RED	C1-24	17	7RED	C1-101	51	1PCL	C1-97	103	OLAR
C1-8	222	FYC3	C1-25	224	FYC7	C1-102	187	SFL	C1-98	102	OLAY
C1-9	33	3GRN	C1-26	37	7GRN	C1-103	147	WDOG	C1-99	101	OLAG
C1-10	42	2DWK	C1-27	46	6DWK	C1-83	43	3DWK	C11-1	254	N/U
C1-11	62	2WLK	C1-28	66	6WLK	C1-84	63	3WLK	C11-2	254	N/U
C1-12	12	2RED	C1-29	16	6RED	C1-85	116	OLDR	C11-3	254	N/U
C1-13	22	2YEL	C1-30	26	6YEL	C1-86	115	OLDY	C11-4	254	N/U
C1-15	32	2GRN	C1-31	36	6GRN	C1-87	114	OLDG	C11-5	254	N/U
C1-16	11	1RED	C1-32	15	5RED	C1-88	113	OLCR	C11-6	254	N/U
C1-17	221	FYC1	C1-33	223	FYC5	C1-89	112	OLCY	C11-7	254	N/U
C1-18	31	1GRN	C1-34	35	5GRN	C1-90	111	OLCG	C11-8	254	N/U

Internal Logic (next/2/9)

Step	Inst.	Description	Comment
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Internal Logic cont.

Step	Inst.	Description	Comment
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Internal Logic cont.

Step	Inst.	Description	Comment
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Internal Logic cont.

Step	Inst.	Description	Comment
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Internal Logic cont.

Step	Inst.	Description	Comment
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256			

FYLTA - Continued (next/2/2/8/6)

Phase Pairs -->		1 - 2	3 - 4	5 - 6	7 - 8	
Gap-Dependent FYLTA (next/2/2/8/6-A)	Detector Input	0	0	0	0	0 = disable, 1 - 64 detectors
	Min Delay	0.0	0.0	0.0	0.0	0 - 255 sec
	Detector Gap	255	255	255	255	0 - 25.5 sec
	Max Delay	3	3	3	3	0 - 255 sec
	Not Ped	4	4	4	4	0 - 255 sec

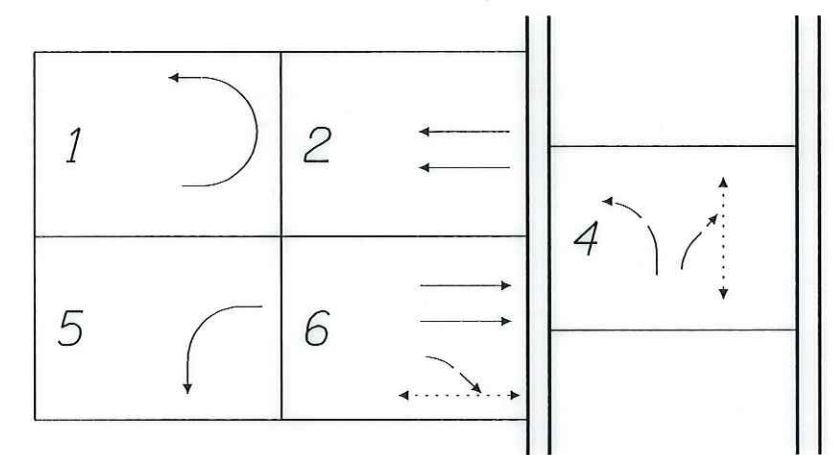
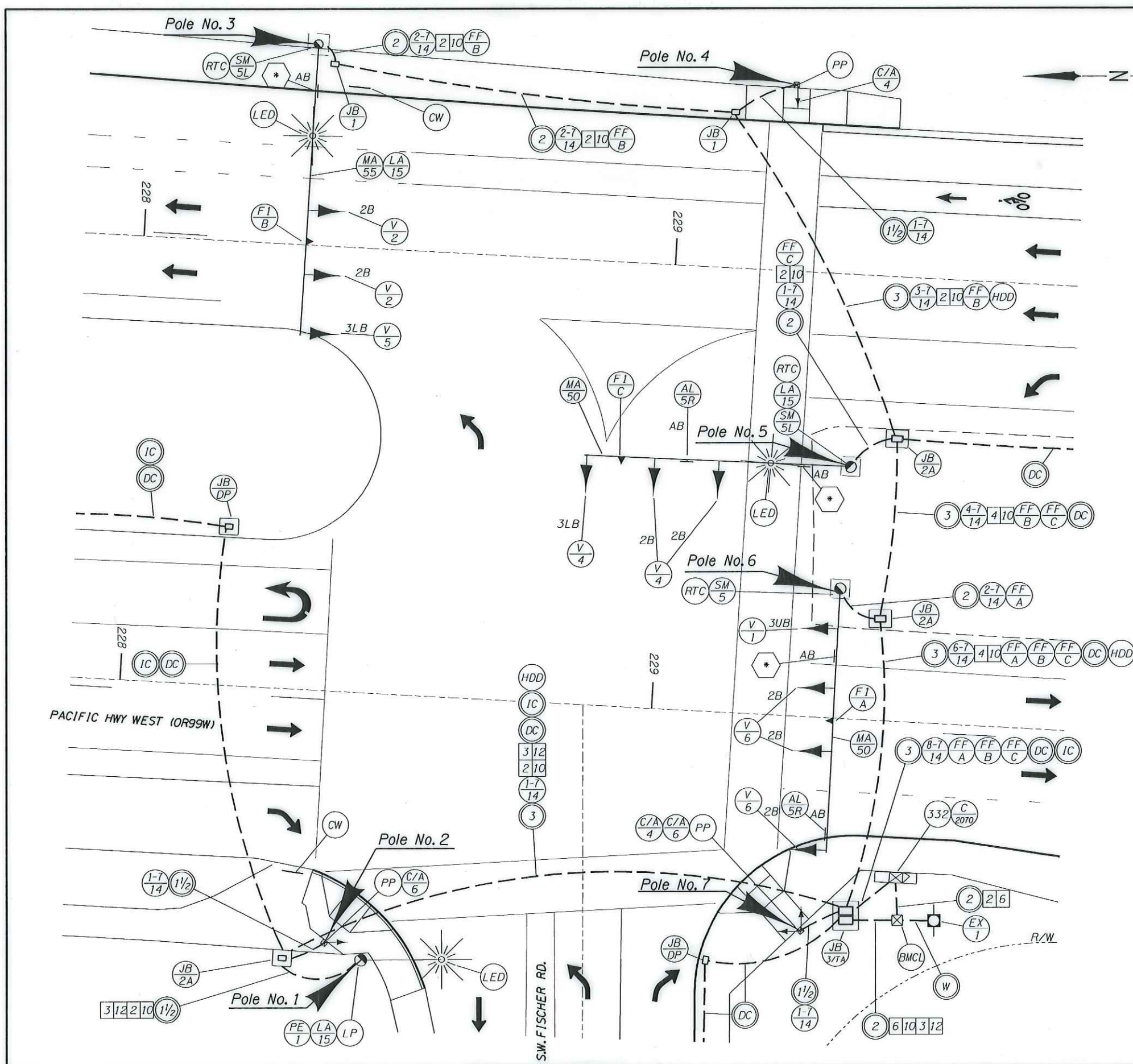
FYLTA Gap-Dependent Plans (next/2/2/8/6)

Phase Pairs -->		1 - 2	3 - 4	5 - 6	7 - 8	
FYLTA Gap-Dependent Plan A	Detector Input	0	0	0	0	0 = disable, 1 - 64 detectors
	Min Delay	0	0	0	0	0 - 255 sec
	Detector Gap	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Max Delay	0	0	0	0	0 - 255 sec
	Not Ped	0	0	0	0	0 - 255 sec
FYLTA Gap-Dependent Plan B	Detector Input	0	0	0	0	0 = disable, 1 - 64 detectors
	Min Delay	0	0	0	0	0 - 255 sec
	Detector Gap	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Max Delay	0	0	0	0	0 - 255 sec
	Not Ped	0	0	0	0	0 - 255 sec
FYLTA Gap-Dependent Plan C	Detector Input	0	0	0	0	0 = disable, 1 - 64 detectors
	Min Delay	0	0	0	0	0 - 255 sec
	Detector Gap	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Max Delay	0	0	0	0	0 - 255 sec

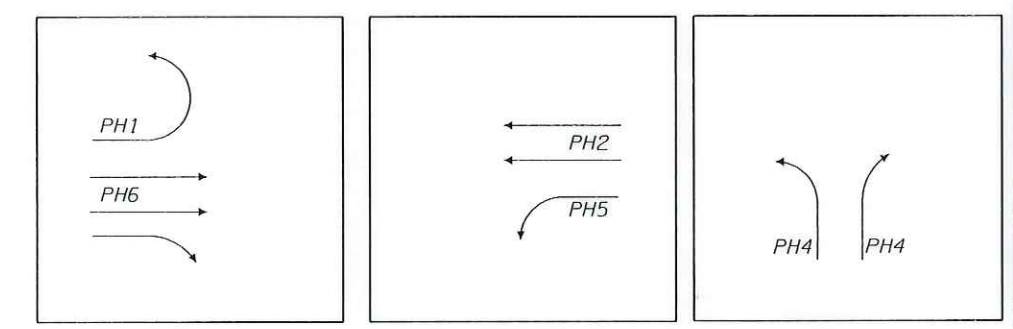
	Not Ped	0	0	0	0	0 - 255 sec
FYLTA Gap-Dependent Plan D	Detector Input	0	0	0	0	0 = disable, 1 - 64 detectors
	Min Delay	0	0	0	0	0 - 255 sec
	Detector Gap	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Max Delay	0	0	0	0	0 - 255 sec
	Not Ped	0	0	0	0	0 - 255 sec

17540

SIGNAL PLAN
PACIFIC HWY. WEST AT SW FISCHER RD
OR99W M.P. 11.92
(TIGARD)



NORMAL PHASE ROTATION




FIRE PREEMPTION

Note:
Right of way for NW, NE, SE quadrant is outside of plan sheet view

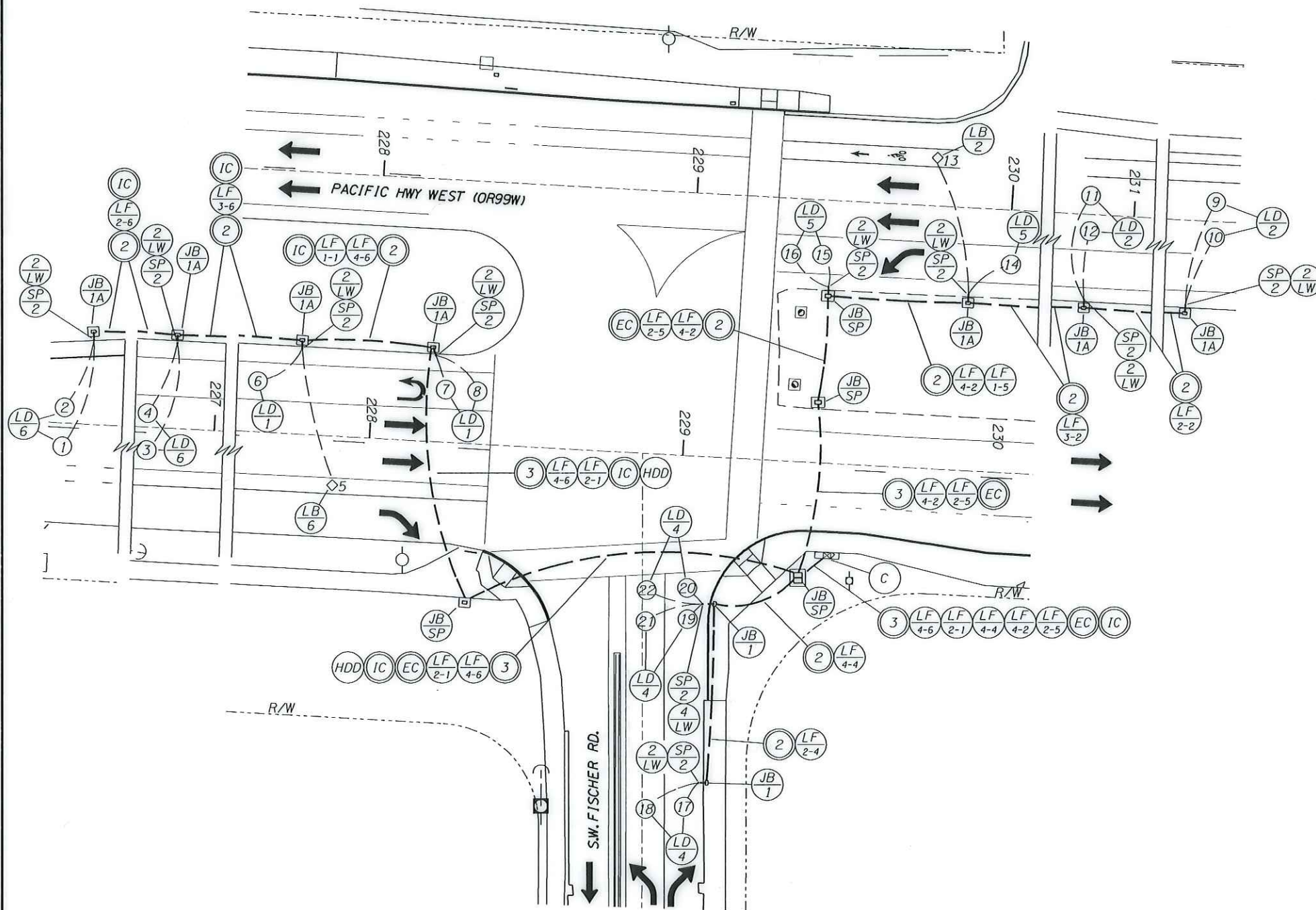
"UTILITIES NOT SHOWN"
See Utility Plan Sheet

NOTE:
See T.R.S. Dwg. 17538-9 for Legend

 Traffic Section Approval		 OREGON DEPARTMENT OF TRANSPORTATION TRAFFIC - ROADWAY SECTION	
		REGION 1 TRAFFIC UNIT	
		OR99W: SW DURHAM RD - SW FISCHER RD SEC PACIFIC HIGHWAY WEST WASHINGTON COUNTY	
DESIGNED BY: J. ORSER REVIEWED BY: S. CRAMER DRAWN BY: J. ORSER FC: 091 MP: 11.92		SIGNAL PLAN	
		ISSU No. 2B347, T.R.S. DWG. NO. 17540	

17542

DETECTOR PLAN
 PACIFIC HWY WEST AT SW FISCHER RD
 OR99W M.P. 11.92
 (TIGARD)



Loop Number	Distance Feet	Phase	Slot	Voyage
1	320	6	J2U	19
2	320	6	J2L	20
3	160	6	J3U	21
4	160	6	J3L	22
5 BIKE	50	6	J1	1
6	75	1	19U	2
7	15	1	12U	9
8	5	2	12L	10
9	320	2	13U	11
10	320	2	13L	12
11	160	5	J1	5
12	160	5	J9U	6
13 BIKE	50	4	16U	14
14	75	4	16L	15
15	15	4	17U	16
16	5	4	17L	17

LOOP DETECTOR WIRING DIAGRAM
 "Distance" is From Stop Line to center of loop in feet

"UTILITIES NOT SHOWN"
 See Utility Plan Sheet

NOTE:
 See T.R.S. Dwg. 17538-9 for Legend

Traffic Section Approval

OREGON DEPARTMENT OF TRANSPORTATION
 TRAFFIC - ROADWAY SECTION

REGION 1 TRAFFIC UNIT

**OR99W: SW DURHAM RD -
 SW FISCHER RD SEC
 PACIFIC HIGHWAY WEST
 WASHINGTON COUNTY**

DESIGNED BY: J. ORSER
 REVIEWED BY: S. CRAMER
 DRAWN BY: J. ORSER
 FC: 091 MP: 11.92

DETECTOR PLAN

ISSU. NO. 2B347 T.R.S. DWG. NO. 17542

Table: Phase Timing Plans [Timing Plan: 1]

Phase	1	2	4	5	6
Walk	0	0	7	0	7
Ped Clear	0	0	43	0	16
Min Green	4	10	6	4	10
Passage	2.3	4.5	2.5	2.3	4.5
Max 1	25	90	35	25	90
Max 2	23	82	30	23	82
Max 3	25	92	33	40	86
Yellow Chang	3.5	5	3.5	4	5
Red Clear	1	1	1.5	1.5	1
Added Initial	0	1.2	0	0	1.2
Maximum Ini	4	17	6	4	17
Time Before l	8	10	8	8	10
Time To Redu	3	20	3	3	20
Minimum Ga	0.5	2.5	0.5	0.5	2.5

Table: Sequence Parameters [Sequence: 1]

Ring	Sequence Data
1	1,2,a,4,b
2	5,6,a,b

Table: Sequence Parameters [Sequence: 5]

Ring	Sequence Data
1	1,2,a,4,b
2	6,5,a,b

Table: Global Phase Recalls

Phase	2	6
Min	TRUE	TRUE
Max	FALSE	FALSE
Ped	FALSE	FALSE
Act. Walk Re:	FALSE	FALSE

Table: Pattern Parameters

Pattern	Cycle Time	Offset 1	Offset 2	Offset 3	Split Number	Seq Number	Ref Point	Coord Mode	Force Off
1	140	88	0	0	0	1	5 Green	Full Permissiv	Phase
2	120	1	0	0	0	2	1 Green	Full Permissiv	Phase
3	140	81	0	0	0	3	1 Green	Full Permissiv	Phase
4	120	85	0	0	0	4	1 Green	Full Permissiv	Phase

Max Mode	Trans Ped M	Min Permissi	Correction M	Single Perm	% Phase Plan	Overlap Plan	Veh Detector	Veh Detector	Ped Detector
Max 1	Phase	Phase Only	Shortway (Au	0	1	1	1	1	1
Max 2	Phase	Phase Only	Shortway (Au	0	1	1	1	1	1
Max 3	Phase	Phase Only	Shortway (Au	0	1	1	1	1	1
Max 1	Phase	Phase Only	Shortway (Au	0	2	1	1	1	1

Ped Detector Pri/Pre Detec Description

1	1 Coord Plan #1
1	1 Coord Plan #2
1	1 Coord Plan #3
1	1 Coord Plan #4

Table: Split Parameters [Split: 1]

Phase	Time	Min	Max	Coord	Phase	Ref Point	Trans	Cover	F Force	Off Mo	Mode	Pri	Min
1	20	0	0	0	0		0	0	Fixed		None		0
2	90	0	0	0	TRUE	TRUE		0	Fixed		None		0
4	30	0	0	0	0		0	0	Fixed		None		0
5	20	0	0	0	0		0	0	Fixed		None		0
6	90	0	0	0	TRUE		0	0	Fixed		None		0

Pri Max **Pri Force Off Mode**

0 Float

0 Float

0 Float

0 Float

0 Float

Table: Split Parameters [Split: 3]

Phase	Time	Min	Max	Coord	Phase	Ref Point	Trans	Cover	F Force	Off Mo	Mode	Pri	Min
1	20	0	0	0	0		0	0	Fixed		None		0
2	100	0	0	0	TRUE	TRUE		0	Fixed		None		0
4	20	0	0	0	0		0	0	Fixed		None		0
5	35	0	0	0	0		0	0	Fixed		None		0
6	85	0	0	0	TRUE		0	0	Fixed		None		0

Pri Max **Pri Force Off Mode**

0 Float

0 Float

0 Float

0 Float

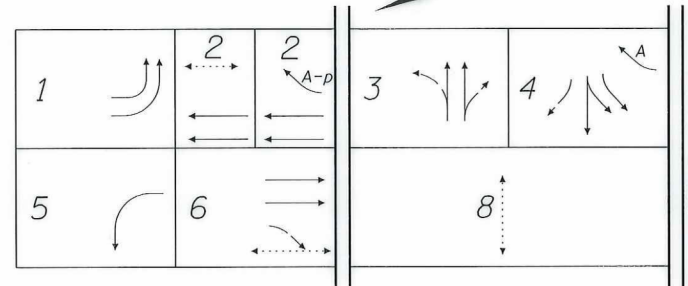
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Table: Day Plan Events [Day Plan: 1]

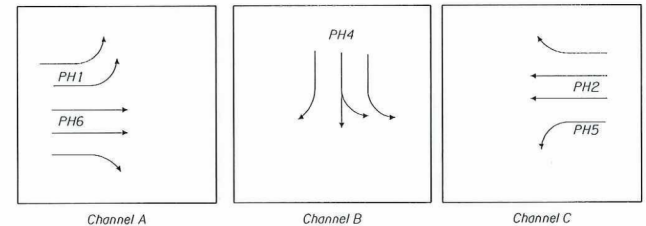
Event	Hour	Minute	Action	Description
1	0	0		21 Coord Free
2	5	30		1 Coord Plan #1
3	10	0		2 Coord Plan #2
4	14	30		3 Coord Plan #3
5	18	30		2 Coord Plan #2
6	22	0		21 Coord Free

17544

SIGNAL MODIFICATION PLAN
 PACIFIC HWY WEST AT SW DURHAM RD
 OR99W M.P. 11.48
 (TIGARD)



OLA = Ph. 4 & Ph. 2 - Ped 2
 NORMAL PHASE ROTATION



FIRE PREEMPTION

NOTE:
 See T.R.S. Dwg. 17538-9 for Legend

Traffic Section Approval

REGISTERED PROFESSIONAL ENGINEER
 48,097
 JORDAN R. ORSER
 OREGON 98
 JULY 21, 1988
 Expires Dec. 31, 2014

OREGON DEPARTMENT OF TRANSPORTATION
 TRAFFIC - ROADWAY SECTION

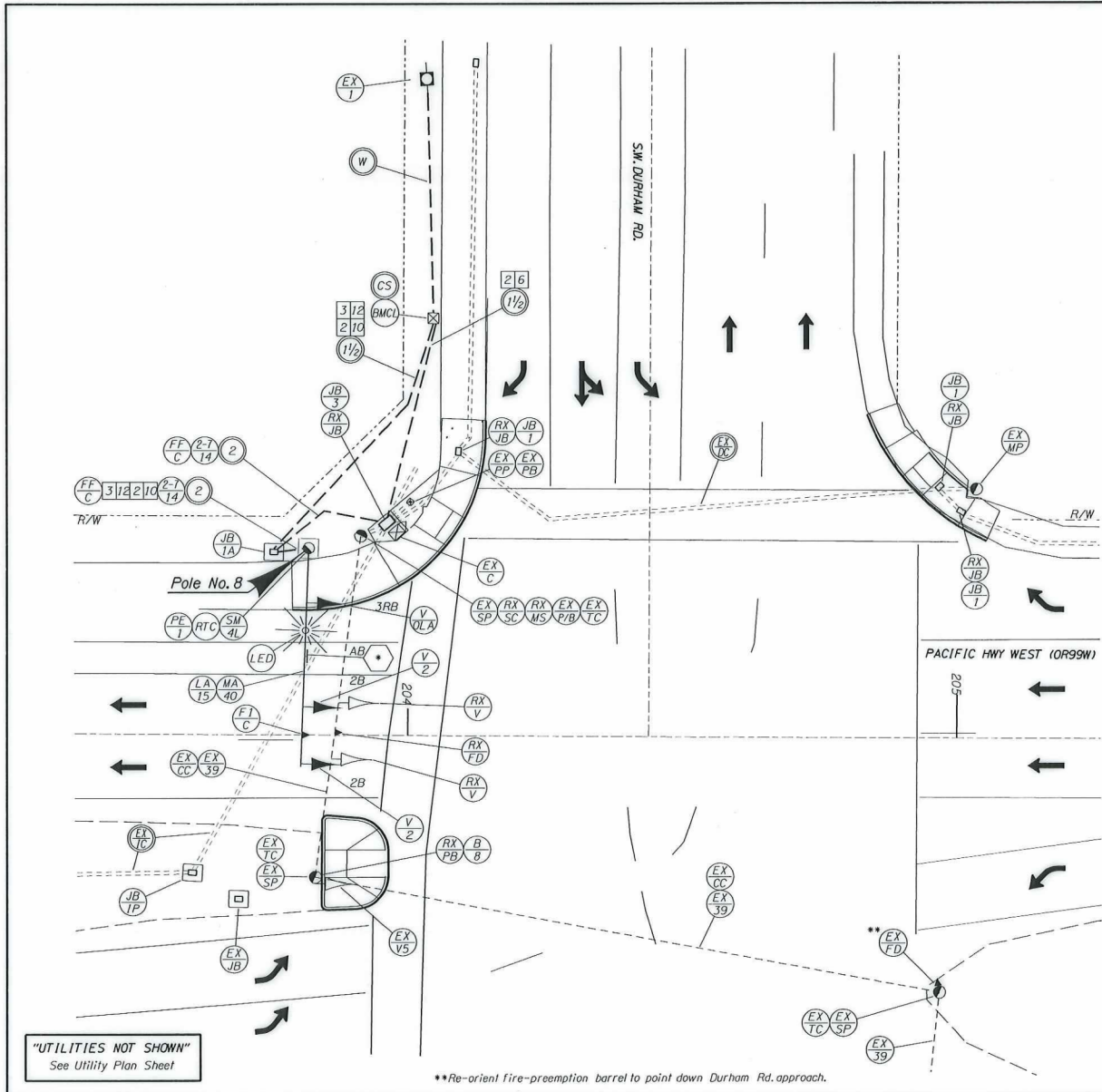
REGION 1 TRAFFIC UNIT

OR99W: SW DURHAM RD - SW FISCHER RD SEC
 PACIFIC HIGHWAY WEST
 WASHINGTON COUNTY

DESIGNED BY: J. ORSER
 REVIEWED BY: S. CRAMER
 DRAWN BY: J. ORSER
 FC1.091 MP:11.48

SIGNAL MODIFICATION PLAN

15511 100' 2B358 (R.S. DWG. NO. 17544)

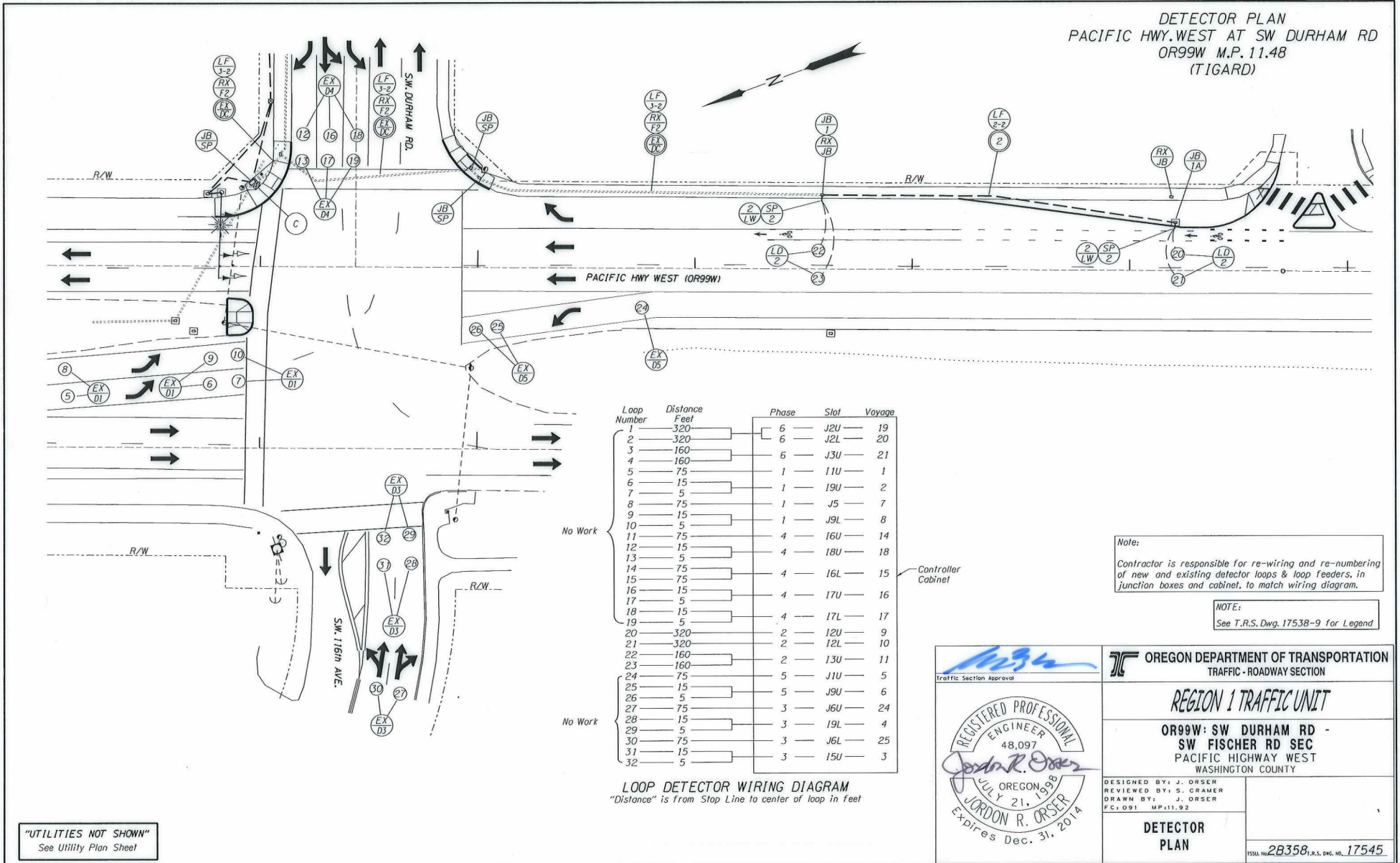


"UTILITIES NOT SHOWN"
 See Utility Plan Sheet

**Re-orient fire-preemption barrel to point down Durham Rd. approach.

17545

DETECTOR PLAN
PACIFIC HWY WEST AT SW DURHAM RD
OR99W M.P. 11.48
(TIGARD)



Loop Detector Wiring Diagram

"Distance" is from Stop Line to center of loop in feet

Note:
Contractor is responsible for re-wiring and re-numbering of new and existing detector loops & loop feeders, in junction boxes and cabinet, to match wiring diagram.

NOTE:
See T.R.S. Dwg. 17538-9 for Legend.

"UTILITIES NOT SHOWN"
See Utility Plan Sheet

OREGON DEPARTMENT OF TRANSPORTATION
TRAFFIC - ROADWAY SECTION

REGION 1 TRAFFIC UNIT

OR99W: SW DURHAM RD - SW FISCHER RD SEC
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

DESIGNED BY: J. ORSER
REVIEWED BY: S. CRAMER
DRAWN BY: J. ORSER
PC: 001 MP: 11.92

DETECTOR PLAN

15511, M.P. 11.92, B.S. DWG. NO. 17545

REGISTERED PROFESSIONAL ENGINEER 48,097
JORDAN R. ORSER
JULY 21, 1998
EXPIRES DEC. 31, 2014

Table: Phase Timing Plans [Timing Plan: 1]

Phase	1	2	3	4	5	6	7	8
Walk	0	7	0	0	0	7	0	5
Ped Clear	0	22	0	0	0	16	0	35
Min Green	4	10	12	12	4	10	0	4
Passage	2.3	4.5	2.3	2.3	2.3	4.8	0	0.2
Max 1	29	72	17	26	17	84	0	42
Max 2	20	52	25	27	22	50	0	51
Max 3	29	60	16	45	18	71	0	54
Yellow Change	4	4.7	4	4	4.4	4.3	0	0
Red Clear	1.3	0.7	2	2	1	0.7	0	0
Added Initial	0	1.2	0	0	0	1.2	0	0
Maximum Initial	4	17	6	6	4	17	0	4
Time Before Reduction	8	10	8	8	8	10	0	1
Time To Reduce	3	20	3	3	3	20	0	1
Minimum Gap	0.5	2.5	1	0.5	1	2.8	0	0.2
Advance Walk	0	0	0	0	0	0	0	5
Walk 2	0	0	0	0	0	0	0	16

Table: Sequence Parameters [Sequence: 1]

Ring	Sequence Data
1	1,2,a,3,4,b
2	5,6,a,8,b

Table: Sequence Parameters [Sequence: 2]

Ring	Sequence Data
1	2,1,a,3,4,b
2	5,6,a,8,b

Table: Pattern Parameters

Pattern	Cycle Time	Offset 1	Offset 2	Offset 3	Split Number	Seq Number	Ref Point	Coord Mode	Force Off
1	140	24	0	0	0	1	2 Green	Full Permissive	Phase
2	120	83	0	0	0	2	2 Green	Full Permissive	Phase
3	140	49	0	0	0	3	1 Green	Full Permissive	Phase
4	120	117	0	0	0	4	2 Green	Full Permissive	Phase

Max Mode	Trans Ped M	Min Permissi	Correction M	Single Perm	% Phase Plan	Overlap Plan	Veh Detector	Veh Detector	Ped Detector
Max 1	Phase	Phase Only	Shortway (Au	0	1	1	1	1	1
Max 2	Phase	Phase Only	Shortway (Au	0	1	1	1	1	1
Max 3	Phase	Phase Only	Shortway (Au	0	1	1	1	1	1
Max 1	Phase	Phase Only	Shortway (Au	0	2	1	1	1	1

Ped Detector Pri/Pre Detec Description

1	1 Coord Plan #1
1	1 Coord Plan #2
1	1 Coord Plan #3
1	1 Coord Plan #4

Table: Split Parameters [Split: 1]

Phase	Time	Min	Max	Coord	Phase	Ref Point	Trans	Cover	F Force	Off Mo	Mode	Pri	Min
1	28	0	0	0	0		0	0	Fixed		None		0
2	68	0	0	0	TRUE		0	0	Fixed		None		0
3	19	0	0	0	0		0	0	Fixed		None		0
4	25	0	0	0	0		0	0	Fixed		None		0
5	16	0	0	0	0		0	0	Fixed		None		0
6	80	0	0	0	TRUE	TRUE		0	Fixed		None		0
8	44	0	0	0	0		0	0	Fixed		None		0

Pri Max **Pri Force Off Mode**

0 Float

0 Float

0 Float

0 Float

0 Float

0 Float

0 Float

Table: Split Parameters [Split: 2]

Phase	Time	Min	Max	Coord	Phase	Ref Point	Trans	Cover	F Force	Off Mo	Mode	Pri	Min
1	19	0	0	0	0	0	0	0	Fixed	None		0	
2	51	0	0	TRUE		0	0	0	Fixed	None		0	
3	24	0	0		0	0	0	0	Fixed	None		0	
4	26	0	0		0	0	0	0	Fixed	None		0	
5	21	0	0		0	0	0	0	Fixed	None		0	
6	49	0	0	TRUE		TRUE		0	Fixed	None		0	
8	50	0	0		0	0	0	0	Fixed	None		0	

Pri Max **Pri Force Off Mode**

0 Float

0 Float

0 Float

0 Float

0 Float

0 Float

0 Float

Table: Day Plan Events [Day Plan: 1]

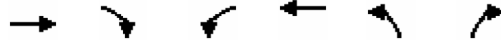
Event	Hour	Minute	Action	Description
1	0	0		21 Coord Free
2	5	30		1 Coord Plan #1
3	10	0		2 Coord Plan #2
4	14	30		3 Coord Plan #3
5	18	30		2 Coord Plan #2
6	22	0		21 Coord Free

APPENDIX I.
**OPERATIONS
CALCULATIONS**

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1008	477	974	759	158	352
v/c Ratio	0.86	0.59	0.70	0.28	0.33	0.26
Control Delay (s/veh)	45.5	8.6	34.4	5.1	24.5	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.5	8.6	34.4	5.1	24.5	15.2
Queue Length 50th (ft)	380	36	298	57	63	132
Queue Length 95th (ft)	470	136	#585	175	30	179
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1174	804	1386	2691	990	1371
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.59	0.70	0.28	0.16	0.26

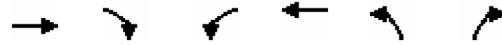
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	907	429	877	683	142	317
Future Volume (vph)	907	429	877	683	142	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1568	3400	3438	3213	2472
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1568	3400	3438	3213	2472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1008	477	974	759	158	352
RTOR Reduction (vph)	0	269	0	0	0	0
Lane Group Flow (vph)	1008	208	974	759	158	352
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	5%	3%	3%	5%	9%	15%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	44.1	88.7	19.3	63.4
Effective Green, g (s)	41.0	41.0	45.7	90.7	21.3	58.4
Actuated g/C Ratio	0.34	0.34	0.38	0.76	0.18	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1174	535	1294	2598	570	1203
v/s Ratio Prot	c0.29		c0.29	0.22	c0.05	0.14
v/s Ratio Perm		0.13				
v/c Ratio	0.86	0.39	0.75	0.29	0.28	0.29
Uniform Delay, d1	36.8	30.0	32.2	4.6	42.7	18.4
Progression Factor	1.00	1.00	1.00	1.00	0.52	0.99
Incremental Delay, d2	7.2	1.1	4.1	0.3	0.2	0.1
Delay (s)	44.0	31.1	36.3	4.9	22.4	18.4
Level of Service	D	C	D	A	C	B
Approach Delay (s/veh)	39.8			22.6	19.6	
Approach LOS	D			C	B	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			29.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	18.6
Intersection Capacity Utilization			89.3%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

09/20/2024

















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	215	323	31	715	798
v/c Ratio	0.28	0.17	0.67	0.12	0.60	0.29
Control Delay (s/veh)	47.9	0.8	54.0	14.1	13.1	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.9	0.8	54.0	14.1	13.1	4.3
Queue Length 50th (ft)	41	0	126	0	73	41
Queue Length 95th (ft)	65	16	157	24	371	147
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	437	1424	1006	497	1191	2772
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.15	0.32	0.06	0.60	0.29

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

09/20/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	49	187	281	27	622	694
Future Volume (vph)	49	187	281	27	622	694
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1641	1509	3059	1449	1752	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.38	1.00
Satd. Flow (perm)	1641	1509	3059	1449	700	3438
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	56	215	323	31	715	798
RTOR Reduction (vph)	0	42	0	26	0	0
Lane Group Flow (vph)	56	173	323	5	715	798
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	10%	7%	18%	9%	3%	5%
Turn Type	Perm	pt+ov	NA	Perm	D.P+P	NA
Protected Phases		4 5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	13.7	91.5	18.0	18.0	90.8	95.8
Effective Green, g (s)	14.7	96.5	19.0	19.0	92.8	96.8
Actuated g/C Ratio	0.12	0.80	0.16	0.16	0.77	0.81
Clearance Time (s)	5.0		5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0		4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	201	1213	484	229	1188	2773
v/s Ratio Prot		0.11	c0.11		c0.37	0.23
v/s Ratio Perm	c0.03			0.00	0.10	
v/c Ratio	0.28	0.14	0.67	0.02	0.60	0.29
Uniform Delay, d1	47.8	2.6	47.5	42.6	8.6	2.9
Progression Factor	1.00	1.00	1.00	1.00	0.93	1.05
Incremental Delay, d2	1.0	0.1	4.2	0.1	0.9	0.2
Delay (s)	48.9	2.7	51.7	42.7	8.9	3.3
Level of Service	D	A	D	D	A	A
Approach Delay (s/veh)	12.2		50.9			5.9
Approach LOS	B		D			A

Intersection Summary

HCM 2000 Control Delay (s/veh)	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	677	5	4	218	128	2	1	1	40	2	29
Future Volume (Veh/h)	62	677	5	4	218	128	2	1	1	40	2	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	736	5	4	237	139	2	1	1	43	2	32
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	377			742			1152	1259	740	1187	1192	308
vC1, stage 1 conf vol							874	874		316	316	
vC2, stage 2 conf vol							278	385		872	876	
vCu, unblocked vol	377			742			1152	1259	740	1187	1192	308
tC, single (s)	4.1			4.6			8.1	6.5	7.2	7.2	6.5	6.3
tC, 2 stage (s)							7.1	5.5		6.2	5.5	
tF (s)	2.2			2.7			4.4	4.0	4.2	3.6	4.0	3.4
p0 queue free %	94			99			99	100	100	85	99	95
cM capacity (veh/h)	1175			683			209	313	291	292	320	705
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total	67	741	4	376	2	2	77					
Volume Left	67	0	4	0	2	0	43					
Volume Right	0	5	0	139	0	1	32					
cSH	1175	1700	683	1700	209	302	387					
Volume to Capacity	0.06	0.44	0.01	0.22	0.01	0.01	0.20					
Queue Length 95th (ft)	5	0	0	0	1	1	18					
Control Delay (s/veh)	8.2	0.0	10.3	0.0	22.4	17.0	16.6					
Lane LOS	A		B		C	C	C					
Approach Delay (s/veh)	0.7		0.1		19.7		16.6					
Approach LOS					C		C					
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			60.0%		ICU Level of Service				B			
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷			↕	
Traffic Vol, veh/h	62	677	5	4	218	128	2	1	1	40	2	29
Future Vol, veh/h	62	677	5	4	218	128	2	1	1	40	2	29
Conflicting Peds, #/hr	1	0	1	1	0	1	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	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	2	40	50	9	7	100	2	100	10	2	14
Mvmt Flow	67	736	5	4	237	139	2	1	1	43	2	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	377	0	0	742	0	0	1121	1260	740	1187	1193	308
Stage 1	-	-	-	-	-	-	874	874	-	316	316	-
Stage 2	-	-	-	-	-	-	247	386	-	871	877	-
Critical Hdwy	4.13	-	-	4.6	-	-	8.1	6.52	7.2	7.2	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Follow-up Hdwy	2.227	-	-	2.65	-	-	4.4	4.018	4.2	3.59	4.018	3.426
Pot Cap-1 Maneuver	1176	-	-	683	-	-	121	170	291	159	187	705
Stage 1	-	-	-	-	-	-	237	367	-	678	655	-
Stage 2	-	-	-	-	-	-	583	610	-	335	366	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1175	-	-	682	-	-	107	159	291	147	175	705
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	159	-	147	175	-
Stage 1	-	-	-	-	-	-	224	346	-	673	650	-
Stage 2	-	-	-	-	-	-	551	606	-	313	345	-

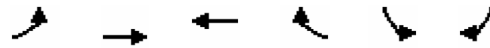
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.69			0.12			31.08			30.09		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	206	1175	-	-	682	-	-	219
HCM Lane V/C Ratio	0.02	0.011	0.057	-	-	0.006	-	-	0.352
HCM Control Delay (s/veh)	39.5	22.7	8.3	-	-	10.3	-	-	30.1
HCM Lane LOS	E	C	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.1	0	0.2	-	-	0	-	-	1.5

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↘	↘
Traffic Volume (veh/h)	5	688	330	10	18	7
Future Volume (Veh/h)	5	688	330	10	18	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	717	344	10	19	7
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	360				1082	355
vC1, stage 1 conf vol					355	
vC2, stage 2 conf vol					727	
vCu, unblocked vol	360				1082	355
tC, single (s)	4.3				6.5	6.2
tC, 2 stage (s)					5.5	
tF (s)	2.4				3.6	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	1099				424	685

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	717	354	26
Volume Left	5	0	0	19
Volume Right	0	0	10	7
cSH	1099	1700	1700	473
Volume to Capacity	0.00	0.42	0.21	0.05
Queue Length 95th (ft)	0	0	0	4
Control Delay (s/veh)	8.3	0.0	0.0	13.1
Lane LOS	A			B
Approach Delay (s/veh)	0.1		0.0	13.1
Approach LOS				B

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		46.2%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
5: SW Tualatin Road & SW 112th Avenue

09/20/2024

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗		↘	
Traffic Vol, veh/h	5	688	330	10	18	7
Future Vol, veh/h	5	688	330	10	18	7
Conflicting Peds, #/hr	6	0	0	6	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	20	3	9	20	6	2
Mvmt Flow	5	717	344	10	19	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	360	0	-	0	1082 355
Stage 1	-	-	-	-	355 -
Stage 2	-	-	-	-	727 -
Critical Hdwy	4.3	-	-	-	6.46 6.22
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.38	-	-	-	3.554 3.318
Pot Cap-1 Maneuver	1106	-	-	-	237 689
Stage 1	-	-	-	-	701 -
Stage 2	-	-	-	-	471 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1099	-	-	-	233 685
Mov Cap-2 Maneuver	-	-	-	-	355 -
Stage 1	-	-	-	-	694 -
Stage 2	-	-	-	-	469 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.06	0	14.37
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1099	-	-	-	410
HCM Lane V/C Ratio	0.005	-	-	-	0.063
HCM Control Delay (s/veh)	8.3	-	-	-	14.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	742	20	35	341	3	3
Future Volume (Veh/h)	742	20	35	341	3	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	781	21	37	359	3	3
Pedestrians				1	2	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage veh	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			804	1227		795
vC1, stage 1 conf vol					794	
vC2, stage 2 conf vol					433	
vCu, unblocked vol			804	1227		795
tC, single (s)			4.2	6.4		6.5
tC, 2 stage (s)					5.4	
tF (s)			2.3	3.5		3.6
p0 queue free %			95	99		99
cM capacity (veh/h)			789	389		342

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	802	37	359	6
Volume Left	0	37	0	3
Volume Right	21	0	0	3
cSH	1700	789	1700	364
Volume to Capacity	0.47	0.05	0.21	0.02
Queue Length 95th (ft)	0	4	0	1
Control Delay (s/veh)	0.0	9.8	0.0	15.1
Lane LOS	A		C	
Approach Delay (s/veh)	0.0	0.9	15.1	
Approach LOS			C	

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Vol, veh/h	742	20	35	341	3	3
Future Vol, veh/h	742	20	35	341	3	3
Conflicting Peds, #/hr	0	2	2	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	15	9	9	2	33
Mvmt Flow	781	21	37	359	3	3

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	804	0	1226
Stage 1	-	-	-	-	794
Stage 2	-	-	-	-	433
Critical Hdwy	-	-	4.19	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.281	-	3.518
Pot Cap-1 Maneuver	-	-	790	-	197
Stage 1	-	-	-	-	445
Stage 2	-	-	-	-	654
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	789	-	188
Mov Cap-2 Maneuver	-	-	-	-	319
Stage 1	-	-	-	-	444
Stage 2	-	-	-	-	624

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.91	16.12
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	330	-	-	789	-
HCM Lane V/C Ratio	0.019	-	-	0.047	-
HCM Control Delay (s/veh)	16.1	-	-	9.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	6	55	0
Future Volume (Veh/h)	0	0	0	6	55	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	7	60	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	67	60	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	67	60	60			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	938	1005	1544			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	7	60			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1544	1700			
Volume to Capacity	0.00	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	6.7%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM 7th TWSC
8: SW 108th Ave & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	6	55	0
Future Vol, veh/h	0	0	0	6	55	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	10	10	2
Mvmt Flow	0	0	0	7	60	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	66	60	60	0	0
Stage 1	60	-	-	-	-
Stage 2	7	-	-	-	-
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	939	1006	1544	-	-
Stage 1	963	-	-	-	-
Stage 2	1017	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	939	1006	1544	-	-
Mov Cap-2 Maneuver	939	-	-	-	-
Stage 1	963	-	-	-	-
Stage 2	1017	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1544	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	66	51	0
Future Volume (Veh/h)	0	0	0	66	51	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	72	55	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	127	55	55			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	127	55	55			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	868	1012	1550			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	72	55			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1550	1700			
Volume to Capacity	0.00	0.00	0.03			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	6.8%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM 7th TWSC
 9: SW 108th Ave & South Access

09/20/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	66	51	0
Future Vol, veh/h	0	0	0	66	51	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	10	10	2
Mvmt Flow	0	0	0	72	55	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	127	55	55	0	0
Stage 1	55	-	-	-	-
Stage 2	72	-	-	-	-
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	867	1011	1549	-	-
Stage 1	967	-	-	-	-
Stage 2	951	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	867	1011	1549	-	-
Mov Cap-2 Maneuver	867	-	-	-	-
Stage 1	967	-	-	-	-
Stage 2	951	-	-	-	-

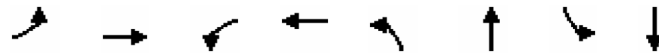
Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1549	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	144	6	43	29	339	225	663
v/c Ratio	0.02	0.36	0.03	0.12	0.06	0.40	0.37	0.40
Control Delay (s/veh)	29.4	19.5	29.4	9.5	9.0	19.2	10.9	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.4	19.5	29.4	9.5	9.0	19.2	10.9	14.0
Queue Length 50th (ft)	1	26	1	1	2	31	21	35
Queue Length 95th (ft)	15	98	15	24	24	125	128	223
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	512	1348	264	1002	800	2317	992	2838
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	0.02	0.04	0.04	0.15	0.23	0.23

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	90	32	5	6	31	25	239	49	191	541	23
Future Volume (vph)	5	90	32	5	6	31	25	239	49	191	541	23
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1504	1757		1128	1495		1612	3021		1767	3371	
Flt Permitted	0.95	1.00		0.95	1.00		0.35	1.00		0.53	1.00	
Satd. Flow (perm)	1504	1757		1128	1495		600	3021		988	3371	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	106	38	6	7	36	29	281	58	225	636	27
RTOR Reduction (vph)	0	12	0	0	29	0	0	14	0	0	2	0
Lane Group Flow (vph)	6	132	0	6	14	0	29	325	0	225	661	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	20%	2%	9%	60%	17%	10%	12%	18%	6%	2%	6%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	0.8	10.7		0.8	10.7		28.0	17.4		28.0	25.8	
Effective Green, g (s)	1.8	11.7		1.8	11.7		30.0	18.4		28.0	25.8	
Actuated g/C Ratio	0.03	0.20		0.03	0.20		0.50	0.31		0.47	0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	45	345		34	293		356	934		603	1461	
v/s Ratio Prot	0.00	c0.08		c0.01	0.01		0.00	0.11		c0.07	c0.20	
v/s Ratio Perm							0.04			0.11		
v/c Ratio	0.13	0.38		0.18	0.05		0.08	0.35		0.37	0.45	
Uniform Delay, d1	28.1	20.8		28.1	19.4		7.5	15.9		9.6	11.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.7		2.5	0.1		0.1	0.2		0.4	0.2	
Delay (s)	29.4	21.5		30.6	19.5		7.6	16.1		9.9	12.1	
Level of Service	C	C		C	B		A	B		A	B	
Approach Delay (s/veh)		21.8			20.8			15.5			11.6	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

09/20/2024



















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	5	90	32	5	6	31	25	239	49	191	541	23
Future Volume (veh/h)	5	90	32	5	6	31	25	239	49	191	541	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1604	1870	1767	1011	1648	1752	1722	1633	1811	1870	1811	1648
Adj Flow Rate, veh/h	6	106	38	6	7	36	29	281	58	225	636	27
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	20	2	9	60	17	10	12	18	6	2	6	17
Cap, veh/h	52	210	75	33	37	191	426	649	132	606	1231	52
Arrive On Green	0.03	0.16	0.14	0.03	0.16	0.14	0.06	0.25	0.23	0.17	0.37	0.37
Sat Flow, veh/h	1527	1314	471	963	233	1199	1640	2566	521	1781	3363	143
Grp Volume(v), veh/h	6	0	144	6	0	43	29	168	171	225	325	338
Grp Sat Flow(s),veh/h/ln	1527	0	1786	963	0	1432	1640	1552	1535	1781	1721	1785
Q Serve(g_s), s	0.2	0.0	3.3	0.3	0.0	1.2	0.4	4.0	4.2	3.8	6.5	6.6
Cycle Q Clear(g_c), s	0.2	0.0	3.3	0.3	0.0	1.2	0.4	4.0	4.2	3.8	6.5	6.6
Prop In Lane	1.00		0.26	1.00		0.84	1.00		0.34	1.00		0.08
Lane Grp Cap(c), veh/h	52	0	285	33	0	228	426	393	389	606	630	653
V/C Ratio(X)	0.12	0.00	0.51	0.18	0.00	0.19	0.07	0.43	0.44	0.37	0.52	0.52
Avail Cap(c_a), veh/h	552	0	1251	239	0	1003	1112	1087	1075	1310	1555	1613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	17.1	20.8	0.0	16.5	7.4	13.8	14.0	9.4	11.0	11.0
Incr Delay (d2), s/veh	1.0	0.0	1.4	2.7	0.0	0.4	0.1	0.7	0.8	0.4	0.7	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	1.2	0.1	0.0	0.3	0.1	1.1	1.2	1.0	1.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.7	0.0	18.5	23.5	0.0	16.9	7.5	14.6	14.8	9.7	11.6	11.6
LnGrp LOS	C		B	C		B	A	B	B	A	B	B
Approach Vol, veh/h		150			49			368			888	
Approach Delay, s/veh		18.6			17.7			14.1			11.1	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	15.2	5.5	11.1	6.5	21.2	5.5	11.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	5.8	6.2	2.3	5.3	2.4	8.6	2.2	3.2				
Green Ext Time (p_c), s	0.9	1.6	0.0	1.4	0.1	3.4	0.0	0.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			12.9									
HCM 7th LOS			B									

Notes
 User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

09/20/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	18	265	16	5	26	1	11	3	16	0	2	3
Future Volume (vph)	18	265	16	5	26	1	11	3	16	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	22	319	19	6	31	1	13	4	19	0	2	4
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	360	38	36	6								
Volume Left (vph)	22	6	13	0								
Volume Right (vph)	19	1	19	4								
Hadj (s)	0.03	0.23	-0.01	-0.01								
Departure Headway (s)	4.1	4.6	4.8	4.8								
Degree Utilization, x	0.41	0.05	0.05	0.01								
Capacity (veh/h)	872	755	694	680								
Control Delay (s/veh)	9.9	7.8	8.0	7.8								
Approach Delay (s/veh)	9.9	7.8	8.0	7.8								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.5									
Level of Service			A									
Intersection Capacity Utilization			33.0%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	265	16	5	26	1	11	3	16	0	2	3
Future Vol, veh/h	18	265	16	5	26	1	11	3	16	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	19	20	8	100	18	2	13	2	2	33
Mvmt Flow	22	319	19	6	31	1	13	4	19	0	2	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

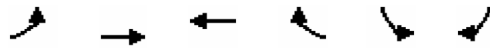
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.8	8	8.1	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	37%	6%	16%	0%
Vol Thru, %	10%	89%	81%	40%
Vol Right, %	53%	5%	3%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	299	32	5
LT Vol	11	18	5	0
Through Vol	3	265	26	2
RT Vol	16	16	1	3
Lane Flow Rate	36	360	39	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.049	0.402	0.05	0.008
Departure Headway (Hd)	4.837	4.015	4.704	4.491
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	744	890	765	801
Service Time	2.84	2.068	2.71	2.495
HCM Lane V/C Ratio	0.048	0.404	0.051	0.007
HCM Control Delay, s/veh	8.1	9.8	8	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	2	0.2	0

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	147	125	13	68	7	12
Future Volume (Veh/h)	147	125	13	68	7	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	186	158	16	86	9	15
Pedestrians					4	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	106				593	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	106				593	63
tC, single (s)	4.1				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	87				98	98
cM capacity (veh/h)	1479				391	957
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	344	102	9	15		
Volume Left	186	0	9	0		
Volume Right	0	86	0	15		
cSH	1479	1700	391	957		
Volume to Capacity	0.13	0.06	0.02	0.02		
Queue Length 95th (ft)	11	0	2	1		
Control Delay (s/veh)	4.7	0.0	14.4	8.8		
Lane LOS	A		B	A		
Approach Delay (s/veh)	4.7	0.0	10.9			
Approach LOS			B			
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			31.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 12: SW Leveton Drive & West Access

09/20/2024

Intersection

Int Delay, s/veh 3.6

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	147	125	13	68	7	12
Future Vol, veh/h	147	125	13	68	7	12
Conflicting Peds, #/hr	4	0	0	4	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	79	79	79	79	79	79
Heavy Vehicles, %	2	3	15	4	14	17
Mvmt Flow	186	158	16	86	9	15

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	107	0	-	0	594	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	530	-
Critical Hdwy	4.12	-	-	-	6.54	6.37
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	2.218	-	-	-	3.626	3.453
Pot Cap-1 Maneuver	1484	-	-	-	448	960
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	567	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1479	-	-	-	384	957
Mov Cap-2 Maneuver	-	-	-	-	384	-
Stage 1	-	-	-	-	798	-
Stage 2	-	-	-	-	564	-

Approach EB WB SB

HCM Control Delay, s/v	4.21	0	10.95
HCM LOS			B

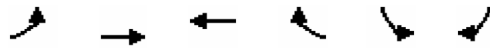
Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h)	973	-	-	-	384	957
HCM Lane V/C Ratio	0.126	-	-	-	0.023	0.016
HCM Control Delay (s/veh)	7.8	0	-	-	14.6	8.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0

HCM Unsignalized Intersection Capacity Analysis

13: SW Lave-ton Drive & Center Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	19	117	82	25	2	3
Future Volume (Veh/h)	19	117	82	25	2	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	24	150	105	32	3	4
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	152				334	136
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152				334	136
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1408				641	900
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	174	137	3	4		
Volume Left	24	0	3	0		
Volume Right	0	32	0	4		
cSH	1408	1700	641	900		
Volume to Capacity	0.02	0.08	0.00	0.00		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s/veh)	1.2	0.0	10.6	9.0		
Lane LOS	A		B	A		
Approach Delay (s/veh)	1.2	0.0	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			23.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 13: SW Leveton Drive & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	19	117	82	25	2	3
Future Vol, veh/h	19	117	82	25	2	3
Conflicting Peds, #/hr	15	0	0	15	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, %	2	4	7	4	2	2
Mvmt Flow	24	150	105	32	3	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	152	0	-	0	335
Stage 1	-	-	-	-	136
Stage 2	-	-	-	-	199
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	1429	-	-	-	660
Stage 1	-	-	-	-	890
Stage 2	-	-	-	-	835
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1408	-	-	-	630
Mov Cap-2 Maneuver	-	-	-	-	630
Stage 1	-	-	-	-	861
Stage 2	-	-	-	-	823

Approach	EB	WB	SB
HCM Control Delay, s/v	1.06	0	9.71
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	251	-	-	-	630	899
HCM Lane V/C Ratio	0.017	-	-	-	0.004	0.004
HCM Control Delay (s/veh)	7.6	0	-	-	10.7	9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0

HCM Unsignalized Intersection Capacity Analysis
 14: Calmax Technology Access/East Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	47	56	4	0	103	35	1	0	0	2	0	4
Future Volume (Veh/h)	47	56	4	0	103	35	1	0	0	2	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	53	64	5	0	117	40	1	0	0	2	0	5
Pedestrians												17
Lane Width (ft)												12.0
Walking Speed (ft/s)												3.5
Percent Blockage												2
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	174			69			315	347	67	327	329	154
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	174			69			315	347	67	327	329	154
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.6	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	4.0	4.0	3.8
p0 queue free %	96			100			100	100	100	100	100	99
cM capacity (veh/h)	1368			1532			608	545	997	513	558	767
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	122	157	1	7								
Volume Left	53	0	1	2								
Volume Right	5	40	0	5								
cSH	1368	1532	608	672								
Volume to Capacity	0.04	0.00	0.00	0.01								
Queue Length 95th (ft)	3	0	0	1								
Control Delay (s/veh)	3.5	0.0	10.9	10.4								
Lane LOS	A		B	B								
Approach Delay (s/veh)	3.5	0.0	10.9	10.4								
Approach LOS			B	B								
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			29.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	56	4	0	103	35	1	0	0	2	0	4
Future Vol, veh/h	47	56	4	0	103	35	1	0	0	2	0	4
Conflicting Peds, #/hr	17	0	0	0	0	17	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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	4	7	2	2	4	6	2	2	2	50	2	50
Mvmt Flow	53	64	5	0	117	40	1	0	0	2	0	5

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	174	0	0	68
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.236	-	-	2.218
Pot Cap-1 Maneuver	1391	-	-	1533
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1368	-	-	1533
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	3.4	0	10.71	10.51
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	632	780	-	-	1533	-	-	660
HCM Lane V/C Ratio	0.002	0.039	-	-	-	-	-	0.01
HCM Control Delay (s/veh)	10.7	7.7	0	-	0	-	-	10.5
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0

HCM Unsignalized Intersection Capacity Analysis

15: SW 108th Ave & SW Leveton Drive

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	54	108	39	25	26
Future Volume (Veh/h)	27	54	108	39	25	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	31	61	123	44	28	30
Pedestrians	19			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	2			0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				861		
pX, platoon unblocked						
vC, conflicting volume	353	63	77			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	353	63	77			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	95	94	92			
cM capacity (veh/h)	571	983	1476			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	92	167	58			
Volume Left	31	123	0			
Volume Right	61	0	30			
cSH	790	1476	1700			
Volume to Capacity	0.12	0.08	0.03			
Queue Length 95th (ft)	10	7	0			
Control Delay (s/veh)	10.2	5.8	0.0			
Lane LOS	B	A				
Approach Delay (s/veh)	10.2	5.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			6.0			
Intersection Capacity Utilization			26.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	5.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	27	54	108	39	25	26
Future Vol, veh/h	27	54	108	39	25	26
Conflicting Peds, #/hr	1	1	19	0	0	19
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	88	88	88	88	88	88
Heavy Vehicles, %	7	2	5	21	28	12
Mvmt Flow	31	61	123	44	28	30

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	353	63	77	0	0
Stage 1	62	-	-	-	-
Stage 2	291	-	-	-	-
Critical Hdwy	6.47	6.22	4.15	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.318	2.245	-	-
Pot Cap-1 Maneuver	635	1001	1503	-	-
Stage 1	948	-	-	-	-
Stage 2	747	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	560	982	1476	-	-
Mov Cap-2 Maneuver	560	-	-	-	-
Stage 1	851	-	-	-	-
Stage 2	734	-	-	-	-

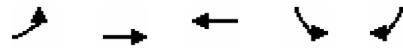
Approach	EB	NB	SB
HCM Control Delay, s/v10.19		5.63	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1322	-	785	-	-
HCM Lane V/C Ratio	0.083	-	0.117	-	-
HCM Control Delay (s/veh)	7.7	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.4	-	-

Queues

16: SW Herman Road & SW 108th Ave

09/20/2024



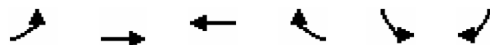
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	16	410	450	53	12
v/c Ratio	0.03	0.35	0.39	0.14	0.03
Control Delay (s/veh)	2.7	5.4	7.3	15.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	2.7	5.4	7.3	15.3	9.1
Queue Length 50th (ft)	1	45	44	10	0
Queue Length 95th (ft)	6	92	161	36	10
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	757	1557	1622	1263	1235
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.26	0.28	0.04	0.01

Intersection Summary

HCM Signalized Intersection Capacity Analysis

16: SW Herman Road & SW 108th Ave

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	353	235	152	46	10
Future Volume (vph)	14	353	235	152	46	10
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	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1398	1557	1626		1504	1468
Flt Permitted	0.45	1.00	1.00		0.95	1.00
Satd. Flow (perm)	655	1557	1626		1504	1468
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	16	410	273	177	53	12
RTOR Reduction (vph)	0	0	19	0	0	10
Lane Group Flow (vph)	16	410	431	0	53	2
Confl. Peds. (#/hr)	3			3		
Heavy Vehicles (%)	29%	22%	12%	6%	20%	10%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	25.2	30.6	24.5		4.3	4.3
Effective Green, g (s)	28.0	32.0	25.9		6.8	6.8
Actuated g/C Ratio	0.60	0.68	0.55		0.15	0.15
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	425	1064	899		218	213
v/s Ratio Prot	0.00	c0.26	c0.27		c0.04	
v/s Ratio Perm	0.02					0.00
v/c Ratio	0.04	0.39	0.48		0.24	0.01
Uniform Delay, d1	5.2	3.2	6.4		17.7	17.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	0.4		0.5	0.0
Delay (s)	5.2	3.4	6.8		18.2	17.1
Level of Service	A	A	A		B	B
Approach Delay (s/veh)		3.5	6.8		18.0	
Approach LOS		A	A		B	

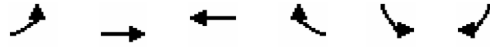
Intersection Summary

HCM 2000 Control Delay (s/veh)	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	46.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

09/20/2024

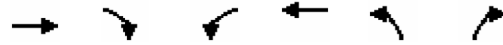


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	353	235	152	46	10
Future Volume (veh/h)	14	353	235	152	46	10
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1470	1574	1722	1811	1604	1752
Adj Flow Rate, veh/h	16	410	273	177	53	12
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	29	22	12	6	20	10
Cap, veh/h	511	1087	530	343	186	181
Arrive On Green	0.05	0.69	0.54	0.51	0.12	0.12
Sat Flow, veh/h	1400	1574	974	632	1527	1485
Grp Volume(v), veh/h	16	410	0	450	53	12
Grp Sat Flow(s),veh/h/ln	1400	1574	0	1606	1527	1485
Q Serve(g_s), s	0.0	4.6	0.0	7.7	1.3	0.3
Cycle Q Clear(g_c), s	0.0	4.6	0.0	7.7	1.3	0.3
Prop In Lane	1.00			0.39	1.00	1.00
Lane Grp Cap(c), veh/h	511	1087	0	873	186	181
V/C Ratio(X)	0.03	0.38	0.00	0.52	0.29	0.07
Avail Cap(c_a), veh/h	811	1714	0	2466	1165	1132
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.4	2.8	0.0	6.4	17.0	16.6
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.5	0.7	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.0	1.6	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	7.4	3.0	0.0	6.9	17.7	16.7
LnGrp LOS	A	A		A	B	B
Approach Vol, veh/h		426	450		65	
Approach Delay, s/veh		3.2	6.9		17.5	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		33.4		9.2	6.3	27.2
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		6.6		3.3	2.0	9.7
Green Ext Time (p_c), s		9.5		0.1	0.0	12.1
Intersection Summary						
HCM 7th Control Delay, s/veh			5.9			
HCM 7th LOS			A			

HCM Unsignalized Intersection Capacity Analysis

17: SW Teton Avenue & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	601	162	63	299	75	57
Future Volume (Veh/h)	601	162	63	299	75	57
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	633	171	66	315	79	60
Pedestrians						2
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			806		1168	721
vC1, stage 1 conf vol					721	
vC2, stage 2 conf vol					447	
vCu, unblocked vol			806		1168	721
tC, single (s)			4.1		6.6	6.4
tC, 2 stage (s)					5.6	
tF (s)			2.2		3.6	3.5
p0 queue free %			92		80	85
cM capacity (veh/h)			804		386	397
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total	804	66	315	79	60	
Volume Left	0	66	0	79	0	
Volume Right	171	0	0	0	60	
cSH	1700	804	1700	386	397	
Volume to Capacity	0.47	0.08	0.19	0.20	0.15	
Queue Length 95th (ft)	0	7	0	19	13	
Control Delay (s/veh)	0.0	9.9	0.0	16.7	15.7	
Lane LOS		A		C	C	
Approach Delay (s/veh)	0.0	1.7		16.3		
Approach LOS				C		
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			59.2%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	601	162	63	299	75	57
Future Vol, veh/h	601	162	63	299	75	57
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	3	5	7	15	21
Mvmt Flow	633	171	66	315	79	60

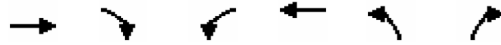
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	805	0	1167	720
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	447	-
Critical Hdwy	-	-	4.15	-	6.55	6.41
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.245	-	3.635	3.489
Pot Cap-1 Maneuver	-	-	806	-	202	398
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	805	-	185	397
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	458	-
Stage 2	-	-	-	-	567	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.72	28.54
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	185	397	-	-	805	-
HCM Lane V/C Ratio	0.428	0.151	-	-	0.082	-
HCM Control Delay (s/veh)	38.3	15.7	-	-	9.9	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	2	0.5	-	-	0.3	-

HCM Unsignalized Intersection Capacity Analysis
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	26	12	45	80	100	107
Future Volume (Veh/h)	26	12	45	80	100	107
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	41	19	70	125	156	167
Pedestrians					37	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					4	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			97			353 88
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			97			353 88
tC, single (s)			4.2			6.4 6.2
tC, 2 stage (s)						
tF (s)			2.3			3.5 3.3
p0 queue free %			95			73 82
cM capacity (veh/h)			1414			588 929

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	60	195	323
Volume Left	0	70	156
Volume Right	19	0	167
cSH	1700	1414	726
Volume to Capacity	0.04	0.05	0.45
Queue Length 95th (ft)	0	4	58
Control Delay (s/veh)	0.0	3.0	13.9
Lane LOS		A	B
Approach Delay (s/veh)	0.0	3.0	13.9
Approach LOS			B

Intersection Summary			
Average Delay			8.8
Intersection Capacity Utilization	32.1%		ICU Level of Service
Analysis Period (min)	15		A

HCM 7th TWSC
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	8.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	12	45	80	100	107
Future Vol, veh/h	26	12	45	80	100	107
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	41	19	70	125	156	167

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	96	0	353 87
Stage 1	-	-	-	-	87 -
Stage 2	-	-	-	-	266 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1466	-	641 963
Stage 1	-	-	-	-	931 -
Stage 2	-	-	-	-	774 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1415	-	585 929
Mov Cap-2 Maneuver	-	-	-	-	585 -
Stage 1	-	-	-	-	899 -
Stage 2	-	-	-	-	733 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.76	13.93
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	724	-	-	648	-
HCM Lane V/C Ratio	0.447	-	-	0.05	-
HCM Control Delay (s/veh)	13.9	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.3	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↘		↕↕
Traffic Volume (veh/h)	0	184	1194	18	0	1536
Future Volume (Veh/h)	0	184	1194	18	0	1536
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	209	1357	20	0	1745
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2231	680			1358	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2231	680			1358	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	55			100	
cM capacity (veh/h)	36	468			502	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	209	679	679	20	873	873
Volume Left	0	0	0	0	0	0
Volume Right	209	0	0	20	0	0
cSH	468	1700	1700	1700	1700	1700
Volume to Capacity	0.45	0.40	0.40	0.01	0.51	0.51
Queue Length 95th (ft)	57	0	0	0	0	0
Control Delay (s/veh)	18.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s/veh)	18.8	0.0			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay		1.2	
Intersection Capacity Utilization		51.1%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

HCM 7th TWSC
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Vol, veh/h	0	184	1194	18	0	1536
Future Vol, veh/h	0	184	1194	18	0	1536
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	4	8	3	2	10
Mvmt Flow	0	209	1357	20	0	1745

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	678	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.98	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.34	-
Pot Cap-1 Maneuver	0	390	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	390	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

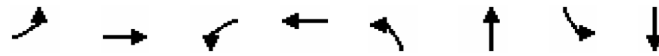
Approach	WB	NB	SB
HCM Control Delay, s/v	24.42	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 390	-
HCM Lane V/C Ratio	- 0.536	-
HCM Control Delay (s/veh)	- 24.4	-
HCM Lane LOS	- C	-
HCM 95th %tile Q(veh)	- 3.1	-

Queues

20: SW Teton Avenue & SW Herman Road

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	350	20	251	280	122	26	168
v/c Ratio	0.02	0.73	0.07	0.57	0.48	0.19	0.06	0.42
Control Delay (s/veh)	14.4	30.7	14.7	25.0	16.3	19.1	14.4	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.4	30.7	14.7	25.0	16.3	19.1	14.4	29.8
Queue Length 50th (ft)	1	97	5	71	57	23	5	50
Queue Length 95th (ft)	10	279	20	207	177	102	24	156
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	440	1203	570	1066	695	1250	703	1429
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.29	0.04	0.24	0.40	0.10	0.04	0.12

Intersection Summary

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	5	172	140	18	201	22	249	83	26	23	126	23
Future Volume (vph)	5	172	140	18	201	22	249	83	26	23	126	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1128	1471		1543	1307		1656	1495		1594	1705	
Flt Permitted	0.54	1.00		0.35	1.00		0.52	1.00		0.68	1.00	
Satd. Flow (perm)	644	1471		568	1307		907	1495		1138	1705	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	193	157	20	226	25	280	93	29	26	142	26
RTOR Reduction (vph)	0	17	0	0	2	0	0	0	0	0	4	0
Lane Group Flow (vph)	6	333	0	20	249	0	280	122	0	26	164	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	60%	16%	26%	17%	45%	27%	9%	24%	15%	13%	5%	30%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	22.2	21.4		24.0	22.3		34.5	28.5		20.5	18.5	
Effective Green, g (s)	22.2	21.9		24.0	22.8		34.5	29.0		20.5	19.0	
Actuated g/C Ratio	0.31	0.30		0.33	0.31		0.48	0.40		0.28	0.26	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	202	443		210	410		554	597		333	446	
v/s Ratio Prot	0.00	c0.23		c0.00	0.19		c0.08	0.08		0.00	0.10	
v/s Ratio Perm	0.01			0.03			c0.16			0.02		
v/c Ratio	0.03	0.75		0.10	0.61		0.51	0.20		0.08	0.37	
Uniform Delay, d1	17.6	22.9		16.9	21.1		12.2	14.3		19.0	21.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	7.1		0.1	2.6		0.3	0.2		0.0	0.6	
Delay (s)	17.6	30.0		17.0	23.7		12.5	14.4		19.0	22.4	
Level of Service	B	C		B	C		B	B		B	C	
Approach Delay (s/veh)		29.8			23.2			13.1			22.0	
Approach LOS		C			C			B			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	72.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	172	140	18	201	22	249	83	26	23	126	23
Future Volume (veh/h)	5	172	140	18	201	22	249	83	26	23	126	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1011	1663	1515	1648	1233	1500	1767	1544	1678	1707	1826	1455
Adj Flow Rate, veh/h	6	193	157	20	226	25	280	93	29	26	142	26
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	60	16	26	17	45	27	9	24	15	13	5	30
Cap, veh/h	241	297	242	289	399	44	481	346	108	352	257	47
Arrive On Green	0.01	0.35	0.34	0.02	0.37	0.36	0.16	0.31	0.30	0.03	0.17	0.16
Sat Flow, veh/h	963	848	690	1570	1091	121	1682	1128	352	1626	1500	275
Grp Volume(v), veh/h	6	0	350	20	0	251	280	0	122	26	0	168
Grp Sat Flow(s),veh/h/ln	963	0	1539	1570	0	1211	1682	0	1480	1626	0	1774
Q Serve(g_s), s	0.3	0.0	11.9	0.5	0.0	10.3	7.9	0.0	3.9	0.8	0.0	5.4
Cycle Q Clear(g_c), s	0.3	0.0	11.9	0.5	0.0	10.3	7.9	0.0	3.9	0.8	0.0	5.4
Prop In Lane	1.00		0.45	1.00		0.10	1.00		0.24	1.00		0.15
Lane Grp Cap(c), veh/h	241	0	538	289	0	443	481	0	454	352	0	304
V/C Ratio(X)	0.02	0.00	0.65	0.07	0.00	0.57	0.58	0.00	0.27	0.07	0.00	0.55
Avail Cap(c_a), veh/h	544	0	1355	760	0	1047	748	0	1375	830	0	1592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	0.0	17.0	13.8	0.0	15.7	15.8	0.0	16.3	20.5	0.0	23.5
Incr Delay (d2), s/veh	0.0	0.0	1.4	0.0	0.0	1.2	0.4	0.0	0.3	0.0	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.7	0.2	0.0	2.6	2.7	0.0	1.2	0.3	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	0.0	18.5	13.8	0.0	17.0	16.2	0.0	16.6	20.5	0.0	25.2
LnGrp LOS	B		B	B		B	B		B	C		C
Approach Vol, veh/h		356			271			402				194
Approach Delay, s/veh		18.4			16.7			16.3				24.6
Approach LOS		B			B			B				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	26.7	14.2	15.6	4.5	27.6	5.8	24.0				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	2.5	13.9	9.9	7.4	2.3	12.3	2.8	5.9				
Green Ext Time (p_c), s	0.0	7.3	0.4	0.6	0.0	5.6	0.1	1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			18.3									
HCM 7th LOS			B									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	240	426	134	1432	1284	140
v/c Ratio	0.80	0.95	0.76	0.56	0.60	0.14
Control Delay (s/veh)	74.9	59.0	86.7	7.7	23.3	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.9	59.0	86.7	7.7	23.3	4.0
Queue Length 50th (ft)	209	201	120	256	530	13
Queue Length 95th (ft)	#320	#404	#226	304	612	m25
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	325	467	176	2577	2139	987
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.91	0.76	0.56	0.60	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	216	383	121	1289	0	1156	126
Future Volume (vph)	216	383	121	1289	0	1156	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1752	1555	1543	3343		3406	1499
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1752	1555	1543	3343		3406	1499
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	240	426	134	1432	0	1284	140
RTOR Reduction (vph)	0	181	0	0	0	0	46
Lane Group Flow (vph)	240	245	134	1432	0	1284	94
Confl. Peds. (#/hr)		7					5
Heavy Vehicles (%)	3%	2%	17%	8%	2%	6%	4%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	23.1	23.1	14.5	105.9		85.9	85.9
Effective Green, g (s)	24.1	24.1	16.0	107.9		87.9	87.9
Actuated g/C Ratio	0.17	0.17	0.11	0.77		0.63	0.63
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	301	267	176	2576		2138	941
v/s Ratio Prot	0.14		c0.09	0.43		c0.38	
v/s Ratio Perm		c0.16					0.06
v/c Ratio	0.80	0.92	0.76	0.56		0.60	0.10
Uniform Delay, d1	55.6	57.0	60.1	6.4		15.6	10.3
Progression Factor	1.00	1.00	1.00	1.00		1.38	1.54
Incremental Delay, d2	13.2	33.5	16.5	0.9		1.0	0.2
Delay (s)	68.8	90.4	76.6	7.3		22.6	16.1
Level of Service	E	F	E	A		C	B
Approach Delay (s/veh)	82.7			13.2		21.9	
Approach LOS	F			B		C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	216	383	121	1289	0	1156	126
Future Volume (veh/h)	216	383	121	1289	0	1156	126
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1856	1870	1648	1781		1811	1841
Adj Flow Rate, veh/h	240	426	134	1432		1284	140
Peak Hour Factor	0.90	0.90	0.90	0.90		0.90	0.90
Percent Heavy Veh, %	3	2	17	8		6	4
Cap, veh/h	328	294	174	2563		2114	954
Arrive On Green	0.19	0.19	0.11	0.76		0.82	0.82
Sat Flow, veh/h	1767	1585	1570	3474		3532	1554
Grp Volume(v), veh/h	240	426	134	1432		1284	140
Grp Sat Flow(s),veh/h/ln	1767	1585	1570	1692		1721	1554
Q Serve(g_s), s	17.9	26.0	11.6	24.9		19.0	2.6
Cycle Q Clear(g_c), s	17.9	26.0	11.6	24.9		19.0	2.6
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	328	294	174	2563		2114	954
V/C Ratio(X)	0.73	1.45	0.77	0.56		0.61	0.15
Avail Cap(c_a), veh/h	328	294	179	2563		2114	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.33	1.33
Upstream Filter(l)	1.00	1.00	1.00	1.00		0.80	0.80
Uniform Delay (d), s/veh	53.7	57.0	60.5	7.2		6.7	5.2
Incr Delay (d2), s/veh	7.7	219.4	16.8	0.9		1.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	38.7	5.4	7.7		4.5	0.9
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	61.4	276.4	77.3	8.0		7.7	5.4
LnGrp LOS	E	F	E	A		A	A
Approach Vol, veh/h				1566		1424	
Approach Delay, s/veh				14.0		7.5	
Approach LOS		F		B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		110.0		30.0	20.0	90.0	
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6	
Max Green Setting (Gmax), s		84.0		25.0	14.5	* 84	
Max Q Clear Time (g_c+I1), s		26.9		28.0	13.6	21.0	
Green Ext Time (p_c), s		48.9		0.0	0.0	47.5	

Intersection Summary

HCM 7th Control Delay, s/veh	45.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

HCM 7th Signalized Intersection Summary
21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	186	186	235	64	1177	375	449	1004	12
v/c Ratio	0.39	0.86	0.84	0.58	0.57	0.77	0.40	0.81	0.52	0.01
Control Delay (s/veh)	44.4	91.9	89.2	12.4	73.4	37.7	7.7	68.7	20.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.4	91.9	89.2	12.4	73.4	37.7	7.7	68.7	20.5	0.0
Queue Length 50th (ft)	38	174	174	0	58	501	116	205	303	0
Queue Length 95th (ft)	73	#305	#301	80	m103	590	174	#272	372	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	348	228	232	416	134	1526	955	556	1933	954
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.82	0.80	0.56	0.48	0.77	0.39	0.81	0.52	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↖	↖	↖	↕↕	↖	↖↖	↕↕	↖
Traffic Volume (vph)	8	70	38	306	36	216	59	1083	345	413	924	11
Future Volume (vph)	8	70	38	306	36	216	59	1083	345	413	924	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3354		1633	1664	1535	1770	3343	1506	3433	3374	1583
Flt Permitted		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3354		1633	1664	1535	1770	3343	1506	3433	3374	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	76	41	333	39	235	64	1177	375	449	1004	12
RTOR Reduction (vph)	0	37	0	0	0	204	0	0	64	0	0	5
Lane Group Flow (vph)	0	89	0	186	186	31	64	1177	311	449	1004	7
Confl. Peds. (#/hr)	4					4			2			
Heavy Vehicles (%)	2%	2%	2%	5%	2%	3%	2%	8%	6%	2%	7%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1		6
Permitted Phases						4			2			6
Actuated Green, G (s)		12.0		18.7	18.7	18.7	7.8	62.8	81.5	23.8	79.1	79.1
Effective Green, g (s)		12.0		18.7	18.7	18.7	7.8	62.8	81.5	23.8	79.1	79.1
Actuated g/C Ratio		0.09		0.13	0.13	0.13	0.06	0.45	0.58	0.17	0.56	0.56
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		218	222	205	98	1499	941	583	1906	894
v/s Ratio Prot		c0.03		c0.11	0.11		0.04	c0.35	0.04	c0.13	0.30	
v/s Ratio Perm						0.02			0.16			0.00
v/c Ratio		0.31		0.85	0.84	0.15	0.65	0.79	0.33	0.77	0.53	0.01
Uniform Delay, d1		60.1		59.3	59.2	53.6	64.8	32.9	15.1	55.5	18.9	13.3
Progression Factor		1.00		1.00	1.00	1.00	0.91	1.06	0.94	1.00	1.00	1.00
Incremental Delay, d2		0.4		25.7	22.6	0.2	10.2	3.5	0.1	5.9	1.0	0.0
Delay (s)		60.5		85.0	81.8	53.8	69.0	38.2	14.3	61.4	19.9	13.3
Level of Service		E		F	F	D	E	D	B	E	B	B
Approach Delay (s/veh)		60.5			71.9			33.9			32.6	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

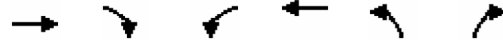
c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	837	210	719	1151	618	698
v/c Ratio	0.69	0.32	0.67	0.48	0.75	0.45
Control Delay (s/veh)	37.7	5.1	40.1	10.0	40.0	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.7	5.1	40.1	10.0	40.0	17.9
Queue Length 50th (ft)	292	0	246	192	235	218
Queue Length 95th (ft)	365	53	#357	302	238	292
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1209	663	1080	2381	1058	1523
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.32	0.67	0.48	0.58	0.46

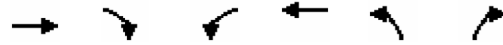
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	787	197	676	1082	581	656
Future Volume (vph)	787	197	676	1082	581	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1538	3400	3438	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1538	3400	3438	3433	2787
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	837	210	719	1151	618	698
RTOR Reduction (vph)	0	138	0	0	0	0
Lane Group Flow (vph)	837	72	719	1151	618	698
Confl. Peds. (#/hr)						1
Heavy Vehicles (%)	2%	5%	3%	5%	2%	2%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	33.3	77.9	30.1	63.4
Effective Green, g (s)	41.0	41.0	34.9	79.9	32.1	58.4
Actuated g/C Ratio	0.34	0.34	0.29	0.67	0.27	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1209	525	988	2289	918	1356
v/s Ratio Prot	c0.24		c0.21	0.33	c0.18	0.25
v/s Ratio Perm		0.05				
v/c Ratio	0.69	0.14	0.73	0.50	0.67	0.51
Uniform Delay, d1	34.1	27.3	38.3	10.1	39.3	21.1
Progression Factor	1.00	1.00	1.00	1.00	0.82	1.00
Incremental Delay, d2	2.4	0.3	4.7	0.8	1.7	0.2
Delay (s)	36.4	27.6	43.0	10.9	33.7	21.4
Level of Service	D	C	D	B	C	C
Approach Delay (s/veh)	34.6			23.2	27.2	
Approach LOS	C			C	C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	37	527	740	50	429	477
v/c Ratio	0.19	0.46	0.74	0.11	0.42	0.16
Control Delay (s/veh)	46.3	3.9	43.5	11.8	8.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.3	3.9	43.5	11.8	8.8	3.6
Queue Length 50th (ft)	27	4	272	6	26	15
Queue Length 95th (ft)	50	91	322	34	154	85
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	445	1134	1164	547	1027	2932
Starvation Cap Reductn	0	0	0	0	34	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.46	0.64	0.09	0.43	0.16

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	495	696	47	403	448
Future Volume (vph)	35	495	696	47	403	448
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1599	3539	1583	1752	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.16	1.00
Satd. Flow (perm)	1671	1599	3539	1583	295	3374
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	527	740	50	429	477
RTOR Reduction (vph)	0	230	0	29	0	0
Lane Group Flow (vph)	37	297	740	21	429	477
Heavy Vehicles (%)	8%	1%	2%	2%	3%	7%
Turn Type	Perm	Over	NA	Perm	D.P+P	NA
Protected Phases		5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	10.0	61.6	32.9	32.9	94.5	99.5
Effective Green, g (s)	11.0	66.6	33.9	33.9	96.5	100.5
Actuated g/C Ratio	0.09	0.55	0.28	0.28	0.80	0.84
Clearance Time (s)	5.0	5.0	5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0	4.0	4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	153	887	999	447	997	2825
v/s Ratio Prot		0.19	c0.21		c0.22	0.14
v/s Ratio Perm	c0.02			0.01	0.12	
v/c Ratio	0.24	0.34	0.74	0.05	0.43	0.17
Uniform Delay, d1	50.6	14.6	39.1	31.3	11.9	1.8
Progression Factor	1.00	1.00	1.00	1.00	0.53	1.16
Incremental Delay, d2	1.1	1.0	3.4	0.1	0.4	0.1
Delay (s)	51.7	15.6	42.4	31.4	6.7	2.3
Level of Service	D	B	D	C	A	A
Approach Delay (s/veh)	18.0		41.7			4.3
Approach LOS	B		D			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	370	1	4	600	243	0	4	5	20	2	22
Future Volume (Veh/h)	48	370	1	4	600	243	0	4	5	20	2	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	51	389	1	4	632	256	0	4	5	21	2	23
Pedestrians		1										4
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		3.5									3.5	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	892			390			1157	1392	390	1270	1264	765
vC1, stage 1 conf vol							492	492		772	772	
vC2, stage 2 conf vol							665	900		498	492	
vCu, unblocked vol	892			390			1157	1392	390	1270	1264	765
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.2	6.5	6.4
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.5
p0 queue free %	93			100			100	99	99	93	99	94
cM capacity (veh/h)	757			1169			321	276	633	322	341	378

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	51	390	4	888	0	9	46
Volume Left	51	0	4	0	0	0	21
Volume Right	0	1	0	256	0	5	23
cSH	757	1700	1169	1700	1700	402	349
Volume to Capacity	0.07	0.23	0.00	0.52	0.00	0.02	0.13
Queue Length 95th (ft)	5	0	0	0	0	2	11
Control Delay (s/veh)	10.1	0.0	8.1	0.0	0.0	14.2	16.9
Lane LOS	B		A		A	B	C
Approach Delay (s/veh)	1.2		0.0		14.2		16.9
Approach LOS					B		C

Intersection Summary

Average Delay		1.0					
Intersection Capacity Utilization		62.6%		ICU Level of Service		B	
Analysis Period (min)		15					

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	370	1	4	600	243	0	4	5	20	2	22
Future Vol, veh/h	48	370	1	4	600	243	0	4	5	20	2	22
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	3	2	2	2	2	2	2	14	5	2	17
Mvmt Flow	51	389	1	4	632	256	0	4	5	21	2	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	891	0	0	391	0	0	1133	1391	390	1265	1263	764
Stage 1	-	-	-	-	-	-	491	491	-	772	772	-
Stage 2	-	-	-	-	-	-	642	900	-	493	492	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.34	7.15	6.52	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.426	3.545	4.018	3.453
Pot Cap-1 Maneuver	761	-	-	1168	-	-	180	142	633	144	170	380
Stage 1	-	-	-	-	-	-	559	548	-	388	409	-
Stage 2	-	-	-	-	-	-	463	357	-	552	548	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	758	-	-	1168	-	-	155	132	633	128	157	379
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	132	-	128	157	-
Stage 1	-	-	-	-	-	-	522	512	-	385	406	-
Stage 2	-	-	-	-	-	-	430	355	-	507	511	-

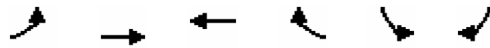
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.16			0.04			20.95			29.25		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	235	758	-	-	1168	-	-	194
HCM Lane V/C Ratio	-	0.04	0.067	-	-	0.004	-	-	0.238
HCM Control Delay (s/veh)	0	21	10.1	-	-	8.1	-	-	29.2
HCM Lane LOS		A	C	B	-	-	A	-	D
HCM 95th %tile Q(veh)	-	0.1	0.2	-	-	0	-	-	0.9

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↘	↘
Traffic Volume (veh/h)	12	391	895	14	8	2
Future Volume (Veh/h)	12	391	895	14	8	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	434	994	16	9	2
Pedestrians			2		3	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1013				1467	1005
vC1, stage 1 conf vol					1005	
vC2, stage 2 conf vol					462	
vCu, unblocked vol	1013				1467	1005
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	99
cM capacity (veh/h)	683				319	292

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	13	434	1010	11
Volume Left	13	0	0	9
Volume Right	0	0	16	2
cSH	683	1700	1700	314
Volume to Capacity	0.02	0.26	0.59	0.04
Queue Length 95th (ft)	1	0	0	3
Control Delay (s/veh)	10.4	0.0	0.0	16.9
Lane LOS	B			C
Approach Delay (s/veh)	0.3		0.0	16.9
Approach LOS				C

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		58.0%	ICU Level of Service
Analysis Period (min)		15	B

HCM 7th TWSC
5: SW Tualatin Road & SW 112th Avenue

09/20/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑		↘	
Traffic Vol, veh/h	12	391	895	14	8	2
Future Vol, veh/h	12	391	895	14	8	2
Conflicting Peds, #/hr	3	0	0	3	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	4	2	8	2	2
Mvmt Flow	13	434	994	16	9	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1013	0	-	0	1468 1005
Stage 1	-	-	-	-	1005 -
Stage 2	-	-	-	-	463 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	684	-	-	-	141 293
Stage 1	-	-	-	-	354 -
Stage 2	-	-	-	-	634 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	683	-	-	-	137 292
Mov Cap-2 Maneuver	-	-	-	-	259 -
Stage 1	-	-	-	-	346 -
Stage 2	-	-	-	-	632 -

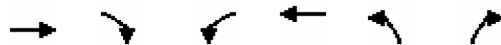
Approach	EB	WB	SB
HCM Control Delay, s/v	0.31	0	19.17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	683	-	-	-	265
HCM Lane V/C Ratio	0.02	-	-	-	0.042
HCM Control Delay (s/veh)	10.4	-	-	-	19.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→		←	→	↔	
Traffic Volume (veh/h)	386	4	9	852	28	22
Future Volume (Veh/h)	386	4	9	852	28	22
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	420	4	10	926	30	24
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage veh	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			425		1369	423
vC1, stage 1 conf vol					423	
vC2, stage 2 conf vol					946	
vCu, unblocked vol			425		1369	423
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		91	96
cM capacity (veh/h)			1133		341	630

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	424	10	926	54
Volume Left	0	10	0	30
Volume Right	4	0	0	24
cSH	1700	1133	1700	429
Volume to Capacity	0.25	0.01	0.54	0.13
Queue Length 95th (ft)	0	1	0	11
Control Delay (s/veh)	0.0	8.2	0.0	14.6
Lane LOS		A		B
Approach Delay (s/veh)	0.0	0.1		14.6
Approach LOS				B

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization	54.8%		ICU Level of Service A
Analysis Period (min)	15		

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Vol, veh/h	386	4	9	852	28	22
Future Vol, veh/h	386	4	9	852	28	22
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	2	2	2	2
Mvmt Flow	420	4	10	926	30	24

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	425	0	1368	423
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	946	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1134	-	162	631
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	378	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1133	-	160	630
Mov Cap-2 Maneuver	-	-	-	-	283	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	374	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.09	16.27
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	374	-	-	1133	-
HCM Lane V/C Ratio	0.145	-	-	0.009	-
HCM Control Delay (s/veh)	16.3	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	46	13	0
Future Volume (Veh/h)	0	0	0	46	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	50	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	64	14	14			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64	14	14			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	942	1066	1604			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	50	14			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1604	1700			
Volume to Capacity	0.00	0.00	0.01			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	6.7%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM 7th TWSC
8: SW 108th Ave & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	0	0	0	46	13	0
Future Vol, veh/h	0	0	0	46	13	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	0	0	0	50	14	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	64	14	14	0	0
Stage 1	14	-	-	-	-
Stage 2	50	-	-	-	-
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	942	1066	1604	-	-
Stage 1	1009	-	-	-	-
Stage 2	972	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	942	1066	1604	-	-
Mov Cap-2 Maneuver	942	-	-	-	-
Stage 1	1009	-	-	-	-
Stage 2	972	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	40	48	0
Future Volume (Veh/h)	0	0	0	40	48	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	43	52	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	95	52	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	95	52	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	905	1016	1554			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	43	52			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1554	1700			
Volume to Capacity	0.00	0.00	0.03			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	6.7%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM 7th TWSC
 9: SW 108th Ave & South Access

09/20/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	40	48	0
Future Vol, veh/h	0	0	0	40	48	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	0	0	0	43	52	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	96	52	52	0	0
Stage 1	52	-	-	-	-
Stage 2	43	-	-	-	-
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	904	1015	1554	-	-
Stage 1	970	-	-	-	-
Stage 2	979	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	904	1015	1554	-	-
Mov Cap-2 Maneuver	904	-	-	-	-
Stage 1	970	-	-	-	-
Stage 2	979	-	-	-	-

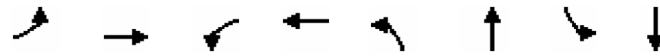
Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1554	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	32	45	264	5	633	40	423
v/c Ratio	0.06	0.08	0.13	0.39	0.01	0.51	0.09	0.29
Control Delay (s/veh)	31.8	15.4	29.9	4.9	11.6	19.2	12.0	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.8	15.4	29.9	4.9	11.6	19.2	12.0	13.7
Queue Length 50th (ft)	6	4	14	1	1	95	6	38
Queue Length 95th (ft)	35	26	60	53	8	234	34	152
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	687	1206	472	1159	642	2531	1050	2587
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.10	0.23	0.01	0.25	0.04	0.16

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	13	16	41	2	238	5	563	13	36	379	6
Future Volume (vph)	19	13	16	41	2	238	5	563	13	36	379	6
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1669		1770	1580		1128	3516		1671	3423	
Flt Permitted	0.95	1.00		0.95	1.00		0.50	1.00		0.31	1.00	
Satd. Flow (perm)	1770	1669		1770	1580		595	3516		542	3423	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	21	14	18	45	2	262	5	619	14	40	416	7
RTOR Reduction (vph)	0	14	0	0	190	0	0	1	0	0	1	0
Lane Group Flow (vph)	21	18	0	45	74	0	5	632	0	40	422	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	2%	2%	6%	2%	50%	2%	60%	2%	15%	8%	5%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	0.9	12.3		3.8	15.2		23.1	19.3		23.1	22.4	
Effective Green, g (s)	1.9	13.3		4.8	16.2		25.1	20.3		23.1	22.4	
Actuated g/C Ratio	0.03	0.22		0.08	0.27		0.42	0.34		0.39	0.38	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	56	374		143	432		267	1205		283	1295	
v/s Ratio Prot	0.01	0.01		c0.03	c0.05		0.00	c0.18		c0.01	c0.12	
v/s Ratio Perm							0.01			0.05		
v/c Ratio	0.38	0.05		0.31	0.17		0.02	0.52		0.14	0.33	
Uniform Delay, d1	28.1	18.0		25.6	16.4		9.9	15.6		11.5	13.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.2	0.1		1.3	0.2		0.0	0.4		0.2	0.1	
Delay (s)	32.2	18.0		26.9	16.6		9.9	16.0		11.7	13.2	
Level of Service	C	B		C	B		A	B		B	B	
Approach Delay (s/veh)		23.7			18.1			15.9			13.1	
Approach LOS		C			B			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	19	13	16	41	2	238	5	563	13	36	379	6
Future Volume (veh/h)	19	13	16	41	2	238	5	563	13	36	379	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1870	1159	1870	1011	1870	1678	1781	1826	1648
Adj Flow Rate, veh/h	21	14	18	45	2	262	5	619	14	40	416	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	6	2	50	2	60	2	15	8	5	17
Cap, veh/h	92	229	294	141	2	327	261	920	21	298	1050	18
Arrive On Green	0.05	0.31	0.29	0.08	0.34	0.32	0.02	0.26	0.24	0.07	0.30	0.30
Sat Flow, veh/h	1781	743	955	1781	7	976	963	3552	80	1697	3491	59
Grp Volume(v), veh/h	21	0	32	45	0	264	5	310	323	40	207	216
Grp Sat Flow(s),veh/h/ln	1781	0	1698	1781	0	983	963	1777	1855	1697	1735	1815
Q Serve(g_s), s	0.7	0.0	0.8	1.4	0.0	14.5	0.2	9.2	9.2	1.0	5.6	5.6
Cycle Q Clear(g_c), s	0.7	0.0	0.8	1.4	0.0	14.5	0.2	9.2	9.2	1.0	5.6	5.6
Prop In Lane	1.00		0.56	1.00		0.99	1.00		0.04	1.00		0.03
Lane Grp Cap(c), veh/h	92	0	523	141	0	330	261	460	481	298	522	546
V/C Ratio(X)	0.23	0.00	0.06	0.32	0.00	0.80	0.02	0.67	0.67	0.13	0.40	0.40
Avail Cap(c_a), veh/h	484	0	894	333	0	518	581	935	977	907	1178	1233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	14.6	25.6	0.0	18.3	13.1	19.6	19.6	15.2	16.3	16.4
Incr Delay (d2), s/veh	1.3	0.0	0.0	1.3	0.0	4.8	0.0	1.7	1.6	0.2	0.5	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	0.6	0.0	3.3	0.0	3.4	3.6	0.3	1.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.1	0.0	14.6	26.9	0.0	23.1	13.1	21.3	21.2	15.4	16.8	16.8
LnGrp LOS	C		B	C		C	B	C	C	B	B	B
Approach Vol, veh/h		53			309			638			463	
Approach Delay, s/veh		19.9			23.6			21.2			16.7	
Approach LOS		B			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	19.3	8.6	22.1	5.4	22.7	7.0	23.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	3.0	11.2	3.4	2.8	2.2	7.6	2.7	16.5				
Green Ext Time (p_c), s	0.1	2.9	0.0	0.2	0.0	2.0	0.0	2.4				

Intersection Summary												
HCM 7th Control Delay, s/veh				20.2								
HCM 7th LOS				C								

Notes
 User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	37	9	15	260	2	20	3	8	0	2	13
Future Volume (vph)	6	37	9	15	260	2	20	3	8	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	8	50	12	20	351	3	27	4	11	0	3	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	70	374	42	21
Volume Left (vph)	8	20	27	0
Volume Right (vph)	12	3	11	18
Hadj (s)	0.02	0.04	0.14	-0.48
Departure Headway (s)	4.5	4.2	5.1	4.5
Degree Utilization, x	0.09	0.43	0.06	0.03
Capacity (veh/h)	780	840	652	722
Control Delay (s/veh)	7.9	10.3	8.4	7.6
Approach Delay (s/veh)	7.9	10.3	8.4	7.6
Approach LOS	A	B	A	A

Intersection Summary			
Delay		9.7	
Level of Service		A	
Intersection Capacity Utilization	31.8%		ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	37	9	15	260	2	20	3	8	0	2	13
Future Vol, veh/h	6	37	9	15	260	2	20	3	8	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	5	11	2	2	2	5	2	25	2	2	2
Mvmt Flow	8	50	12	20	351	3	27	4	11	0	3	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

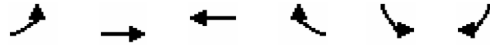
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.8	10.2	8.3	7.6
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	12%	5%	0%
Vol Thru, %	10%	71%	94%	13%
Vol Right, %	26%	17%	1%	87%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	52	277	15
LT Vol	20	6	15	0
Through Vol	3	37	260	2
RT Vol	8	9	2	13
Lane Flow Rate	42	70	374	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.058	0.085	0.426	0.025
Departure Headway (Hd)	4.959	4.377	4.101	4.443
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	726	822	868	809
Service Time	2.964	2.385	2.176	2.449
HCM Lane V/C Ratio	0.058	0.085	0.431	0.025
HCM Control Delay, s/veh	8.3	7.8	10.2	7.6
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.3	2.2	0.1

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	11	33	141	14	75	139
Future Volume (Veh/h)	11	33	141	14	75	139
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	14	43	186	18	99	183
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	204				266	195
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	204				266	195
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	99				86	78
cM capacity (veh/h)	1327				713	846

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	57	204	99	183
Volume Left	14	0	99	0
Volume Right	0	18	0	183
cSH	1327	1700	713	846
Volume to Capacity	0.01	0.12	0.14	0.22
Queue Length 95th (ft)	1	0	12	20
Control Delay (s/veh)	2.0	0.0	10.9	10.4
Lane LOS	A		B	B
Approach Delay (s/veh)	2.0	0.0	10.6	
Approach LOS			B	

Intersection Summary			
Average Delay		5.7	
Intersection Capacity Utilization	23.5%		ICU Level of Service
Analysis Period (min)	15		A

HCM 7th TWSC
 12: SW Leveton Drive & West Access

09/20/2024

Intersection

Int Delay, s/veh 5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	11	33	141	14	75	139
Future Vol, veh/h	11	33	141	14	75	139
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	76	76	76	76	76	76
Heavy Vehicles, %	9	9	2	2	3	2
Mvmt Flow	14	43	186	18	99	183

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	204	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.19	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.281	-	-
Pot Cap-1 Maneuver	1327	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1327	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	EB	WB	SB
HCM Control Delay, s/v	1.94	0	10.58
HCM LOS			B

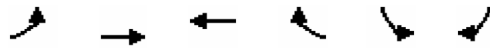
Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	450	-	-	-	712	847
HCM Lane V/C Ratio	0.011	-	-	-	0.139	0.216
HCM Control Delay (s/veh)	7.7	0	-	-	10.9	10.4
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0.8

HCM Unsignalized Intersection Capacity Analysis

13: SW Lave-ton Drive & Center Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	9	109	120	9	23	30
Future Volume (Veh/h)	9	109	120	9	23	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	12	142	156	12	30	39
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	183				343	177
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	183				343	177
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	95
cM capacity (veh/h)	1372				638	854

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	154	168	30	39
Volume Left	12	0	30	0
Volume Right	0	12	0	39
cSH	1372	1700	638	854
Volume to Capacity	0.01	0.10	0.05	0.05
Queue Length 95th (ft)	1	0	4	4
Control Delay (s/veh)	0.7	0.0	10.9	9.4
Lane LOS	A		B	A
Approach Delay (s/veh)	0.7	0.0	10.1	
Approach LOS			B	

Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		23.2%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
 13: SW Leveton Drive & Center Access

09/20/2024

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	9	109	120	9	23	30
Future Vol, veh/h	9	109	120	9	23	30
Conflicting Peds, #/hr	15	0	0	15	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	77	77	77	77	77	77
Heavy Vehicles, %	2	5	2	2	2	2
Mvmt Flow	12	142	156	12	30	39

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	183	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1393	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1373	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.58	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	137	-	-	-	630	854
HCM Lane V/C Ratio	0.009	-	-	-	0.047	0.046
HCM Control Delay (s/veh)	7.6	0	-	-	11	9.4
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

HCM Unsignalized Intersection Capacity Analysis
 14: Calmax Technology Access/East Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	134	0	0	73	2	4	0	1	33	0	33
Future Volume (Veh/h)	0	134	0	0	73	2	4	0	1	33	0	33
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	179	0	0	97	3	5	0	1	44	0	44
Pedestrians								4			15	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	115			183			326	298	183	294	297	114
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115			183			326	298	183	294	297	114
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	93	100	95
cM capacity (veh/h)	1453			1387			587	603	856	640	604	926
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	179	100	6	88								
Volume Left	0	0	5	44								
Volume Right	0	3	1	44								
cSH	1453	1387	620	757								
Volume to Capacity	0.00	0.00	0.01	0.12								
Queue Length 95th (ft)	0	0	1	10								
Control Delay (s/veh)	0.0	0.0	10.9	10.4								
Lane LOS			B	B								
Approach Delay (s/veh)	0.0	0.0	10.9	10.4								
Approach LOS			B	B								
Intersection Summary												
Average Delay			2.6									
Intersection Capacity Utilization			18.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	134	0	0	73	2	4	0	1	33	0	33
Future Vol, veh/h	0	134	0	0	73	2	4	0	1	33	0	33
Conflicting Peds, #/hr	15	0	4	4	0	15	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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	0	179	0	0	97	3	5	0	1	44	0	44

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	115	0	0	183
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1474	-	-	1392
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1453	-	-	1387
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	10.41	10.33
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	1453	-	-	1387	-	-	763
HCM Lane V/C Ratio	0.01	-	-	-	-	-	-	0.115
HCM Control Delay (s/veh)	10.4	0	-	-	0	-	-	10.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

HCM Unsignalized Intersection Capacity Analysis

15: SW 108th Ave & SW Leveton Drive

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	169	30	23	30	18
Future Volume (Veh/h)	17	169	30	23	30	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	22	219	39	30	39	23
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	861					
pX, platoon unblocked						
vC, conflicting volume	160	52	63			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	160	52	63			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	97	78	97			
cM capacity (veh/h)	801	1015	1532			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	241	69	62			
Volume Left	22	39	0			
Volume Right	219	0	23			
cSH	991	1532	1700			
Volume to Capacity	0.24	0.03	0.04			
Queue Length 95th (ft)	24	2	0			
Control Delay (s/veh)	9.8	4.3	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.8	4.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			7.1			
Intersection Capacity Utilization			27.6%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	7.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	17	169	30	23	30	18
Future Vol, veh/h	17	169	30	23	30	18
Conflicting Peds, #/hr	0	0	1	0	0	1
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	77	77	77	77	77	77
Heavy Vehicles, %	6	2	3	9	7	2
Mvmt Flow	22	219	39	30	39	23

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	159	52	63	0	0
Stage 1	52	-	-	-	-
Stage 2	108	-	-	-	-
Critical Hdwy	6.46	6.22	4.13	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.227	-	-
Pot Cap-1 Maneuver	822	1016	1533	-	-
Stage 1	961	-	-	-	-
Stage 2	907	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	800	1015	1531	-	-
Mov Cap-2 Maneuver	800	-	-	-	-
Stage 1	935	-	-	-	-
Stage 2	906	-	-	-	-

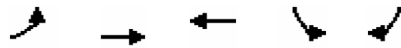
Approach	EB	NB	SB
HCM Control Delay, s/v	9.8	4.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1019	-	991	-	-
HCM Lane V/C Ratio	0.025	-	0.244	-	-
HCM Control Delay (s/veh)	7.4	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Queues

16: SW Herman Road & SW 108th Ave

09/20/2024

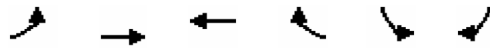


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	8	322	528	204	21
v/c Ratio	0.02	0.37	0.64	0.37	0.04
Control Delay (s/veh)	4.3	8.4	14.3	16.7	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.3	8.4	14.3	16.7	8.4
Queue Length 50th (ft)	1	41	77	31	0
Queue Length 95th (ft)	6	104	274	136	16
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	662	1776	1722	1371	1196
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.18	0.31	0.15	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 16: SW Herman Road & SW 108th Ave

09/20/2024



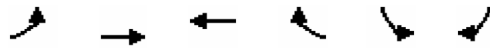
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	296	438	48	188	19
Future Volume (vph)	7	296	438	48	188	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1583	1776	1769		1770	1538
Flt Permitted	0.30	1.00	1.00		0.95	1.00
Satd. Flow (perm)	496	1776	1769		1770	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	322	476	52	204	21
RTOR Reduction (vph)	0	0	4	0	0	15
Lane Group Flow (vph)	8	322	524	0	204	6
Heavy Vehicles (%)	14%	7%	6%	6%	2%	5%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	20.4	25.8	19.8		11.7	11.7
Effective Green, g (s)	23.2	27.2	21.2		14.2	14.2
Actuated g/C Ratio	0.47	0.55	0.43		0.29	0.29
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	276	977	759		508	442
v/s Ratio Prot	0.00	c0.18	c0.30		c0.12	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.03	0.33	0.69		0.40	0.01
Uniform Delay, d1	11.8	6.1	11.4		14.2	12.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	2.7		0.4	0.0
Delay (s)	11.8	6.3	14.2		14.6	12.6
Level of Service	B	A	B		B	B
Approach Delay (s/veh)		6.4	14.2		14.4	
Approach LOS		A	B		B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

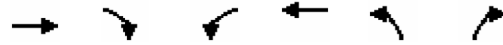
09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶		↶	↷
Traffic Volume (veh/h)	7	296	438	48	188	19
Future Volume (veh/h)	7	296	438	48	188	19
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1693	1796	1811	1811	1870	1826
Adj Flow Rate, veh/h	8	322	476	52	204	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	14	7	6	6	2	5
Cap, veh/h	469	1171	862	94	347	301
Arrive On Green	0.04	0.65	0.54	0.51	0.19	0.19
Sat Flow, veh/h	1612	1796	1604	175	1781	1547
Grp Volume(v), veh/h	8	322	0	528	204	21
Grp Sat Flow(s),veh/h/ln	1612	1796	0	1780	1781	1547
Q Serve(g_s), s	0.0	4.0	0.0	10.2	5.4	0.6
Cycle Q Clear(g_c), s	0.0	4.0	0.0	10.2	5.4	0.6
Prop In Lane	1.00			0.10	1.00	1.00
Lane Grp Cap(c), veh/h	469	1171	0	957	347	301
V/C Ratio(X)	0.02	0.28	0.00	0.55	0.59	0.07
Avail Cap(c_a), veh/h	761	1600	0	2234	1111	965
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	3.9	0.0	8.0	19.1	17.1
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.5	1.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.0	2.8	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	10.2	4.0	0.0	8.5	20.3	17.2
LnGrp LOS	B	A		A	C	B
Approach Vol, veh/h		330	528		225	
Approach Delay, s/veh		4.1	8.5		20.1	
Approach LOS		A	A		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.0		14.2	5.9	32.0
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		6.0		7.4	2.0	12.2
Green Ext Time (p_c), s		7.0		0.5	0.0	14.4
Intersection Summary						
HCM 7th Control Delay, s/veh			9.6			
HCM 7th LOS			A			

HCM Unsignalized Intersection Capacity Analysis
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	338	78	43	709	149	66
Future Volume (Veh/h)	338	78	43	709	149	66
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	371	86	47	779	164	73
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			458		1288	415
vC1, stage 1 conf vol					415	
vC2, stage 2 conf vol					873	
vCu, unblocked vol			458		1288	415
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)					5.4	
tF (s)			2.3		3.5	3.4
p0 queue free %			96		54	88
cM capacity (veh/h)			1076		355	628

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	457	47	779	164	73
Volume Left	0	47	0	164	0
Volume Right	86	0	0	0	73
cSH	1700	1076	1700	355	628
Volume to Capacity	0.27	0.04	0.46	0.46	0.12
Queue Length 95th (ft)	0	3	0	59	10
Control Delay (s/veh)	0.0	8.5	0.0	23.6	11.5
Lane LOS	A		C		B
Approach Delay (s/veh)	0.0	0.5	19.9		
Approach LOS				C	

Intersection Summary					
Average Delay			3.4		
Intersection Capacity Utilization			52.2%	ICU Level of Service	A
Analysis Period (min)	15				

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	12.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	338	78	43	709	149	66
Future Vol, veh/h	338	78	43	709	149	66
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	5	7	2	3	6
Mvmt Flow	371	86	47	779	164	73

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	458	0	1289 415
Stage 1	-	-	-	-	415 -
Stage 2	-	-	-	-	874 -
Critical Hdwy	-	-	4.17	-	6.43 6.26
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.263	-	3.527 3.354
Pot Cap-1 Maneuver	-	-	1077	-	180 629
Stage 1	-	-	-	-	664 -
Stage 2	-	-	-	-	407 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1076	-	172 628
Mov Cap-2 Maneuver	-	-	-	-	172 -
Stage 1	-	-	-	-	663 -
Stage 2	-	-	-	-	389 -

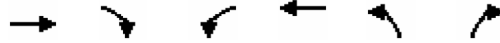
Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.49	80.36
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	172	628	-	-	1076	-
HCM Lane V/C Ratio	0.953	0.115	-	-	0.044	-
HCM Control Delay (s/veh)	110.9	11.5	-	-	8.5	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	7.4	0.4	-	-	0.1	-

HCM Unsignalized Intersection Capacity Analysis

18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (veh/h)	10	12	56	94	235	19
Future Volume (Veh/h)	10	12	56	94	235	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	16	19	88	147	367	30
Pedestrians						37
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						4
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			72		386	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		386	63
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			94		34	97
cM capacity (veh/h)			1444		556	959
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	35	235	397			
Volume Left	0	88	367			
Volume Right	19	0	30			
cSH	1700	1444	574			
Volume to Capacity	0.02	0.06	0.69			
Queue Length 95th (ft)	0	5	135			
Control Delay (s/veh)	0.0	3.2	24.1			
Lane LOS		A	C			
Approach Delay (s/veh)	0.0	3.2	24.1			
Approach LOS			C			
Intersection Summary						
Average Delay			15.5			
Intersection Capacity Utilization			35.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	15.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	12	56	94	235	19
Future Vol, veh/h	10	12	56	94	235	19
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	16	19	88	147	367	30

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	71	0	384 62
Stage 1	-	-	-	-	62 -
Stage 2	-	-	-	-	322 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1498	-	615 995
Stage 1	-	-	-	-	956 -
Stage 2	-	-	-	-	730 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1445	-	554 959
Mov Cap-2 Maneuver	-	-	-	-	554 -
Stage 1	-	-	-	-	922 -
Stage 2	-	-	-	-	682 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.86	24.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	572	-	-	672	-
HCM Lane V/C Ratio	0.694	-	-	0.061	-
HCM Control Delay (s/veh)	24.3	-	-	7.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	5.4	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↘		↕↕
Traffic Volume (veh/h)	0	287	1459	28	0	1726
Future Volume (Veh/h)	0	287	1459	28	0	1726
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	312	1586	30	0	1876
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2525	794			1587	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2525	794			1587	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	23			100	
cM capacity (veh/h)	23	406			409	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	312	793	793	30	938	938
Volume Left	0	0	0	0	0	0
Volume Right	312	0	0	30	0	0
cSH	406	1700	1700	1700	1700	1700
Volume to Capacity	0.77	0.47	0.47	0.02	0.55	0.55
Queue Length 95th (ft)	161	0	0	0	0	0
Control Delay (s/veh)	37.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s/veh)	37.8	0.0			0.0	
Approach LOS	E					

Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization			64.8%		ICU Level of Service	C
Analysis Period (min)			15			

* User Entered Value

HCM 7th TWSC
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024

Intersection

Int Delay, s/veh 6.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Vol, veh/h	0	287	1459	28	0	1726
Future Vol, veh/h	0	287	1459	28	0	1726
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	3	4	2	2
Mvmt Flow	0	312	1586	30	0	1876

Major/Minor

	Minor1	Major1	Major2
Conflicting Flow All	-	793	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.96	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.33	-
Pot Cap-1 Maneuver	0	329	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	329	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s/v	73.33	0	0
HCM LOS	F		

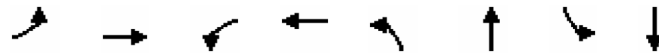
Minor Lane/Major Mvmt

	NBTWBLn1	SBT
Capacity (veh/h)	- 329	-
HCM Lane V/C Ratio	- 0.947	-
HCM Control Delay (s/veh)	- 73.3	-
HCM Lane LOS	- F	-
HCM 95th %tile Q(veh)	- 9.8	-

Queues

20: SW Teton Avenue & SW Herman Road

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	503	48	332	170	219	20	185
v/c Ratio	0.02	0.75	0.17	0.40	0.40	0.36	0.05	0.53
Control Delay (s/veh)	12.5	30.5	13.5	17.7	23.3	27.6	20.6	39.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.5	30.5	13.5	17.7	23.3	27.6	20.6	39.5
Queue Length 50th (ft)	2	216	12	103	61	83	7	86
Queue Length 95th (ft)	9	352	33	214	123	181	23	173
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	600	1136	514	1217	526	1213	601	1133
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.44	0.09	0.27	0.32	0.18	0.03	0.16

Intersection Summary

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	195	207	38	238	27	136	144	31	16	121	27
Future Volume (vph)	6	195	207	38	238	27	136	144	31	16	121	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.98		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1543	1668		1626	1802		1596	1733		1703	1617	
Flt Permitted	0.52	1.00		0.23	1.00		0.46	1.00		0.62	1.00	
Satd. Flow (perm)	841	1668		393	1802		774	1733		1114	1617	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	8	244	259	48	298	34	170	180	39	20	151	34
RTOR Reduction (vph)	0	20	0	0	2	0	0	0	0	0	5	0
Lane Group Flow (vph)	8	483	0	48	330	0	170	219	0	20	180	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	17%	2%	8%	11%	4%	2%	13%	6%	10%	6%	16%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.8	35.0		43.6	38.9		35.8	29.8		22.7	20.7	
Effective Green, g (s)	35.8	35.5		43.6	39.4		35.8	30.3		22.7	21.2	
Actuated g/C Ratio	0.40	0.39		0.48	0.44		0.40	0.33		0.25	0.23	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	338	654		253	784		406	580		292	378	
v/s Ratio Prot	0.00	c0.29		c0.01	c0.18		c0.05	0.13		0.00	c0.11	
v/s Ratio Perm	0.01			0.08			0.11			0.02		
v/c Ratio	0.02	0.74		0.19	0.42		0.42	0.38		0.07	0.48	
Uniform Delay, d1	16.7	23.5		14.9	17.7		18.8	22.9		25.7	29.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	4.4		0.1	0.4		0.3	0.4		0.0	1.0	
Delay (s)	16.7	27.9		15.1	18.1		19.1	23.4		25.7	30.9	
Level of Service	B	C		B	B		B	C		C	C	
Approach Delay (s/veh)		27.8			17.7			21.5			30.4	
Approach LOS		C			B			C			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	195	207	38	238	27	136	144	31	16	121	27
Future Volume (veh/h)	6	195	207	38	238	27	136	144	31	16	121	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1648	1870	1781	1737	1841	1870	1707	1811	1752	1811	1663	1841
Adj Flow Rate, veh/h	8	244	259	48	298	34	170	180	39	20	151	34
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	17	2	8	11	4	2	13	6	10	6	16	4
Cap, veh/h	430	357	379	330	752	86	326	352	76	288	205	46
Arrive On Green	0.01	0.43	0.42	0.04	0.46	0.46	0.11	0.24	0.24	0.02	0.16	0.15
Sat Flow, veh/h	1570	830	881	1654	1622	185	1626	1442	312	1725	1313	296
Grp Volume(v), veh/h	8	0	503	48	0	332	170	0	219	20	0	185
Grp Sat Flow(s),veh/h/ln	1570	0	1712	1654	0	1807	1626	0	1754	1725	0	1608
Q Serve(g_s), s	0.2	0.0	16.5	1.1	0.0	8.4	5.8	0.0	7.5	0.7	0.0	7.6
Cycle Q Clear(g_c), s	0.2	0.0	16.5	1.1	0.0	8.4	5.8	0.0	7.5	0.7	0.0	7.6
Prop In Lane	1.00		0.51	1.00		0.10	1.00		0.18	1.00		0.18
Lane Grp Cap(c), veh/h	430	0	737	330	0	838	326	0	428	288	0	252
V/C Ratio(X)	0.02	0.00	0.68	0.15	0.00	0.40	0.52	0.00	0.51	0.07	0.00	0.74
Avail Cap(c_a), veh/h	866	0	1343	734	0	1392	615	0	1452	745	0	1285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	16.1	12.2	0.0	12.3	20.4	0.0	22.7	24.1	0.0	28.0
Incr Delay (d2), s/veh	0.0	0.0	1.2	0.1	0.0	0.3	0.5	0.0	1.0	0.0	0.0	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.6	0.4	0.0	3.0	2.1	0.0	3.0	0.3	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.5	0.0	17.3	12.2	0.0	12.6	20.9	0.0	23.8	24.1	0.0	32.5
LnGrp LOS	B		B	B		B	C		C	C		C
Approach Vol, veh/h		511			380			389			205	
Approach Delay, s/veh		17.2			12.5			22.5			31.7	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	34.9	11.7	15.9	4.7	37.2	5.6	21.9				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	3.1	18.5	7.8	9.6	2.2	10.4	2.7	9.5				
Green Ext Time (p_c), s	0.0	10.9	0.2	0.7	0.0	7.7	0.1	3.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			19.4									
HCM 7th LOS			B									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	193	340	365	1564	1552	327
v/c Ratio	0.96	0.81	0.95	0.53	0.78	0.34
Control Delay (s/veh)	113.7	27.6	87.7	4.5	32.1	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	113.7	27.6	87.7	4.5	32.1	7.3
Queue Length 50th (ft)	178	49	329	184	745	54
Queue Length 95th (ft)	#334	#200	#522	217	m834	m79
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	202	421	391	2932	1999	969
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.81	0.93	0.53	0.78	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	178	313	336	1439	0	1428	301
Future Volume (vph)	178	313	336	1439	0	1428	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1770	1493	1770	3539		3438	1509
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1770	1493	1770	3539		3438	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	340	365	1564	0	1552	327
RTOR Reduction (vph)	0	251	0	0	0	0	92
Lane Group Flow (vph)	193	89	365	1564	0	1552	235
Confl. Peds. (#/hr)		21	9				9
Heavy Vehicles (%)	2%	5%	2%	2%	2%	5%	2%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	15.0	15.0	29.1	114.0		79.4	79.4
Effective Green, g (s)	16.0	16.0	30.6	116.0		81.4	81.4
Actuated g/C Ratio	0.11	0.11	0.22	0.83		0.58	0.58
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	202	170	386	2932		1998	877
v/s Ratio Prot	c0.11		c0.21	0.44		c0.45	
v/s Ratio Perm		0.06					0.16
v/c Ratio	0.96	0.53	0.95	0.53		0.78	0.27
Uniform Delay, d1	61.6	58.4	53.9	3.7		22.4	14.5
Progression Factor	1.00	1.00	1.00	1.00		1.32	1.39
Incremental Delay, d2	50.2	2.2	31.7	0.7		2.0	0.5
Delay (s)	111.8	60.7	85.6	4.4		31.5	20.7
Level of Service	F	E	F	A		C	C
Approach Delay (s/veh)	79.2			19.8		29.6	
Approach LOS	E			B		C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	178	313	336	1439	0	1428	301
Future Volume (veh/h)	178	313	336	1439	0	1428	301
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1870		1826	1870
Adj Flow Rate, veh/h	193	340	365	1564		1552	327
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	2	5	2	2		5	2
Cap, veh/h	204	177	394	2944		2007	910
Arrive On Green	0.11	0.11	0.22	0.83		1.00	1.00
Sat Flow, veh/h	1781	1547	1781	3647		3561	1573
Grp Volume(v), veh/h	193	340	365	1564		1552	327
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1777		1735	1573
Q Serve(g_s), s	15.1	16.0	28.1	18.9		0.0	0.0
Cycle Q Clear(g_c), s	15.1	16.0	28.1	18.9		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	204	177	394	2944		2007	910
V/C Ratio(X)	0.95	1.92	0.93	0.53		0.77	0.36
Avail Cap(c_a), veh/h	204	177	394	2944		2007	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00		2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		0.54	0.54
Uniform Delay (d), s/veh	61.6	62.0	53.4	3.7		0.0	0.0
Incr Delay (d2), s/veh	48.1	435.4	27.2	0.7		1.6	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	34.4	15.2	4.6		0.5	0.2
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	109.7	497.4	80.6	4.4		1.6	0.6
LnGrp LOS	F	F	F	A		A	A
Approach Vol, veh/h	533			1929		1879	
Approach Delay, s/veh	357.0			18.8		1.4	
Approach LOS	F			B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		120.0		20.0	35.0	85.0	
Change Period (Y+Rc), s		6.0		5.0	5.5	6.0	
Max Green Setting (Gmax), s		94.0		15.0	29.5	79.0	
Max Q Clear Time (g_c+I1), s		20.9		18.0	30.1	2.0	
Green Ext Time (p_c), s		64.1		0.0	0.0	64.4	

Intersection Summary	
HCM 7th Control Delay, s/veh	52.8
HCM 7th LOS	D

Notes
 User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	173	314	317	407	133	1191	236	469	1159	22
v/c Ratio	0.50	0.92	0.92	0.68	0.82	0.86	0.24	0.88	0.74	0.03
Control Delay (s/veh)	42.0	86.5	85.9	13.8	93.0	40.9	2.8	76.8	34.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.0	86.5	85.9	13.8	93.0	40.9	2.8	76.8	34.8	0.0
Queue Length 50th (ft)	48	295	298	32	121	435	12	216	453	0
Queue Length 95th (ft)	88	#490	#492	148	m#213	m514	m33	#298	542	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	390	342	346	601	171	1377	985	556	1573	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.92	0.92	0.68	0.78	0.86	0.24	0.84	0.74	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↖	↖	↖	↕↕	↖	↖↖	↕↕	↖
Traffic Volume (vph)	23	76	64	518	75	383	125	1120	222	441	1089	21
Future Volume (vph)	23	76	64	518	75	383	125	1120	222	441	1089	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3295		1681	1702	1533	1770	3505	1560	3433	3438	1547
Flt Permitted		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3295		1681	1702	1533	1770	3505	1560	3433	3438	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	24	81	68	551	80	407	133	1191	236	469	1159	22
RTOR Reduction (vph)	0	62	0	0	0	290	0	0	60	0	0	12
Lane Group Flow (vph)	0	111	0	314	317	117	133	1191	176	469	1159	10
Confl. Peds. (#/hr)	7					7	1		7	7		1
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	2%	3%	2%	2%	5%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		4	1	6
Permitted Phases						4			2			6
Actuated Green, G (s)		12.2		28.5	28.5	28.5	12.9	55.0	83.5	21.6	64.0	64.0
Effective Green, g (s)		12.2		28.5	28.5	28.5	12.9	55.0	83.5	21.6	64.0	64.0
Actuated g/C Ratio		0.09		0.20	0.20	0.20	0.09	0.39	0.60	0.15	0.46	0.46
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		342	346	312	163	1376	930	529	1571	707
v/s Ratio Prot		c0.03		c0.19	0.19		0.08	c0.34	0.04	c0.14	0.34	
v/s Ratio Perm						0.08			0.07			0.01
v/c Ratio		0.39		0.92	0.92	0.38	0.82	0.87	0.19	0.89	0.74	0.01
Uniform Delay, d1		60.4		54.6	54.6	48.1	62.4	39.1	12.9	58.0	31.1	20.8
Progression Factor		1.00		1.00	1.00	1.00	1.01	0.87	0.88	1.00	1.00	1.00
Incremental Delay, d2		0.5		28.3	27.8	0.4	21.4	6.3	0.0	16.1	3.1	0.0
Delay (s)		60.9		82.9	82.4	48.5	84.2	40.3	11.4	74.1	34.3	20.8
Level of Service		E		F	F	D	F	D	B	E	C	C
Approach Delay (s/veh)		60.9			69.3			39.6			45.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1038	550	1102	781	172	378
v/c Ratio	0.88	0.66	0.80	0.29	0.35	0.28
Control Delay (s/veh)	47.6	10.1	38.1	5.2	23.8	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.6	10.1	38.1	5.2	23.8	15.3
Queue Length 50th (ft)	396	49	361	62	68	144
Queue Length 95th (ft)	#502	170	#694	181	31	194
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1174	837	1372	2676	990	1371
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.66	0.80	0.29	0.17	0.28

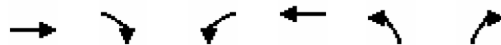
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	934	495	992	703	155	340
Future Volume (vph)	934	495	992	703	155	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1568	3400	3438	3213	2472
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1568	3400	3438	3213	2472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1038	550	1102	781	172	378
RTOR Reduction (vph)	0	302	0	0	0	0
Lane Group Flow (vph)	1038	248	1102	781	172	378
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	5%	3%	3%	5%	9%	15%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	43.6	88.2	19.8	63.4
Effective Green, g (s)	41.0	41.0	45.2	90.2	21.8	58.4
Actuated g/C Ratio	0.34	0.34	0.38	0.75	0.18	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1174	535	1280	2584	583	1203
v/s Ratio Prot	c0.30		c0.32	0.23	c0.05	0.15
v/s Ratio Perm		0.16				
v/c Ratio	0.88	0.46	0.86	0.30	0.30	0.31
Uniform Delay, d1	37.3	30.9	34.5	4.8	42.5	18.7
Progression Factor	1.00	1.00	1.00	1.00	0.51	0.98
Incremental Delay, d2	8.9	1.5	7.7	0.3	0.2	0.1
Delay (s)	46.2	32.4	42.2	5.1	21.7	18.4
Level of Service	D	C	D	A	C	B
Approach Delay (s/veh)	41.4			26.8	19.4	
Approach LOS	D			C	B	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			31.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.80			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	18.6
Intersection Capacity Utilization			93.3%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

09/20/2024

















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	57	223	356	32	747	975
v/c Ratio	0.28	0.18	0.69	0.12	0.64	0.35
Control Delay (s/veh)	48.0	0.8	53.8	13.7	13.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay (s/veh)	48.0	0.8	53.8	13.7	13.4	4.6
Queue Length 50th (ft)	42	0	137	0	80	52
Queue Length 95th (ft)	67	16	173	25	399	180
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	437	1416	1006	498	1170	2771
Starvation Cap Reductn	0	0	0	0	0	749
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.35	0.06	0.64	0.48

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

09/20/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	50	194	310	28	650	848
Future Volume (vph)	50	194	310	28	650	848
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1641	1509	3059	1449	1752	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.35	1.00
Satd. Flow (perm)	1641	1509	3059	1449	645	3438
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	57	223	356	32	747	975
RTOR Reduction (vph)	0	46	0	27	0	0
Lane Group Flow (vph)	57	177	356	5	747	975
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	10%	7%	18%	9%	3%	5%
Turn Type	Perm	pt+ov	NA	Perm	D.P+P	NA
Protected Phases		4 5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	13.8	90.3	19.2	19.2	90.7	95.7
Effective Green, g (s)	14.8	95.3	20.2	20.2	92.7	96.7
Actuated g/C Ratio	0.12	0.79	0.17	0.17	0.77	0.81
Clearance Time (s)	5.0		5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0		4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	202	1198	514	243	1167	2770
v/s Ratio Prot		0.12	c0.12		c0.39	0.28
v/s Ratio Perm	c0.03			0.00	0.11	
v/c Ratio	0.28	0.15	0.69	0.02	0.64	0.35
Uniform Delay, d1	47.8	2.9	47.0	41.7	9.7	3.2
Progression Factor	1.00	1.00	1.00	1.00	0.85	1.00
Incremental Delay, d2	1.0	0.1	4.6	0.1	1.0	0.2
Delay (s)	48.8	3.0	51.6	41.7	9.2	3.4
Level of Service	D	A	D	D	A	A
Approach Delay (s/veh)	12.3		50.8			5.9
Approach LOS	B		D			A

Intersection Summary

HCM 2000 Control Delay (s/veh)	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	706	5	4	226	132	2	1	1	41	2	30
Future Volume (Veh/h)	64	706	5	4	226	132	2	1	1	41	2	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	767	5	4	246	143	2	1	1	45	2	33
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	390			773			1199	1309	771	1235	1240	319
vC1, stage 1 conf vol							911	911		327	327	
vC2, stage 2 conf vol							288	398		909	913	
vCu, unblocked vol	390			773			1199	1309	771	1235	1240	319
tC, single (s)	4.1			4.6			8.1	6.5	7.2	7.2	6.5	6.3
tC, 2 stage (s)							7.1	5.5		6.2	5.5	
tF (s)	2.2			2.7			4.4	4.0	4.2	3.6	4.0	3.4
p0 queue free %	94			99			99	100	100	84	99	95
cM capacity (veh/h)	1162			663			198	300	278	277	306	694
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total	70	772	4	389	2	2	80					
Volume Left	70	0	4	0	2	0	45					
Volume Right	0	5	0	143	0	1	33					
cSH	1162	1700	663	1700	198	288	370					
Volume to Capacity	0.06	0.45	0.01	0.23	0.01	0.01	0.22					
Queue Length 95th (ft)	5	0	0	0	1	1	20					
Control Delay (s/veh)	8.3	0.0	10.5	0.0	23.4	17.6	17.4					
Lane LOS	A		B		C	C	C					
Approach Delay (s/veh)	0.7		0.1		20.5		17.4					
Approach LOS					C		C					
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			61.7%	ICU Level of Service	B							
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↔	↔	
Traffic Vol, veh/h	64	706	5	4	226	132	2	1	1	41	2	30
Future Vol, veh/h	64	706	5	4	226	132	2	1	1	41	2	30
Conflicting Peds, #/hr	1	0	1	1	0	1	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	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	2	40	50	9	7	100	2	100	10	2	14
Mvmt Flow	70	767	5	4	246	143	2	1	1	45	2	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	390	0	0	774	0	0	1166	1309	771	1234	1240	318
Stage 1	-	-	-	-	-	-	910	910	-	327	327	-
Stage 2	-	-	-	-	-	-	255	399	-	907	913	-
Critical Hdwy	4.13	-	-	4.6	-	-	8.1	6.52	7.2	7.2	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Follow-up Hdwy	2.227	-	-	2.65	-	-	4.4	4.018	4.2	3.59	4.018	3.426
Pot Cap-1 Maneuver	1163	-	-	663	-	-	111	159	278	148	175	695
Stage 1	-	-	-	-	-	-	225	353	-	669	648	-
Stage 2	-	-	-	-	-	-	576	602	-	320	352	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1162	-	-	662	-	-	98	148	278	136	163	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	98	148	-	136	163	-
Stage 1	-	-	-	-	-	-	212	332	-	664	643	-
Stage 2	-	-	-	-	-	-	543	598	-	298	331	-

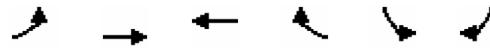
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.69			0.12			33.22			33.24		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	98	193	1162	-	-	662	-	-	205
HCM Lane V/C Ratio	0.022	0.011	0.06	-	-	0.007	-	-	0.387
HCM Control Delay (s/veh)	42.6	23.8	8.3	-	-	10.5	-	-	33.2
HCM Lane LOS	E	C	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.1	0	0.2	-	-	0	-	-	1.7

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↑		↘	
Traffic Volume (veh/h)	5	718	341	10	19	7
Future Volume (Veh/h)	5	718	341	10	19	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	748	355	10	20	7
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	371				1124	366
vC1, stage 1 conf vol					366	
vC2, stage 2 conf vol					758	
vCu, unblocked vol	371				1124	366
tC, single (s)	4.3				6.5	6.2
tC, 2 stage (s)					5.5	
tF (s)	2.4				3.6	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1089				411	675

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	748	365	27
Volume Left	5	0	0	20
Volume Right	0	0	10	7
cSH	1089	1700	1700	457
Volume to Capacity	0.00	0.44	0.21	0.06
Queue Length 95th (ft)	0	0	0	5
Control Delay (s/veh)	8.3	0.0	0.0	13.4
Lane LOS	A			B
Approach Delay (s/veh)	0.1		0.0	13.4
Approach LOS				B

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		47.8%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
5: SW Tualatin Road & SW 112th Avenue

09/20/2024

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	718	341	10	19	7
Future Vol, veh/h	5	718	341	10	19	7
Conflicting Peds, #/hr	6	0	0	6	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	20	3	9	20	6	2
Mvmt Flow	5	748	355	10	20	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	372	0	-	0	1125 366
Stage 1	-	-	-	-	366 -
Stage 2	-	-	-	-	758 -
Critical Hdwy	4.3	-	-	-	6.46 6.22
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.38	-	-	-	3.554 3.318
Pot Cap-1 Maneuver	1094	-	-	-	223 679
Stage 1	-	-	-	-	692 -
Stage 2	-	-	-	-	456 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1088	-	-	-	219 675
Mov Cap-2 Maneuver	-	-	-	-	342 -
Stage 1	-	-	-	-	685 -
Stage 2	-	-	-	-	453 -

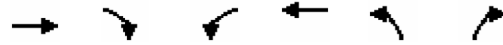
Approach	EB	WB	SB
HCM Control Delay, s/v	0.06	0	14.79
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1088	-	-	-	395
HCM Lane V/C Ratio	0.005	-	-	-	0.069
HCM Control Delay (s/veh)	8.3	-	-	-	14.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩		↩	↩	↩	↩
Traffic Volume (veh/h)	764	30	47	351	4	5
Future Volume (Veh/h)	764	30	47	351	4	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	804	32	49	369	4	5
Pedestrians				1	2	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage veh	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			838	1289		823
vC1, stage 1 conf vol					822	
vC2, stage 2 conf vol					467	
vCu, unblocked vol			838	1289		823
tC, single (s)			4.2	6.4		6.5
tC, 2 stage (s)					5.4	
tF (s)			2.3	3.5		3.6
p0 queue free %			94	99		98
cM capacity (veh/h)			766	372		329
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	836	49	369	9		
Volume Left	0	49	0	4		
Volume Right	32	0	0	5		
cSH	1700	766	1700	347		
Volume to Capacity	0.49	0.06	0.22	0.03		
Queue Length 95th (ft)	0	5	0	2		
Control Delay (s/veh)	0.0	10.0	0.0	15.7		
Lane LOS	B		C			
Approach Delay (s/veh)	0.0	1.2	15.7			
Approach LOS					C	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			52.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	764	30	47	351	4	5
Future Vol, veh/h	764	30	47	351	4	5
Conflicting Peds, #/hr	0	2	2	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	15	9	9	2	33
Mvmt Flow	804	32	49	369	4	5

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	838	0	1290 823
Stage 1	-	-	-	-	822 -
Stage 2	-	-	-	-	468 -
Critical Hdwy	-	-	4.19	-	6.42 6.53
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.281	-	3.518 3.597
Pot Cap-1 Maneuver	-	-	767	-	180 330
Stage 1	-	-	-	-	432 -
Stage 2	-	-	-	-	630 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	766	-	168 329
Mov Cap-2 Maneuver	-	-	-	-	301 -
Stage 1	-	-	-	-	431 -
Stage 2	-	-	-	-	589 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.18	16.74
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	316	-	-	766	-
HCM Lane V/C Ratio	0.03	-	-	0.065	-
HCM Control Delay (s/veh)	16.7	-	-	10	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	16	112	8	68	9
Future Volume (Veh/h)	1	16	112	8	68	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	17	122	9	74	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	332	79	84			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	332	79	84			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	92			
cM capacity (veh/h)	609	981	1513			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	18	131	84			
Volume Left	1	122	0			
Volume Right	17	0	10			
cSH	949	1513	1700			
Volume to Capacity	0.02	0.08	0.05			
Queue Length 95th (ft)	1	7	0			
Control Delay (s/veh)	8.9	7.1	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.9	7.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			23.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
8: SW 108th Ave & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	1	16	112	8	68	9
Future Vol, veh/h	1	16	112	8	68	9
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	10	10	2
Mvmt Flow	1	17	122	9	74	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	331	79	84	0	0
Stage 1	79	-	-	-	-
Stage 2	252	-	-	-	-
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	664	982	1513	-	-
Stage 1	944	-	-	-	-
Stage 2	790	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	610	982	1513	-	-
Mov Cap-2 Maneuver	610	-	-	-	-
Stage 1	868	-	-	-	-
Stage 2	790	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.87	7.08	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1506	-	948	-	-
HCM Lane V/C Ratio	0.08	-	0.019	-	-
HCM Control Delay (s/veh)	7.6	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	34	181	71	9
Future Volume (Veh/h)	1	5	34	181	71	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	5	37	197	77	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	353	82	87			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	353	82	87			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	98			
cM capacity (veh/h)	629	978	1509			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	6	234	87			
Volume Left	1	37	0			
Volume Right	5	0	10			
cSH	895	1509	1700			
Volume to Capacity	0.01	0.02	0.05			
Queue Length 95th (ft)	1	2	0			
Control Delay (s/veh)	9.0	1.4	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.0	1.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			28.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
 9: SW 108th Ave & South Access

09/20/2024

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	5	34	181	71	9
Future Vol, veh/h	1	5	34	181	71	9
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	10	10	2
Mvmt Flow	1	5	37	197	77	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	353	82	87	0	0
Stage 1	82	-	-	-	-
Stage 2	271	-	-	-	-
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	645	978	1509	-	-
Stage 1	941	-	-	-	-
Stage 2	775	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	627	978	1509	-	-
Mov Cap-2 Maneuver	627	-	-	-	-
Stage 1	915	-	-	-	-
Stage 2	775	-	-	-	-

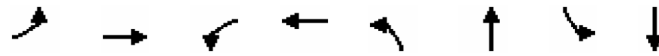
Approach	EB	NB	SB
HCM Control Delay, s/v	9.05	1.18	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	285	-	894	-	-
HCM Lane V/C Ratio	0.024	-	0.007	-	-
HCM Control Delay (s/veh)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	148	13	60	31	395	321	750
v/c Ratio	0.03	0.38	0.07	0.16	0.07	0.47	0.52	0.43
Control Delay (s/veh)	34.0	23.0	33.4	9.6	8.7	21.2	12.2	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.0	23.0	33.4	9.6	8.7	21.2	12.2	13.8
Queue Length 50th (ft)	1	31	3	2	3	39	33	42
Queue Length 95th (ft)	16	115	26	30	25	154	187	260
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	474	1250	244	937	765	2141	953	2643
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.12	0.05	0.06	0.04	0.18	0.34	0.28

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↗	
Traffic Volume (vph)	5	93	33	11	6	45	26	254	82	273	614	24
Future Volume (vph)	5	93	33	11	6	45	26	254	82	273	614	24
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.87		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1504	1757		1128	1487		1612	3004		1768	3374	
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00		0.47	1.00	
Satd. Flow (perm)	1504	1757		1128	1487		528	3004		873	3374	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	109	39	13	7	53	31	299	96	321	722	28
RTOR Reduction (vph)	0	11	0	0	43	0	0	24	0	0	2	0
Lane Group Flow (vph)	6	137	0	13	17	0	31	371	0	321	748	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	20%	2%	9%	60%	17%	10%	12%	18%	6%	2%	6%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	0.8	11.4		1.0	11.6		32.2	19.0		32.2	30.0	
Effective Green, g (s)	1.8	12.4		2.0	12.6		34.2	20.0		32.2	30.0	
Actuated g/C Ratio	0.03	0.19		0.03	0.20		0.53	0.31		0.50	0.46	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	41	337		34	290		333	930		618	1566	
v/s Ratio Prot	0.00	c0.08		c0.01	0.01		0.00	0.12		c0.11	c0.22	
v/s Ratio Perm							0.04			0.15		
v/c Ratio	0.15	0.41		0.38	0.06		0.09	0.40		0.52	0.48	
Uniform Delay, d1	30.7	22.9		30.7	21.2		7.5	17.6		10.0	11.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.8		7.0	0.1		0.1	0.3		0.7	0.2	
Delay (s)	32.3	23.7		37.7	21.3		7.6	17.8		10.7	12.1	
Level of Service	C	C		D	C		A	B		B	B	
Approach Delay (s/veh)		24.0			24.2			17.1			11.7	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	93	33	11	6	45	26	254	82	273	614	24
Future Volume (veh/h)	5	93	33	11	6	45	26	254	82	273	614	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1604	1870	1767	1011	1648	1752	1722	1633	1811	1870	1811	1648
Adj Flow Rate, veh/h	6	109	39	13	7	53	31	299	96	321	722	28
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	20	2	9	60	17	10	12	18	6	2	6	17
Cap, veh/h	49	212	76	43	29	218	396	550	173	602	1277	49
Arrive On Green	0.03	0.16	0.14	0.04	0.17	0.15	0.06	0.24	0.22	0.20	0.38	0.38
Sat Flow, veh/h	1527	1315	471	963	166	1256	1640	2318	729	1781	3377	131
Grp Volume(v), veh/h	6	0	148	13	0	60	31	198	197	321	368	382
Grp Sat Flow(s),veh/h/ln	1527	0	1786	963	0	1422	1640	1552	1496	1781	1721	1787
Q Serve(g_s), s	0.2	0.0	3.6	0.6	0.0	1.8	0.5	5.3	5.5	6.1	8.0	8.0
Cycle Q Clear(g_c), s	0.2	0.0	3.6	0.6	0.0	1.8	0.5	5.3	5.5	6.1	8.0	8.0
Prop In Lane	1.00		0.26	1.00		0.88	1.00		0.49	1.00		0.07
Lane Grp Cap(c), veh/h	49	0	288	43	0	246	396	368	355	602	651	676
V/C Ratio(X)	0.12	0.00	0.51	0.30	0.00	0.24	0.08	0.54	0.55	0.53	0.57	0.57
Avail Cap(c_a), veh/h	517	0	1171	224	0	933	1032	1018	981	1193	1456	1512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	18.3	21.9	0.0	17.3	7.8	15.8	16.1	10.4	11.6	11.6
Incr Delay (d2), s/veh	1.1	0.0	1.4	3.9	0.0	0.5	0.1	1.2	1.4	0.7	0.8	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	1.4	0.2	0.0	0.5	0.1	1.6	1.6	1.7	2.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.3	0.0	19.7	25.8	0.0	17.8	7.9	17.0	17.4	11.1	12.4	12.4
LnGrp LOS	C		B	C		B	A	B	B	B	B	B
Approach Vol, veh/h		154			73			426			1071	
Approach Delay, s/veh		19.8			19.2			16.5			12.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	15.2	6.1	11.6	6.7	22.9	5.5	12.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	8.1	7.5	2.6	5.6	2.5	10.0	2.2	3.8				
Green Ext Time (p_c), s	1.4	1.8	0.0	1.4	0.1	3.9	0.0	0.5				

Intersection Summary

HCM 7th Control Delay, s/veh	14.1
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	381	16	8	46	1	11	3	27	0	2	3
Future Volume (vph)	19	381	16	8	46	1	11	3	27	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	23	459	19	10	55	1	13	4	33	0	2	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	501	66	50	6
Volume Left (vph)	23	10	13	0
Volume Right (vph)	19	1	33	4
Hadj (s)	0.03	0.21	-0.12	-0.01
Departure Headway (s)	4.2	4.8	5.0	5.2
Degree Utilization, x	0.58	0.09	0.07	0.01
Capacity (veh/h)	856	723	640	609
Control Delay (s/veh)	12.7	8.2	8.4	8.3
Approach Delay (s/veh)	12.7	8.2	8.4	8.3
Approach LOS	B	A	A	A

Intersection Summary			
Delay		11.8	
Level of Service		B	
Intersection Capacity Utilization	40.0%		ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	381	16	8	46	1	11	3	27	0	2	3
Future Vol, veh/h	19	381	16	8	46	1	11	3	27	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	19	20	8	100	18	2	13	2	2	33
Mvmt Flow	23	459	19	10	55	1	13	4	33	0	2	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

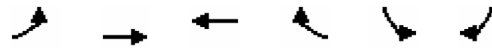
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.4	8.4	8.5	7.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	5%	15%	0%
Vol Thru, %	7%	92%	84%	40%
Vol Right, %	66%	4%	2%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	416	55	5
LT Vol	11	19	8	0
Through Vol	3	381	46	2
RT Vol	27	16	1	3
Lane Flow Rate	49	501	66	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.566	0.09	0.008
Departure Headway (Hd)	5.119	4.066	4.895	4.893
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	703	877	735	734
Service Time	3.124	2.151	2.904	2.902
HCM Lane V/C Ratio	0.07	0.571	0.09	0.008
HCM Control Delay, s/veh	8.5	12.4	8.4	7.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.2	3.6	0.3	0

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	147	248	35	68	7	12
Future Volume (Veh/h)	147	248	35	68	7	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	186	314	44	86	9	15
Pedestrians					4	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	134				777	91
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	134				777	91
tC, single (s)	4.1				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	87				97	98
cM capacity (veh/h)	1445				303	923

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	500	130	9	15
Volume Left	186	0	9	0
Volume Right	0	86	0	15
cSH	1445	1700	303	923
Volume to Capacity	0.13	0.08	0.03	0.02
Queue Length 95th (ft)	11	0	2	1
Control Delay (s/veh)	3.7	0.0	17.2	9.0
Lane LOS	A		C	A
Approach Delay (s/veh)	3.7	0.0	12.1	
Approach LOS			B	

Intersection Summary			
Average Delay		3.3	
Intersection Capacity Utilization		37.9%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
 12: SW Lefevon Drive & West Access

09/20/2024

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	147	248	35	68	7	12
Future Vol, veh/h	147	248	35	68	7	12
Conflicting Peds, #/hr	4	0	0	4	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	79	79	79	79	79	79
Heavy Vehicles, %	2	3	15	4	14	17
Mvmt Flow	186	314	44	86	9	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	134	0	-	0	777 91
Stage 1	-	-	-	-	91 -
Stage 2	-	-	-	-	686 -
Critical Hdwy	4.12	-	-	-	6.54 6.37
Critical Hdwy Stg 1	-	-	-	-	5.54 -
Critical Hdwy Stg 2	-	-	-	-	5.54 -
Follow-up Hdwy	2.218	-	-	-	3.626 3.453
Pot Cap-1 Maneuver	1450	-	-	-	349 926
Stage 1	-	-	-	-	903 -
Stage 2	-	-	-	-	478 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1445	-	-	-	292 923
Mov Cap-2 Maneuver	-	-	-	-	292 -
Stage 1	-	-	-	-	759 -
Stage 2	-	-	-	-	477 -

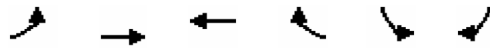
Approach	EB	WB	SB
HCM Control Delay, s/v	2.93	0	12.19
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	670	-	-	-	292	923
HCM Lane V/C Ratio	0.129	-	-	-	0.03	0.016
HCM Control Delay (s/veh)	7.9	0	-	-	17.7	9
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.1

HCM Unsignalized Intersection Capacity Analysis

13: SW Lave-ton Drive & Center Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	28	231	105	25	2	4
Future Volume (Veh/h)	28	231	105	25	2	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	36	296	135	32	3	5
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	182				534	166
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	182				534	166
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				99	99
cM capacity (veh/h)	1373				486	866

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	332	167	3	5
Volume Left	36	0	3	0
Volume Right	0	32	0	5
cSH	1373	1700	486	866
Volume to Capacity	0.03	0.10	0.01	0.01
Queue Length 95th (ft)	2	0	0	0
Control Delay (s/veh)	1.1	0.0	12.4	9.2
Lane LOS	A		B	A
Approach Delay (s/veh)	1.1	0.0	10.4	
Approach LOS			B	

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		36.7%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
 13: SW Lave-ton Drive & Center Access

09/20/2024

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	28	231	105	25	2	4
Future Vol, veh/h	28	231	105	25	2	4
Conflicting Peds, #/hr	15	0	0	15	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, %	2	4	7	4	2	2
Mvmt Flow	36	296	135	32	3	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	182	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1394	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1374	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.83	0	10.32
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	195	-	-	-	477	866
HCM Lane V/C Ratio	0.026	-	-	-	0.005	0.006
HCM Control Delay (s/veh)	7.7	0	-	-	12.6	9.2
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0

HCM Unsignalized Intersection Capacity Analysis

14: Calmax Technology Access/East Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	2	189	28	16	120	2	10	0	5	1	0	2
Future Volume (Veh/h)	2	189	28	16	120	2	10	0	5	1	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	215	32	18	136	2	11	0	6	1	0	2
Pedestrians												17
Lane Width (ft)												12.0
Walking Speed (ft/s)												3.5
Percent Blockage												2
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	155			247			410	426	231	431	441	154
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	155			247			410	426	231	431	441	154
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.6	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	4.0	4.0	3.8
p0 queue free %	100			99			98	100	99	100	100	100
cM capacity (veh/h)	1390			1319			538	504	808	439	495	767
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	249	156	17	3								
Volume Left	2	18	11	1								
Volume Right	32	2	6	2								
cSH	1390	1319	610	614								
Volume to Capacity	0.00	0.01	0.03	0.00								
Queue Length 95th (ft)	0	1	2	0								
Control Delay (s/veh)	0.1	1.0	11.1	10.9								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.1	1.0	11.1	10.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			27.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	189	28	16	120	2	10	0	5	1	0	2
Future Vol, veh/h	2	189	28	16	120	2	10	0	5	1	0	2
Conflicting Peds, #/hr	17	0	0	0	0	17	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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	4	7	2	2	4	6	2	2	2	50	2	50
Mvmt Flow	2	215	32	18	136	2	11	0	6	1	0	2

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	156	0	0	247
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.236	-	-	2.218
Pot Cap-1 Maneuver	1412	-	-	1319
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1389	-	-	1319
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.07	0.9	11.08	10.78
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	610	16	-	-	208	-	-	626
HCM Lane V/C Ratio	0.028	0.002	-	-	0.014	-	-	0.005
HCM Control Delay (s/veh)	11.1	7.6	0	-	7.8	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM Unsignalized Intersection Capacity Analysis
 15: SW 108th Ave & SW Leveton Drive

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	160	59	96	129	35	39
Future Volume (Veh/h)	160	59	96	129	35	39
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	182	67	109	147	40	44
Pedestrians	19			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	2			0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				861		
pX, platoon unblocked						
vC, conflicting volume	447	82	103			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	447	82	103			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	64	93	92			
cM capacity (veh/h)	508	959	1444			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	249	256	84			
Volume Left	182	109	0			
Volume Right	67	0	44			
cSH	581	1444	1700			
Volume to Capacity	0.43	0.08	0.05			
Queue Length 95th (ft)	53	6	0			
Control Delay (s/veh)	15.7	3.6	0.0			
Lane LOS	C	A				
Approach Delay (s/veh)	15.7	3.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			8.2			
Intersection Capacity Utilization			38.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	8.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	160	59	96	129	35	39
Future Vol, veh/h	160	59	96	129	35	39
Conflicting Peds, #/hr	1	1	19	0	0	19
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	88	88	88	88	88	88
Heavy Vehicles, %	7	2	5	21	28	12
Mvmt Flow	182	67	109	147	40	44

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	447	82	103	0	0
Stage 1	81	-	-	-	-
Stage 2	366	-	-	-	-
Critical Hdwy	6.47	6.22	4.15	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.318	2.245	-	-
Pot Cap-1 Maneuver	560	978	1470	-	-
Stage 1	930	-	-	-	-
Stage 2	691	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	496	959	1444	-	-
Mov Cap-2 Maneuver	496	-	-	-	-
Stage 1	838	-	-	-	-
Stage 2	678	-	-	-	-

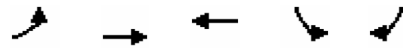
Approach	EB	NB	SB
HCM Control Delay, s/v	16.13	3.28	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	768	-	570	-	-
HCM Lane V/C Ratio	0.076	-	0.437	-	-
HCM Control Delay (s/veh)	7.7	0	16.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.2	-	-

Queues

16: SW Herman Road & SW 108th Ave

09/20/2024



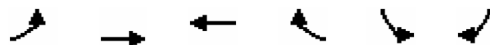
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	16	424	550	69	12
v/c Ratio	0.03	0.40	0.52	0.19	0.03
Control Delay (s/veh)	2.9	6.4	9.0	18.1	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	2.9	6.4	9.0	18.1	10.5
Queue Length 50th (ft)	1	49	59	12	0
Queue Length 95th (ft)	7	105	215	51	11
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	661	1557	1602	1125	1102
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.02	0.27	0.34	0.06	0.01

Intersection Summary

HCM Signalized Intersection Capacity Analysis

16: SW Herman Road & SW 108th Ave

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↘
Traffic Volume (vph)	14	365	242	231	59	10
Future Volume (vph)	14	365	242	231	59	10
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	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1399	1557	1608		1504	1468
Flt Permitted	0.36	1.00	1.00		0.95	1.00
Satd. Flow (perm)	527	1557	1608		1504	1468
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	16	424	281	269	69	12
RTOR Reduction (vph)	0	0	28	0	0	10
Lane Group Flow (vph)	16	424	522	0	69	2
Confl. Peds. (#/hr)	3			3		
Heavy Vehicles (%)	29%	22%	12%	6%	20%	10%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	27.4	32.8	26.7		6.5	6.5
Effective Green, g (s)	30.2	34.2	28.1		9.0	9.0
Actuated g/C Ratio	0.59	0.67	0.55		0.18	0.18
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	346	1040	882		264	258
v/s Ratio Prot	0.00	c0.27	c0.32		c0.05	
v/s Ratio Perm	0.03					0.00
v/c Ratio	0.05	0.41	0.59		0.26	0.01
Uniform Delay, d1	7.4	3.9	7.7		18.2	17.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.3	1.1		0.4	0.0
Delay (s)	7.4	4.1	8.8		18.6	17.4
Level of Service	A	A	A		B	B
Approach Delay (s/veh)		4.3	8.8		18.5	
Approach LOS		A	A		B	

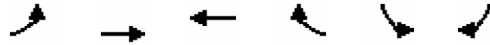
Intersection Summary

HCM 2000 Control Delay (s/veh)	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

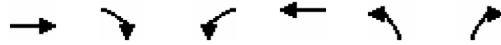
09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	365	242	231	59	10
Future Volume (veh/h)	14	365	242	231	59	10
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1470	1574	1722	1811	1604	1752
Adj Flow Rate, veh/h	16	424	281	269	69	12
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	29	22	12	6	20	10
Cap, veh/h	464	1140	483	462	178	173
Arrive On Green	0.05	0.72	0.60	0.57	0.12	0.12
Sat Flow, veh/h	1400	1574	808	773	1527	1485
Grp Volume(v), veh/h	16	424	0	550	69	12
Grp Sat Flow(s),veh/h/ln	1400	1574	0	1581	1527	1485
Q Serve(g_s), s	0.0	5.1	0.0	11.1	2.1	0.4
Cycle Q Clear(g_c), s	0.0	5.1	0.0	11.1	2.1	0.4
Prop In Lane	1.00			0.49	1.00	1.00
Lane Grp Cap(c), veh/h	464	1140	0	944	178	173
V/C Ratio(X)	0.03	0.37	0.00	0.58	0.39	0.07
Avail Cap(c_a), veh/h	714	1448	0	2050	984	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.5	2.6	0.0	6.5	20.6	19.8
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.6	1.1	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.0	2.4	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.5	2.8	0.0	7.1	21.7	20.0
LnGrp LOS	A	A		A	C	B
Approach Vol, veh/h		440	550		81	
Approach Delay, s/veh		3.0	7.1		21.4	
Approach LOS		A	A		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		40.5		9.9	6.4	34.1
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		7.1		4.1	2.0	13.1
Green Ext Time (p_c), s		9.8		0.2	0.0	15.7
Intersection Summary						
HCM 7th Control Delay, s/veh			6.5			
HCM 7th LOS			A			

HCM Unsignalized Intersection Capacity Analysis
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻		↻	↻	↻	↻
Traffic Volume (veh/h)	621	167	65	319	77	59
Future Volume (Veh/h)	621	167	65	319	77	59
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	654	176	68	336	81	62
Pedestrians						2
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage veh	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			832		1216	744
vC1, stage 1 conf vol					744	
vC2, stage 2 conf vol					472	
vCu, unblocked vol			832		1216	744
tC, single (s)			4.1		6.6	6.4
tC, 2 stage (s)					5.6	
tF (s)			2.2		3.6	3.5
p0 queue free %			91		78	84
cM capacity (veh/h)			786		373	384
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total	830	68	336	81	62	
Volume Left	0	68	0	81	0	
Volume Right	176	0	0	0	62	
cSH	1700	786	1700	373	384	
Volume to Capacity	0.49	0.09	0.20	0.22	0.16	
Queue Length 95th (ft)	0	7	0	20	14	
Control Delay (s/veh)	0.0	10.0	0.0	17.3	16.2	
Lane LOS	B		C		C	
Approach Delay (s/veh)	0.0	1.7		16.8		
Approach LOS					C	
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			60.7%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Vol, veh/h	621	167	65	319	77	59
Future Vol, veh/h	621	167	65	319	77	59
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	3	5	7	15	21
Mvmt Flow	654	176	68	336	81	62

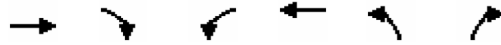
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	831	0	1216	744
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	473	-
Critical Hdwy	-	-	4.15	-	6.55	6.41
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.245	-	3.635	3.489
Pot Cap-1 Maneuver	-	-	788	-	188	385
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	601	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	787	-	171	385
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	549	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.69	31.65
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	171	385	-	-	787	-
HCM Lane V/C Ratio	0.473	0.162	-	-	0.087	-
HCM Control Delay (s/veh)	43.5	16.2	-	-	10	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2.2	0.6	-	-	0.3	-

HCM Unsignalized Intersection Capacity Analysis
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (veh/h)	27	12	46	82	103	110
Future Volume (Veh/h)	27	12	46	82	103	110
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	42	19	72	128	161	172
Pedestrians					37	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					4	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			98			89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			98			89
tC, single (s)			4.2			6.2
tC, 2 stage (s)						
tF (s)			2.3			3.3
p0 queue free %			95			81
cM capacity (veh/h)			1413			928
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	61	200	333			
Volume Left	0	72	161			
Volume Right	19	0	172			
cSH	1700	1413	720			
Volume to Capacity	0.04	0.05	0.46			
Queue Length 95th (ft)	0	4	61			
Control Delay (s/veh)	0.0	3.0	14.2			
Lane LOS			A			B
Approach Delay (s/veh)	0.0	3.0	14.2			
Approach LOS			B			
Intersection Summary						
Average Delay			9.0			
Intersection Capacity Utilization			32.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	8.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	27	12	46	82	103	110
Future Vol, veh/h	27	12	46	82	103	110
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	42	19	72	128	161	172

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	98	0	360 89
Stage 1	-	-	-	-	89 -
Stage 2	-	-	-	-	272 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1464	-	634 961
Stage 1	-	-	-	-	930 -
Stage 2	-	-	-	-	769 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1413	-	579 927
Mov Cap-2 Maneuver	-	-	-	-	579 -
Stage 1	-	-	-	-	897 -
Stage 2	-	-	-	-	727 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.76	14.27
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	718	-	-	647	-
HCM Lane V/C Ratio	0.463	-	-	0.051	-
HCM Control Delay (s/veh)	14.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.5	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↘		↕
Traffic Volume (veh/h)	0	190	1243	19	0	1582
Future Volume (Veh/h)	0	190	1243	19	0	1582
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	216	1412	22	0	1798
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2312	707			1413	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2312	707			1413	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	52			100	
cM capacity (veh/h)	32	452			478	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	216	706	706	22	899	899
Volume Left	0	0	0	0	0	0
Volume Right	216	0	0	22	0	0
cSH	452	1700	1700	1700	1700	1700
Volume to Capacity	0.48	0.42	0.42	0.01	0.53	0.53
Queue Length 95th (ft)	63	0	0	0	0	0
Control Delay (s/veh)	20.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s/veh)	20.0	0.0			0.0	
Approach LOS	C					

Intersection Summary	
Average Delay	1.3
Intersection Capacity Utilization	52.8%
ICU Level of Service	A
Analysis Period (min)	15

* User Entered Value

HCM 7th TWSC
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Vol, veh/h	0	190	1243	19	0	1582
Future Vol, veh/h	0	190	1243	19	0	1582
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	4	8	3	2	10
Mvmt Flow	0	216	1413	22	0	1798

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	706	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.98	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.34	-
Pot Cap-1 Maneuver	0	374	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	374	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

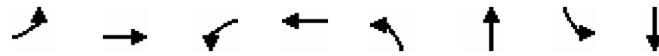
Approach	WB	NB	SB
HCM Control Delay, s/v27.02		0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 374	-
HCM Lane V/C Ratio	- 0.578	-
HCM Control Delay (s/veh)	- 27	-
HCM Lane LOS	- D	-
HCM 95th %tile Q(veh)	- 3.5	-

Queues

20: SW Teton Avenue & SW Herman Road

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	375	21	308	321	126	27	173
v/c Ratio	0.02	0.75	0.07	0.67	0.56	0.21	0.07	0.44
Control Delay (s/veh)	14.8	32.3	15.0	29.0	18.6	21.5	15.5	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.8	32.3	15.0	29.0	18.6	21.5	15.5	32.1
Queue Length 50th (ft)	2	116	5	100	76	36	5	58
Queue Length 95th (ft)	9	305	21	264	219	109	26	166
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	416	1160	545	1028	673	1204	687	1377
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.32	0.04	0.30	0.48	0.10	0.04	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	182	152	19	251	23	286	85	27	24	130	24
Future Volume (vph)	5	182	152	19	251	23	286	85	27	24	130	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1128	1468		1543	1307		1656	1495		1593	1704	
Flt Permitted	0.46	1.00		0.33	1.00		0.50	1.00		0.68	1.00	
Satd. Flow (perm)	548	1468		536	1307		870	1495		1134	1704	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	204	171	21	282	26	321	96	30	27	146	27
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	0	0	5	0
Lane Group Flow (vph)	6	357	0	21	306	0	321	126	0	27	168	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	60%	16%	26%	17%	45%	27%	9%	24%	15%	13%	5%	30%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	24.5	23.7		26.3	24.6		35.6	28.4		21.4	18.2	
Effective Green, g (s)	24.5	24.2		26.3	25.1		35.6	28.9		21.4	18.7	
Actuated g/C Ratio	0.32	0.32		0.35	0.33		0.47	0.38		0.28	0.25	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	182	467		208	431		546	568		338	419	
v/s Ratio Prot	0.00	c0.24		c0.00	0.23		c0.10	0.08		0.00	0.10	
v/s Ratio Perm	0.01			0.03			c0.17			0.02		
v/c Ratio	0.03	0.77		0.10	0.71		0.59	0.22		0.08	0.40	
Uniform Delay, d1	17.7	23.3		17.1	22.3		13.6	15.9		20.0	24.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	7.4		0.1	5.4		1.0	0.2		0.0	0.7	
Delay (s)	17.7	30.8		17.2	27.6		14.6	16.2		20.0	24.7	
Level of Service	B	C		B	C		B	B		B	C	
Approach Delay (s/veh)		30.5			27.0			15.0			24.0	
Approach LOS		C			C			B			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	182	152	19	251	23	286	85	27	24	130	24
Future Volume (veh/h)	5	182	152	19	251	23	286	85	27	24	130	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1011	1663	1515	1648	1233	1500	1767	1544	1678	1707	1826	1455
Adj Flow Rate, veh/h	6	204	171	21	282	26	321	96	30	27	146	27
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	60	16	26	17	45	27	9	24	15	13	5	30
Cap, veh/h	208	302	253	277	420	39	488	355	111	331	239	44
Arrive On Green	0.01	0.36	0.35	0.02	0.38	0.37	0.18	0.31	0.31	0.03	0.16	0.15
Sat Flow, veh/h	963	836	701	1570	1112	103	1682	1127	352	1626	1497	277
Grp Volume(v), veh/h	6	0	375	21	0	308	321	0	126	27	0	173
Grp Sat Flow(s),veh/h/ln	963	0	1537	1570	0	1215	1682	0	1480	1626	0	1774
Q Serve(g_s), s	0.3	0.0	13.8	0.6	0.0	14.1	9.9	0.0	4.3	0.9	0.0	6.1
Cycle Q Clear(g_c), s	0.3	0.0	13.8	0.6	0.0	14.1	9.9	0.0	4.3	0.9	0.0	6.1
Prop In Lane	1.00		0.46	1.00		0.08	1.00		0.24	1.00		0.16
Lane Grp Cap(c), veh/h	208	0	555	277	0	459	488	0	465	331	0	283
V/C Ratio(X)	0.03	0.00	0.68	0.08	0.00	0.67	0.66	0.00	0.27	0.08	0.00	0.61
Avail Cap(c_a), veh/h	489	0	1258	710	0	976	683	0	1278	771	0	1479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	18.1	14.5	0.0	17.3	17.2	0.0	17.1	22.7	0.0	26.1
Incr Delay (d2), s/veh	0.0	0.0	1.6	0.0	0.0	1.9	0.6	0.0	0.3	0.0	0.0	2.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.4	0.2	0.0	3.7	3.5	0.0	1.4	0.3	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.9	0.0	19.6	14.6	0.0	19.1	17.7	0.0	17.5	22.7	0.0	28.4
LnGrp LOS	B		B	B		B	B		B	C		C
Approach Vol, veh/h		381			329			447				200
Approach Delay, s/veh		19.6			18.9			17.7				27.6
Approach LOS		B			B			B				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	29.1	16.3	15.6	4.5	30.1	6.0	25.9				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	2.6	15.8	11.9	8.1	2.3	16.1	2.9	6.3				
Green Ext Time (p_c), s	0.0	7.8	0.4	0.6	0.0	6.9	0.1	1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh			20.0									
HCM 7th LOS			B									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	247	438	139	1490	1323	144
v/c Ratio	0.79	0.97	0.79	0.58	0.63	0.15
Control Delay (s/veh)	73.4	63.4	89.9	8.3	24.2	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.4	63.4	89.9	8.3	24.2	4.1
Queue Length 50th (ft)	216	222	125	275	553	14
Queue Length 95th (ft)	#335	#439	#236	325	637	m26
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	325	463	176	2555	2116	978
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.95	0.79	0.58	0.63	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	⊘	↑↑	↗
Traffic Volume (vph)	222	394	125	1341	0	1191	130
Future Volume (vph)	222	394	125	1341	0	1191	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1752	1555	1543	3343		3406	1499
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1752	1555	1543	3343		3406	1499
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	247	438	139	1490	0	1323	144
RTOR Reduction (vph)	0	176	0	0	0	0	47
Lane Group Flow (vph)	247	262	139	1490	0	1323	97
Confl. Peds. (#/hr)		7					5
Heavy Vehicles (%)	3%	2%	17%	8%	2%	6%	4%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	24.0	24.0	14.5	105.0		85.0	85.0
Effective Green, g (s)	25.0	25.0	16.0	107.0		87.0	87.0
Actuated g/C Ratio	0.18	0.18	0.11	0.76		0.62	0.62
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	312	277	176	2555		2116	931
v/s Ratio Prot	0.14		c0.09	0.45		c0.39	
v/s Ratio Perm		c0.17					0.06
v/c Ratio	0.79	0.95	0.79	0.58		0.63	0.10
Uniform Delay, d1	55.0	56.8	60.4	7.0		16.4	10.7
Progression Factor	1.00	1.00	1.00	1.00		1.37	1.48
Incremental Delay, d2	12.5	39.4	19.6	1.0		1.2	0.2
Delay (s)	67.5	96.3	80.0	8.0		23.6	16.0
Level of Service	E	F	E	A		C	B
Approach Delay (s/veh)	85.9			14.1		22.9	
Approach LOS	F			B		C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	222	394	125	1341	0	1191	130
Future Volume (veh/h)	222	394	125	1341	0	1191	130
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1856	1870	1648	1781		1811	1841
Adj Flow Rate, veh/h	247	438	139	1490		1323	144
Peak Hour Factor	0.90	0.90	0.90	0.90		0.90	0.90
Percent Heavy Veh, %	3	2	17	8		6	4
Cap, veh/h	328	294	179	2575		2114	954
Arrive On Green	0.19	0.19	0.11	0.76		0.82	0.82
Sat Flow, veh/h	1767	1585	1570	3474		3532	1554
Grp Volume(v), veh/h	247	438	139	1490		1323	144
Grp Sat Flow(s),veh/h/ln	1767	1585	1570	1692		1721	1554
Q Serve(g_s), s	18.5	26.0	12.0	26.3		20.2	2.7
Cycle Q Clear(g_c), s	18.5	26.0	12.0	26.3		20.2	2.7
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	328	294	179	2575		2114	954
V/C Ratio(X)	0.75	1.49	0.77	0.58		0.63	0.15
Avail Cap(c_a), veh/h	328	294	179	2575		2114	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00		0.78	0.78
Uniform Delay (d), s/veh	54.0	57.0	60.3	7.2		6.8	5.2
Incr Delay (d2), s/veh	9.0	236.9	17.9	1.0		1.1	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	40.1	5.6	8.0		4.7	0.9
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	63.0	293.9	78.1	8.1		7.9	5.5
LnGrp LOS	E	F	E	A		A	A
Approach Vol, veh/h	685			1629		1467	
Approach Delay, s/veh	210.6			14.1		7.7	
Approach LOS	F			B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		110.5		30.0	20.5	90.0	
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6	
Max Green Setting (Gmax), s		84.0		25.0	14.5	* 84	
Max Q Clear Time (g_c+I1), s		28.3		28.0	14.0	22.2	
Green Ext Time (p_c), s		49.0		0.0	0.0	48.1	

Intersection Summary

HCM 7th Control Delay, s/veh	47.2
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

HCM 7th Signalized Intersection Summary
21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	129	192	190	241	66	1226	386	462	1035	12
v/c Ratio	0.40	0.87	0.84	0.58	0.58	0.81	0.41	0.83	0.54	0.01
Control Delay (s/veh)	44.5	93.2	89.2	12.2	73.3	38.9	7.7	70.5	21.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.5	93.2	89.2	12.2	73.3	38.9	7.7	70.5	21.0	0.0
Queue Length 50th (ft)	40	181	178	0	60	531	120	212	318	0
Queue Length 95th (ft)	74	#318	#310	80	m101	624	177	#290	387	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	349	230	234	423	134	1518	950	556	1924	951
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.83	0.81	0.57	0.49	0.81	0.41	0.83	0.54	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↖	↖	↖	↑↑	↖	↖↖	↑↑	↖
Traffic Volume (vph)	8	72	39	315	37	222	61	1128	355	425	952	11
Future Volume (vph)	8	72	39	315	37	222	61	1128	355	425	952	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3355		1633	1664	1536	1770	3343	1506	3433	3374	1583
Flt Permitted		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3355		1633	1664	1536	1770	3343	1506	3433	3374	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	78	42	342	40	241	66	1226	386	462	1035	12
RTOR Reduction (vph)	0	38	0	0	0	208	0	0	62	0	0	5
Lane Group Flow (vph)	0	91	0	192	190	33	66	1226	324	462	1035	7
Confl. Peds. (#/hr)	4					4			2			
Heavy Vehicles (%)	2%	2%	2%	5%	2%	3%	2%	8%	6%	2%	7%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		4	1	6
Permitted Phases						4			2			6
Actuated Green, G (s)		12.0		19.0	19.0	19.0	7.9	62.5	81.5	23.8	78.7	78.7
Effective Green, g (s)		12.0		19.0	19.0	19.0	7.9	62.5	81.5	23.8	78.7	78.7
Actuated g/C Ratio		0.09		0.14	0.14	0.14	0.06	0.45	0.58	0.17	0.56	0.56
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		221	225	208	99	1492	941	583	1896	889
v/s Ratio Prot		c0.03		c0.12	0.11		0.04	c0.37	0.05	c0.13	0.31	
v/s Ratio Perm						0.02			0.17			0.00
v/c Ratio		0.32		0.87	0.84	0.16	0.67	0.82	0.34	0.79	0.55	0.01
Uniform Delay, d1		60.1		59.3	59.1	53.4	64.8	33.9	15.3	55.7	19.4	13.5
Progression Factor		1.00		1.00	1.00	1.00	0.90	1.04	0.88	1.00	1.00	1.00
Incremental Delay, d2		0.4		27.8	23.5	0.2	10.9	4.2	0.1	7.0	1.1	0.0
Delay (s)		60.5		87.1	82.6	53.6	69.3	39.5	13.6	62.7	20.5	13.5
Level of Service		E		F	F	D	E	D	B	E	C	B
Approach Delay (s/veh)		60.5			72.8			34.7			33.4	
Approach LOS		E			E			C			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

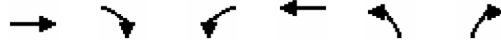
c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	863	228	757	1185	693	802
v/c Ratio	0.71	0.34	0.74	0.51	0.78	0.52
Control Delay (s/veh)	38.4	5.0	43.8	11.1	38.8	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.4	5.0	43.8	11.1	38.8	18.4
Queue Length 50th (ft)	304	0	271	217	250	245
Queue Length 95th (ft)	379	54	#398	315	261	342
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1209	675	1023	2324	1058	1546
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.34	0.74	0.51	0.66	0.52

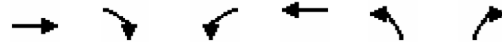
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	811	214	712	1114	651	754
Future Volume (vph)	811	214	712	1114	651	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1538	3400	3438	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1538	3400	3438	3433	2787
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	863	228	757	1185	693	802
RTOR Reduction (vph)	0	150	0	0	0	0
Lane Group Flow (vph)	863	78	757	1185	693	802
Confl. Peds. (#/hr)						1
Heavy Vehicles (%)	2%	5%	3%	5%	2%	2%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	31.3	75.9	32.1	63.4
Effective Green, g (s)	41.0	41.0	32.9	77.9	34.1	58.4
Actuated g/C Ratio	0.34	0.34	0.27	0.65	0.28	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1209	525	932	2231	975	1356
v/s Ratio Prot	c0.24		c0.22	0.34	c0.20	0.29
v/s Ratio Perm		0.05				
v/c Ratio	0.71	0.15	0.81	0.53	0.71	0.59
Uniform Delay, d1	34.4	27.4	40.7	11.3	38.5	22.2
Progression Factor	1.00	1.00	1.00	1.00	0.78	0.96
Incremental Delay, d2	2.7	0.3	7.7	0.9	2.1	0.5
Delay (s)	37.1	27.7	48.3	12.2	32.2	21.9
Level of Service	D	C	D	B	C	C
Approach Delay (s/veh)	35.1			26.3	26.7	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	38	551	887	51	444	517
v/c Ratio	0.20	0.51	0.78	0.10	0.47	0.18
Control Delay (s/veh)	46.4	5.4	41.8	13.2	11.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.4	5.4	41.8	13.2	11.0	3.8
Queue Length 50th (ft)	28	19	316	9	28	17
Queue Length 95th (ft)	51	130	401	38	168	91
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	445	1084	1201	559	945	2931
Starvation Cap Reductn	0	0	0	0	13	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.51	0.74	0.09	0.48	0.18

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	518	834	48	417	486
Future Volume (vph)	36	518	834	48	417	486
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1599	3539	1583	1752	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.12	1.00
Satd. Flow (perm)	1671	1599	3539	1583	225	3374
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	38	551	887	51	444	517
RTOR Reduction (vph)	0	244	0	23	0	0
Lane Group Flow (vph)	38	307	887	28	444	517
Heavy Vehicles (%)	8%	1%	2%	2%	3%	7%
Turn Type	Perm	Over	NA	Perm	D.P+P	NA
Protected Phases		5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	10.1	56.7	37.7	37.7	94.4	99.4
Effective Green, g (s)	11.1	61.7	38.7	38.7	96.4	100.4
Actuated g/C Ratio	0.09	0.51	0.32	0.32	0.80	0.84
Clearance Time (s)	5.0	5.0	5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0	4.0	4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	154	822	1141	510	914	2822
v/s Ratio Prot		0.19	c0.25		c0.23	0.15
v/s Ratio Perm	c0.02			0.02	0.16	
v/c Ratio	0.25	0.37	0.78	0.05	0.49	0.18
Uniform Delay, d1	50.6	17.5	36.8	28.0	15.0	1.9
Progression Factor	1.00	1.00	1.00	1.00	0.53	1.23
Incremental Delay, d2	1.1	1.3	3.8	0.1	0.5	0.1
Delay (s)	51.7	18.8	40.6	28.1	8.5	2.4
Level of Service	D	B	D	C	A	A
Approach Delay (s/veh)	21.0		39.9			5.2
Approach LOS	C		D			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	383	1	4	626	250	0	4	5	21	2	23
Future Volume (Veh/h)	49	383	1	4	626	250	0	4	5	21	2	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	52	403	1	4	659	263	0	4	5	22	2	24
Pedestrians		1										4
Lane Width (ft)		12.0										12.0
Walking Speed (ft/s)		3.5										3.5
Percent Blockage		0										0
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	926			404			1201	1442	404	1317	1311	796
vC1, stage 1 conf vol							508	508		803	803	
vC2, stage 2 conf vol							693	934		514	508	
vCu, unblocked vol	926			404			1201	1442	404	1317	1311	796
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.2	6.5	6.4
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.5
p0 queue free %	93			100			100	98	99	93	99	93
cM capacity (veh/h)	735			1155			306	263	622	309	330	363
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total	52	404	4	922	0	9	48					
Volume Left	52	0	4	0	0	0	22					
Volume Right	0	1	0	263	0	5	24					
cSH	735	1700	1155	1700	1700	388	335					
Volume to Capacity	0.07	0.24	0.00	0.54	0.00	0.02	0.14					
Queue Length 95th (ft)	6	0	0	0	0	2	12					
Control Delay (s/veh)	10.3	0.0	8.1	0.0	0.0	14.5	17.5					
Lane LOS	B		A		A	B	C					
Approach Delay (s/veh)	1.2		0.0		14.5		17.5					
Approach LOS					B		C					
Intersection Summary												
Average Delay			1.1									
Intersection Capacity Utilization			64.5%		ICU Level of Service		C					
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷			↕	
Traffic Vol, veh/h	49	383	1	4	626	250	0	4	5	21	2	23
Future Vol, veh/h	49	383	1	4	626	250	0	4	5	21	2	23
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	3	2	2	2	2	2	2	14	5	2	17
Mvmt Flow	52	403	1	4	659	263	0	4	5	22	2	24

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	926	0	0	404	0	0	1176	1441	404	1311	1310	796
Stage 1	-	-	-	-	-	-	507	507	-	803	803	-
Stage 2	-	-	-	-	-	-	669	935	-	508	507	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.34	7.15	6.52	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.426	3.545	4.018	3.453
Pot Cap-1 Maneuver	738	-	-	1155	-	-	168	132	622	134	159	365
Stage 1	-	-	-	-	-	-	548	539	-	373	396	-
Stage 2	-	-	-	-	-	-	447	344	-	542	539	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	735	-	-	1155	-	-	143	122	622	118	147	363
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	122	-	118	147	-
Stage 1	-	-	-	-	-	-	510	501	-	370	393	-
Stage 2	-	-	-	-	-	-	413	342	-	495	501	-

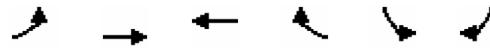
Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	1.16		0.04		22.04		32.02	
HCM LOS					C		D	

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	221	735	-	-	1155	-	-	181
HCM Lane V/C Ratio	-	0.043	0.07	-	-	0.004	-	-	0.268
HCM Control Delay (s/veh)	0	22	10.3	-	-	8.1	-	-	32
HCM Lane LOS		A	C	B	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.1	0.2	-	-	0	-	-	1

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↑		↘	
Traffic Volume (veh/h)	12	405	930	14	8	2
Future Volume (Veh/h)	12	405	930	14	8	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	450	1033	16	9	2
Pedestrians			2		3	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1052				1522	1044
vC1, stage 1 conf vol					1044	
vC2, stage 2 conf vol					478	
vCu, unblocked vol	1052				1522	1044
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	99
cM capacity (veh/h)	660				306	277

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	13	450	1049	11
Volume Left	13	0	0	9
Volume Right	0	0	16	2
cSH	660	1700	1700	300
Volume to Capacity	0.02	0.26	0.62	0.04
Queue Length 95th (ft)	2	0	0	3
Control Delay (s/veh)	10.6	0.0	0.0	17.4
Lane LOS	B			C
Approach Delay (s/veh)	0.3		0.0	17.4
Approach LOS				C

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		59.8%	ICU Level of Service
Analysis Period (min)		15	B

HCM 7th TWSC
 5: SW Tualatin Road & SW 112th Avenue

09/20/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗		↘	
Traffic Vol, veh/h	12	405	930	14	8	2
Future Vol, veh/h	12	405	930	14	8	2
Conflicting Peds, #/hr	3	0	0	3	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	4	2	8	2	2
Mvmt Flow	13	450	1033	16	9	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1052	0	-	0	1523 1044
Stage 1	-	-	-	-	1044 -
Stage 2	-	-	-	-	479 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	662	-	-	-	130 278
Stage 1	-	-	-	-	339 -
Stage 2	-	-	-	-	623 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	660	-	-	-	127 277
Mov Cap-2 Maneuver	-	-	-	-	248 -
Stage 1	-	-	-	-	331 -
Stage 2	-	-	-	-	621 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	19.87
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	660	-	-	-	253
HCM Lane V/C Ratio	0.02	-	-	-	0.044
HCM Control Delay (s/veh)	10.6	-	-	-	19.9
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	
Traffic Volume (veh/h)	398	6	12	878	37	33
Future Volume (Veh/h)	398	6	12	878	37	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	433	7	13	954	40	36
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage (veh)	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			441		1418	438
vC1, stage 1 conf vol					438	
vC2, stage 2 conf vol					980	
vCu, unblocked vol			441		1418	438
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		88	94
cM capacity (veh/h)			1118		328	619

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	440	13	954	76
Volume Left	0	13	0	40
Volume Right	7	0	0	36
cSH	1700	1118	1700	422
Volume to Capacity	0.26	0.01	0.56	0.18
Queue Length 95th (ft)	0	1	0	16
Control Delay (s/veh)	0.0	8.3	0.0	15.4
Lane LOS		A		C
Approach Delay (s/veh)	0.0	0.1		15.4
Approach LOS				C

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization	56.9%		ICU Level of Service
Analysis Period (min)	15		B

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	398	6	12	878	37	33
Future Vol, veh/h	398	6	12	878	37	33
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	2	2	2	2
Mvmt Flow	433	7	13	954	40	36

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	440	0	1417 437
Stage 1	-	-	-	-	437 -
Stage 2	-	-	-	-	980 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1120	-	151 620
Stage 1	-	-	-	-	651 -
Stage 2	-	-	-	-	364 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1119	-	149 619
Mov Cap-2 Maneuver	-	-	-	-	271 -
Stage 1	-	-	-	-	651 -
Stage 2	-	-	-	-	359 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.11	17.27
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	369	-	-	1119	-
HCM Lane V/C Ratio	0.206	-	-	0.012	-
HCM Control Delay (s/veh)	17.3	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	104	21	57	16	2
Future Volume (Veh/h)	8	104	21	57	16	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	113	23	62	17	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126	18	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126	18	19			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	89	99			
cM capacity (veh/h)	856	1061	1597			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	122	85	19			
Volume Left	9	23	0			
Volume Right	113	0	2			
cSH	1042	1597	1700			
Volume to Capacity	0.12	0.01	0.01			
Queue Length 95th (ft)	10	1	0			
Control Delay (s/veh)	8.9	2.1	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.9	2.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			5.6			
Intersection Capacity Utilization			24.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
8: SW 108th Ave & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	8	104	21	57	16	2
Future Vol, veh/h	8	104	21	57	16	2
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	9	113	23	62	17	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	126	18	20	0	0
Stage 1	18	-	-	-	-
Stage 2	108	-	-	-	-
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	869	1060	1597	-	-
Stage 1	1004	-	-	-	-
Stage 2	917	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	856	1060	1597	-	-
Mov Cap-2 Maneuver	856	-	-	-	-
Stage 1	989	-	-	-	-
Stage 2	917	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.91	1.96	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	485	-	1042	-	-
HCM Lane V/C Ratio	0.014	-	0.117	-	-
HCM Control Delay (s/veh)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	32	7	64	154	2
Future Volume (Veh/h)	8	32	7	64	154	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	35	8	70	167	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	254	168	169			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	254	168	169			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	99			
cM capacity (veh/h)	730	876	1409			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	44	78	169			
Volume Left	9	8	0			
Volume Right	35	0	2			
cSH	842	1409	1700			
Volume to Capacity	0.05	0.01	0.10			
Queue Length 95th (ft)	4	0	0			
Control Delay (s/veh)	9.5	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.5	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			19.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
9: SW 108th Ave & South Access

09/20/2024

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	8	32	7	64	154	2
Future Vol, veh/h	8	32	7	64	154	2
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	9	35	8	70	167	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	253	168	170	0	0
Stage 1	168	-	-	-	-
Stage 2	85	-	-	-	-
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	735	876	1408	-	-
Stage 1	861	-	-	-	-
Stage 2	939	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	731	876	1408	-	-
Mov Cap-2 Maneuver	731	-	-	-	-
Stage 1	856	-	-	-	-
Stage 2	939	-	-	-	-

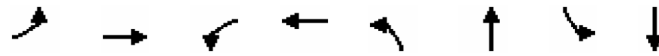
Approach	EB	NB	SB
HCM Control Delay, s/v	9.51	0.75	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	177	-	842	-	-
HCM Lane V/C Ratio	0.005	-	0.052	-	-
HCM Control Delay (s/veh)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	32	78	347	5	712	58	445
v/c Ratio	0.07	0.09	0.22	0.48	0.01	0.54	0.14	0.30
Control Delay (s/veh)	33.5	16.5	31.2	5.2	11.6	19.8	12.1	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.5	16.5	31.2	5.2	11.6	19.8	12.1	13.6
Queue Length 50th (ft)	7	5	26	1	1	115	10	43
Queue Length 95th (ft)	37	27	94	61	8	270	45	158
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	638	1179	438	1167	606	2466	980	2524
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.18	0.30	0.01	0.29	0.06	0.18

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	13	16	71	2	314	5	628	20	53	399	6
Future Volume (vph)	20	13	16	71	2	314	5	628	20	53	399	6
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1669		1770	1581		1128	3506		1671	3424	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.27	1.00	
Satd. Flow (perm)	1770	1669		1770	1581		573	3506		467	3424	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	14	18	78	2	345	5	690	22	58	438	7
RTOR Reduction (vph)	0	15	0	0	251	0	0	2	0	0	1	0
Lane Group Flow (vph)	22	17	0	78	96	0	5	710	0	58	444	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	2%	2%	6%	2%	50%	2%	60%	2%	15%	8%	5%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	0.9	10.0		7.0	16.1		25.5	21.5		25.5	24.8	
Effective Green, g (s)	1.9	11.0		8.0	17.1		27.5	22.5		25.5	24.8	
Actuated g/C Ratio	0.03	0.18		0.13	0.27		0.44	0.36		0.41	0.40	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	53	293		226	432		267	1262		267	1358	
v/s Ratio Prot	0.01	0.01		c0.04	c0.06		0.00	c0.20		c0.01	c0.13	
v/s Ratio Perm							0.01			0.07		
v/c Ratio	0.42	0.06		0.35	0.22		0.02	0.56		0.22	0.33	
Uniform Delay, d1	29.8	21.4		24.9	17.6		9.8	16.1		11.7	13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	0.1		0.9	0.3		0.0	0.6		0.4	0.1	
Delay (s)	35.0	21.5		25.8	17.8		9.9	16.6		12.1	13.2	
Level of Service	C	C		C	B		A	B		B	B	
Approach Delay (s/veh)		27.0			19.3			16.6			13.1	
Approach LOS		C			B			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	20	13	16	71	2	314	5	628	20	53	399	6
Future Volume (veh/h)	20	13	16	71	2	314	5	628	20	53	399	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1870	1159	1870	1011	1870	1678	1781	1826	1648
Adj Flow Rate, veh/h	22	14	18	78	2	345	5	690	22	58	438	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	6	2	50	2	60	2	15	8	5	17
Cap, veh/h	85	258	332	158	2	379	234	921	29	271	1108	18
Arrive On Green	0.05	0.35	0.33	0.09	0.39	0.37	0.02	0.26	0.25	0.07	0.32	0.32
Sat Flow, veh/h	1781	743	955	1781	6	977	963	3514	112	1697	3494	56
Grp Volume(v), veh/h	22	0	32	78	0	347	5	349	363	58	217	228
Grp Sat Flow(s),veh/h/ln	1781	0	1698	1781	0	983	963	1777	1849	1697	1735	1816
Q Serve(g_s), s	0.9	0.0	0.9	3.1	0.0	25.0	0.3	13.5	13.5	1.8	7.3	7.3
Cycle Q Clear(g_c), s	0.9	0.0	0.9	3.1	0.0	25.0	0.3	13.5	13.5	1.8	7.3	7.3
Prop In Lane	1.00		0.56	1.00		0.99	1.00		0.06	1.00		0.03
Lane Grp Cap(c), veh/h	85	0	590	158	0	381	234	466	485	271	550	575
V/C Ratio(X)	0.26	0.00	0.05	0.49	0.00	0.91	0.02	0.75	0.75	0.21	0.40	0.40
Avail Cap(c_a), veh/h	381	0	704	262	0	408	485	737	767	711	928	971
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	0.0	16.4	32.5	0.0	22.1	16.2	25.3	25.4	19.0	19.9	19.9
Incr Delay (d2), s/veh	1.6	0.0	0.0	2.4	0.0	23.2	0.0	2.4	2.4	0.4	0.5	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.3	1.4	0.0	7.6	0.1	5.4	5.6	0.7	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.9	0.0	16.5	34.9	0.0	45.3	16.3	27.8	27.7	19.4	20.4	20.4
LnGrp LOS	D		B	C		D	B	C	C	B	C	C
Approach Vol, veh/h		54			425			717			503	
Approach Delay, s/veh		24.4			43.4			27.7			20.3	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	23.6	10.6	30.0	5.5	28.7	7.6	33.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	3.8	15.5	5.1	2.9	2.3	9.3	2.9	27.0				
Green Ext Time (p_c), s	0.2	3.0	0.1	0.2	0.0	2.1	0.0	1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh				29.3								
HCM 7th LOS				C								

Notes
 User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	61	9	28	366	2	21	3	11	0	2	13
Future Volume (vph)	6	61	9	28	366	2	21	3	11	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	8	82	12	38	495	3	28	4	15	0	3	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	102	536	47	21
Volume Left (vph)	8	38	28	0
Volume Right (vph)	12	3	15	18
Hadj (s)	0.04	0.04	0.12	-0.48
Departure Headway (s)	4.7	4.3	5.5	4.9
Degree Utilization, x	0.13	0.63	0.07	0.03
Capacity (veh/h)	738	831	586	635
Control Delay (s/veh)	8.4	14.3	8.9	8.1
Approach Delay (s/veh)	8.4	14.3	8.9	8.1
Approach LOS	A	B	A	A

Intersection Summary			
Delay		12.9	
Level of Service		B	
Intersection Capacity Utilization	41.9%		ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	61	9	28	366	2	21	3	11	0	2	13
Future Vol, veh/h	6	61	9	28	366	2	21	3	11	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	5	11	2	2	2	5	2	25	2	2	2
Mvmt Flow	8	82	12	38	495	3	28	4	15	0	3	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

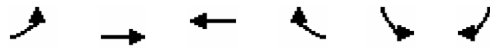
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.3	14.3	8.8	8.1
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	60%	8%	7%	0%
Vol Thru, %	9%	80%	92%	13%
Vol Right, %	31%	12%	1%	87%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	76	396	15
LT Vol	21	6	28	0
Through Vol	3	61	366	2
RT Vol	11	9	2	13
Lane Flow Rate	47	103	535	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.131	0.632	0.028
Departure Headway (Hd)	5.347	4.595	4.251	4.887
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	669	781	856	730
Service Time	3.39	2.624	2.251	2.933
HCM Lane V/C Ratio	0.07	0.132	0.625	0.027
HCM Control Delay, s/veh	8.8	8.3	14.3	8.1
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.4	4.6	0.1

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	11	60	256	14	75	139
Future Volume (Veh/h)	11	60	256	14	75	139
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	14	79	337	18	99	183
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	355				453	346
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	355				453	346
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	99				82	74
cM capacity (veh/h)	1166				556	697

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	93	355	99	183
Volume Left	14	0	99	0
Volume Right	0	18	0	183
cSH	1166	1700	556	697
Volume to Capacity	0.01	0.21	0.18	0.26
Queue Length 95th (ft)	1	0	16	26
Control Delay (s/veh)	1.3	0.0	12.9	12.0
Lane LOS	A		B	B
Approach Delay (s/veh)	1.3	0.0	12.3	
Approach LOS			B	

Intersection Summary			
Average Delay		4.9	
Intersection Capacity Utilization	29.6%		ICU Level of Service
Analysis Period (min)	15		A

HCM 7th TWSC
 12: SW Leveton Drive & West Access

09/20/2024

Intersection

Int Delay, s/veh 4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	11	60	256	14	75	139
Future Vol, veh/h	11	60	256	14	75	139
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	76	76	76	76	76	76
Heavy Vehicles, %	9	9	2	2	3	2
Mvmt Flow	14	79	337	18	99	183

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	355	0	-	0	454 346
Stage 1	-	-	-	-	346 -
Stage 2	-	-	-	-	108 -
Critical Hdwy	4.19	-	-	-	6.43 6.22
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.281	-	-	-	3.527 3.318
Pot Cap-1 Maneuver	1166	-	-	-	562 697
Stage 1	-	-	-	-	714 -
Stage 2	-	-	-	-	914 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1166	-	-	-	555 697
Mov Cap-2 Maneuver	-	-	-	-	555 -
Stage 1	-	-	-	-	705 -
Stage 2	-	-	-	-	914 -

Approach

	EB	WB	SB
HCM Control Delay, s/v	1.26	0	12.31
HCM LOS			B

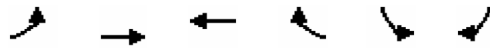
Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	279	-	-	-	555	697
HCM Lane V/C Ratio	0.012	-	-	-	0.178	0.262
HCM Control Delay (s/veh)	8.1	0	-	-	12.9	12
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6	1.1

HCM Unsignalized Intersection Capacity Analysis

13: SW Leveton Drive & Center Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	11	136	227	9	23	38
Future Volume (Veh/h)	11	136	227	9	23	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	14	177	295	12	30	49
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	322				521	316
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	322				521	316
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				94	93
cM capacity (veh/h)	1220				502	714

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	191	307	30	49
Volume Left	14	0	30	0
Volume Right	0	12	0	49
cSH	1220	1700	502	714
Volume to Capacity	0.01	0.18	0.06	0.07
Queue Length 95th (ft)	1	0	5	6
Control Delay (s/veh)	0.7	0.0	12.6	10.4
Lane LOS	A		B	B
Approach Delay (s/veh)	0.7	0.0	11.3	
Approach LOS			B	

Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization	26.2%		ICU Level of Service
Analysis Period (min)	15		A

HCM 7th TWSC
 13: SW Lefevon Drive & Center Access

09/20/2024

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	11	136	227	9	23	38
Future Vol, veh/h	11	136	227	9	23	38
Conflicting Peds, #/hr	15	0	0	15	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	77	77	77	77	77	77
Heavy Vehicles, %	2	5	2	2	2	2
Mvmt Flow	14	177	295	12	30	49

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	321	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1238	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1221	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.6	0	11.29
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	135	-	-	-	495	714
HCM Lane V/C Ratio	0.012	-	-	-	0.06	0.069
HCM Control Delay (s/veh)	8	0	-	-	12.7	10.4
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2

HCM Unsignalized Intersection Capacity Analysis

14: Calmax Technology Access/East Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	154	8	6	188	0	27	0	14	0	0	0
Future Volume (Veh/h)	0	154	8	6	188	0	27	0	14	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	205	11	8	251	0	36	0	19	0	0	0
Pedestrians								4			15	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	266			220			482	497	215	512	502	266
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	266			220			482	497	215	512	502	266
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			93	100	98	100	100	100
cM capacity (veh/h)	1279			1344			484	464	822	447	460	762
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	216	259	55	0								
Volume Left	0	8	36	0								
Volume Right	11	0	19	0								
cSH	1279	1344	564	1700								
Volume to Capacity	0.00	0.01	0.10	0.00								
Queue Length 95th (ft)	0	0	8	0								
Control Delay (s/veh)	0.0	0.3	12.1	0.0								
Lane LOS		A	B	A								
Approach Delay (s/veh)	0.0	0.3	12.1	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			24.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	154	8	6	188	0	27	0	14	0	0	0
Future Vol, veh/h	0	154	8	6	188	0	27	0	14	0	0	0
Conflicting Peds, #/hr	15	0	4	4	0	15	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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	0	205	11	8	251	0	36	0	19	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	266	0	0	220
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1298	-	-	1349
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1280	-	-	1344
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.24	12.01	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	568	1280	-	-	56	-	-	-
HCM Lane V/C Ratio	0.096	-	-	-	0.006	-	-	-
HCM Control Delay (s/veh)	12	0	-	-	7.7	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

HCM Unsignalized Intersection Capacity Analysis
 15: SW 108th Ave & SW Leveton Drive

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	156	34	38	116	133
Future Volume (Veh/h)	32	156	34	38	116	133
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	42	203	44	49	151	173
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	861					
pX, platoon unblocked						
vC, conflicting volume	376	239	325			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	239	325			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	93	75	96			
cM capacity (veh/h)	595	800	1228			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	245	93	324			
Volume Left	42	44	0			
Volume Right	203	0	173			
cSH	755	1228	1700			
Volume to Capacity	0.32	0.04	0.19			
Queue Length 95th (ft)	35	3	0			
Control Delay (s/veh)	12.0	4.0	0.0			
Lane LOS	B	A				
Approach Delay (s/veh)	12.0	4.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			39.6%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	32	156	34	38	116	133
Future Vol, veh/h	32	156	34	38	116	133
Conflicting Peds, #/hr	0	0	1	0	0	1
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	77	77	77	77	77	77
Heavy Vehicles, %	6	2	3	9	7	2
Mvmt Flow	42	203	44	49	151	173

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	376	238	324	0	0
Stage 1	238	-	-	-	-
Stage 2	138	-	-	-	-
Critical Hdwy	6.46	6.22	4.13	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.227	-	-
Pot Cap-1 Maneuver	618	801	1230	-	-
Stage 1	792	-	-	-	-
Stage 2	879	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	594	800	1229	-	-
Mov Cap-2 Maneuver	594	-	-	-	-
Stage 1	762	-	-	-	-
Stage 2	878	-	-	-	-

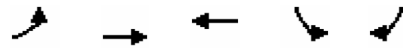
Approach	EB	NB	SB
HCM Control Delay, s/v12.02		3.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	850	-	755	-	-
HCM Lane V/C Ratio	0.036	-	0.323	-	-
HCM Control Delay (s/veh)	8	0	12	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

Queues

16: SW Herman Road & SW 108th Ave

09/20/2024



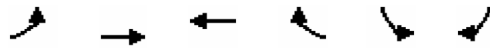
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	8	338	562	284	22
v/c Ratio	0.02	0.40	0.70	0.46	0.04
Control Delay (s/veh)	5.6	9.9	17.3	19.1	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.6	9.9	17.3	19.1	8.6
Queue Length 50th (ft)	1	52	101	54	0
Queue Length 95th (ft)	7	136	344	208	17
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	588	1741	1667	1246	1089
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.19	0.34	0.23	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis

16: SW Herman Road & SW 108th Ave

09/20/2024



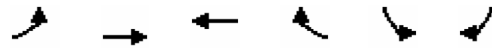
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	311	451	66	261	20
Future Volume (vph)	7	311	451	66	261	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1583	1776	1761		1770	1538
Flt Permitted	0.25	1.00	1.00		0.95	1.00
Satd. Flow (perm)	422	1776	1761		1770	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	338	490	72	284	22
RTOR Reduction (vph)	0	0	5	0	0	15
Lane Group Flow (vph)	8	338	557	0	284	7
Heavy Vehicles (%)	14%	7%	6%	6%	2%	5%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	22.6	28.0	22.0		15.1	15.1
Effective Green, g (s)	25.4	29.4	23.4		17.6	17.6
Actuated g/C Ratio	0.46	0.53	0.43		0.32	0.32
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	237	949	749		566	492
v/s Ratio Prot	0.00	c0.19	c0.32		c0.16	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.03	0.36	0.74		0.50	0.01
Uniform Delay, d1	14.7	7.4	13.3		15.1	12.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	4.0		0.5	0.0
Delay (s)	14.7	7.6	17.3		15.7	12.8
Level of Service	B	A	B		B	B
Approach Delay (s/veh)		7.8	17.3		15.5	
Approach LOS		A	B		B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

09/20/2024

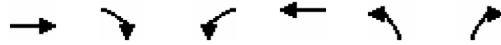


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	311	451	66	261	20
Future Volume (veh/h)	7	311	451	66	261	20
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1693	1796	1811	1811	1870	1826
Adj Flow Rate, veh/h	8	338	490	72	284	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	14	7	6	6	2	5
Cap, veh/h	417	1139	823	121	413	359
Arrive On Green	0.03	0.63	0.53	0.51	0.23	0.23
Sat Flow, veh/h	1612	1796	1543	227	1781	1547
Grp Volume(v), veh/h	8	338	0	562	284	22
Grp Sat Flow(s),veh/h/ln	1612	1796	0	1770	1781	1547
Q Serve(g_s), s	0.0	5.1	0.0	13.0	8.7	0.7
Cycle Q Clear(g_c), s	0.0	5.1	0.0	13.0	8.7	0.7
Prop In Lane	1.00			0.13	1.00	1.00
Lane Grp Cap(c), veh/h	417	1139	0	944	413	359
V/C Ratio(X)	0.02	0.30	0.00	0.60	0.69	0.06
Avail Cap(c_a), veh/h	670	1394	0	1937	968	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	4.9	0.0	9.6	21.0	17.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.6	1.6	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.3	0.0	4.0	3.5	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	12.8	5.1	0.0	10.2	22.6	17.9
LnGrp LOS	B	A		B	C	B
Approach Vol, veh/h		346	562		306	
Approach Delay, s/veh		5.3	10.2		22.3	
Approach LOS		A	B		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		41.9		17.9	6.0	35.9
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		7.1		10.7	2.0	15.0
Green Ext Time (p_c), s		7.4		0.7	0.0	15.5
Intersection Summary						
HCM 7th Control Delay, s/veh			11.9			
HCM 7th LOS			B			

HCM Unsignalized Intersection Capacity Analysis

17: SW Teton Avenue & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	358	80	44	733	153	68
Future Volume (Veh/h)	358	80	44	733	153	68
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	393	88	48	805	168	75
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			482			1339 438
vC1, stage 1 conf vol					438	
vC2, stage 2 conf vol					901	
vCu, unblocked vol			482			1339 438
tC, single (s)			4.2			6.4 6.3
tC, 2 stage (s)					5.4	
tF (s)			2.3			3.5 3.4
p0 queue free %			95			51 88
cM capacity (veh/h)			1054			342 610
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total	481	48	805	168	75	
Volume Left	0	48	0	168	0	
Volume Right	88	0	0	0	75	
cSH	1700	1054	1700	342	610	
Volume to Capacity	0.28	0.05	0.47	0.49	0.12	
Queue Length 95th (ft)	0	4	0	65	10	
Control Delay (s/veh)	0.0	8.6	0.0	25.2	11.7	
Lane LOS	A		D		B	
Approach Delay (s/veh)	0.0	0.5	21.1			
Approach LOS			C			
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			53.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024

Intersection

Int Delay, s/veh 16.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Vol, veh/h	358	80	44	733	153	68
Future Vol, veh/h	358	80	44	733	153	68
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	5	7	2	3	6
Mvmt Flow	393	88	48	805	168	75

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	482
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.17
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.263
Pot Cap-1 Maneuver	-	-	1055
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1054
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.49	103.33
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	159	609	-	-	1054	-
HCM Lane V/C Ratio	1.054	0.123	-	-	0.046	-
HCM Control Delay (s/veh)	144	11.7	-	-	8.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	8.5	0.4	-	-	0.1	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Volume (veh/h)	10	12	58	97	242	20
Future Volume (Veh/h)	10	12	58	97	242	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	16	19	91	152	378	31
Pedestrians						37
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						4
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			72			397
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72			397
tC, single (s)			4.2			6.4
tC, 2 stage (s)						
tF (s)			2.3			3.5
p0 queue free %			94			31
cM capacity (veh/h)			1444			547
						959
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	35	243	409			
Volume Left	0	91	378			
Volume Right	19	0	31			
cSH	1700	1444	565			
Volume to Capacity	0.02	0.06	0.72			
Queue Length 95th (ft)	0	5	150			
Control Delay (s/veh)	0.0	3.2	26.3			
Lane LOS			A			D
Approach Delay (s/veh)	0.0	3.2	26.3			
Approach LOS			D			
Intersection Summary						
Average Delay			16.8			
Intersection Capacity Utilization			36.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	16.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	10	12	58	97	242	20
Future Vol, veh/h	10	12	58	97	242	20
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	16	19	91	152	378	31

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	71	0	395 62
Stage 1	-	-	-	-	62 -
Stage 2	-	-	-	-	333 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1498	-	606 995
Stage 1	-	-	-	-	956 -
Stage 2	-	-	-	-	722 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1445	-	545 959
Mov Cap-2 Maneuver	-	-	-	-	545 -
Stage 1	-	-	-	-	922 -
Stage 2	-	-	-	-	672 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.87	26.53
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	674	-
HCM Lane V/C Ratio	0.727	-	-	0.063	-
HCM Control Delay (s/veh)	26.5	-	-	7.7	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	6.1	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Volume (veh/h)	0	293	1573	29	0	1772
Future Volume (Veh/h)	0	293	1573	29	0	1772
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	318	1710	32	0	1926
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2674	856			1711	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2674	856			1711	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	15			100	
cM capacity (veh/h)	18	375			367	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	318	855	855	32	963	963
Volume Left	0	0	0	0	0	0
Volume Right	318	0	0	32	0	0
cSH	375	1700	1700	1700	1700	1700
Volume to Capacity	0.85	0.50	0.50	0.02	0.57	0.57
Queue Length 95th (ft)	198	0	0	0	0	0
Control Delay (s/veh)	49.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s/veh)	49.7	0.0			0.0	
Approach LOS	E					

Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			68.3%		ICU Level of Service	C
Analysis Period (min)			15			

* User Entered Value

HCM 7th TWSC
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024

Intersection

Int Delay, s/veh 8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	293	1573	29	0	1772
Future Vol, veh/h	0	293	1573	29	0	1772
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	3	4	2	2
Mvmt Flow	0	318	1710	32	0	1926

Major/Minor

	Minor1	Major1	Major2
Conflicting Flow All	-	855	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.96	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.33	-
Pot Cap-1 Maneuver	0 ~ 300	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	- ~ 300	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s/100.34		0	0
HCM LOS	F		

Minor Lane/Major Mvmt

	NBTWBLn1	SBT
Capacity (veh/h)	- 300	-
HCM Lane V/C Ratio	- 1.063	-
HCM Control Delay (s/veh)	- 108.3	-
HCM Lane LOS	- F	-
HCM 95th %tile Q(veh)	- 12.2	-

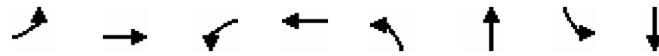
Notes

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

Queues

20: SW Teton Avenue & SW Herman Road

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	605	49	353	188	223	21	191
v/c Ratio	0.02	0.71	0.16	0.35	0.55	0.43	0.07	0.68
Control Delay (s/veh)	12.8	28.6	13.3	16.7	33.5	35.2	25.2	55.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	12.8	28.6	13.3	16.7	33.5	35.2	25.2	55.6
Queue Length 50th (ft)	2	315	14	124	100	122	10	125
Queue Length 95th (ft)	10	475	35	238	141	191	24	188
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	614	851	457	1009	393	916	482	858
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.71	0.11	0.35	0.48	0.24	0.04	0.22

Intersection Summary

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	228	256	39	254	28	150	146	32	17	125	28
Future Volume (vph)	6	228	256	39	254	28	150	146	32	17	125	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1543	1663		1626	1803		1596	1732		1703	1617	
Flt Permitted	0.51	1.00		0.23	1.00		0.37	1.00		0.62	1.00	
Satd. Flow (perm)	826	1663		398	1803		628	1732		1110	1617	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	8	285	320	49	318	35	188	182	40	21	156	35
RTOR Reduction (vph)	0	18	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	8	587	0	49	352	0	188	223	0	21	185	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	17%	2%	8%	11%	4%	2%	13%	6%	10%	6%	16%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	58.2	57.2		66.2	61.2		38.9	32.6		23.1	20.8	
Effective Green, g (s)	58.2	57.7		66.2	61.7		38.9	33.1		23.1	21.3	
Actuated g/C Ratio	0.50	0.50		0.57	0.53		0.34	0.29		0.20	0.18	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	420	826		279	958		327	493		232	296	
v/s Ratio Prot	0.00	c0.35		c0.01	c0.19		c0.07	0.13		0.00	0.11	
v/s Ratio Perm	0.01			0.09			c0.12			0.02		
v/c Ratio	0.02	0.71		0.18	0.37		0.57	0.45		0.09	0.63	
Uniform Delay, d1	14.6	22.7		14.8	15.8		29.6	34.1		37.7	43.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.9		0.1	0.3		1.5	0.7		0.1	4.2	
Delay (s)	14.6	25.7		14.9	16.1		31.2	34.8		37.8	47.9	
Level of Service	B	C		B	B		C	C		D	D	
Approach Delay (s/veh)		25.5			15.9			33.1			46.9	
Approach LOS		C			B			C			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	116.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	228	256	39	254	28	150	146	32	17	125	28
Future Volume (veh/h)	6	228	256	39	254	28	150	146	32	17	125	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1648	1870	1781	1737	1841	1870	1707	1811	1752	1811	1663	1841
Adj Flow Rate, veh/h	8	285	320	49	318	35	188	182	40	21	156	35
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	17	2	8	11	4	2	13	6	10	6	16	4
Cap, veh/h	441	378	424	285	815	90	315	357	78	276	202	45
Arrive On Green	0.01	0.47	0.46	0.04	0.50	0.49	0.12	0.25	0.24	0.02	0.15	0.15
Sat Flow, veh/h	1570	804	903	1654	1629	179	1626	1438	316	1725	1314	295
Grp Volume(v), veh/h	8	0	605	49	0	353	188	0	222	21	0	191
Grp Sat Flow(s),veh/h/ln	1570	0	1708	1654	0	1808	1626	0	1753	1725	0	1609
Q Serve(g_s), s	0.2	0.0	24.1	1.2	0.0	10.0	7.7	0.0	9.0	0.8	0.0	9.4
Cycle Q Clear(g_c), s	0.2	0.0	24.1	1.2	0.0	10.0	7.7	0.0	9.0	0.8	0.0	9.4
Prop In Lane	1.00		0.53	1.00		0.10	1.00		0.18	1.00		0.18
Lane Grp Cap(c), veh/h	441	0	802	285	0	905	315	0	435	276	0	247
V/C Ratio(X)	0.02	0.00	0.75	0.17	0.00	0.39	0.60	0.00	0.51	0.08	0.00	0.77
Avail Cap(c_a), veh/h	805	0	1127	618	0	1172	517	0	1221	654	0	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	18.1	14.1	0.0	12.8	24.5	0.0	26.8	28.8	0.0	33.6
Incr Delay (d2), s/veh	0.0	0.0	2.0	0.1	0.0	0.3	0.7	0.0	1.0	0.0	0.0	5.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	8.6	0.4	0.0	3.7	2.9	0.0	3.7	0.3	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.8	0.0	20.1	14.2	0.0	13.1	25.2	0.0	27.8	28.8	0.0	39.2
LnGrp LOS	B		C	B		B	C		C	C		D
Approach Vol, veh/h		613			402			410				212
Approach Delay, s/veh		20.0			13.3			26.6				38.2
Approach LOS		B			B			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	43.8	13.7	17.7	4.8	46.3	5.9	25.5				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	3.2	26.1	9.7	11.4	2.2	12.0	2.8	11.0				
Green Ext Time (p_c), s	0.0	12.2	0.2	0.7	0.0	8.2	0.1	3.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			22.3									
HCM 7th LOS			C									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	200	352	370	1691	1590	332
v/c Ratio	0.99	0.84	0.95	0.58	0.80	0.34
Control Delay (s/veh)	121.9	32.0	89.1	4.9	32.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	121.9	32.0	89.1	4.9	32.7	7.4
Queue Length 50th (ft)	185	61	335	213	772	56
Queue Length 95th (ft)	#349	#228	#531	250	m854	m81
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	202	419	391	2932	1995	966
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.84	0.95	0.58	0.80	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	184	324	340	1556	0	1463	305
Future Volume (vph)	184	324	340	1556	0	1463	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1770	1493	1770	3539		3438	1509
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1770	1493	1770	3539		3438	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	352	370	1691	0	1590	332
RTOR Reduction (vph)	0	249	0	0	0	0	92
Lane Group Flow (vph)	200	103	370	1691	0	1590	240
Confl. Peds. (#/hr)		21	9				9
Heavy Vehicles (%)	2%	5%	2%	2%	2%	5%	2%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	15.0	15.0	29.3	114.0		79.2	79.2
Effective Green, g (s)	16.0	16.0	30.8	116.0		81.2	81.2
Actuated g/C Ratio	0.11	0.11	0.22	0.83		0.58	0.58
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	202	170	389	2932		1994	875
v/s Ratio Prot	c0.11		c0.21	0.48		c0.46	
v/s Ratio Perm		0.07					0.16
v/c Ratio	0.99	0.61	0.95	0.58		0.80	0.27
Uniform Delay, d1	61.9	59.0	53.9	3.9		23.0	14.7
Progression Factor	1.00	1.00	1.00	1.00		1.30	1.36
Incremental Delay, d2	60.3	5.1	33.0	0.8		2.2	0.5
Delay (s)	122.2	64.1	86.9	4.8		32.0	20.4
Level of Service	F	E	F	A		C	C
Approach Delay (s/veh)	85.2			19.5		30.0	
Approach LOS	F			B		C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	184	324	340	1556	0	1463	305
Future Volume (veh/h)	184	324	340	1556	0	1463	305
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1870		1826	1870
Adj Flow Rate, veh/h	200	352	370	1691		1590	332
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	2	5	2	2		5	2
Cap, veh/h	204	177	394	2944		2007	910
Arrive On Green	0.11	0.11	0.22	0.83		1.00	1.00
Sat Flow, veh/h	1781	1547	1781	3647		3561	1573
Grp Volume(v), veh/h	200	352	370	1691		1590	332
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1777		1735	1573
Q Serve(g_s), s	15.7	16.0	28.6	21.8		0.0	0.0
Cycle Q Clear(g_c), s	15.7	16.0	28.6	21.8		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	204	177	394	2944		2007	910
V/C Ratio(X)	0.98	1.99	0.94	0.57		0.79	0.36
Avail Cap(c_a), veh/h	204	177	394	2944		2007	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00		2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		0.51	0.51
Uniform Delay (d), s/veh	61.9	62.0	53.6	3.9		0.0	0.0
Incr Delay (d2), s/veh	57.8	465.3	29.8	0.8		1.7	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	35.8	15.7	5.3		0.5	0.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	119.6	527.3	83.4	4.7		1.7	0.6
LnGrp LOS	F	F	F	A		A	A
Approach Vol, veh/h	552			2061		1922	
Approach Delay, s/veh	379.6			18.9		1.5	
Approach LOS	F			B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		120.0		20.0	35.0	85.0	
Change Period (Y+Rc), s		6.0		5.0	5.5	6.0	
Max Green Setting (Gmax), s		94.0		15.0	29.5	79.0	
Max Q Clear Time (g_c+I1), s		23.8		18.0	30.6	2.0	
Green Ext Time (p_c), s		64.5		0.0	0.0	65.6	

Intersection Summary

HCM 7th Control Delay, s/veh	55.4
HCM 7th LOS	E

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved ignoring U-Turning movement.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	176	320	322	414	135	1309	247	482	1188	22
v/c Ratio	0.50	0.92	0.92	0.69	0.83	0.96	0.25	0.90	0.76	0.03
Control Delay (s/veh)	42.1	87.2	86.1	14.7	92.4	52.3	3.5	78.3	35.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.1	87.2	86.1	14.7	92.4	52.3	3.5	78.3	35.9	0.0
Queue Length 50th (ft)	49	303	305	40	124	496	16	223	471	0
Queue Length 95th (ft)	88	#504	#505	162	m#219	m#751	m42	#312	562	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	391	346	350	602	171	1361	979	556	1563	764
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.92	0.92	0.69	0.79	0.96	0.25	0.87	0.76	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↖	↖	↖	↕↕	↖	↖↖	↕↕	↖
Traffic Volume (vph)	23	78	65	527	76	389	127	1230	232	453	1117	21
Future Volume (vph)	23	78	65	527	76	389	127	1230	232	453	1117	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3296		1681	1702	1533	1770	3505	1561	3433	3438	1547
Flt Permitted		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3296		1681	1702	1533	1770	3505	1561	3433	3438	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	24	83	69	561	81	414	135	1309	247	482	1188	22
RTOR Reduction (vph)	0	63	0	0	0	287	0	0	58	0	0	12
Lane Group Flow (vph)	0	113	0	320	322	127	135	1309	189	482	1188	10
Confl. Peds. (#/hr)	7					7	1		7	7		1
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	2%	3%	2%	2%	5%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1		6
Permitted Phases						4			2			6
Actuated Green, G (s)		12.2		28.8	28.8	28.8	12.9	54.4	83.2	21.9	63.7	63.7
Effective Green, g (s)		12.2		28.8	28.8	28.8	12.9	54.4	83.2	21.9	63.7	63.7
Actuated g/C Ratio		0.09		0.21	0.21	0.21	0.09	0.39	0.59	0.16	0.46	0.46
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		345	350	315	163	1361	927	537	1564	703
v/s Ratio Prot		c0.03		c0.19	0.19		0.08	c0.37	0.04	c0.14	0.35	
v/s Ratio Perm						0.08			0.08			0.01
v/c Ratio		0.39		0.93	0.92	0.40	0.83	0.96	0.20	0.90	0.76	0.01
Uniform Delay, d1		60.4		54.6	54.5	48.2	62.5	41.8	13.1	57.9	31.8	20.9
Progression Factor		1.00		1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5		30.1	28.6	0.5	22.3	14.3	0.1	17.4	3.5	0.0
Delay (s)		60.9		84.6	83.0	48.7	84.8	51.9	13.2	75.3	35.3	21.0
Level of Service		E		F	F	D	F	D	B	E	D	C
Approach Delay (s/veh)		60.9			70.0			48.9			46.5	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

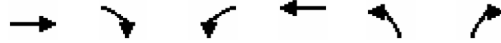
c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1038	574	1136	781	179	381
v/c Ratio	0.88	0.67	0.83	0.29	0.36	0.28
Control Delay (s/veh)	47.6	10.3	39.4	5.2	25.0	15.3
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay (s/veh)	47.6	10.4	39.8	5.2	25.0	15.3
Queue Length 50th (ft)	396	51	378	63	71	143
Queue Length 95th (ft)	#502	179	#723	181	35	193
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1174	851	1369	2674	990	1371
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	5	35	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.68	0.85	0.29	0.18	0.28

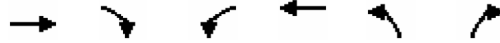
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	934	517	1022	703	161	343
Future Volume (vph)	934	517	1022	703	161	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1568	3400	3438	3213	2472
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1568	3400	3438	3213	2472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1038	574	1136	781	179	381
RTOR Reduction (vph)	0	315	0	0	0	0
Lane Group Flow (vph)	1038	259	1136	781	179	381
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	5%	3%	3%	5%	9%	15%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	43.5	88.1	19.9	63.4
Effective Green, g (s)	41.0	41.0	45.1	90.1	21.9	58.4
Actuated g/C Ratio	0.34	0.34	0.38	0.75	0.18	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1174	535	1277	2581	586	1203
v/s Ratio Prot	c0.30		c0.33	0.23	c0.06	0.15
v/s Ratio Perm		0.16				
v/c Ratio	0.88	0.48	0.89	0.30	0.31	0.32
Uniform Delay, d1	37.3	31.1	35.1	4.8	42.5	18.7
Progression Factor	1.00	1.00	1.00	1.00	0.53	0.98
Incremental Delay, d2	8.9	1.6	9.5	0.3	0.2	0.1
Delay (s)	46.2	32.8	44.6	5.1	22.7	18.4
Level of Service	D	C	D	A	C	B
Approach Delay (s/veh)	41.4			28.5	19.8	
Approach LOS	D			C	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

09/20/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	239	349	53	947	834
v/c Ratio	0.29	0.19	0.68	0.18	0.81	0.30
Control Delay (s/veh)	48.1	0.9	53.0	11.8	19.9	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.1	0.9	53.0	11.8	19.9	4.3
Queue Length 50th (ft)	44	0	135	0	133	42
Queue Length 95th (ft)	68	17	168	32	#847	155
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	437	1415	1006	512	1170	2768
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.17	0.35	0.10	0.81	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	208	304	46	824	726
Future Volume (vph)	51	208	304	46	824	726
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1641	1509	3059	1449	1752	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.36	1.00
Satd. Flow (perm)	1641	1509	3059	1449	664	3438
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	59	239	349	53	947	834
RTOR Reduction (vph)	0	49	0	44	0	0
Lane Group Flow (vph)	59	190	349	9	947	834
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	10%	7%	18%	9%	3%	5%
Turn Type	Perm	pt+ov	NA	Perm	D.P+P	NA
Protected Phases		4 5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	13.9	90.2	19.3	19.3	90.6	95.6
Effective Green, g (s)	14.9	95.2	20.3	20.3	92.6	96.6
Actuated g/C Ratio	0.12	0.79	0.17	0.17	0.77	0.81
Clearance Time (s)	5.0		5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0		4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	203	1197	517	245	1167	2767
v/s Ratio Prot		0.13	0.11		c0.49	0.24
v/s Ratio Perm	c0.04			0.01	c0.14	
v/c Ratio	0.29	0.16	0.68	0.04	0.81	0.30
Uniform Delay, d1	47.7	2.9	46.8	41.7	12.4	3.0
Progression Factor	1.00	1.00	1.00	1.00	0.95	1.03
Incremental Delay, d2	1.1	0.1	4.1	0.1	3.2	0.2
Delay (s)	48.8	3.0	50.9	41.8	15.0	3.3
Level of Service	D	A	D	D	B	A
Approach Delay (s/veh)	12.1		49.7			9.5
Approach LOS	B		D			A

Intersection Summary

HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	706	185	72	226	132	17	4	10	41	2	30
Future Volume (Veh/h)	64	706	185	72	226	132	17	4	10	41	2	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	767	201	78	246	143	18	4	11	45	2	33
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	390			969			1445	1555	869	1395	1584	319
vC1, stage 1 conf vol							1009	1009		475	475	
vC2, stage 2 conf vol							436	546		920	1109	
vCu, unblocked vol	390			969			1445	1555	869	1395	1584	319
tC, single (s)	4.1			4.6			8.1	6.5	7.2	7.2	6.5	6.3
tC, 2 stage (s)							7.1	5.5		6.2	5.5	
tF (s)	2.2			2.7			4.4	4.0	4.2	3.6	4.0	3.4
p0 queue free %	94			86			89	98	95	76	99	95
cM capacity (veh/h)	1162			550			159	244	240	189	180	694

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	70	968	78	389	18	15	80
Volume Left	70	0	78	0	18	0	45
Volume Right	0	201	0	143	0	11	33
cSH	1162	1700	550	1700	159	241	270
Volume to Capacity	0.06	0.57	0.14	0.23	0.11	0.06	0.30
Queue Length 95th (ft)	5	0	12	0	9	5	30
Control Delay (s/veh)	8.3	0.0	12.6	0.0	30.6	20.9	23.9
Lane LOS	A		B		D	C	C
Approach Delay (s/veh)	0.6		2.1		26.2		23.9
Approach LOS					D		C

Intersection Summary

Average Delay		2.7					
Intersection Capacity Utilization		73.3%		ICU Level of Service		D	
Analysis Period (min)		15					

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	64	706	185	72	226	132	17	4	10	41	2	30
Future Vol, veh/h	64	706	185	72	226	132	17	4	10	41	2	30
Conflicting Peds, #/hr	1	0	1	1	0	1	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	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	2	40	50	9	7	100	2	100	10	2	14
Mvmt Flow	70	767	201	78	246	143	18	4	11	45	2	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	390	0	0	969	0	0	1411	1555	869	1384	1584	318
Stage 1	-	-	-	-	-	-	1008	1008	-	475	475	-
Stage 2	-	-	-	-	-	-	403	547	-	909	1109	-
Critical Hdwy	4.13	-	-	4.6	-	-	8.1	6.52	7.2	7.2	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Follow-up Hdwy	2.227	-	-	2.65	-	-	4.4	4.018	4.2	3.59	4.018	3.426
Pot Cap-1 Maneuver	1163	-	-	551	-	-	72	113	240	116	108	695
Stage 1	-	-	-	-	-	-	195	318	-	556	557	-
Stage 2	-	-	-	-	-	-	468	518	-	319	285	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1162	-	-	550	-	-	54	91	240	86	87	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	91	-	86	87	-
Stage 1	-	-	-	-	-	-	183	299	-	476	478	-
Stage 2	-	-	-	-	-	-	381	444	-	282	268	-

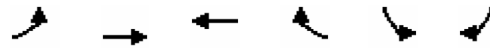
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.56			2.11			69.77			64.65		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	54	163	1162	-	-	550	-	-	134
HCM Lane V/C Ratio	0.342	0.093	0.06	-	-	0.142	-	-	0.591
HCM Control Delay (s/veh)	103.1	29.3	8.3	-	-	12.6	-	-	64.7
HCM Lane LOS	F	D	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.2	0.3	0.2	-	-	0.5	-	-	3

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↑		↘	
Traffic Volume (veh/h)	5	727	409	10	19	7
Future Volume (Veh/h)	5	727	409	10	19	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	757	426	10	20	7
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	442				1204	437
vC1, stage 1 conf vol					437	
vC2, stage 2 conf vol					767	
vCu, unblocked vol	442				1204	437
tC, single (s)	4.3				6.5	6.2
tC, 2 stage (s)					5.5	
tF (s)	2.4				3.6	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1023				396	616

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	757	436	27
Volume Left	5	0	0	20
Volume Right	0	0	10	7
cSH	1023	1700	1700	437
Volume to Capacity	0.00	0.45	0.26	0.06
Queue Length 95th (ft)	0	0	0	5
Control Delay (s/veh)	8.5	0.0	0.0	13.8
Lane LOS	A			B
Approach Delay (s/veh)	0.1		0.0	13.8
Approach LOS				B

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization	48.3%		ICU Level of Service
Analysis Period (min)	15		A

HCM 7th TWSC
5: SW Tualatin Road & SW 112th Avenue

09/20/2024

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗		↘	
Traffic Vol, veh/h	5	727	409	10	19	7
Future Vol, veh/h	5	727	409	10	19	7
Conflicting Peds, #/hr	6	0	0	6	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	20	3	9	20	6	2
Mvmt Flow	5	757	426	10	20	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	442	0	-	0	1205 437
Stage 1	-	-	-	-	437 -
Stage 2	-	-	-	-	768 -
Critical Hdwy	4.3	-	-	-	6.46 6.22
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.38	-	-	-	3.554 3.318
Pot Cap-1 Maneuver	1028	-	-	-	199 619
Stage 1	-	-	-	-	643 -
Stage 2	-	-	-	-	451 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1023	-	-	-	196 616
Mov Cap-2 Maneuver	-	-	-	-	325 -
Stage 1	-	-	-	-	636 -
Stage 2	-	-	-	-	448 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.06	0	15.42
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1023	-	-	-	373
HCM Lane V/C Ratio	0.005	-	-	-	0.073
HCM Control Delay (s/veh)	8.5	-	-	-	15.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	765	38	39	364	59	5
Future Volume (Veh/h)	765	38	39	364	59	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	805	40	41	383	62	5
Pedestrians				1	2	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage veh	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			847	1292		828
vC1, stage 1 conf vol					827	
vC2, stage 2 conf vol					465	
vCu, unblocked vol			847	1292		828
tC, single (s)			4.2	6.4		6.5
tC, 2 stage (s)					5.4	
tF (s)			2.3	3.5		3.6
p0 queue free %			95	83		98
cM capacity (veh/h)			760	372		327

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	845	41	383	67
Volume Left	0	41	0	62
Volume Right	40	0	0	5
cSH	1700	760	1700	368
Volume to Capacity	0.50	0.05	0.23	0.18
Queue Length 95th (ft)	0	4	0	16
Control Delay (s/veh)	0.0	10.0	0.0	17.0
Lane LOS	B		C	
Approach Delay (s/veh)	0.0	1.0	17.0	
Approach LOS	C			

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Vol, veh/h	765	38	39	364	59	5
Future Vol, veh/h	765	38	39	364	59	5
Conflicting Peds, #/hr	0	2	2	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	15	9	9	2	33
Mvmt Flow	805	40	41	383	62	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	847	0	1293	828
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	465	-
Critical Hdwy	-	-	4.19	-	6.42	6.53
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.281	-	3.518	3.597
Pot Cap-1 Maneuver	-	-	761	-	180	328
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	759	-	170	327
Mov Cap-2 Maneuver	-	-	-	-	302	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.97	20.18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	-	-	759	-
HCM Lane V/C Ratio	0.222	-	-	0.054	-
HCM Control Delay (s/veh)	20.2	-	-	10	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	16	112	63	68	9
Future Volume (Veh/h)	1	16	112	63	68	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	17	122	68	74	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	391	79	84			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	391	79	84			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	92			
cM capacity (veh/h)	564	981	1513			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	18	190	84			
Volume Left	1	122	0			
Volume Right	17	0	10			
cSH	943	1513	1700			
Volume to Capacity	0.02	0.08	0.05			
Queue Length 95th (ft)	1	7	0			
Control Delay (s/veh)	8.9	5.1	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.9	5.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			26.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
8: SW 108th Ave & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	1	16	112	63	68	9
Future Vol, veh/h	1	16	112	63	68	9
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	10	10	2
Mvmt Flow	1	17	122	68	74	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	391	79	84	0	0
Stage 1	79	-	-	-	-
Stage 2	312	-	-	-	-
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	613	982	1513	-	-
Stage 1	944	-	-	-	-
Stage 2	742	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	562	982	1513	-	-
Mov Cap-2 Maneuver	562	-	-	-	-
Stage 1	865	-	-	-	-
Stage 2	742	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.91	4.86	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1152	-	940	-	-
HCM Lane V/C Ratio	0.08	-	0.02	-	-
HCM Control Delay (s/veh)	7.6	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	34	236	71	9
Future Volume (Veh/h)	1	5	34	236	71	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	5	37	257	77	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	413	82	87			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	413	82	87			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	98			
cM capacity (veh/h)	581	978	1509			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	6	294	87			
Volume Left	1	37	0			
Volume Right	5	0	10			
cSH	878	1509	1700			
Volume to Capacity	0.01	0.02	0.05			
Queue Length 95th (ft)	1	2	0			
Control Delay (s/veh)	9.1	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.1	1.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			31.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	1	5	34	236	71	9
Future Vol, veh/h	1	5	34	236	71	9
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	10	10	2
Mvmt Flow	1	5	37	257	77	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	413	82	87	0	0
Stage 1	82	-	-	-	-
Stage 2	330	-	-	-	-
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	596	978	1509	-	-
Stage 1	941	-	-	-	-
Stage 2	728	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	579	978	1509	-	-
Mov Cap-2 Maneuver	579	-	-	-	-
Stage 1	914	-	-	-	-
Stage 2	728	-	-	-	-

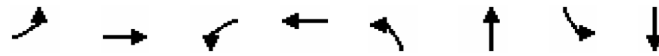
Approach	EB	NB	SB
HCM Control Delay, s/v	9.14	0.94	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	227	-	877	-	-
HCM Lane V/C Ratio	0.024	-	0.007	-	-
HCM Control Delay (s/veh)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	161	14	53	31	409	178	752
v/c Ratio	0.02	0.39	0.07	0.14	0.07	0.45	0.31	0.45
Control Delay (s/veh)	33.2	22.0	32.2	9.4	9.2	18.7	10.6	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.2	22.0	32.2	9.4	9.2	18.7	10.6	14.5
Queue Length 50th (ft)	1	31	3	1	3	39	18	44
Queue Length 95th (ft)	16	119	27	27	25	146	105	263
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	485	1284	250	956	765	2188	963	2696
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.13	0.06	0.06	0.04	0.19	0.18	0.28

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕	↗	↖	↗	
Traffic Volume (vph)	5	104	33	12	6	39	26	272	76	151	615	24
Future Volume (vph)	5	104	33	12	6	39	26	272	76	151	615	24
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1504	1766		1128	1490		1612	3010		1768	3374	
Flt Permitted	0.95	1.00		0.95	1.00		0.31	1.00		0.47	1.00	
Satd. Flow (perm)	1504	1766		1128	1490		519	3010		870	3374	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	122	39	14	7	46	31	320	89	178	724	28
RTOR Reduction (vph)	0	10	0	0	37	0	0	19	0	0	2	0
Lane Group Flow (vph)	6	151	0	14	16	0	31	390	0	178	750	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	20%	2%	9%	60%	17%	10%	12%	18%	6%	2%	6%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	0.8	11.7		1.0	11.9		30.6	20.1		30.6	28.4	
Effective Green, g (s)	1.8	12.7		2.0	12.9		32.6	21.1		30.6	28.4	
Actuated g/C Ratio	0.03	0.20		0.03	0.20		0.52	0.33		0.48	0.45	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	42	354		35	303		322	1003		569	1513	
v/s Ratio Prot	0.00	c0.09		c0.01	0.01		0.00	0.13		c0.05	c0.22	
v/s Ratio Perm							0.04			0.10		
v/c Ratio	0.14	0.43		0.40	0.05		0.10	0.39		0.31	0.50	
Uniform Delay, d1	30.0	22.1		30.1	20.3		7.8	16.2		9.4	12.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.8		7.3	0.1		0.1	0.3		0.3	0.3	
Delay (s)	31.6	22.9		37.4	20.4		7.9	16.4		9.7	12.6	
Level of Service	C	C		D	C		A	B		A	B	
Approach Delay (s/veh)		23.2			23.9			15.8			12.1	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (veh/h)	5	104	33	12	6	39	26	272	76	151	615	24
Future Volume (veh/h)	5	104	33	12	6	39	26	272	76	151	615	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1604	1870	1767	1011	1648	1752	1722	1633	1811	1870	1811	1648
Adj Flow Rate, veh/h	6	122	39	14	7	46	31	320	89	178	724	28
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	20	2	9	60	17	10	12	18	6	2	6	17
Cap, veh/h	51	235	75	45	35	231	378	594	163	543	1172	45
Arrive On Green	0.03	0.17	0.15	0.05	0.19	0.16	0.06	0.25	0.23	0.16	0.35	0.35
Sat Flow, veh/h	1527	1358	434	963	188	1237	1640	2404	658	1781	3377	131
Grp Volume(v), veh/h	6	0	161	14	0	53	31	205	204	178	369	383
Grp Sat Flow(s),veh/h/ln	1527	0	1792	963	0	1425	1640	1552	1510	1781	1721	1787
Q Serve(g_s), s	0.2	0.0	3.7	0.6	0.0	1.5	0.5	5.2	5.4	3.1	8.1	8.1
Cycle Q Clear(g_c), s	0.2	0.0	3.7	0.6	0.0	1.5	0.5	5.2	5.4	3.1	8.1	8.1
Prop In Lane	1.00		0.24	1.00		0.87	1.00		0.44	1.00		0.07
Lane Grp Cap(c), veh/h	51	0	310	45	0	266	378	384	373	543	597	620
V/C Ratio(X)	0.12	0.00	0.52	0.31	0.00	0.20	0.08	0.53	0.55	0.33	0.62	0.62
Avail Cap(c_a), veh/h	539	0	1225	234	0	974	1043	1061	1032	1245	1518	1576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	17.1	20.9	0.0	15.9	8.3	14.8	15.1	10.0	12.3	12.3
Incr Delay (d2), s/veh	1.0	0.0	1.3	3.8	0.0	0.4	0.1	1.2	1.3	0.3	1.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	1.4	0.2	0.0	0.4	0.1	1.5	1.5	0.9	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.3	0.0	18.5	24.7	0.0	16.3	8.4	16.0	16.3	10.3	13.3	13.3
LnGrp LOS	C		B	C		B	A	B	B	B	B	B
Approach Vol, veh/h		167			67			440			930	
Approach Delay, s/veh		18.6			18.1			15.6			12.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	15.2	6.1	11.9	6.6	20.7	5.5	12.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	5.1	7.4	2.6	5.7	2.5	10.1	2.2	3.5				
Green Ext Time (p_c), s	0.7	1.9	0.0	1.6	0.1	3.9	0.0	0.4				

Intersection Summary

















HCM 7th Control Delay, s/veh	14.4
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

09/20/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	276	16	8	40	3	11	3	33	0	2	3
Future Volume (vph)	19	276	16	8	40	3	11	3	33	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	23	333	19	10	48	4	13	4	40	0	2	4
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	375	62	57	6								
Volume Left (vph)	23	10	13	0								
Volume Right (vph)	19	4	40	4								
Hadj (s)	0.03	0.26	-0.15	-0.01								
Departure Headway (s)	4.2	4.7	4.7	4.9								
Degree Utilization, x	0.43	0.08	0.07	0.01								
Capacity (veh/h)	852	733	696	657								
Control Delay (s/veh)	10.3	8.1	8.1	8.0								
Approach Delay (s/veh)	10.3	8.1	8.1	8.0								
Approach LOS	B	A	A	A								
Intersection Summary												
Delay			9.8									
Level of Service			A									
Intersection Capacity Utilization			34.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	276	16	8	40	3	11	3	33	0	2	3
Future Vol, veh/h	19	276	16	8	40	3	11	3	33	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	19	20	8	100	18	2	13	2	2	33
Mvmt Flow	23	333	19	10	48	4	13	4	40	0	2	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

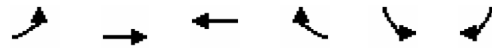
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.2	8.2	8.2	7.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	6%	16%	0%
Vol Thru, %	6%	89%	78%	40%
Vol Right, %	70%	5%	6%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	311	51	5
LT Vol	11	19	8	0
Through Vol	3	276	40	2
RT Vol	33	16	3	3
Lane Flow Rate	57	375	61	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.076	0.424	0.081	0.008
Departure Headway (Hd)	4.801	4.07	4.76	4.612
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	750	873	756	779
Service Time	2.806	2.15	2.771	2.619
HCM Lane V/C Ratio	0.076	0.43	0.081	0.008
HCM Control Delay, s/veh	8.2	10.2	8.2	7.7
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.2	2.1	0.3	0

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	1	295	41	3	1	2
Future Volume (Veh/h)	1	295	41	3	1	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	1	373	52	4	1	3
Pedestrians					4	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	60				433	58
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	60				433	58
tC, single (s)	4.1				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	100				100	100
cM capacity (veh/h)	1538				555	964
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	374	56	1	3		
Volume Left	1	0	1	0		
Volume Right	0	4	0	3		
cSH	1538	1700	555	964		
Volume to Capacity	0.00	0.03	0.00	0.00		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s/veh)	0.0	0.0	11.5	8.7		
Lane LOS	A		B	A		
Approach Delay (s/veh)	0.0	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			26.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 12: SW Lefevon Drive & West Access

09/20/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	1	295	41	3	1	2
Future Vol, veh/h	1	295	41	3	1	2
Conflicting Peds, #/hr	4	0	0	4	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	79	79	79	79	79	79
Heavy Vehicles, %	2	3	15	4	14	17
Mvmt Flow	1	373	52	4	1	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	60	0	-	0	434 58
Stage 1	-	-	-	-	58 -
Stage 2	-	-	-	-	376 -
Critical Hdwy	4.12	-	-	-	6.54 6.37
Critical Hdwy Stg 1	-	-	-	-	5.54 -
Critical Hdwy Stg 2	-	-	-	-	5.54 -
Follow-up Hdwy	2.218	-	-	-	3.626 3.453
Pot Cap-1 Maneuver	1544	-	-	-	557 968
Stage 1	-	-	-	-	935 -
Stage 2	-	-	-	-	669 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1538	-	-	-	552 964
Mov Cap-2 Maneuver	-	-	-	-	552 -
Stage 1	-	-	-	-	931 -
Stage 2	-	-	-	-	666 -

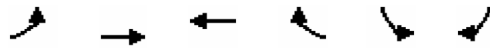
Approach	EB	WB	SB
HCM Control Delay, s/v	0.02	0	9.67
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	6	-	-	-	552	964
HCM Lane V/C Ratio	0.001	-	-	-	0.002	0.003
HCM Control Delay (s/veh)	7.3	0	-	-	11.5	8.7
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0

HCM Unsignalized Intersection Capacity Analysis

13: SW Lave-ton Drive & Center Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	75	225	40	65	7	10
Future Volume (Veh/h)	75	225	40	65	7	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	96	288	51	83	9	13
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	149				588	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	149				588	108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				98	99
cM capacity (veh/h)	1412				433	933

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	384	134	9	13
Volume Left	96	0	9	0
Volume Right	0	83	0	13
cSH	1412	1700	433	933
Volume to Capacity	0.07	0.08	0.02	0.01
Queue Length 95th (ft)	5	0	2	1
Control Delay (s/veh)	2.4	0.0	13.5	8.9
Lane LOS	A		B	A
Approach Delay (s/veh)	2.4	0.0	10.8	
Approach LOS			B	

Intersection Summary			
Average Delay		2.2	
Intersection Capacity Utilization		32.7%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
 13: SW Lefevon Drive & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	75	225	40	65	7	10
Future Vol, veh/h	75	225	40	65	7	10
Conflicting Peds, #/hr	15	0	0	15	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, %	2	4	7	4	2	2
Mvmt Flow	96	288	51	83	9	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	150	0	-	0	589 108
Stage 1	-	-	-	-	108 -
Stage 2	-	-	-	-	481 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1432	-	-	-	471 946
Stage 1	-	-	-	-	916 -
Stage 2	-	-	-	-	622 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1411	-	-	-	420 932
Mov Cap-2 Maneuver	-	-	-	-	420 -
Stage 1	-	-	-	-	830 -
Stage 2	-	-	-	-	613 -

Approach	EB	WB	SB
HCM Control Delay, s/v	1.93	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	450	-	-	-	420	932
HCM Lane V/C Ratio	0.068	-	-	-	0.021	0.014
HCM Control Delay (s/veh)	7.7	0	-	-	13.7	8.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	0

HCM Unsignalized Intersection Capacity Analysis
 14: Calmax Technology Access/East Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	2	188	28	16	95	2	10	0	5	1	0	2
Future Volume (Veh/h)	2	188	28	16	95	2	10	0	5	1	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	214	32	18	108	2	11	0	6	1	0	2
Pedestrians												17
Lane Width (ft)												12.0
Walking Speed (ft/s)												3.5
Percent Blockage												2
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	127			246			381	397	230	402	412	126
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	127			246			381	397	230	402	412	126
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.6	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	4.0	4.0	3.8
p0 queue free %	100			99			98	100	99	100	100	100
cM capacity (veh/h)	1423			1320			562	524	809	460	514	797
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	248	128	17	3								
Volume Left	2	18	11	1								
Volume Right	32	2	6	2								
cSH	1423	1320	630	641								
Volume to Capacity	0.00	0.01	0.03	0.00								
Queue Length 95th (ft)	0	1	2	0								
Control Delay (s/veh)	0.1	1.2	10.9	10.6								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.1	1.2	10.9	10.6								
Approach LOS			B	B								
Intersection Summary												
Average Delay			1.0									
Intersection Capacity Utilization			26.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	188	28	16	95	2	10	0	5	1	0	2
Future Vol, veh/h	2	188	28	16	95	2	10	0	5	1	0	2
Conflicting Peds, #/hr	17	0	0	0	0	17	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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	4	7	2	2	4	6	2	2	2	50	2	50
Mvmt Flow	2	214	32	18	108	2	11	0	6	1	0	2

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	127	0	0	245
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.236	-	-	2.218
Pot Cap-1 Maneuver	1447	-	-	1321
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1423	-	-	1321
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.07	1.1	10.87	10.54
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	631	16	-	-	254	-	-	653
HCM Lane V/C Ratio	0.027	0.002	-	-	0.014	-	-	0.005
HCM Control Delay (s/veh)	10.9	7.5	0	-	7.8	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM Unsignalized Intersection Capacity Analysis

15: SW 108th Ave & SW Leveton Drive

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	160	58	79	184	43	31
Future Volume (Veh/h)	160	58	79	184	43	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	182	66	90	209	49	35
Pedestrians	19			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	2			0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				861		
pX, platoon unblocked						
vC, conflicting volume	476	87	103			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	476	87	103			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	63	93	94			
cM capacity (veh/h)	496	954	1444			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	248	299	84			
Volume Left	182	90	0			
Volume Right	66	0	35			
cSH	568	1444	1700			
Volume to Capacity	0.44	0.06	0.05			
Queue Length 95th (ft)	55	5	0			
Control Delay (s/veh)	16.1	2.7	0.0			
Lane LOS	C	A				
Approach Delay (s/veh)	16.1	2.7	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			7.6			
Intersection Capacity Utilization			39.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	160	58	79	184	43	31
Future Vol, veh/h	160	58	79	184	43	31
Conflicting Peds, #/hr	1	1	19	0	0	19
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	88	88	88	88	88	88
Heavy Vehicles, %	7	2	5	21	28	12
Mvmt Flow	182	66	90	209	49	35

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	475	86	103	0	0
Stage 1	85	-	-	-	-
Stage 2	390	-	-	-	-
Critical Hdwy	6.47	6.22	4.15	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.318	2.245	-	-
Pot Cap-1 Maneuver	539	972	1470	-	-
Stage 1	925	-	-	-	-
Stage 2	674	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	483	954	1444	-	-
Mov Cap-2 Maneuver	483	-	-	-	-
Stage 1	845	-	-	-	-
Stage 2	661	-	-	-	-

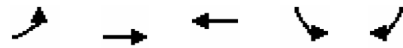
Approach	EB	NB	SB
HCM Control Delay, s/v	16.56	2.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	541	-	556	-	-
HCM Lane V/C Ratio	0.062	-	0.445	-	-
HCM Control Delay (s/veh)	7.7	0	16.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.3	-	-

Queues

16: SW Herman Road & SW 108th Ave

09/20/2024



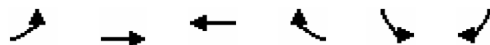
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	16	424	594	77	12
v/c Ratio	0.03	0.40	0.55	0.22	0.03
Control Delay (s/veh)	2.9	6.4	9.4	19.5	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	2.9	6.4	9.4	19.5	11.3
Queue Length 50th (ft)	1	51	68	14	0
Queue Length 95th (ft)	7	109	245	60	12
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	628	1557	1572	1083	1060
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.27	0.38	0.07	0.01

Intersection Summary

HCM Signalized Intersection Capacity Analysis

16: SW Herman Road & SW 108th Ave

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	365	242	269	66	10
Future Volume (vph)	14	365	242	269	66	10
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	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1399	1557	1601		1504	1468
Flt Permitted	0.33	1.00	1.00		0.95	1.00
Satd. Flow (perm)	483	1557	1601		1504	1468
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	16	424	281	313	77	12
RTOR Reduction (vph)	0	0	32	0	0	10
Lane Group Flow (vph)	16	424	562	0	77	2
Confl. Peds. (#/hr)	3			3		
Heavy Vehicles (%)	29%	22%	12%	6%	20%	10%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	29.3	34.7	28.6		7.0	7.0
Effective Green, g (s)	32.1	36.1	30.0		9.5	9.5
Actuated g/C Ratio	0.60	0.67	0.56		0.18	0.18
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	325	1048	896		266	260
v/s Ratio Prot	0.00	c0.27	c0.35		c0.05	
v/s Ratio Perm	0.03					0.00
v/c Ratio	0.05	0.40	0.63		0.29	0.01
Uniform Delay, d1	8.1	3.9	8.0		19.1	18.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.3	1.4		0.5	0.0
Delay (s)	8.1	4.2	9.4		19.6	18.2
Level of Service	A	A	A		B	B
Approach Delay (s/veh)		4.3	9.4		19.4	
Approach LOS		A	A		B	

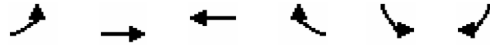
Intersection Summary

HCM 2000 Control Delay (s/veh)	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

09/20/2024

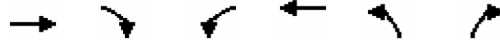


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶		↶	↷
Traffic Volume (veh/h)	14	365	242	269	66	10
Future Volume (veh/h)	14	365	242	269	66	10
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1470	1574	1722	1811	1604	1752
Adj Flow Rate, veh/h	16	424	281	313	77	12
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	29	22	12	6	20	10
Cap, veh/h	444	1162	460	512	174	170
Arrive On Green	0.05	0.74	0.62	0.59	0.11	0.11
Sat Flow, veh/h	1400	1574	743	828	1527	1485
Grp Volume(v), veh/h	16	424	0	594	77	12
Grp Sat Flow(s),veh/h/ln	1400	1574	0	1571	1527	1485
Q Serve(g_s), s	0.0	5.2	0.0	12.8	2.5	0.4
Cycle Q Clear(g_c), s	0.0	5.2	0.0	12.8	2.5	0.4
Prop In Lane	1.00			0.53	1.00	1.00
Lane Grp Cap(c), veh/h	444	1162	0	972	174	170
V/C Ratio(X)	0.04	0.36	0.00	0.61	0.44	0.07
Avail Cap(c_a), veh/h	674	1348	0	1896	916	891
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.1	2.5	0.0	6.6	22.4	21.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.7	1.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.0	2.8	0.9	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.1	2.7	0.0	7.3	23.8	21.6
LnGrp LOS	A	A		A	C	C
Approach Vol, veh/h		440	594		89	
Approach Delay, s/veh		3.0	7.3		23.5	
Approach LOS		A	A		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.0		10.2	6.5	37.5
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		7.2		4.5	2.0	14.8
Green Ext Time (p_c), s		9.8		0.2	0.0	17.3
Intersection Summary						
HCM 7th Control Delay, s/veh			6.9			
HCM 7th LOS			A			

HCM Unsignalized Intersection Capacity Analysis

17: SW Teton Avenue & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	622	167	65	324	77	59
Future Volume (Veh/h)	622	167	65	324	77	59
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	655	176	68	341	81	62
Pedestrians						2
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			833		1222	745
vC1, stage 1 conf vol					745	
vC2, stage 2 conf vol					477	
vCu, unblocked vol			833		1222	745
tC, single (s)			4.1		6.6	6.4
tC, 2 stage (s)					5.6	
tF (s)			2.2		3.6	3.5
p0 queue free %			91		78	84
cM capacity (veh/h)			786		372	384
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total	831	68	341	81	62	
Volume Left	0	68	0	81	0	
Volume Right	176	0	0	0	62	
cSH	1700	786	1700	372	384	
Volume to Capacity	0.49	0.09	0.20	0.22	0.16	
Queue Length 95th (ft)	0	7	0	20	14	
Control Delay (s/veh)	0.0	10.0	0.0	17.4	16.2	
Lane LOS	B		C		C	
Approach Delay (s/veh)	0.0	1.7	16.9			
Approach LOS			C			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			60.8%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Vol, veh/h	622	167	65	324	77	59
Future Vol, veh/h	622	167	65	324	77	59
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	3	5	7	15	21
Mvmt Flow	655	176	68	341	81	62

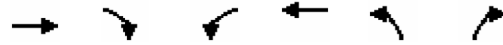
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	833	0	1223	745
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	478	-
Critical Hdwy	-	-	4.15	-	6.55	6.41
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.245	-	3.635	3.489
Pot Cap-1 Maneuver	-	-	787	-	186	385
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	786	-	170	384
Mov Cap-2 Maneuver	-	-	-	-	170	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.67	32.01
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	170	384	-	-	786	-
HCM Lane V/C Ratio	0.477	0.162	-	-	0.087	-
HCM Control Delay (s/veh)	44.1	16.2	-	-	10	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2.3	0.6	-	-	0.3	-

HCM Unsignalized Intersection Capacity Analysis
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	27	12	46	82	106	110
Future Volume (Veh/h)	27	12	46	82	106	110
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	42	19	72	128	166	172
Pedestrians					37	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					4	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			98			89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			98			89
tC, single (s)			4.2			6.2
tC, 2 stage (s)						
tF (s)			2.3			3.3
p0 queue free %			95			81
cM capacity (veh/h)			1413			928
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	61	200	338			
Volume Left	0	72	166			
Volume Right	19	0	172			
cSH	1700	1413	717			
Volume to Capacity	0.04	0.05	0.47			
Queue Length 95th (ft)	0	4	63			
Control Delay (s/veh)	0.0	3.0	14.4			
Lane LOS			A			B
Approach Delay (s/veh)	0.0	3.0	14.4			
Approach LOS			B			
Intersection Summary						
Average Delay			9.1			
Intersection Capacity Utilization			32.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	9.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	27	12	46	82	106	110
Future Vol, veh/h	27	12	46	82	106	110
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	42	19	72	128	166	172

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	98	0	360 89
Stage 1	-	-	-	-	89 -
Stage 2	-	-	-	-	272 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1464	-	634 961
Stage 1	-	-	-	-	930 -
Stage 2	-	-	-	-	769 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1413	-	579 927
Mov Cap-2 Maneuver	-	-	-	-	579 -
Stage 1	-	-	-	-	897 -
Stage 2	-	-	-	-	727 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.76	14.44
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	716	-	-	647	-
HCM Lane V/C Ratio	0.472	-	-	0.051	-
HCM Control Delay (s/veh)	14.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.5	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Volume (veh/h)	0	192	1247	19	0	1612
Future Volume (Veh/h)	0	192	1247	19	0	1612
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	218	1417	22	0	1832
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2334	710			1418	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2334	710			1418	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	52			100	
cM capacity (veh/h)	31	451			476	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	218	709	709	22	916	916
Volume Left	0	0	0	0	0	0
Volume Right	218	0	0	22	0	0
cSH	451	1700	1700	1700	1700	1700
Volume to Capacity	0.48	0.42	0.42	0.01	0.54	0.54
Queue Length 95th (ft)	65	0	0	0	0	0
Control Delay (s/veh)	20.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s/veh)	20.3	0.0			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay		1.3	
Intersection Capacity Utilization		53.0%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	192	1247	19	0	1612
Future Vol, veh/h	0	192	1247	19	0	1612
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	4	8	3	2	10
Mvmt Flow	0	218	1417	22	0	1832

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	709	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	372	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	372	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

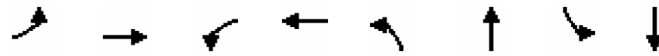
Approach	WB	NB	SB
HCM Control Delay, s/v	27.48	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 372	-
HCM Lane V/C Ratio	- 0.586	-
HCM Control Delay (s/veh)	- 27.5	-
HCM Lane LOS	- D	-
HCM 95th %tile Q(veh)	- 3.6	-

Queues

20: SW Teton Avenue & SW Herman Road

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	383	21	322	354	126	27	173
v/c Ratio	0.02	0.76	0.07	0.69	0.61	0.21	0.07	0.45
Control Delay (s/veh)	15.0	32.7	15.3	30.2	20.3	21.8	15.8	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	32.7	15.3	30.2	20.3	21.8	15.8	33.3
Queue Length 50th (ft)	2	125	5	111	90	38	5	61
Queue Length 95th (ft)	9	312	21	278	249	110	27	168
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	404	1141	529	1012	662	1185	678	1355
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.34	0.04	0.32	0.53	0.11	0.04	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	
Traffic Volume (vph)	5	184	157	19	263	23	315	85	27	24	130	24
Future Volume (vph)	5	184	157	19	263	23	315	85	27	24	130	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1128	1467		1543	1308		1656	1495		1593	1704	
Flt Permitted	0.44	1.00		0.32	1.00		0.49	1.00		0.68	1.00	
Satd. Flow (perm)	525	1467		524	1308		860	1495		1134	1704	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	207	176	21	296	26	354	96	30	27	146	27
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	0	0	5	0
Lane Group Flow (vph)	6	365	0	21	320	0	354	126	0	27	168	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	60%	16%	26%	17%	45%	27%	9%	24%	15%	13%	5%	30%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	25.6	24.8		27.4	25.7		36.7	29.5		21.5	18.3	
Effective Green, g (s)	25.6	25.3		27.4	26.2		36.7	30.0		21.5	18.8	
Actuated g/C Ratio	0.33	0.32		0.35	0.34		0.47	0.38		0.27	0.24	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	178	474		205	438		550	573		330	409	
v/s Ratio Prot	0.00	c0.25		c0.00	0.24		c0.12	0.08		0.00	0.10	
v/s Ratio Perm	0.01			0.03			c0.18			0.02		
v/c Ratio	0.03	0.77		0.10	0.73		0.64	0.22		0.08	0.41	
Uniform Delay, d1	18.0	23.8		17.4	22.9		14.3	16.2		20.9	25.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	7.5		0.1	6.3		1.9	0.2		0.0	0.7	
Delay (s)	18.0	31.3		17.5	29.1		16.2	16.4		20.9	25.8	
Level of Service	B	C		B	C		B	B		C	C	
Approach Delay (s/veh)		31.1			28.4			16.3			25.1	
Approach LOS		C			C			B			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	184	157	19	263	23	315	85	27	24	130	24
Future Volume (veh/h)	5	184	157	19	263	23	315	85	27	24	130	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1011	1663	1515	1648	1233	1500	1767	1544	1678	1707	1826	1455
Adj Flow Rate, veh/h	6	207	176	21	296	26	354	96	30	27	146	27
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	60	16	26	17	45	27	9	24	15	13	5	30
Cap, veh/h	196	301	256	268	423	37	503	366	114	319	230	42
Arrive On Green	0.01	0.36	0.36	0.02	0.38	0.37	0.20	0.32	0.32	0.03	0.15	0.15
Sat Flow, veh/h	963	830	706	1570	1117	98	1682	1127	352	1626	1497	277
Grp Volume(v), veh/h	6	0	383	21	0	322	354	0	126	27	0	173
Grp Sat Flow(s),veh/h/ln	963	0	1536	1570	0	1215	1682	0	1480	1626	0	1774
Q Serve(g_s), s	0.3	0.0	14.7	0.6	0.0	15.5	11.5	0.0	4.4	1.0	0.0	6.4
Cycle Q Clear(g_c), s	0.3	0.0	14.7	0.6	0.0	15.5	11.5	0.0	4.4	1.0	0.0	6.4
Prop In Lane	1.00		0.46	1.00		0.08	1.00		0.24	1.00		0.16
Lane Grp Cap(c), veh/h	196	0	557	268	0	460	503	0	480	319	0	272
V/C Ratio(X)	0.03	0.00	0.69	0.08	0.00	0.70	0.70	0.00	0.26	0.08	0.00	0.64
Avail Cap(c_a), veh/h	466	0	1207	683	0	937	651	0	1226	740	0	1419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	18.9	15.1	0.0	18.2	17.9	0.0	17.3	24.0	0.0	27.6
Incr Delay (d2), s/veh	0.0	0.0	1.6	0.0	0.0	2.1	1.3	0.0	0.3	0.0	0.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.7	0.2	0.0	4.2	4.2	0.0	1.4	0.4	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.7	0.0	20.5	15.2	0.0	20.3	19.2	0.0	17.7	24.0	0.0	30.3
LnGrp LOS	B		C	B		C	B		B	C		C
Approach Vol, veh/h		389			343			480			200	
Approach Delay, s/veh		20.4			20.0			18.8			29.4	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	30.2	17.9	15.6	4.5	31.3	6.0	27.5				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	2.6	16.7	13.5	8.4	2.3	17.5	3.0	6.4				
Green Ext Time (p_c), s	0.0	7.9	0.4	0.6	0.0	7.2	0.1	1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh			21.1									
HCM 7th LOS			C									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	247	440	143	1496	1356	144
v/c Ratio	0.78	0.97	0.81	0.59	0.64	0.15
Control Delay (s/veh)	72.4	65.0	92.8	8.4	24.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.4	65.0	92.8	8.4	24.7	4.2
Queue Length 50th (ft)	216	228	129	277	573	14
Queue Length 95th (ft)	#335	#447	#247	328	660	m26
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	325	460	176	2549	2110	974
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.96	0.81	0.59	0.64	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	222	396	129	1346	0	1220	130
Future Volume (vph)	222	396	129	1346	0	1220	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1752	1555	1543	3343		3406	1499
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1752	1555	1543	3343		3406	1499
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	247	440	143	1496	0	1356	144
RTOR Reduction (vph)	0	173	0	0	0	0	46
Lane Group Flow (vph)	247	267	143	1496	0	1356	98
Confl. Peds. (#/hr)		7					5
Heavy Vehicles (%)	3%	2%	17%	8%	2%	6%	4%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	24.3	24.3	14.5	104.7		84.7	84.7
Effective Green, g (s)	25.3	25.3	16.0	106.7		86.7	86.7
Actuated g/C Ratio	0.18	0.18	0.11	0.76		0.62	0.62
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	316	281	176	2547		2109	928
v/s Ratio Prot	0.14		c0.09	0.45		c0.40	
v/s Ratio Perm		c0.17					0.07
v/c Ratio	0.78	0.95	0.81	0.59		0.64	0.11
Uniform Delay, d1	54.7	56.7	60.5	7.2		16.9	10.9
Progression Factor	1.00	1.00	1.00	1.00		1.36	1.42
Incremental Delay, d2	11.5	40.3	23.3	1.0		1.2	0.2
Delay (s)	66.2	97.1	83.8	8.2		24.2	15.7
Level of Service	E	F	F	A		C	B
Approach Delay (s/veh)	86.0			14.8		23.4	
Approach LOS	F			B		C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	222	396	129	1346	0	1220	130
Future Volume (veh/h)	222	396	129	1346	0	1220	130
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1856	1870	1648	1781		1811	1841
Adj Flow Rate, veh/h	247	440	143	1496		1356	144
Peak Hour Factor	0.90	0.90	0.90	0.90		0.90	0.90
Percent Heavy Veh, %	3	2	17	8		6	4
Cap, veh/h	328	294	222	2666		2114	954
Arrive On Green	0.19	0.19	0.14	0.79		0.82	0.82
Sat Flow, veh/h	1767	1585	1570	3474		3532	1554
Grp Volume(v), veh/h	247	440	143	1496		1356	144
Grp Sat Flow(s),veh/h/ln	1767	1585	1570	1692		1721	1554
Q Serve(g_s), s	18.5	26.0	12.1	23.5		21.2	2.7
Cycle Q Clear(g_c), s	18.5	26.0	12.1	23.5		21.2	2.7
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	328	294	222	2666		2114	954
V/C Ratio(X)	0.75	1.49	0.65	0.56		0.64	0.15
Avail Cap(c_a), veh/h	328	294	222	2666		2114	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00		0.77	0.77
Uniform Delay (d), s/veh	54.0	57.0	56.8	5.7		6.9	5.2
Incr Delay (d2), s/veh	9.0	239.8	5.5	0.9		1.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	40.4	5.0	6.6		4.9	0.9
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	63.0	296.8	62.3	6.5		8.0	5.4
LnGrp LOS	E	F	E	A		A	A
Approach Vol, veh/h	687			1639		1500	
Approach Delay, s/veh	212.7			11.4		7.8	
Approach LOS	F			B		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		114.3		30.0	24.3	90.0	
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6	
Max Green Setting (Gmax), s		84.0		25.0	14.5	* 84	
Max Q Clear Time (g_c+I1), s		25.5		28.0	14.1	23.2	
Green Ext Time (p_c), s		51.3		0.0	0.0	48.5	

Intersection Summary

HCM 7th Control Delay, s/veh	46.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	129	192	197	241	72	1230	387	462	1060	12
v/c Ratio	0.40	0.86	0.87	0.58	0.62	0.81	0.41	0.83	0.55	0.01
Control Delay (s/veh)	44.5	92.3	92.9	12.2	75.0	38.9	7.6	70.5	21.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.5	92.3	92.9	12.2	75.0	38.9	7.6	70.5	21.4	0.0
Queue Length 50th (ft)	40	181	186	0	65	533	120	212	332	0
Queue Length 95th (ft)	74	#318	#326	80	m109	627	176	#290	401	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	349	230	234	424	134	1516	950	556	1917	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.83	0.84	0.57	0.54	0.81	0.41	0.83	0.55	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↖	↖	↖	↑↑	↖	↖↔	↑↑	↖
Traffic Volume (vph)	8	72	39	321	37	222	66	1132	356	425	975	11
Future Volume (vph)	8	72	39	321	37	222	66	1132	356	425	975	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3355		1633	1663	1536	1770	3343	1506	3433	3374	1583
Flt Permitted		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3355		1633	1663	1536	1770	3343	1506	3433	3374	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	78	42	349	40	241	72	1230	387	462	1060	12
RTOR Reduction (vph)	0	38	0	0	0	208	0	0	62	0	0	5
Lane Group Flow (vph)	0	91	0	192	197	33	72	1230	325	462	1060	7
Confl. Peds. (#/hr)	4					4			2			
Heavy Vehicles (%)	2%	2%	2%	5%	2%	3%	2%	8%	6%	2%	7%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2	4	1	6	
Permitted Phases						4			2			6
Actuated Green, G (s)		12.0		19.1	19.1	19.1	8.0	62.4	81.5	23.8	78.5	78.5
Effective Green, g (s)		12.0		19.1	19.1	19.1	8.0	62.4	81.5	23.8	78.5	78.5
Actuated g/C Ratio		0.09		0.14	0.14	0.14	0.06	0.45	0.58	0.17	0.56	0.56
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		222	226	209	101	1490	941	583	1891	887
v/s Ratio Prot		c0.03		0.12	c0.12		0.04	c0.37	0.05	c0.13	0.31	
v/s Ratio Perm						0.02			0.17			0.00
v/c Ratio		0.32		0.86	0.87	0.16	0.71	0.83	0.35	0.79	0.56	0.01
Uniform Delay, d1		60.1		59.2	59.2	53.3	64.9	34.0	15.3	55.7	19.7	13.6
Progression Factor		1.00		1.00	1.00	1.00	0.90	1.04	0.87	1.00	1.00	1.00
Incremental Delay, d2		0.4		27.2	28.3	0.2	15.5	4.3	0.1	7.0	1.2	0.0
Delay (s)		60.5		86.4	87.5	53.6	73.8	39.6	13.5	62.7	20.9	13.6
Level of Service		E		F	F	D	E	D	B	E	C	B
Approach Delay (s/veh)		60.5			74.2			35.1			33.4	
Approach LOS		E			E			D			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

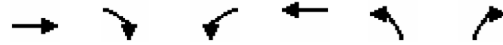
c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	863	231	762	1185	728	801
v/c Ratio	0.71	0.34	0.76	0.52	0.80	0.52
Control Delay (s/veh)	38.4	5.0	45.4	11.6	41.6	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.4	5.0	45.4	11.6	41.6	18.2
Queue Length 50th (ft)	304	0	278	225	260	232
Queue Length 95th (ft)	379	54	#403	315	328	327
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1209	677	998	2298	1058	1546
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.34	0.76	0.52	0.69	0.52

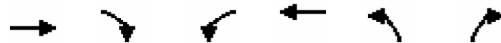
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	811	217	716	1114	684	753
Future Volume (vph)	811	217	716	1114	684	753
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1538	3400	3438	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1538	3400	3438	3433	2787
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	863	231	762	1185	728	801
RTOR Reduction (vph)	0	152	0	0	0	0
Lane Group Flow (vph)	863	79	762	1185	728	801
Confl. Peds. (#/hr)						1
Heavy Vehicles (%)	2%	5%	3%	5%	2%	2%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	30.4	75.0	33.0	63.4
Effective Green, g (s)	41.0	41.0	32.0	77.0	35.0	58.4
Actuated g/C Ratio	0.34	0.34	0.27	0.64	0.29	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1209	525	906	2206	1001	1356
v/s Ratio Prot	c0.24		c0.22	0.34	c0.21	0.29
v/s Ratio Perm		0.05				
v/c Ratio	0.71	0.15	0.84	0.54	0.73	0.59
Uniform Delay, d1	34.4	27.4	41.6	11.8	38.2	22.2
Progression Factor	1.00	1.00	1.00	1.00	0.85	0.95
Incremental Delay, d2	2.7	0.3	9.3	0.9	2.3	0.5
Delay (s)	37.1	27.7	50.9	12.7	34.6	21.7
Level of Service	D	C	D	B	C	C
Approach Delay (s/veh)	35.1			27.6	27.8	
Approach LOS	D			C	C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	50	687	785	53	457	511
v/c Ratio	0.25	0.63	0.75	0.11	0.48	0.18
Control Delay (s/veh)	47.3	9.6	42.9	12.1	11.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.3	9.6	42.9	12.1	11.6	4.2
Queue Length 50th (ft)	37	70	285	7	29	17
Queue Length 95th (ft)	63	299	345	36	179	91
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	445	1091	1169	549	956	2820
Starvation Cap Reductn	0	0	0	0	24	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.63	0.67	0.10	0.49	0.18

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	47	646	738	50	430	480
Future Volume (vph)	47	646	738	50	430	480
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1599	3539	1583	1752	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.15	1.00
Satd. Flow (perm)	1671	1599	3539	1583	272	3374
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	50	687	785	53	457	511
RTOR Reduction (vph)	0	243	0	28	0	0
Lane Group Flow (vph)	50	444	785	25	457	511
Heavy Vehicles (%)	8%	1%	2%	2%	3%	7%
Turn Type	Perm	Over	NA	Perm	D.P+P	NA
Protected Phases		5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	12.1	58.0	34.4	34.4	92.4	97.4
Effective Green, g (s)	13.1	63.0	35.4	35.4	94.4	98.4
Actuated g/C Ratio	0.11	0.53	0.30	0.30	0.79	0.82
Clearance Time (s)	5.0	5.0	5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0	4.0	4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	182	839	1044	466	941	2766
v/s Ratio Prot		c0.28	c0.22		0.24	0.15
v/s Ratio Perm	c0.03			0.02	0.14	
v/c Ratio	0.27	0.53	0.75	0.05	0.49	0.18
Uniform Delay, d1	49.1	18.8	38.3	30.3	14.2	2.3
Progression Factor	1.00	1.00	1.00	1.00	0.58	1.22
Incremental Delay, d2	1.1	2.4	3.5	0.1	0.5	0.1
Delay (s)	50.2	21.1	41.8	30.4	8.8	2.9
Level of Service	D	C	D	C	A	A
Approach Delay (s/veh)	23.1		41.1			5.7
Approach LOS	C		D			A

Intersection Summary

HCM 2000 Control Delay (s/veh)	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	383	16	18	626	250	139	35	73	21	2	23
Future Volume (Veh/h)	49	383	16	18	626	250	139	35	73	21	2	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	52	403	17	19	659	263	146	37	77	22	2	24
Pedestrians		1										4
Lane Width (ft)		12.0										12.0
Walking Speed (ft/s)		3.5										3.5
Percent Blockage		0										0
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	926			420			1239	1480	412	1435	1357	796
vC1, stage 1 conf vol							516	516		833	833	
vC2, stage 2 conf vol							723	964		603	524	
vCu, unblocked vol	926			420			1239	1480	412	1435	1357	796
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.2	6.5	6.4
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.5
p0 queue free %	93			98			50	85	87	91	99	93
cM capacity (veh/h)	735			1139			291	251	615	252	314	363
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total	52	420	19	922	146	114	48					
Volume Left	52	0	19	0	146	0	22					
Volume Right	0	17	0	263	0	77	24					
cSH	735	1700	1139	1700	291	418	300					
Volume to Capacity	0.07	0.25	0.02	0.54	0.50	0.27	0.16					
Queue Length 95th (ft)	6	0	1	0	66	27	14					
Control Delay (s/veh)	10.3	0.0	8.2	0.0	29.2	16.8	19.3					
Lane LOS	B		A		D	C	C					
Approach Delay (s/veh)	1.1		0.2		23.7		19.3					
Approach LOS					C		C					
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			69.3%	ICU Level of Service	C							
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	18.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷			↕	
Traffic Vol, veh/h	49	383	16	18	626	250	139	35	73	21	2	23
Future Vol, veh/h	49	383	16	18	626	250	139	35	73	21	2	23
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	3	2	2	2	2	2	2	14	5	2	17
Mvmt Flow	52	403	17	19	659	263	146	37	77	22	2	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	926	0	0	420	0	0	1214	1479	412	1357	1356	796
Stage 1	-	-	-	-	-	-	515	515	-	832	832	-
Stage 2	-	-	-	-	-	-	699	964	-	525	523	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.34	7.15	6.52	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.426	3.545	4.018	3.453
Pot Cap-1 Maneuver	738	-	-	1139	-	-	158	126	615	124	149	365
Stage 1	-	-	-	-	-	-	543	535	-	359	384	-
Stage 2	-	-	-	-	-	-	430	334	-	531	530	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	735	-	-	1139	-	-	~ 133	115	615	69	136	363
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 133	115	-	69	136	-
Stage 1	-	-	-	-	-	-	505	497	-	352	376	-
Stage 2	-	-	-	-	-	-	392	327	-	400	493	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.12	0.17	109.89	53.69
HCM LOS			F	F

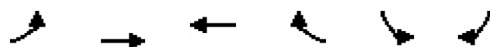
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	133	255	735	-	-	1139	-	-	120
HCM Lane V/C Ratio	1.099	0.447	0.07	-	-	0.017	-	-	0.402
HCM Control Delay (s/veh)	171.9	30.1	10.3	-	-	8.2	-	-	53.7
HCM Lane LOS	F	D	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	8.3	2.2	0.2	-	-	0.1	-	-	1.7

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

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↑		↘	
Traffic Volume (veh/h)	12	473	944	14	8	2
Future Volume (Veh/h)	12	473	944	14	8	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	526	1049	16	9	2
Pedestrians			2		3	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1068				1614	1060
vC1, stage 1 conf vol					1060	
vC2, stage 2 conf vol					554	
vCu, unblocked vol	1068				1614	1060
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	99
cM capacity (veh/h)	651				294	272
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	13	526	1065	11		
Volume Left	13	0	0	9		
Volume Right	0	0	16	2		
cSH	651	1700	1700	290		
Volume to Capacity	0.02	0.31	0.63	0.04		
Queue Length 95th (ft)	2	0	0	3		
Control Delay (s/veh)	10.6	0.0	0.0	17.9		
Lane LOS	B			C		
Approach Delay (s/veh)	0.3		0.0	17.9		
Approach LOS				C		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			60.5%		ICU Level of Service	B
Analysis Period (min)			15			

HCM 7th TWSC
5: SW Tualatin Road & SW 112th Avenue

09/20/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑		↘	
Traffic Vol, veh/h	12	473	944	14	8	2
Future Vol, veh/h	12	473	944	14	8	2
Conflicting Peds, #/hr	3	0	0	3	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	4	2	8	2	2
Mvmt Flow	13	526	1049	16	9	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1067	0	-	0	1614 1060
Stage 1	-	-	-	-	1060 -
Stage 2	-	-	-	-	554 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	653	-	-	-	114 272
Stage 1	-	-	-	-	333 -
Stage 2	-	-	-	-	575 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	651	-	-	-	111 272
Mov Cap-2 Maneuver	-	-	-	-	235 -
Stage 1	-	-	-	-	325 -
Stage 2	-	-	-	-	574 -

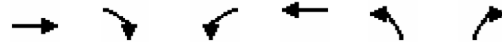
Approach	EB	WB	SB
HCM Control Delay, s/v	0.26	0	20.61
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	651	-	-	-	242
HCM Lane V/C Ratio	0.02	-	-	-	0.046
HCM Control Delay (s/veh)	10.6	-	-	-	20.6
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→		←	→	↔	
Traffic Volume (veh/h)	437	36	10	881	48	23
Future Volume (Veh/h)	437	36	10	881	48	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	475	39	11	958	52	25
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage veh	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			515		1476	496
vC1, stage 1 conf vol					496	
vC2, stage 2 conf vol					980	
vCu, unblocked vol			515		1476	496
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		84	96
cM capacity (veh/h)			1050		323	574

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	514	11	958	77
Volume Left	0	11	0	52
Volume Right	39	0	0	25
cSH	1700	1050	1700	376
Volume to Capacity	0.30	0.01	0.56	0.20
Queue Length 95th (ft)	0	1	0	19
Control Delay (s/veh)	0.0	8.5	0.0	17.0
Lane LOS		A		C
Approach Delay (s/veh)	0.0	0.1		17.0
Approach LOS				C

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		57.1%	ICU Level of Service
Analysis Period (min)		15	B

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Vol, veh/h	437	36	10	881	48	23
Future Vol, veh/h	437	36	10	881	48	23
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	2	2	2	2
Mvmt Flow	475	39	11	958	52	25

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	515	0	1475 496
Stage 1	-	-	-	-	496 -
Stage 2	-	-	-	-	979 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1051	-	139 574
Stage 1	-	-	-	-	612 -
Stage 2	-	-	-	-	364 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1050	-	138 574
Mov Cap-2 Maneuver	-	-	-	-	264 -
Stage 1	-	-	-	-	612 -
Stage 2	-	-	-	-	360 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	320	-	-	1050	-
HCM Lane V/C Ratio	0.241	-	-	0.01	-
HCM Control Delay (s/veh)	19.8	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	104	21	58	44	2
Future Volume (Veh/h)	8	104	21	58	44	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	113	23	63	48	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	158	49	50			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	158	49	50			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	89	99			
cM capacity (veh/h)	821	1020	1557			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	122	86	50			
Volume Left	9	23	0			
Volume Right	113	0	2			
cSH	1002	1557	1700			
Volume to Capacity	0.12	0.01	0.03			
Queue Length 95th (ft)	10	1	0			
Control Delay (s/veh)	9.1	2.0	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.1	2.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	5.0					
Intersection Capacity Utilization	24.4%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM 7th TWSC
8: SW 108th Ave & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	8	104	21	58	44	2
Future Vol, veh/h	8	104	21	58	44	2
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	9	113	23	63	48	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	158	49	50	0	0
Stage 1	49	-	-	-	-
Stage 2	109	-	-	-	-
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	834	1020	1557	-	-
Stage 1	974	-	-	-	-
Stage 2	916	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	821	1020	1557	-	-
Mov Cap-2 Maneuver	821	-	-	-	-
Stage 1	959	-	-	-	-
Stage 2	916	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.09	1.95	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	478	-	1002	-	-
HCM Lane V/C Ratio	0.015	-	0.121	-	-
HCM Control Delay (s/veh)	7.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	32	7	65	182	2
Future Volume (Veh/h)	8	32	7	65	182	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	35	8	71	198	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	286	199	200			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	286	199	200			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	99			
cM capacity (veh/h)	700	842	1372			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	44	79	200			
Volume Left	9	8	0			
Volume Right	35	0	2			
cSH	809	1372	1700			
Volume to Capacity	0.05	0.01	0.12			
Queue Length 95th (ft)	4	0	0			
Control Delay (s/veh)	9.7	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.7	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			19.7%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	8	32	7	65	182	2
Future Vol, veh/h	8	32	7	65	182	2
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	9	35	8	71	198	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	285	199	200	0	0
Stage 1	199	-	-	-	-
Stage 2	86	-	-	-	-
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	705	842	1372	-	-
Stage 1	835	-	-	-	-
Stage 2	937	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	701	842	1372	-	-
Mov Cap-2 Maneuver	701	-	-	-	-
Stage 1	830	-	-	-	-
Stage 2	937	-	-	-	-

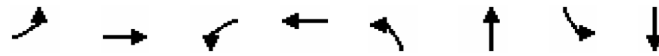
Approach	EB	NB	SB
HCM Control Delay, s/v	9.7	0.74	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	175	-	810	-	-
HCM Lane V/C Ratio	0.006	-	0.054	-	-
HCM Control Delay (s/veh)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

09/20/2024

























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	34	79	242	5	714	52	458
v/c Ratio	0.07	0.09	0.22	0.37	0.01	0.55	0.13	0.30
Control Delay (s/veh)	33.4	16.8	31.1	5.1	11.6	19.8	12.1	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.4	16.8	31.1	5.1	11.6	19.8	12.1	13.7
Queue Length 50th (ft)	7	5	26	1	1	116	9	45
Queue Length 95th (ft)	37	29	95	53	8	270	41	163
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	638	1188	438	1130	604	2466	980	2524
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.18	0.21	0.01	0.29	0.05	0.18

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: SW 124th Avenue & SW Leveton Drive

09/20/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	15	16	72	2	218	5	630	20	47	410	6
Future Volume (vph)	20	15	16	72	2	218	5	630	20	47	410	6
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1680		1770	1579		1128	3506		1671	3424	
Flt Permitted	0.95	1.00		0.95	1.00		0.47	1.00		0.27	1.00	
Satd. Flow (perm)	1770	1680		1770	1579		561	3506		467	3424	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	16	18	79	2	240	5	692	22	52	451	7
RTOR Reduction (vph)	0	15	0	0	174	0	0	2	0	0	1	0
Lane Group Flow (vph)	22	19	0	79	68	0	5	712	0	52	457	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	2%	2%	6%	2%	50%	2%	60%	2%	15%	8%	5%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	0.9	10.0		7.0	16.1		25.5	21.6		25.5	24.8	
Effective Green, g (s)	1.9	11.0		8.0	17.1		27.5	22.6		25.5	24.8	
Actuated g/C Ratio	0.03	0.18		0.13	0.27		0.44	0.36		0.41	0.40	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	53	295		226	432		262	1267		265	1358	
v/s Ratio Prot	0.01	0.01		c0.04	c0.04		0.00	c0.20		c0.01	c0.13	
v/s Ratio Perm							0.01			0.07		
v/c Ratio	0.42	0.06		0.35	0.16		0.02	0.56		0.20	0.34	
Uniform Delay, d1	29.8	21.5		24.9	17.2		9.8	16.0		11.7	13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.2	0.1		0.9	0.2		0.0	0.6		0.4	0.1	
Delay (s)	35.0	21.6		25.8	17.4		9.9	16.6		12.0	13.3	
Level of Service	C	C		C	B		A	B		B	B	
Approach Delay (s/veh)		26.8			19.5			16.5			13.1	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			16.4				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			62.5				Sum of lost time (s)			17.0		
Intersection Capacity Utilization			52.2%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	15	16	72	2	218	5	630	20	47	410	6
Future Volume (veh/h)	20	15	16	72	2	218	5	630	20	47	410	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1870	1159	1870	1011	1870	1678	1781	1826	1648
Adj Flow Rate, veh/h	22	16	18	79	2	240	5	692	22	52	451	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	6	2	50	2	60	2	15	8	5	17
Cap, veh/h	93	210	237	180	3	303	268	987	31	310	1170	18
Arrive On Green	0.05	0.26	0.25	0.10	0.31	0.29	0.02	0.28	0.26	0.08	0.33	0.33
Sat Flow, veh/h	1781	804	904	1781	8	975	963	3515	112	1697	3496	54
Grp Volume(v), veh/h	22	0	34	79	0	242	5	350	364	52	224	234
Grp Sat Flow(s),veh/h/ln	1781	0	1708	1781	0	983	963	1777	1850	1697	1735	1816
Q Serve(g_s), s	0.7	0.0	0.9	2.5	0.0	13.8	0.2	10.7	10.7	1.3	6.0	6.0
Cycle Q Clear(g_c), s	0.7	0.0	0.9	2.5	0.0	13.8	0.2	10.7	10.7	1.3	6.0	6.0
Prop In Lane	1.00		0.53	1.00		0.99	1.00		0.06	1.00		0.03
Lane Grp Cap(c), veh/h	93	0	447	180	0	306	268	499	519	310	580	608
V/C Ratio(X)	0.24	0.00	0.08	0.44	0.00	0.79	0.02	0.70	0.70	0.17	0.39	0.39
Avail Cap(c_a), veh/h	468	0	869	322	0	501	577	905	942	876	1139	1193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	17.1	25.7	0.0	19.7	12.3	19.6	19.6	14.7	15.5	15.5
Incr Delay (d2), s/veh	1.3	0.0	0.1	1.7	0.0	4.6	0.0	1.8	1.7	0.3	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3	1.1	0.0	3.1	0.0	4.0	4.2	0.4	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.0	0.0	17.2	27.4	0.0	24.3	12.3	21.4	21.4	14.9	15.9	15.9
LnGrp LOS	C		B	C		C	B	C	C	B	B	B
Approach Vol, veh/h	56		321				719		510			
Approach Delay, s/veh	21.8		25.0				21.3		15.8			
Approach LOS	C		C				C		B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	21.1	10.2	20.0	5.4	25.4	7.2	22.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	3.3	12.7	4.5	2.9	2.2	8.0	2.7	15.8				
Green Ext Time (p_c), s	0.1	3.2	0.1	0.2	0.0	2.2	0.0	2.2				

Intersection Summary

HCM 7th Control Delay, s/veh	20.3
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	56	9	28	265	14	21	3	12	0	2	13
Future Volume (vph)	6	56	9	28	265	14	21	3	12	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	8	76	12	38	358	19	28	4	16	0	3	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	96	415	48	21
Volume Left (vph)	8	38	28	0
Volume Right (vph)	12	19	16	18
Hadj (s)	0.04	0.02	0.11	-0.48
Departure Headway (s)	4.5	4.2	5.2	4.6
Degree Utilization, x	0.12	0.49	0.07	0.03
Capacity (veh/h)	764	834	629	687
Control Delay (s/veh)	8.2	11.1	8.6	7.8
Approach Delay (s/veh)	8.2	11.1	8.6	7.8
Approach LOS	A	B	A	A

Intersection Summary			
Delay		10.3	
Level of Service		B	
Intersection Capacity Utilization	37.3%		ICU Level of Service A
Analysis Period (min)		15	

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	56	9	28	265	14	21	3	12	0	2	13
Future Vol, veh/h	6	56	9	28	265	14	21	3	12	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	5	11	2	2	2	5	2	25	2	2	2
Mvmt Flow	8	76	12	38	358	19	28	4	16	0	3	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

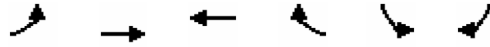
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.1	10.9	8.4	7.7
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	58%	8%	9%	0%
Vol Thru, %	8%	79%	86%	13%
Vol Right, %	33%	13%	5%	87%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	71	307	15
LT Vol	21	6	28	0
Through Vol	3	56	265	2
RT Vol	12	9	14	13
Lane Flow Rate	49	96	415	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.068	0.119	0.474	0.026
Departure Headway (Hd)	5.046	4.462	4.117	4.6
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	713	806	863	781
Service Time	3.055	2.473	2.212	2.61
HCM Lane V/C Ratio	0.069	0.119	0.481	0.026
HCM Control Delay, s/veh	8.4	8.1	10.9	7.7
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.4	2.6	0.1

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	1	66	306	0	2	0
Future Volume (Veh/h)	1	66	306	0	2	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	1	87	403	0	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	403				492	403
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	403				492	403
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1119				534	647
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	88	403	3	0		
Volume Left	1	0	3	0		
Volume Right	0	0	0	0		
cSH	1119	1700	534	1700		
Volume to Capacity	0.00	0.24	0.01	0.00		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s/veh)	0.1	0.0	11.8	0.0		
Lane LOS	A		B	A		
Approach Delay (s/veh)	0.1	0.0	11.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			26.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 12: SW Leveton Drive & West Access

09/20/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	1	66	306	0	2	0
Future Vol, veh/h	1	66	306	0	2	0
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	76	76	76	76	76	76
Heavy Vehicles, %	9	9	2	2	3	2
Mvmt Flow	1	87	403	0	3	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	403	0	-	0	492 403
Stage 1	-	-	-	-	403 -
Stage 2	-	-	-	-	89 -
Critical Hdwy	4.19	-	-	-	6.43 6.22
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.281	-	-	-	3.527 3.318
Pot Cap-1 Maneuver	1119	-	-	-	534 648
Stage 1	-	-	-	-	673 -
Stage 2	-	-	-	-	931 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1119	-	-	-	533 648
Mov Cap-2 Maneuver	-	-	-	-	533 -
Stage 1	-	-	-	-	672 -
Stage 2	-	-	-	-	931 -

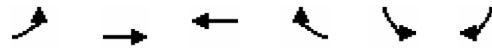
Approach	EB	WB	SB
HCM Control Delay, s/v	0.12	0	11.78
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	27	-	-	-	533	-
HCM Lane V/C Ratio	0.001	-	-	-	0.005	-
HCM Control Delay (s/veh)	8.2	0	-	-	11.8	0
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-

HCM Unsignalized Intersection Capacity Analysis

13: SW Lave-ton Drive & Center Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	17	63	213	15	70	88
Future Volume (Veh/h)	17	63	213	15	70	88
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	22	82	277	19	91	114
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	311				428	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311				428	302
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				84	84
cM capacity (veh/h)	1232				565	728
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	104	296	91	114		
Volume Left	22	0	91	0		
Volume Right	0	19	0	114		
cSH	1232	1700	565	728		
Volume to Capacity	0.02	0.17	0.16	0.16		
Queue Length 95th (ft)	1	0	14	14		
Control Delay (s/veh)	1.8	0.0	12.6	10.9		
Lane LOS	A		B	B		
Approach Delay (s/veh)	1.8	0.0	11.6			
Approach LOS			B			
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			28.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 13: SW Lefevon Drive & Center Access

09/20/2024

Intersection

Int Delay, s/veh 4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	17	63	213	15	70	88
Future Vol, veh/h	17	63	213	15	70	88
Conflicting Peds, #/hr	15	0	0	15	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	77	77	77	77	77	77
Heavy Vehicles, %	2	5	2	2	2	2
Mvmt Flow	22	82	277	19	91	114

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	311	0	427
Stage 1	-	-	301
Stage 2	-	-	126
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	1249	-	584
Stage 1	-	-	750
Stage 2	-	-	900
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1231	-	557
Mov Cap-2 Maneuver	-	-	557
Stage 1	-	-	726
Stage 2	-	-	887

Approach

	EB	WB	SB
HCM Control Delay, s/v	1.7	0	11.69
HCM LOS			B

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	383	-	-	-	557	728
HCM Lane V/C Ratio	0.018	-	-	-	0.163	0.157
HCM Control Delay (s/veh)	8	0	-	-	12.7	10.9
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	0.6

HCM Unsignalized Intersection Capacity Analysis
 14: Calmax Technology Access/East Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	128	8	6	180	0	27	0	14	0	0	0
Future Volume (Veh/h)	0	128	8	6	180	0	27	0	14	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	171	11	8	240	0	36	0	19	0	0	0
Pedestrians								4			15	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	255			186			437	452	181	467	457	255
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	255			186			437	452	181	467	457	255
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			93	100	98	100	100	100
cM capacity (veh/h)	1291			1383			519	492	859	479	488	772
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	182	248	55	0								
Volume Left	0	8	36	0								
Volume Right	11	0	19	0								
cSH	1291	1383	601	1700								
Volume to Capacity	0.00	0.01	0.09	0.00								
Queue Length 95th (ft)	0	0	8	0								
Control Delay (s/veh)	0.0	0.3	11.6	0.0								
Lane LOS		A	B	A								
Approach Delay (s/veh)	0.0	0.3	11.6	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			24.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	128	8	6	180	0	27	0	14	0	0	0
Future Vol, veh/h	0	128	8	6	180	0	27	0	14	0	0	0
Conflicting Peds, #/hr	15	0	4	4	0	15	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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	0	171	11	8	240	0	36	0	19	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	255	0	0	185
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1310	-	-	1389
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1291	-	-	1384
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.25	11.53	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	605	1291	-	-	58	-	-	-
HCM Lane V/C Ratio	0.09	-	-	-	0.006	-	-	-
HCM Control Delay (s/veh)	11.5	0	-	-	7.6	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

HCM Unsignalized Intersection Capacity Analysis

15: SW 108th Ave & SW Leveton Drive

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	140	28	49	146	131
Future Volume (Veh/h)	22	140	28	49	146	131
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	29	182	36	64	190	170
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	861					
pX, platoon unblocked						
vC, conflicting volume	412	276	361			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	412	276	361			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	95	76	97			
cM capacity (veh/h)	570	762	1191			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	211	100	360			
Volume Left	29	36	0			
Volume Right	182	0	170			
cSH	728	1191	1700			
Volume to Capacity	0.29	0.03	0.21			
Queue Length 95th (ft)	30	2	0			
Control Delay (s/veh)	11.9	3.1	0.0			
Lane LOS	B	A				
Approach Delay (s/veh)	11.9	3.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			39.7%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	22	140	28	49	146	131
Future Vol, veh/h	22	140	28	49	146	131
Conflicting Peds, #/hr	0	0	1	0	0	1
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	77	77	77	77	77	77
Heavy Vehicles, %	6	2	3	9	7	2
Mvmt Flow	29	182	36	64	190	170

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	412	276	361	0	0
Stage 1	276	-	-	-	-
Stage 2	136	-	-	-	-
Critical Hdwy	6.46	6.22	4.13	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.227	-	-
Pot Cap-1 Maneuver	589	763	1192	-	-
Stage 1	762	-	-	-	-
Stage 2	880	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	569	762	1191	-	-
Mov Cap-2 Maneuver	569	-	-	-	-
Stage 1	737	-	-	-	-
Stage 2	880	-	-	-	-

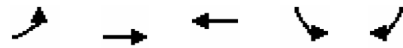
Approach	EB	NB	SB
HCM Control Delay, s/v	11.93	2.95	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	655	-	729	-	-
HCM Lane V/C Ratio	0.031	-	0.289	-	-
HCM Control Delay (s/veh)	8.1	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Queues

16: SW Herman Road & SW 108th Ave

09/20/2024



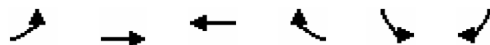
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	8	338	567	299	22
v/c Ratio	0.02	0.40	0.70	0.48	0.04
Control Delay (s/veh)	5.9	10.2	17.7	19.6	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.9	10.2	17.7	19.6	8.6
Queue Length 50th (ft)	1	55	108	62	0
Queue Length 95th (ft)	7	141	358	220	16
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	573	1735	1661	1216	1063
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.19	0.34	0.25	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis

16: SW Herman Road & SW 108th Ave

09/20/2024



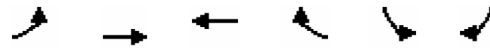
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	311	451	71	275	20
Future Volume (vph)	7	311	451	71	275	20
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1583	1776	1760		1770	1538
Flt Permitted	0.25	1.00	1.00		0.95	1.00
Satd. Flow (perm)	415	1776	1760		1770	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	338	490	77	299	22
RTOR Reduction (vph)	0	0	6	0	0	15
Lane Group Flow (vph)	8	338	561	0	299	7
Heavy Vehicles (%)	14%	7%	6%	6%	2%	5%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	23.4	28.8	22.8		15.8	15.8
Effective Green, g (s)	26.2	30.2	24.2		18.3	18.3
Actuated g/C Ratio	0.46	0.53	0.43		0.32	0.32
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	233	949	753		573	498
v/s Ratio Prot	0.00	c0.19	c0.32		c0.17	
v/s Ratio Perm	0.01					0.00
v/c Ratio	0.03	0.36	0.75		0.52	0.01
Uniform Delay, d1	15.1	7.6	13.6		15.5	13.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	4.1		0.7	0.0
Delay (s)	15.2	7.8	17.6		16.2	13.0
Level of Service	B	A	B		B	B
Approach Delay (s/veh)		8.0	17.6		16.0	
Approach LOS		A	B		B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

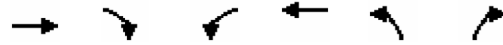
09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Volume (veh/h)	7	311	451	71	275	20
Future Volume (veh/h)	7	311	451	71	275	20
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1693	1796	1811	1811	1870	1826
Adj Flow Rate, veh/h	8	338	490	77	299	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	14	7	6	6	2	5
Cap, veh/h	408	1133	813	128	425	369
Arrive On Green	0.03	0.63	0.53	0.51	0.24	0.24
Sat Flow, veh/h	1612	1796	1528	240	1781	1547
Grp Volume(v), veh/h	8	338	0	567	299	22
Grp Sat Flow(s),veh/h/ln	1612	1796	0	1768	1781	1547
Q Serve(g_s), s	0.0	5.2	0.0	13.6	9.4	0.7
Cycle Q Clear(g_c), s	0.0	5.2	0.0	13.6	9.4	0.7
Prop In Lane	1.00			0.14	1.00	1.00
Lane Grp Cap(c), veh/h	408	1133	0	941	425	369
V/C Ratio(X)	0.02	0.30	0.00	0.60	0.70	0.06
Avail Cap(c_a), veh/h	655	1361	0	1888	945	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	5.1	0.0	10.0	21.3	18.0
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.7	1.7	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	0.0	4.3	3.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	13.3	5.3	0.0	10.6	23.0	18.1
LnGrp LOS	B	A		B	C	B
Approach Vol, veh/h		346	567		321	
Approach Delay, s/veh		5.5	10.6		22.7	
Approach LOS		A	B		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		42.6		18.6	6.0	36.6
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		7.2		11.4	2.0	15.6
Green Ext Time (p_c), s		7.4		0.8	0.0	15.6
Intersection Summary						
HCM 7th Control Delay, s/veh			12.3			
HCM 7th LOS			B			

HCM Unsignalized Intersection Capacity Analysis
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻		↻	↻	↻	↻
Traffic Volume (veh/h)	363	104	44	734	153	68
Future Volume (Veh/h)	363	104	44	734	153	68
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	399	114	48	807	168	75
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			514		1360	457
vC1, stage 1 conf vol					457	
vC2, stage 2 conf vol					903	
vCu, unblocked vol			514		1360	457
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)					5.4	
tF (s)			2.3		3.5	3.4
p0 queue free %			95		50	87
cM capacity (veh/h)			1025		339	595

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	513	48	807	168	75
Volume Left	0	48	0	168	0
Volume Right	114	0	0	0	75
cSH	1700	1025	1700	339	595
Volume to Capacity	0.30	0.05	0.47	0.50	0.13
Queue Length 95th (ft)	0	4	0	66	11
Control Delay (s/veh)	0.0	8.7	0.0	25.6	11.9
Lane LOS	A		D B		
Approach Delay (s/veh)	0.0	0.5	21.4		
Approach LOS				C	

Intersection Summary					
Average Delay			3.5		
Intersection Capacity Utilization			53.8%	ICU Level of Service	A
Analysis Period (min)	15				

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024

Intersection

Int Delay, s/veh	17.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	363	104	44	734	153	68
Future Vol, veh/h	363	104	44	734	153	68
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	5	7	2	3	6
Mvmt Flow	399	114	48	807	168	75

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	514	0	1360 457
Stage 1	-	-	-	-	457 -
Stage 2	-	-	-	-	903 -
Critical Hdwy	-	-	4.17	-	6.43 6.26
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.263	-	3.527 3.354
Pot Cap-1 Maneuver	-	-	1026	-	~ 163 595
Stage 1	-	-	-	-	636 -
Stage 2	-	-	-	-	394 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1025	-	~ 155 595
Mov Cap-2 Maneuver	-	-	-	-	~ 155 -
Stage 1	-	-	-	-	635 -
Stage 2	-	-	-	-	375 -

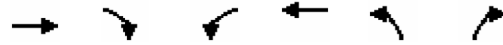
Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.49	111.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	155	595	-	-	1025	-
HCM Lane V/C Ratio	1.086	0.126	-	-	0.047	-
HCM Control Delay (s/veh)	155.8	11.9	-	-	8.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	8.8	0.4	-	-	0.1	-

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

HCM Unsignalized Intersection Capacity Analysis
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Volume (veh/h)	10	12	58	97	273	20
Future Volume (Veh/h)	10	12	58	97	273	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	16	19	91	152	427	31
Pedestrians					37	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					4	
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			72		397	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		397	63
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			94		22	97
cM capacity (veh/h)			1444		547	959

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	35	243	458
Volume Left	0	91	427
Volume Right	19	0	31
cSH	1700	1444	563
Volume to Capacity	0.02	0.06	0.81
Queue Length 95th (ft)	0	5	202
Control Delay (s/veh)	0.0	3.2	33.5
Lane LOS		A	D
Approach Delay (s/veh)	0.0	3.2	33.5
Approach LOS			D

Intersection Summary			
Average Delay		21.9	
Intersection Capacity Utilization		38.0%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	22					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	12	58	97	273	20
Future Vol, veh/h	10	12	58	97	273	20
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	16	19	91	152	427	31

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	71	0	395 62
Stage 1	-	-	-	-	62 -
Stage 2	-	-	-	-	333 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1498	-	606 995
Stage 1	-	-	-	-	956 -
Stage 2	-	-	-	-	722 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1445	-	545 959
Mov Cap-2 Maneuver	-	-	-	-	545 -
Stage 1	-	-	-	-	922 -
Stage 2	-	-	-	-	672 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.87	33.77
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	561	-	-	674	-
HCM Lane V/C Ratio	0.816	-	-	0.063	-
HCM Control Delay (s/veh)	33.8	-	-	7.7	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	8.1	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Volume (veh/h)	0	303	1593	29	0	1776
Future Volume (Veh/h)	0	303	1593	29	0	1776
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	329	1732	32	0	1930
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2698	867			1733	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2698	867			1733	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	11			100	
cM capacity (veh/h)	17	370			359	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	329	866	866	32	965	965
Volume Left	0	0	0	0	0	0
Volume Right	329	0	0	32	0	0
cSH	370	1700	1700	1700	1700	1700
Volume to Capacity	0.89	0.51	0.51	0.02	0.57	0.57
Queue Length 95th (ft)	221	0	0	0	0	0
Control Delay (s/veh)	56.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s/veh)	56.9	0.0			0.0	
Approach LOS	F					

Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			69.5%		ICU Level of Service	C
Analysis Period (min)			15			

* User Entered Value

HCM 7th TWSC
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	10.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	303	1593	29	0	1776
Future Vol, veh/h	0	303	1593	29	0	1776
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	3	4	2	2
Mvmt Flow	0	329	1732	32	0	1930

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	866	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.96	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.33	-
Pot Cap-1 Maneuver	0 ~ 295	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	- ~ 295	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	26.48	0	0
HCM LOS	F		

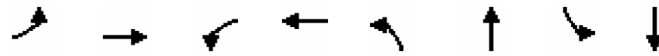
Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 295	-
HCM Lane V/C Ratio	- 1.118	-
HCM Control Delay (s/veh)	- 126.5	-
HCM Lane LOS	- F	-
HCM 95th %tile Q(veh)	- 13.5	-

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

Queues

20: SW Teton Avenue & SW Herman Road

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	653	49	355	221	223	21	191
v/c Ratio	0.02	0.78	0.19	0.36	0.62	0.42	0.07	0.69
Control Delay (s/veh)	13.2	32.7	14.3	17.5	35.3	34.5	25.1	56.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.2	32.7	14.3	17.5	35.3	34.5	25.1	56.5
Queue Length 50th (ft)	2	374	15	132	120	122	10	128
Queue Length 95th (ft)	10	534	35	240	165	190	24	188
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	600	837	422	993	396	901	486	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.78	0.12	0.36	0.56	0.25	0.04	0.23

Intersection Summary

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	240	282	39	256	28	177	146	32	17	125	28
Future Volume (vph)	6	240	282	39	256	28	177	146	32	17	125	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1543	1659		1626	1803		1596	1732		1703	1617	
Flt Permitted	0.50	1.00		0.19	1.00		0.37	1.00		0.62	1.00	
Satd. Flow (perm)	816	1659		326	1803		625	1732		1110	1617	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	8	300	352	49	320	35	221	182	40	21	156	35
RTOR Reduction (vph)	0	19	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	8	634	0	49	354	0	221	223	0	21	185	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	17%	2%	8%	11%	4%	2%	13%	6%	10%	6%	16%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	58.1	57.1		66.1	61.1		40.6	34.3		23.3	21.0	
Effective Green, g (s)	58.1	57.6		66.1	61.6		40.6	34.8		23.3	21.5	
Actuated g/C Ratio	0.49	0.49		0.56	0.52		0.34	0.30		0.20	0.18	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	408	811		238	943		344	512		231	295	
v/s Ratio Prot	0.00	c0.38		c0.01	0.20		c0.09	0.13		0.00	0.11	
v/s Ratio Perm	0.01			0.11			c0.14			0.02		
v/c Ratio	0.02	0.78		0.21	0.37		0.64	0.44		0.09	0.63	
Uniform Delay, d1	15.3	24.9		16.7	16.6		29.9	33.5		38.3	44.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	5.0		0.2	0.3		3.1	0.6		0.1	4.2	
Delay (s)	15.3	29.9		16.9	16.9		33.0	34.1		38.4	48.6	
Level of Service	B	C		B	B		C	C		D	D	
Approach Delay (s/veh)		29.7			16.9			33.6			47.6	
Approach LOS		C			B			C			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	117.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	240	282	39	256	28	177	146	32	17	125	28
Future Volume (veh/h)	6	240	282	39	256	28	177	146	32	17	125	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1648	1870	1781	1737	1841	1870	1707	1811	1752	1811	1663	1841
Adj Flow Rate, veh/h	8	300	352	49	320	35	221	182	40	21	156	35
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	17	2	8	11	4	2	13	6	10	6	16	4
Cap, veh/h	441	376	441	253	828	91	330	376	83	280	197	44
Arrive On Green	0.01	0.48	0.47	0.04	0.51	0.50	0.13	0.26	0.26	0.02	0.15	0.14
Sat Flow, veh/h	1570	784	920	1654	1630	178	1626	1438	316	1725	1314	295
Grp Volume(v), veh/h	8	0	652	49	0	355	221	0	222	21	0	191
Grp Sat Flow(s),veh/h/ln	1570	0	1705	1654	0	1809	1626	0	1753	1725	0	1609
Q Serve(g_s), s	0.2	0.0	29.4	1.3	0.0	10.9	10.0	0.0	9.8	0.9	0.0	10.4
Cycle Q Clear(g_c), s	0.2	0.0	29.4	1.3	0.0	10.9	10.0	0.0	9.8	0.9	0.0	10.4
Prop In Lane	1.00		0.54	1.00		0.10	1.00		0.18	1.00		0.18
Lane Grp Cap(c), veh/h	441	0	817	253	0	919	330	0	458	280	0	241
V/C Ratio(X)	0.02	0.00	0.80	0.19	0.00	0.39	0.67	0.00	0.48	0.08	0.00	0.79
Avail Cap(c_a), veh/h	770	0	1021	552	0	1063	469	0	1108	620	0	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	20.1	16.1	0.0	13.7	26.8	0.0	28.5	32.0	0.0	37.4
Incr Delay (d2), s/veh	0.0	0.0	3.7	0.1	0.0	0.3	0.9	0.0	0.9	0.0	0.0	6.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	11.0	0.5	0.0	4.2	3.8	0.0	4.1	0.4	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.6	0.0	23.9	16.3	0.0	14.0	27.7	0.0	29.3	32.0	0.0	43.6
LnGrp LOS	B		C	B		B	C		C	C		D
Approach Vol, veh/h		660			404			443				212
Approach Delay, s/veh		23.7			14.3			28.5				42.4
Approach LOS		C			B			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	48.6	16.2	18.6	4.9	51.3	6.1	28.8				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	3.3	31.4	12.0	12.4	2.2	12.9	2.9	11.8				
Green Ext Time (p_c), s	0.0	11.7	0.2	0.7	0.0	8.2	0.1	3.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			25.0									
HCM 7th LOS			C									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	200	352	398	1722	1595	332
v/c Ratio	0.99	0.84	1.02	0.59	0.80	0.34
Control Delay (s/veh)	121.9	32.0	103.3	5.0	32.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	121.9	32.0	103.3	5.0	32.7	7.4
Queue Length 50th (ft)	185	61	~382	221	776	56
Queue Length 95th (ft)	#349	#228	#590	258	m855	m80
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	202	419	391	2932	1989	964
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.84	1.02	0.59	0.80	0.34

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	184	324	366	1584	0	1467	305
Future Volume (vph)	184	324	366	1584	0	1467	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1770	1493	1770	3539		3438	1509
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1770	1493	1770	3539		3438	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	200	352	398	1722	0	1595	332
RTOR Reduction (vph)	0	249	0	0	0	0	91
Lane Group Flow (vph)	200	103	398	1722	0	1595	241
Confl. Peds. (#/hr)		21	9				9
Heavy Vehicles (%)	2%	5%	2%	2%	2%	5%	2%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	15.0	15.0	29.5	114.0		79.0	79.0
Effective Green, g (s)	16.0	16.0	31.0	116.0		81.0	81.0
Actuated g/C Ratio	0.11	0.11	0.22	0.83		0.58	0.58
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	202	170	391	2932		1989	873
v/s Ratio Prot	c0.11		c0.22	0.49		c0.46	
v/s Ratio Perm		0.07					0.16
v/c Ratio	0.99	0.61	1.02	0.59		0.80	0.28
Uniform Delay, d1	61.9	59.0	54.5	4.0		23.2	14.8
Progression Factor	1.00	1.00	1.00	1.00		1.29	1.35
Incremental Delay, d2	60.3	5.1	50.1	0.9		2.2	0.5
Delay (s)	122.2	64.1	104.6	4.9		32.1	20.4
Level of Service	F	E	F	A		C	C
Approach Delay (s/veh)	85.2			23.6		30.1	
Approach LOS	F			C		C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	184	324	366	1584	0	1467	305
Future Volume (veh/h)	184	324	366	1584	0	1467	305
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1870		1826	1870
Adj Flow Rate, veh/h	200	352	398	1722		1595	332
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	2	5	2	2		5	2
Cap, veh/h	204	177	394	2944		2007	910
Arrive On Green	0.11	0.11	0.22	0.83		1.00	1.00
Sat Flow, veh/h	1781	1547	1781	3647		3561	1573
Grp Volume(v), veh/h	200	352	398	1722		1595	332
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1777		1735	1573
Q Serve(g_s), s	15.7	16.0	31.0	22.6		0.0	0.0
Cycle Q Clear(g_c), s	15.7	16.0	31.0	22.6		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	204	177	394	2944		2007	910
V/C Ratio(X)	0.98	1.99	1.01	0.58		0.79	0.36
Avail Cap(c_a), veh/h	204	177	394	2944		2007	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00		2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		0.50	0.50
Uniform Delay (d), s/veh	61.9	62.0	54.5	4.0		0.0	0.0
Incr Delay (d2), s/veh	57.8	465.3	47.6	0.9		1.7	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	35.8	18.7	5.5		0.5	0.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	119.6	527.3	102.1	4.8		1.7	0.6
LnGrp LOS	F	F	F	A		A	A
Approach Vol, veh/h	552			2120		1927	
Approach Delay, s/veh	379.6			23.1		1.5	
Approach LOS	F			C		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		120.0		20.0	35.0	85.0	
Change Period (Y+Rc), s		6.0		5.0	5.5	6.0	
Max Green Setting (Gmax), s		94.0		15.0	29.5	79.0	
Max Q Clear Time (g_c+I1), s		24.6		18.0	33.0	2.0	
Green Ext Time (p_c), s		64.3		0.0	0.0	65.8	

Intersection Summary	
HCM 7th Control Delay, s/veh	56.8
HCM 7th LOS	E

Notes
 User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	176	320	323	414	162	1333	253	482	1191	22
v/c Ratio	0.50	0.92	0.92	0.69	0.95	0.98	0.26	0.90	0.77	0.03
Control Delay (s/veh)	42.1	87.2	86.6	14.9	110.5	55.9	3.6	78.3	36.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.1	87.2	86.6	14.9	110.5	55.9	3.6	78.3	36.6	0.0
Queue Length 50th (ft)	49	303	306	41	150	508	18	223	473	0
Queue Length 95th (ft)	88	#504	#507	163	m#281	m#775	m45	#312	564	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	391	346	350	601	171	1361	979	556	1547	757
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.92	0.92	0.69	0.95	0.98	0.26	0.87	0.77	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↖	↖	↖	↕↕	↖	↖↖	↕↕	↖
Traffic Volume (vph)	23	78	65	528	76	389	152	1253	238	453	1120	21
Future Volume (vph)	23	78	65	528	76	389	152	1253	238	453	1120	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3296		1681	1702	1533	1770	3505	1561	3433	3438	1547
Flt Permitted		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3296		1681	1702	1533	1770	3505	1561	3433	3438	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	24	83	69	562	81	414	162	1333	253	482	1191	22
RTOR Reduction (vph)	0	63	0	0	0	286	0	0	58	0	0	12
Lane Group Flow (vph)	0	113	0	320	323	128	162	1333	195	482	1191	10
Confl. Peds. (#/hr)	7					7	1		7	7		1
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	2%	3%	2%	2%	5%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1		6
Permitted Phases						4			2			6
Actuated Green, G (s)		12.2		28.8	28.8	28.8	13.6	54.4	83.2	21.9	63.0	63.0
Effective Green, g (s)		12.2		28.8	28.8	28.8	13.6	54.4	83.2	21.9	63.0	63.0
Actuated g/C Ratio		0.09		0.21	0.21	0.21	0.10	0.39	0.59	0.16	0.45	0.45
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		345	350	315	171	1361	927	537	1547	696
v/s Ratio Prot		c0.03		c0.19	0.19		0.09	c0.38	0.04	c0.14	0.35	
v/s Ratio Perm						0.08			0.08			0.01
v/c Ratio		0.39		0.93	0.92	0.41	0.95	0.98	0.21	0.90	0.77	0.01
Uniform Delay, d1		60.4		54.6	54.5	48.2	62.8	42.2	13.2	57.9	32.4	21.3
Progression Factor		1.00		1.00	1.00	1.00	1.00	0.91	1.02	1.00	1.00	1.00
Incremental Delay, d2		0.5		30.1	29.0	0.5	45.3	17.1	0.1	17.4	3.8	0.0
Delay (s)		60.9		84.6	83.5	48.7	108.2	55.7	13.5	75.3	36.2	21.3
Level of Service		E		F	F	D	F	E	B	E	D	C
Approach Delay (s/veh)		60.9			70.2			54.5			47.1	
Approach LOS		E			E			D			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	55.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1068	606	1187	803	188	394
v/c Ratio	0.91	0.71	0.87	0.30	0.37	0.29
Control Delay (s/veh)	50.1	11.7	42.1	5.4	25.3	15.4
Queue Delay	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay (s/veh)	50.1	11.7	43.0	5.4	25.3	15.4
Queue Length 50th (ft)	413	63	406	66	74	148
Queue Length 95th (ft)	#541	207	#765	187	37	198
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1174	858	1362	2666	990	1371
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	6	45	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.71	0.90	0.30	0.19	0.29

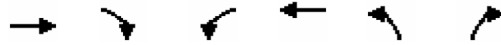
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & OR 99W (Pacific Highway)

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	961	545	1068	723	169	355
Future Volume (vph)	961	545	1068	723	169	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3438	1568	3400	3438	3213	2472
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3438	1568	3400	3438	3213	2472
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1068	606	1187	803	188	394
RTOR Reduction (vph)	0	323	0	0	0	0
Lane Group Flow (vph)	1068	283	1187	803	188	394
Confl. Peds. (#/hr)						3
Heavy Vehicles (%)	5%	3%	3%	5%	9%	15%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	43.3	87.9	20.1	63.4
Effective Green, g (s)	41.0	41.0	44.9	89.9	22.1	58.4
Actuated g/C Ratio	0.34	0.34	0.37	0.75	0.18	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1174	535	1272	2575	591	1203
v/s Ratio Prot	c0.31		c0.35	0.23	c0.06	0.16
v/s Ratio Perm		0.18				
v/c Ratio	0.91	0.53	0.93	0.31	0.32	0.33
Uniform Delay, d1	37.7	31.7	36.1	4.9	42.4	18.8
Progression Factor	1.00	1.00	1.00	1.00	0.54	0.98
Incremental Delay, d2	11.1	2.0	13.6	0.3	0.2	0.1
Delay (s)	48.8	33.8	49.7	5.2	22.9	18.6
Level of Service	D	C	D	A	C	B
Approach Delay (s/veh)	43.4			31.8	20.0	
Approach LOS	D			C	B	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			34.7		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.85			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	18.6
Intersection Capacity Utilization			96.2%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

09/20/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	60	253	359	59	1009	859
v/c Ratio	0.29	0.20	0.68	0.20	0.87	0.31
Control Delay (s/veh)	48.2	0.9	52.9	11.3	23.3	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.2	0.9	52.9	11.3	23.3	4.3
Queue Length 50th (ft)	44	0	138	0	190	42
Queue Length 95th (ft)	69	18	172	33	#956	161
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	437	1412	1006	516	1163	2766
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.18	0.36	0.11	0.87	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	52	220	312	51	878	747
Future Volume (vph)	52	220	312	51	878	747
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1641	1509	3059	1449	1752	3438
Flt Permitted	0.95	1.00	1.00	1.00	0.35	1.00
Satd. Flow (perm)	1641	1509	3059	1449	649	3438
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	60	253	359	59	1009	859
RTOR Reduction (vph)	0	53	0	49	0	0
Lane Group Flow (vph)	60	200	359	10	1009	859
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	10%	7%	18%	9%	3%	5%
Turn Type	Perm	pt+ov	NA	Perm	D.P+P	NA
Protected Phases		4 5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	13.9	89.8	19.7	19.7	90.6	95.6
Effective Green, g (s)	14.9	94.8	20.7	20.7	92.6	96.6
Actuated g/C Ratio	0.12	0.79	0.17	0.17	0.77	0.81
Clearance Time (s)	5.0		5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0		4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	203	1192	527	249	1161	2767
v/s Ratio Prot		0.13	0.12		c0.52	0.25
v/s Ratio Perm	c0.04			0.01	c0.15	
v/c Ratio	0.30	0.17	0.68	0.04	0.87	0.31
Uniform Delay, d1	47.8	3.1	46.6	41.4	13.8	3.0
Progression Factor	1.00	1.00	1.00	1.00	0.99	1.02
Incremental Delay, d2	1.1	0.1	4.2	0.1	4.7	0.2
Delay (s)	48.9	3.1	50.8	41.5	18.4	3.3
Level of Service	D	A	D	D	B	A
Approach Delay (s/veh)	11.9		49.5			11.4
Approach LOS	B		D			B

Intersection Summary

HCM 2000 Control Delay (s/veh)	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	726	224	90	233	136	23	5	13	42	2	31
Future Volume (Veh/h)	66	726	224	90	233	136	23	5	13	42	2	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	789	243	98	253	148	25	5	14	46	2	34
Pedestrians								1			1	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	402			1033			1540	1654	912	1474	1701	328
vC1, stage 1 conf vol							1056	1056		524	524	
vC2, stage 2 conf vol							484	598		950	1177	
vCu, unblocked vol	402			1033			1540	1654	912	1474	1701	328
tC, single (s)	4.1			4.6			8.1	6.5	7.2	7.2	6.5	6.3
tC, 2 stage (s)							7.1	5.5		6.2	5.5	
tF (s)	2.2			2.7			4.4	4.0	4.2	3.6	4.0	3.4
p0 queue free %	94			81			82	98	94	70	99	95
cM capacity (veh/h)	1150			518			142	221	225	155	143	686
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total	72	1032	98	401	25	19	82					
Volume Left	72	0	98	0	25	0	46					
Volume Right	0	243	0	148	0	14	34					
cSH	1150	1700	518	1700	142	224	228					
Volume to Capacity	0.06	0.61	0.19	0.24	0.18	0.08	0.36					
Queue Length 95th (ft)	5	0	17	0	15	7	39					
Control Delay (s/veh)	8.3	0.0	13.6	0.0	35.6	22.6	29.5					
Lane LOS	A		B		E	C	D					
Approach Delay (s/veh)	0.5		2.7		30.0		29.5					
Approach LOS					D		D					
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			77.8%		ICU Level of Service					D		
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↷↶		
Traffic Vol, veh/h	66	726	224	90	233	136	23	5	13	42	2	31
Future Vol, veh/h	66	726	224	90	233	136	23	5	13	42	2	31
Conflicting Peds, #/hr	1	0	1	1	0	1	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	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	2	40	50	9	7	100	2	100	10	2	14
Mvmt Flow	72	789	243	98	253	148	25	5	14	46	2	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	402	0	0	1034	0	0	1505	1653	912	1459	1701	328
Stage 1	-	-	-	-	-	-	1055	1055	-	524	524	-
Stage 2	-	-	-	-	-	-	450	598	-	935	1177	-
Critical Hdwy	4.13	-	-	4.6	-	-	8.1	6.52	7.2	7.2	6.52	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.2	5.52	-
Follow-up Hdwy	2.227	-	-	2.65	-	-	4.4	4.018	4.2	3.59	4.018	3.426
Pot Cap-1 Maneuver	1151	-	-	518	-	-	61	98	225	103	92	686
Stage 1	-	-	-	-	-	-	182	302	-	522	530	-
Stage 2	-	-	-	-	-	-	438	491	-	308	265	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1150	-	-	517	-	-	43	75	225	69	70	686
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	75	-	69	70	-
Stage 1	-	-	-	-	-	-	170	283	-	423	429	-
Stage 2	-	-	-	-	-	-	336	398	-	265	248	-

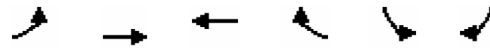
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.54			2.66			111.42			99.13		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	43	144	1150	-	-	517	-	-	110
HCM Lane V/C Ratio	0.586	0.136	0.062	-	-	0.189	-	-	0.741
HCM Control Delay (s/veh)	172.1	33.9	8.3	-	-	13.6	-	-	99.1
HCM Lane LOS	F	D	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.2	0.5	0.2	-	-	0.7	-	-	4

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↑		↘	
Traffic Volume (veh/h)	5	751	437	10	20	7
Future Volume (Veh/h)	5	751	437	10	20	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	782	455	10	21	7
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	471				1258	466
vC1, stage 1 conf vol					466	
vC2, stage 2 conf vol					792	
vCu, unblocked vol	471				1258	466
tC, single (s)	4.3				6.5	6.2
tC, 2 stage (s)					5.5	
tF (s)	2.4				3.6	3.3
p0 queue free %	99				95	99
cM capacity (veh/h)	997				383	593

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	782	465	28
Volume Left	5	0	0	21
Volume Right	0	0	10	7
cSH	997	1700	1700	420
Volume to Capacity	0.01	0.46	0.27	0.07
Queue Length 95th (ft)	0	0	0	5
Control Delay (s/veh)	8.6	0.0	0.0	14.2
Lane LOS	A			B
Approach Delay (s/veh)	0.1		0.0	14.2
Approach LOS				B

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		49.5%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
5: SW Tualatin Road & SW 112th Avenue

09/20/2024

Intersection

Int Delay, s/veh 0.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations	↘	↗	↗		↘	
Traffic Vol, veh/h	5	751	437	10	20	7
Future Vol, veh/h	5	751	437	10	20	7
Conflicting Peds, #/hr	6	0	0	6	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	20	3	9	20	6	2
Mvmt Flow	5	782	455	10	21	7

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	472	0	-	0	1259	466
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	793	-
Critical Hdwy	4.3	-	-	-	6.46	6.22
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	2.38	-	-	-	3.554	3.318
Pot Cap-1 Maneuver	1002	-	-	-	185	596
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	439	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	997	-	-	-	182	593
Mov Cap-2 Maneuver	-	-	-	-	312	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	436	-

Approach EB WB SB

HCM Control Delay, s/v	0.06	0	15.97
HCM LOS			C

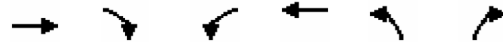
Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	997	-	-	-	356
HCM Lane V/C Ratio	0.005	-	-	-	0.079
HCM Control Delay (s/veh)	8.6	-	-	-	16
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→		←	→	←	→
Traffic Volume (veh/h)	788	42	40	377	74	5
Future Volume (Veh/h)	788	42	40	377	74	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	829	44	42	397	78	5
Pedestrians				1	2	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage (veh)	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			875	1334		854
vC1, stage 1 conf vol					853	
vC2, stage 2 conf vol					481	
vCu, unblocked vol			875	1334		854
tC, single (s)			4.2	6.4		6.5
tC, 2 stage (s)					5.4	
tF (s)			2.3	3.5		3.6
p0 queue free %			94	78		98
cM capacity (veh/h)			741	361		315

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	873	42	397	83
Volume Left	0	42	0	78
Volume Right	44	0	0	5
cSH	1700	741	1700	357
Volume to Capacity	0.51	0.06	0.23	0.23
Queue Length 95th (ft)	0	4	0	22
Control Delay (s/veh)	0.0	10.1	0.0	18.1
Lane LOS	B		C	
Approach Delay (s/veh)	0.0	1.0	18.1	
Approach LOS			C	

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	788	42	40	377	74	5
Future Vol, veh/h	788	42	40	377	74	5
Conflicting Peds, #/hr	0	2	2	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	15	9	9	2	33
Mvmt Flow	829	44	42	397	78	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	876	0	1335	855
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	481	-
Critical Hdwy	-	-	4.19	-	6.42	6.53
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.281	-	3.518	3.597
Pot Cap-1 Maneuver	-	-	742	-	170	316
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	741	-	160	315
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	586	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.97	22.05
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	293	-	-	741	-
HCM Lane V/C Ratio	0.283	-	-	0.057	-
HCM Control Delay (s/veh)	22.1	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.1	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	16	112	78	73	9
Future Volume (Veh/h)	1	16	112	78	73	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	17	122	85	79	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	413	84	89			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	413	84	89			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	92			
cM capacity (veh/h)	547	975	1506			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	18	207	89			
Volume Left	1	122	0			
Volume Right	17	0	10			
cSH	935	1506	1700			
Volume to Capacity	0.02	0.08	0.05			
Queue Length 95th (ft)	1	7	0			
Control Delay (s/veh)	8.9	4.7	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	8.9	4.7	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			27.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
 8: SW 108th Ave & Center Access

09/20/2024

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	1	16	112	78	73	9
Future Vol, veh/h	1	16	112	78	73	9
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	10	10	2
Mvmt Flow	1	17	122	85	79	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	413	84	89	0	0
Stage 1	84	-	-	-	-
Stage 2	328	-	-	-	-
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	596	975	1506	-	-
Stage 1	939	-	-	-	-
Stage 2	730	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	545	975	1506	-	-
Mov Cap-2 Maneuver	545	-	-	-	-
Stage 1	859	-	-	-	-
Stage 2	730	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.94	4.48	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1061	-	932	-	-
HCM Lane V/C Ratio	0.081	-	0.02	-	-
HCM Control Delay (s/veh)	7.6	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	34	253	76	9
Future Volume (Veh/h)	1	5	34	253	76	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	5	37	275	83	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	437	88	93			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	437	88	93			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	98			
cM capacity (veh/h)	563	970	1501			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	6	312	93			
Volume Left	1	37	0			
Volume Right	5	0	10			
cSH	866	1501	1700			
Volume to Capacity	0.01	0.02	0.05			
Queue Length 95th (ft)	1	2	0			
Control Delay (s/veh)	9.2	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.2	1.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			31.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
 9: SW 108th Ave & South Access

09/20/2024

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	1	5	34	253	76	9
Future Vol, veh/h	1	5	34	253	76	9
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	10	10	2
Mvmt Flow	1	5	37	275	83	10

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	436	88	92	0	0
Stage 1	88	-	-	-	-
Stage 2	349	-	-	-	-
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	577	971	1502	-	-
Stage 1	936	-	-	-	-
Stage 2	714	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	560	971	1502	-	-
Mov Cap-2 Maneuver	560	-	-	-	-
Stage 1	909	-	-	-	-
Stage 2	714	-	-	-	-

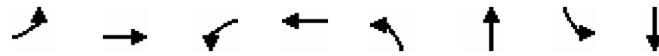
Approach	EB	NB	SB
HCM Control Delay, s/v	9.19	0.88	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	213	-	865	-	-
HCM Lane V/C Ratio	0.025	-	0.008	-	-
HCM Control Delay (s/veh)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	174	16	54	32	428	185	771
v/c Ratio	0.03	0.42	0.09	0.14	0.07	0.46	0.33	0.46
Control Delay (s/veh)	33.6	22.8	32.9	9.4	9.4	19.2	10.9	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.6	22.8	32.9	9.4	9.4	19.2	10.9	14.8
Queue Length 50th (ft)	1	35	3	1	3	42	19	48
Queue Length 95th (ft)	17	131	30	27	26	154	109	272
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	475	1263	245	940	753	2148	947	2649
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.14	0.07	0.06	0.04	0.20	0.20	0.29

Intersection Summary

HCM Signalized Intersection Capacity Analysis

10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↕		↖	↗	
Traffic Volume (vph)	5	114	34	14	6	40	27	283	81	157	631	25
Future Volume (vph)	5	114	34	14	6	40	27	283	81	157	631	25
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.87		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1504	1771		1128	1489		1612	3009		1768	3373	
Flt Permitted	0.95	1.00		0.95	1.00		0.30	1.00		0.45	1.00	
Satd. Flow (perm)	1504	1771		1128	1489		501	3009		837	3373	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	134	40	16	7	47	32	333	95	185	742	29
RTOR Reduction (vph)	0	10	0	0	37	0	0	20	0	0	2	0
Lane Group Flow (vph)	6	164	0	16	17	0	32	408	0	185	769	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	20%	2%	9%	60%	17%	10%	12%	18%	6%	2%	6%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	0.8	12.2		1.1	12.5		31.2	20.5		31.2	29.0	
Effective Green, g (s)	1.8	13.2		2.1	13.5		33.2	21.5		31.2	29.0	
Actuated g/C Ratio	0.03	0.20		0.03	0.21		0.51	0.33		0.48	0.45	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	41	362		36	311		312	1003		559	1516	
v/s Ratio Prot	0.00	c0.09		c0.01	0.01		0.01	0.14		c0.05	c0.23	
v/s Ratio Perm							0.05			0.11		
v/c Ratio	0.15	0.45		0.44	0.05		0.10	0.41		0.33	0.51	
Uniform Delay, d1	30.6	22.5		30.6	20.4		8.0	16.6		9.6	12.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.9		8.5	0.1		0.1	0.3		0.4	0.3	
Delay (s)	32.2	23.4		39.1	20.5		8.1	16.9		10.0	12.9	
Level of Service	C	C		D	C		A	B		A	B	
Approach Delay (s/veh)		23.7			24.7			16.2			12.4	
Approach LOS		C			C			B			B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	114	34	14	6	40	27	283	81	157	631	25
Future Volume (veh/h)	5	114	34	14	6	40	27	283	81	157	631	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1604	1870	1767	1011	1648	1752	1722	1633	1811	1870	1811	1648
Adj Flow Rate, veh/h	6	134	40	16	7	47	32	333	95	185	742	29
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	20	2	9	60	17	10	12	18	6	2	6	17
Cap, veh/h	50	252	75	48	37	247	365	580	163	527	1154	45
Arrive On Green	0.03	0.18	0.16	0.05	0.20	0.18	0.06	0.24	0.22	0.16	0.34	0.34
Sat Flow, veh/h	1527	1383	413	963	185	1240	1640	2388	671	1781	3375	132
Grp Volume(v), veh/h	6	0	174	16	0	54	32	214	214	185	378	393
Grp Sat Flow(s),veh/h/ln	1527	0	1796	963	0	1425	1640	1552	1507	1781	1721	1787
Q Serve(g_s), s	0.2	0.0	4.1	0.7	0.0	1.5	0.5	5.6	5.8	3.3	8.6	8.6
Cycle Q Clear(g_c), s	0.2	0.0	4.1	0.7	0.0	1.5	0.5	5.6	5.8	3.3	8.6	8.6
Prop In Lane	1.00		0.23	1.00		0.87	1.00		0.44	1.00		0.07
Lane Grp Cap(c), veh/h	50	0	327	48	0	284	365	377	366	527	588	611
V/C Ratio(X)	0.12	0.00	0.53	0.33	0.00	0.19	0.09	0.57	0.58	0.35	0.64	0.64
Avail Cap(c_a), veh/h	529	0	1205	229	0	956	1016	1041	1012	1211	1490	1547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	17.2	21.2	0.0	15.8	8.7	15.4	15.6	10.4	12.8	12.8
Incr Delay (d2), s/veh	1.0	0.0	1.3	4.0	0.0	0.3	0.1	1.4	1.5	0.4	1.2	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	1.5	0.2	0.0	0.4	0.1	1.7	1.7	1.0	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.7	0.0	18.5	25.2	0.0	16.1	8.8	16.7	17.1	10.8	14.0	14.0
LnGrp LOS	C		B	C		B	A	B	B	B	B	B
Approach Vol, veh/h		180			70			460			956	
Approach Delay, s/veh		18.7			18.2			16.4			13.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.3	15.2	6.3	12.4	6.7	20.8	5.5	13.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	5.3	7.8	2.7	6.1	2.5	10.6	2.2	3.5				
Green Ext Time (p_c), s	0.7	2.0	0.0	1.7	0.1	4.0	0.0	0.4				

Intersection Summary

HCM 7th Control Delay, s/veh	15.0
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	296	16	8	42	5	11	3	37	0	2	3
Future Volume (vph)	20	296	16	8	42	5	11	3	37	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	24	357	19	10	51	6	13	4	45	0	2	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	400	67	62	6
Volume Left (vph)	24	10	13	0
Volume Right (vph)	19	6	45	4
Hadj (s)	0.03	0.28	-0.17	-0.01
Departure Headway (s)	4.2	4.8	4.8	5.0
Degree Utilization, x	0.46	0.09	0.08	0.01
Capacity (veh/h)	848	723	686	641
Control Delay (s/veh)	10.8	8.2	8.2	8.1
Approach Delay (s/veh)	10.8	8.2	8.2	8.1
Approach LOS	B	A	A	A

Intersection Summary

Delay	10.1
Level of Service	B
Intersection Capacity Utilization	36.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	296	16	8	42	5	11	3	37	0	2	3
Future Vol, veh/h	20	296	16	8	42	5	11	3	37	0	2	3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	19	20	8	100	18	2	13	2	2	33
Mvmt Flow	24	357	19	10	51	6	13	4	45	0	2	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

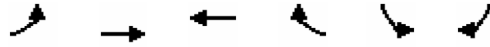
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.6	8.3	8.3	7.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	6%	15%	0%
Vol Thru, %	6%	89%	76%	40%
Vol Right, %	73%	5%	9%	60%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	332	55	5
LT Vol	11	20	8	0
Through Vol	3	296	42	2
RT Vol	37	16	5	3
Lane Flow Rate	61	400	66	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.083	0.454	0.088	0.008
Departure Headway (Hd)	4.851	4.085	4.78	4.688
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	742	868	753	767
Service Time	2.857	2.172	2.79	2.697
HCM Lane V/C Ratio	0.082	0.461	0.088	0.008
HCM Control Delay, s/veh	8.3	10.6	8.3	7.7
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2.4	0.3	0

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	1	314	43	3	1	2
Future Volume (Veh/h)	1	314	43	3	1	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	1	397	54	4	1	3
Pedestrians					4	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	62				459	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	62				459	60
tC, single (s)	4.1				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	100				100	100
cM capacity (veh/h)	1535				536	961
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	398	58	1	3		
Volume Left	1	0	1	0		
Volume Right	0	4	0	3		
cSH	1535	1700	536	961		
Volume to Capacity	0.00	0.03	0.00	0.00		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s/veh)	0.0	0.0	11.7	8.8		
Lane LOS	A		B	A		
Approach Delay (s/veh)	0.0	0.0	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			27.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 12: SW Leveton Drive & West Access

09/20/2024

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	1	314	43	3	1	2
Future Vol, veh/h	1	314	43	3	1	2
Conflicting Peds, #/hr	4	0	0	4	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	79	79	79	79	79	79
Heavy Vehicles, %	2	3	15	4	14	17
Mvmt Flow	1	397	54	4	1	3

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	62	0	-	0	460 60
Stage 1	-	-	-	-	60 -
Stage 2	-	-	-	-	400 -
Critical Hdwy	4.12	-	-	-	6.54 6.37
Critical Hdwy Stg 1	-	-	-	-	5.54 -
Critical Hdwy Stg 2	-	-	-	-	5.54 -
Follow-up Hdwy	2.218	-	-	-	3.626 3.453
Pot Cap-1 Maneuver	1541	-	-	-	538 964
Stage 1	-	-	-	-	933 -
Stage 2	-	-	-	-	652 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1535	-	-	-	533 961
Mov Cap-2 Maneuver	-	-	-	-	533 -
Stage 1	-	-	-	-	928 -
Stage 2	-	-	-	-	649 -

Approach

	EB	WB	SB
HCM Control Delay, s/v	0.02	0	9.76
HCM LOS			A

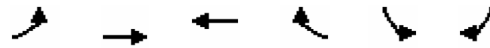
Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	6	-	-	-	533	961
HCM Lane V/C Ratio	0.001	-	-	-	0.002	0.003
HCM Control Delay (s/veh)	7.3	0	-	-	11.8	8.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0

HCM Unsignalized Intersection Capacity Analysis

13: SW Leveton Drive & Center Access

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	90	229	42	76	9	12
Future Volume (Veh/h)	90	229	42	76	9	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	115	294	54	97	12	15
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	166				642	118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166				642	118
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				97	98
cM capacity (veh/h)	1392				397	921

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	409	151	12	15
Volume Left	115	0	12	0
Volume Right	0	97	0	15
cSH	1392	1700	397	921
Volume to Capacity	0.08	0.09	0.03	0.02
Queue Length 95th (ft)	7	0	2	1
Control Delay (s/veh)	2.8	0.0	14.4	9.0
Lane LOS	A		B	A
Approach Delay (s/veh)	2.8	0.0	11.4	
Approach LOS			B	

Intersection Summary			
Average Delay		2.4	
Intersection Capacity Utilization		33.7%	ICU Level of Service
Analysis Period (min)		15	A

HCM 7th TWSC
 13: SW Lave-ton Drive & Center Access

09/20/2024

Intersection

Int Delay, s/veh 2.1

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	90	229	42	76	9	12
Future Vol, veh/h	90	229	42	76	9	12
Conflicting Peds, #/hr	15	0	0	15	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, %	2	4	7	4	2	2
Mvmt Flow	115	294	54	97	12	15

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	166	0	-	0	642	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1412	-	-	-	438	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1392	-	-	-	384	921
Mov Cap-2 Maneuver	-	-	-	-	384	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	585	-

Approach EB WB SB

HCM Control Delay, s/v	2.21	0	11.42
HCM LOS			B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h)	508	-	-	-	384	921
HCM Lane V/C Ratio	0.083	-	-	-	0.03	0.017
HCM Control Delay (s/veh)	7.8	0	-	-	14.7	9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.1	0.1

HCM Unsignalized Intersection Capacity Analysis

14: Calmax Technology Access/East Access & SW Leveton Drive

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	2	192	28	16	109	2	10	0	5	1	0	2
Future Volume (Veh/h)	2	192	28	16	109	2	10	0	5	1	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	218	32	18	124	2	11	0	6	1	0	2
Pedestrians												17
Lane Width (ft)												12.0
Walking Speed (ft/s)												3.5
Percent Blockage												2
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	143			250			401	417	234	422	432	142
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			250			401	417	234	422	432	142
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.6	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	4.0	4.0	3.8
p0 queue free %	100			99			98	100	99	100	100	100
cM capacity (veh/h)	1404			1316			545	510	805	445	500	780
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	252	144	17	3								
Volume Left	2	18	11	1								
Volume Right	32	2	6	2								
cSH	1404	1316	615	624								
Volume to Capacity	0.00	0.01	0.03	0.00								
Queue Length 95th (ft)	0	1	2	0								
Control Delay (s/veh)	0.1	1.1	11.0	10.8								
Lane LOS	A	A	B	B								
Approach Delay (s/veh)	0.1	1.1	11.0	10.8								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			26.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	192	28	16	109	2	10	0	5	1	0	2
Future Vol, veh/h	2	192	28	16	109	2	10	0	5	1	0	2
Conflicting Peds, #/hr	17	0	0	0	0	17	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	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	4	7	2	2	4	6	2	2	2	50	2	50
Mvmt Flow	2	218	32	18	124	2	11	0	6	1	0	2

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	143	0	0	250
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.236	-	-	2.218
Pot Cap-1 Maneuver	1427	-	-	1316
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1404	-	-	1316
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.07	0.98	11.02	10.69
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	615	16	-	-	226	-	-	636
HCM Lane V/C Ratio	0.028	0.002	-	-	0.014	-	-	0.005
HCM Control Delay (s/veh)	11	7.6	0	-	7.8	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

HCM Unsignalized Intersection Capacity Analysis

15: SW 108th Ave & SW Leveton Drive

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	161	62	93	200	47	32
Future Volume (Veh/h)	161	62	93	200	47	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	183	70	106	227	53	36
Pedestrians	19			1	1	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	2			0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	861					
pX, platoon unblocked						
vC, conflicting volume	530	91	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	530	91	108			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	60	93	93			
cM capacity (veh/h)	455	948	1438			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	253	333	89			
Volume Left	183	106	0			
Volume Right	70	0	36			
cSH	532	1438	1700			
Volume to Capacity	0.48	0.07	0.05			
Queue Length 95th (ft)	63	6	0			
Control Delay (s/veh)	17.8	2.9	0.0			
Lane LOS	C	A				
Approach Delay (s/veh)	17.8	2.9	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			8.1			
Intersection Capacity Utilization			41.8%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	8.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	161	62	93	200	47	32
Future Vol, veh/h	161	62	93	200	47	32
Conflicting Peds, #/hr	1	1	19	0	0	19
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	88	88	88	88	88	88
Heavy Vehicles, %	7	2	5	21	28	12
Mvmt Flow	183	70	106	227	53	36

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	530	92	109	0	0
Stage 1	91	-	-	-	-
Stage 2	440	-	-	-	-
Critical Hdwy	6.47	6.22	4.15	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.318	2.245	-	-
Pot Cap-1 Maneuver	501	966	1463	-	-
Stage 1	921	-	-	-	-
Stage 2	639	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	442	947	1437	-	-
Mov Cap-2 Maneuver	442	-	-	-	-
Stage 1	828	-	-	-	-
Stage 2	627	-	-	-	-

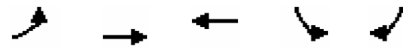
Approach	EB	NB	SB
HCM Control Delay, s/v	18.37	2.45	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	571	-	519	-	-
HCM Lane V/C Ratio	0.074	-	0.488	-	-
HCM Control Delay (s/veh)	7.7	0	18.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.6	-	-

Queues

16: SW Herman Road & SW 108th Ave

09/20/2024



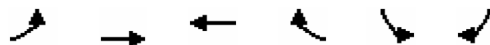
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	16	437	638	84	12
v/c Ratio	0.03	0.40	0.59	0.23	0.03
Control Delay (s/veh)	3.1	6.5	9.9	21.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.1	6.5	9.9	21.3	12.2
Queue Length 50th (ft)	1	55	79	16	0
Queue Length 95th (ft)	7	120	281	70	12
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	598	1557	1539	1040	1019
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.28	0.41	0.08	0.01

Intersection Summary

HCM Signalized Intersection Capacity Analysis

16: SW Herman Road & SW 108th Ave

09/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↘
Traffic Volume (vph)	14	376	249	299	72	10
Future Volume (vph)	14	376	249	299	72	10
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	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.93		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1399	1557	1597		1504	1468
Flt Permitted	0.30	1.00	1.00		0.95	1.00
Satd. Flow (perm)	446	1557	1597		1504	1468
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	16	437	290	348	84	12
RTOR Reduction (vph)	0	0	33	0	0	10
Lane Group Flow (vph)	16	437	605	0	84	2
Confl. Peds. (#/hr)	3			3		
Heavy Vehicles (%)	29%	22%	12%	6%	20%	10%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	31.6	37.0	31.0		7.5	7.5
Effective Green, g (s)	34.4	38.4	32.4		10.0	10.0
Actuated g/C Ratio	0.61	0.68	0.57		0.18	0.18
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	305	1060	917		266	260
v/s Ratio Prot	0.00	c0.28	c0.38		c0.06	
v/s Ratio Perm	0.03					0.00
v/c Ratio	0.05	0.41	0.66		0.32	0.01
Uniform Delay, d1	8.8	4.0	8.2		20.2	19.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.3	1.8		0.5	0.0
Delay (s)	8.9	4.3	10.0		20.8	19.1
Level of Service	A	A	B		C	B
Approach Delay (s/veh)		4.4	10.0		20.6	
Approach LOS		A	B		C	

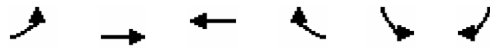
Intersection Summary

HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

09/20/2024

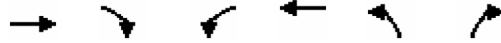


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶		↶	↷
Traffic Volume (veh/h)	14	376	249	299	72	10
Future Volume (veh/h)	14	376	249	299	72	10
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1470	1574	1722	1811	1604	1752
Adj Flow Rate, veh/h	16	437	290	348	84	12
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	29	22	12	6	20	10
Cap, veh/h	422	1179	453	544	173	168
Arrive On Green	0.04	0.75	0.64	0.61	0.11	0.11
Sat Flow, veh/h	1400	1574	712	854	1527	1485
Grp Volume(v), veh/h	16	437	0	638	84	12
Grp Sat Flow(s),veh/h/ln	1400	1574	0	1566	1527	1485
Q Serve(g_s), s	0.0	5.6	0.0	14.9	3.0	0.4
Cycle Q Clear(g_c), s	0.0	5.6	0.0	14.9	3.0	0.4
Prop In Lane	1.00			0.55	1.00	1.00
Lane Grp Cap(c), veh/h	422	1179	0	997	173	168
V/C Ratio(X)	0.04	0.37	0.00	0.64	0.48	0.07
Avail Cap(c_a), veh/h	635	1255	0	1760	853	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	2.5	0.0	6.8	24.2	23.1
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.7	1.7	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.6	0.0	3.4	1.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.9	2.7	0.0	7.5	25.9	23.2
LnGrp LOS	A	A		A	C	C
Approach Vol, veh/h		453	638		96	
Approach Delay, s/veh		3.0	7.5		25.5	
Approach LOS		A	A		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		47.6		10.6	6.5	41.1
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		7.6		5.0	2.0	16.9
Green Ext Time (p_c), s		10.1		0.2	0.0	18.8
Intersection Summary						
HCM 7th Control Delay, s/veh			7.2			
HCM 7th LOS			A			

HCM Unsignalized Intersection Capacity Analysis

17: SW Teton Avenue & SW Tualatin Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻		↻	↻	↻	↻
Traffic Volume (veh/h)	641	172	67	336	79	61
Future Volume (Veh/h)	641	172	67	336	79	61
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	675	181	71	354	83	64
Pedestrians						2
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			858		1264	768
vC1, stage 1 conf vol					768	
vC2, stage 2 conf vol					496	
vCu, unblocked vol			858		1264	768
tC, single (s)			4.1		6.6	6.4
tC, 2 stage (s)					5.6	
tF (s)			2.2		3.6	3.5
p0 queue free %			91		77	83
cM capacity (veh/h)			769		360	372
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	
Volume Total	856	71	354	83	64	
Volume Left	0	71	0	83	0	
Volume Right	181	0	0	0	64	
cSH	1700	769	1700	360	372	
Volume to Capacity	0.50	0.09	0.21	0.23	0.17	
Queue Length 95th (ft)	0	8	0	22	15	
Control Delay (s/veh)	0.0	10.2	0.0	18.0	16.7	
Lane LOS		B		C	C	
Approach Delay (s/veh)	0.0	1.7		17.4		
Approach LOS				C		
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			62.3%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

09/20/2024

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	641	172	67	336	79	61
Future Vol, veh/h	641	172	67	336	79	61
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	3	5	7	15	21
Mvmt Flow	675	181	71	354	83	64

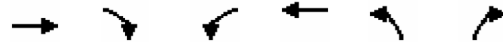
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	858	0	1262 767
Stage 1	-	-	-	-	767 -
Stage 2	-	-	-	-	495 -
Critical Hdwy	-	-	4.15	-	6.55 6.41
Critical Hdwy Stg 1	-	-	-	-	5.55 -
Critical Hdwy Stg 2	-	-	-	-	5.55 -
Follow-up Hdwy	-	-	2.245	-	3.635 3.489
Pot Cap-1 Maneuver	-	-	770	-	176 373
Stage 1	-	-	-	-	436 -
Stage 2	-	-	-	-	587 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	769	-	160 372
Mov Cap-2 Maneuver	-	-	-	-	160 -
Stage 1	-	-	-	-	435 -
Stage 2	-	-	-	-	533 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.69	35.29
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	160	372	-	-	769	-
HCM Lane V/C Ratio	0.52	0.172	-	-	0.092	-
HCM Control Delay (s/veh)	49.7	16.7	-	-	10.2	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2.6	0.6	-	-	0.3	-

HCM Unsignalized Intersection Capacity Analysis
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	28	12	47	84	110	113
Future Volume (Veh/h)	28	12	47	84	110	113
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	44	19	73	131	172	177
Pedestrians					37	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					4	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			100		368	91
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			100		368	91
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			95		70	81
cM capacity (veh/h)			1410		575	925

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	63	204	349
Volume Left	0	73	172
Volume Right	19	0	177
cSH	1700	1410	712
Volume to Capacity	0.04	0.05	0.49
Queue Length 95th (ft)	0	4	68
Control Delay (s/veh)	0.0	3.0	14.8
Lane LOS		A	B
Approach Delay (s/veh)	0.0	3.0	14.8
Approach LOS			B

Intersection Summary			
Average Delay			9.4
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)			15

HCM 7th TWSC
 18: SW 115th Avenue & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	9.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	28	12	47	84	110	113
Future Vol, veh/h	28	12	47	84	110	113
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	44	19	73	131	172	177

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	100	0	368 90
Stage 1	-	-	-	-	90 -
Stage 2	-	-	-	-	278 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1462	-	628 959
Stage 1	-	-	-	-	928 -
Stage 2	-	-	-	-	764 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1411	-	572 926
Mov Cap-2 Maneuver	-	-	-	-	572 -
Stage 1	-	-	-	-	896 -
Stage 2	-	-	-	-	721 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.76	14.88
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	709	-	-	646	-
HCM Lane V/C Ratio	0.491	-	-	0.052	-
HCM Control Delay (s/veh)	14.9	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.7	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Volume (veh/h)	0	199	1285	20	0	1678
Future Volume (Veh/h)	0	199	1285	20	0	1678
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	226	1460	23	0	1907
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2415	731			1461	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2415	731			1461	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	48			100	
cM capacity (veh/h)	27	439			458	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	226	730	730	23	954	954
Volume Left	0	0	0	0	0	0
Volume Right	226	0	0	23	0	0
cSH	439	1700	1700	1700	1700	1700
Volume to Capacity	0.52	0.43	0.43	0.01	0.56	0.56
Queue Length 95th (ft)	72	0	0	0	0	0
Control Delay (s/veh)	21.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s/veh)	21.6	0.0			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay		1.4	
Intersection Capacity Utilization		54.5%	ICU Level of Service A
Analysis Period (min)		15	

* User Entered Value

HCM 7th TWSC
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

09/20/2024

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Vol, veh/h	0	199	1285	20	0	1678
Future Vol, veh/h	0	199	1285	20	0	1678
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	4	8	3	2	10
Mvmt Flow	0	226	1460	23	0	1907

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	730	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.98	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.34	-
Pot Cap-1 Maneuver	0	360	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	360	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

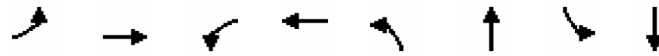
Approach	WB	NB	SB
HCM Control Delay, s/v30.42		0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 360	-
HCM Lane V/C Ratio	- 0.628	-
HCM Control Delay (s/veh)	- 30.4	-
HCM Lane LOS	- D	-
HCM 95th %tile Q(veh)	- 4.1	-

Queues

20: SW Teton Avenue & SW Herman Road

09/20/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	6	397	22	338	381	129	28	179
v/c Ratio	0.03	0.76	0.08	0.70	0.67	0.21	0.07	0.48
Control Delay (s/veh)	15.0	32.7	15.3	30.6	23.5	22.8	16.8	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	32.7	15.3	30.6	23.5	22.8	16.8	35.0
Queue Length 50th (ft)	2	140	6	126	105	41	6	68
Queue Length 95th (ft)	9	329	22	296	282	116	28	178
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	392	1099	511	976	640	1158	664	1323
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.36	0.04	0.35	0.60	0.11	0.04	0.14

Intersection Summary

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	5	190	164	20	277	24	339	87	28	25	134	25
Future Volume (vph)	5	190	164	20	277	24	339	87	28	25	134	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.99		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1128	1466		1543	1308		1656	1494		1593	1704	
Flt Permitted	0.43	1.00		0.31	1.00		0.48	1.00		0.67	1.00	
Satd. Flow (perm)	507	1466		509	1308		833	1494		1131	1704	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	213	184	22	311	27	381	98	31	28	151	28
RTOR Reduction (vph)	0	18	0	0	2	0	0	0	0	0	5	0
Lane Group Flow (vph)	6	379	0	22	336	0	381	129	0	28	174	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	60%	16%	26%	17%	45%	27%	9%	24%	15%	13%	5%	30%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	27.8	27.0		29.8	28.0		38.0	30.8		22.0	18.8	
Effective Green, g (s)	27.8	27.5		29.8	28.5		38.0	31.3		22.0	19.3	
Actuated g/C Ratio	0.34	0.34		0.36	0.35		0.46	0.38		0.27	0.24	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	178	492		208	455		539	571		322	402	
v/s Ratio Prot	0.00	c0.26		c0.00	0.26		c0.13	0.09		0.00	0.10	
v/s Ratio Perm	0.01			0.04			c0.20			0.02		
v/c Ratio	0.03	0.77		0.11	0.74		0.71	0.23		0.09	0.43	
Uniform Delay, d1	18.2	24.3		17.6	23.4		15.6	17.1		22.2	26.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	7.4		0.1	6.3		3.5	0.2		0.0	0.8	
Delay (s)	18.2	31.7		17.7	29.6		19.0	17.3		22.3	27.4	
Level of Service	B	C		B	C		B	B		C	C	
Approach Delay (s/veh)		31.5			28.9			18.6			26.7	
Approach LOS		C			C			B			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	190	164	20	277	24	339	87	28	25	134	25
Future Volume (veh/h)	5	190	164	20	277	24	339	87	28	25	134	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1011	1663	1515	1648	1233	1500	1767	1544	1678	1707	1826	1455
Adj Flow Rate, veh/h	6	213	184	22	311	27	381	98	31	28	151	28
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	60	16	26	17	45	27	9	24	15	13	5	30
Cap, veh/h	186	303	262	260	430	37	508	371	117	307	219	41
Arrive On Green	0.01	0.37	0.36	0.02	0.38	0.38	0.21	0.33	0.32	0.03	0.15	0.14
Sat Flow, veh/h	963	823	711	1570	1119	97	1682	1124	355	1626	1496	277
Grp Volume(v), veh/h	6	0	397	22	0	338	381	0	129	28	0	179
Grp Sat Flow(s),veh/h/ln	963	0	1535	1570	0	1216	1682	0	1479	1626	0	1774
Q Serve(g_s), s	0.3	0.0	16.1	0.6	0.0	17.2	13.2	0.0	4.7	1.1	0.0	7.0
Cycle Q Clear(g_c), s	0.3	0.0	16.1	0.6	0.0	17.2	13.2	0.0	4.7	1.1	0.0	7.0
Prop In Lane	1.00		0.46	1.00		0.08	1.00		0.24	1.00		0.16
Lane Grp Cap(c), veh/h	186	0	565	260	0	468	508	0	488	307	0	260
V/C Ratio(X)	0.03	0.00	0.70	0.08	0.00	0.72	0.75	0.00	0.26	0.09	0.00	0.69
Avail Cap(c_a), veh/h	443	0	1150	652	0	894	611	0	1169	706	0	1353
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	19.7	15.7	0.0	19.1	18.9	0.0	17.9	25.5	0.0	29.5
Incr Delay (d2), s/veh	0.0	0.0	1.7	0.1	0.0	2.3	3.2	0.0	0.3	0.0	0.0	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.2	0.2	0.0	4.7	5.1	0.0	1.5	0.4	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.4	0.0	21.5	15.8	0.0	21.4	22.0	0.0	18.2	25.6	0.0	33.0
LnGrp LOS	B		C	B		C	C		B	C		C
Approach Vol, veh/h		403			360			510			207	
Approach Delay, s/veh		21.4			21.1			21.1			32.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	31.8	19.5	15.7	4.6	33.0	6.2	29.0				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	2.6	18.1	15.2	9.0	2.3	19.2	3.1	6.7				
Green Ext Time (p_c), s	0.0	8.2	0.3	0.6	0.0	7.4	0.1	1.8				
Intersection Summary												
HCM 7th Control Delay, s/veh			22.7									
HCM 7th LOS			C									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	253	453	148	1542	1416	149
v/c Ratio	0.78	1.00	0.84	0.61	0.68	0.15
Control Delay (s/veh)	71.4	72.7	96.7	8.9	25.9	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.4	72.7	96.7	8.9	25.9	4.3
Queue Length 50th (ft)	222	252	134	293	610	14
Queue Length 95th (ft)	#348	#485	#257	347	700	m27
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	325	454	176	2531	2092	967
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.00	0.84	0.61	0.68	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	228	408	133	1388	0	1274	134
Future Volume (vph)	228	408	133	1388	0	1274	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1752	1555	1543	3343		3406	1499
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1752	1555	1543	3343		3406	1499
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	253	453	148	1542	0	1416	149
RTOR Reduction (vph)	0	166	0	0	0	0	46
Lane Group Flow (vph)	253	287	148	1542	0	1416	103
Confl. Peds. (#/hr)		7					5
Heavy Vehicles (%)	3%	2%	17%	8%	2%	6%	4%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	25.0	25.0	14.5	104.0		84.0	84.0
Effective Green, g (s)	26.0	26.0	16.0	106.0		86.0	86.0
Actuated g/C Ratio	0.19	0.19	0.11	0.76		0.61	0.61
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	325	288	176	2531		2092	920
v/s Ratio Prot	0.14		c0.10	0.46		c0.42	
v/s Ratio Perm		c0.18					0.07
v/c Ratio	0.78	1.00	0.84	0.61		0.68	0.11
Uniform Delay, d1	54.3	56.9	60.8	7.7		17.8	11.2
Progression Factor	1.00	1.00	1.00	1.00		1.35	1.38
Incremental Delay, d2	10.8	51.6	28.1	1.1		1.4	0.2
Delay (s)	65.0	108.6	88.9	8.8		25.5	15.6
Level of Service	E	F	F	A		C	B
Approach Delay (s/veh)	93.0			15.8		24.6	
Approach LOS	F			B		C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary

21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	228	408	133	1388	0	1274	134
Future Volume (veh/h)	228	408	133	1388	0	1274	134
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1856	1870	1648	1781		1811	1841
Adj Flow Rate, veh/h	253	453	148	1542		1416	149
Peak Hour Factor	0.90	0.90	0.90	0.90		0.90	0.90
Percent Heavy Veh, %	3	2	17	8		6	4
Cap, veh/h	328	294	271	2771		2114	954
Arrive On Green	0.19	0.19	0.17	0.82		1.00	1.00
Sat Flow, veh/h	1767	1585	1570	3474		3532	1554
Grp Volume(v), veh/h	253	453	148	1542		1416	149
Grp Sat Flow(s),veh/h/ln	1767	1585	1570	1692		1721	1554
Q Serve(g_s), s	19.0	26.0	12.1	21.2		0.0	0.0
Cycle Q Clear(g_c), s	19.0	26.0	12.1	21.2		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	328	294	271	2771		2114	954
V/C Ratio(X)	0.77	1.54	0.55	0.56		0.67	0.16
Avail Cap(c_a), veh/h	328	294	271	2771		2114	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00		2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		0.74	0.74
Uniform Delay (d), s/veh	54.2	57.0	52.9	4.2		0.0	0.0
Incr Delay (d2), s/veh	10.3	258.9	1.7	0.8		1.3	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	41.9	4.8	5.3		0.4	0.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	64.5	315.9	54.6	5.0		1.3	0.3
LnGrp LOS	E	F	D	A		A	A
Approach Vol, veh/h	706			1690		1565	
Approach Delay, s/veh	225.8			9.4		1.2	
Approach LOS	F			A		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		118.7		30.0	28.7	90.0	
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6	
Max Green Setting (Gmax), s		84.0		25.0	14.5	* 84	
Max Q Clear Time (g_c+I1), s		23.2		28.0	14.1	2.0	
Green Ext Time (p_c), s		54.0		0.0	0.0	63.9	

Intersection Summary

HCM 7th Control Delay, s/veh	44.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

HCM 7th Signalized Intersection Summary
21: OR 99W (Pacific Highway) & SW Fischer Road

09/20/2024

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	132	200	204	248	74	1268	399	475	1107	12
v/c Ratio	0.40	0.89	0.89	0.58	0.63	0.84	0.42	0.85	0.58	0.01
Control Delay (s/veh)	44.6	95.7	95.6	12.1	75.4	40.0	7.7	72.5	22.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.6	95.7	95.6	12.1	75.4	40.0	7.7	72.5	22.1	0.0
Queue Length 50th (ft)	41	189	193	0	67	557	125	219	354	0
Queue Length 95th (ft)	75	#336	#342	81	m108	655	182	#304	426	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	350	231	235	430	134	1510	945	556	1910	944
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.87	0.87	0.58	0.55	0.84	0.42	0.85	0.58	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

09/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↔	↔	↔	↑↑	↔	↔↔	↑↑	↔
Traffic Volume (vph)	8	74	40	334	38	228	68	1167	367	437	1018	11
Future Volume (vph)	8	74	40	334	38	228	68	1167	367	437	1018	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3355		1633	1663	1536	1770	3343	1506	3433	3374	1583
Flt Permitted		1.00		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3355		1633	1663	1536	1770	3343	1506	3433	3374	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	80	43	363	41	248	74	1268	399	475	1107	12
RTOR Reduction (vph)	0	39	0	0	0	214	0	0	60	0	0	5
Lane Group Flow (vph)	0	93	0	200	204	34	74	1268	339	475	1107	7
Confl. Peds. (#/hr)	4					4			2			
Heavy Vehicles (%)	2%	2%	2%	5%	2%	3%	2%	8%	6%	2%	7%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2	4	1	6	
Permitted Phases						4			2			6
Actuated Green, G (s)		12.0		19.3	19.3	19.3	8.1	62.2	81.5	23.8	78.2	78.2
Effective Green, g (s)		12.0		19.3	19.3	19.3	8.1	62.2	81.5	23.8	78.2	78.2
Actuated g/C Ratio		0.09		0.14	0.14	0.14	0.06	0.44	0.58	0.17	0.56	0.56
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		225	229	211	102	1485	941	583	1884	884
v/s Ratio Prot		c0.03		0.12	c0.12		0.04	c0.38	0.05	c0.14	0.33	
v/s Ratio Perm						0.02			0.18			0.00
v/c Ratio		0.32		0.89	0.89	0.16	0.73	0.85	0.36	0.81	0.59	0.01
Uniform Delay, d1		60.2		59.3	59.3	53.2	64.9	34.8	15.5	56.0	20.3	13.7
Progression Factor		1.00		1.00	1.00	1.00	0.90	1.03	0.84	1.00	1.00	1.00
Incremental Delay, d2		0.4		31.3	31.7	0.2	16.3	5.1	0.1	8.3	1.4	0.0
Delay (s)		60.6		90.6	91.0	53.4	74.5	40.8	13.0	64.3	21.7	13.7
Level of Service		E		F	F	D	E	D	B	E	C	B
Approach Delay (s/veh)		60.6			76.6			35.9			34.3	
Approach LOS		E			E			D			C	

Intersection Summary

HCM 2000 Control Delay (s/veh)	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

1: SW 124th Avenue & OR 99W (Pacific Highway)

10/01/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	888	239	786	1219	769	837
v/c Ratio	0.73	0.35	0.81	0.54	0.82	0.54
Control Delay (s/veh)	39.1	5.4	48.5	12.3	42.6	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.1	5.4	48.5	12.3	42.6	18.3
Queue Length 50th (ft)	316	3	294	245	277	241
Queue Length 95th (ft)	392	58	#423	329	359	348
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1209	678	968	2268	1058	1546
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.35	0.81	0.54	0.73	0.54

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 1: SW 124th Avenue & OR 99W (Pacific Highway)

10/01/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔
Traffic Volume (vph)	835	225	739	1146	723	787
Future Volume (vph)	835	225	739	1146	723	787
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	5.6
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1538	3400	3438	3433	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1538	3400	3438	3433	2787
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	888	239	786	1219	769	837
RTOR Reduction (vph)	0	153	0	0	0	0
Lane Group Flow (vph)	888	86	786	1219	769	837
Confl. Peds. (#/hr)						1
Heavy Vehicles (%)	2%	5%	3%	5%	2%	2%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	14
Permitted Phases		2				
Actuated Green, G (s)	39.0	39.0	29.4	74.0	34.0	63.4
Effective Green, g (s)	41.0	41.0	31.0	76.0	36.0	58.4
Actuated g/C Ratio	0.34	0.34	0.26	0.63	0.30	0.49
Clearance Time (s)	6.0	6.0	5.6	6.0	6.0	
Vehicle Extension (s)	5.4	5.4	2.3	5.4	2.3	
Lane Grp Cap (vph)	1209	525	878	2177	1029	1356
v/s Ratio Prot	c0.25		c0.23	0.35	c0.22	0.30
v/s Ratio Perm		0.06				
v/c Ratio	0.73	0.16	0.90	0.56	0.75	0.62
Uniform Delay, d1	34.7	27.5	42.9	12.5	37.9	22.6
Progression Factor	1.00	1.00	1.00	1.00	0.87	0.94
Incremental Delay, d2	3.0	0.3	13.6	1.0	2.6	0.6
Delay (s)	37.7	27.9	56.5	13.5	35.4	21.8
Level of Service	D	C	E	B	D	C
Approach Delay (s/veh)	35.6			30.4	28.3	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

Queues

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	51	740	807	55	476	524
v/c Ratio	0.26	0.68	0.76	0.11	0.50	0.19
Control Delay (s/veh)	47.4	11.9	42.7	12.0	13.1	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.4	11.9	42.7	12.0	13.1	4.5
Queue Length 50th (ft)	38	112	293	8	32	20
Queue Length 95th (ft)	63	#417	357	37	m184	m92
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	445	1083	1173	552	943	2819
Starvation Cap Reductn	0	0	0	0	12	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.68	0.69	0.10	0.51	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: SW 124th Avenue & SW Tualatin Road

10/09/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	696	759	52	447	493
Future Volume (vph)	48	696	759	52	447	493
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	0.0	4.5	4.5	4.0	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1599	3539	1583	1752	3374
Flt Permitted	0.95	1.00	1.00	1.00	0.14	1.00
Satd. Flow (perm)	1671	1599	3539	1583	260	3374
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	51	740	807	55	476	524
RTOR Reduction (vph)	0	245	0	29	0	0
Lane Group Flow (vph)	51	495	807	26	476	524
Heavy Vehicles (%)	8%	1%	2%	2%	3%	7%
Turn Type	Perm	Over	NA	Perm	D.P+P	NA
Protected Phases		5	6		5	2
Permitted Phases	4			6	6	
Actuated Green, G (s)	12.1	57.3	35.1	35.1	92.4	97.4
Effective Green, g (s)	13.1	62.3	36.1	36.1	94.4	98.4
Actuated g/C Ratio	0.11	0.52	0.30	0.30	0.79	0.82
Clearance Time (s)	5.0	5.0	5.5	5.5	5.0	5.5
Vehicle Extension (s)	4.0	4.0	4.5	4.5	4.0	4.5
Lane Grp Cap (vph)	182	830	1064	476	929	2766
v/s Ratio Prot		c0.31	c0.23		0.25	0.16
v/s Ratio Perm	c0.03			0.02	0.15	
v/c Ratio	0.28	0.60	0.76	0.06	0.51	0.19
Uniform Delay, d1	49.1	20.1	38.0	29.8	14.9	2.3
Progression Factor	1.00	1.00	1.00	1.00	0.62	1.30
Incremental Delay, d2	1.2	3.2	3.5	0.1	0.6	0.1
Delay (s)	50.3	23.3	41.6	29.9	9.8	3.1
Level of Service	D	C	D	C	A	A
Approach Delay (s/veh)	25.0		40.8			6.3
Approach LOS	C		D			A

Intersection Summary

HCM 2000 Control Delay (s/veh)	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Edition methodology does not support exclusive ped or hold phases.

HCM Unsignalized Intersection Capacity Analysis

4: Site Access/SW 115th Avenue & SW Tualatin Road

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	394	21	20	644	257	174	42	91	22	2	24
Future Volume (Veh/h)	50	394	21	20	644	257	174	42	91	22	2	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	53	415	22	21	678	271	183	44	96	23	2	25
Pedestrians		1										4
Lane Width (ft)		12.0										12.0
Walking Speed (ft/s)		3.5										3.5
Percent Blockage		0										0
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	953			437			1279	1527	426	1499	1403	819
vC1, stage 1 conf vol							532	532		860	860	
vC2, stage 2 conf vol							747	995		639	543	
vCu, unblocked vol	953			437			1279	1527	426	1499	1403	819
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.2	6.5	6.4
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.5
p0 queue free %	93			98			34	82	84	90	99	93
cM capacity (veh/h)	718			1123			278	240	604	230	303	352
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total	53	437	21	949	183	140	50					
Volume Left	53	0	21	0	183	0	23					
Volume Right	0	22	0	271	0	96	25					
cSH	718	1700	1123	1700	278	409	281					
Volume to Capacity	0.07	0.26	0.02	0.56	0.66	0.34	0.18					
Queue Length 95th (ft)	6	0	1	0	106	37	16					
Control Delay (s/veh)	10.4	0.0	8.3	0.0	39.7	18.3	20.5					
Lane LOS	B		A		E	C	C					
Approach Delay (s/veh)	1.1		0.2		30.4		20.5					
Approach LOS					D		C					
Intersection Summary												
Average Delay			6.3									
Intersection Capacity Utilization			73.0%		ICU Level of Service		C					
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	37.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Traffic Vol, veh/h	50	394	21	20	644	257	174	42	91	22	2	24
Future Vol, veh/h	50	394	21	20	644	257	174	42	91	22	2	24
Conflicting Peds, #/hr	4	0	0	0	0	4	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	3	2	2	2	2	2	2	14	5	2	17
Mvmt Flow	53	415	22	21	678	271	183	44	96	23	2	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	952	0	0	437	0	0	1253	1526	426	1401	1401	818
Stage 1	-	-	-	-	-	-	531	531	-	859	859	-
Stage 2	-	-	-	-	-	-	722	995	-	542	542	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.34	7.15	6.52	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.426	3.545	4.018	3.453
Pot Cap-1 Maneuver	721	-	-	1123	-	-	~ 149	118	604	116	140	354
Stage 1	-	-	-	-	-	-	532	526	-	347	373	-
Stage 2	-	-	-	-	-	-	418	323	-	519	520	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	719	-	-	1123	-	-	~ 124	107	604	54	127	352
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 124	107	-	54	127	-
Stage 1	-	-	-	-	-	-	493	488	-	339	365	-
Stage 2	-	-	-	-	-	-	378	316	-	368	482	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.12			0.18			197.13			76.59		
HCM LOS							F			F		

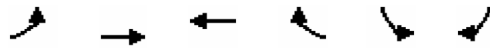
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	124	244	719	-	-	1123	-	-	97
HCM Lane V/C Ratio	1.481	0.573	0.073	-	-	0.019	-	-	0.52
HCM Control Delay (s/veh)	\$ 318.9	37.8	10.4	-	-	8.3	-	-	76.6
HCM Lane LOS	F	E	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	12.8	3.2	0.2	-	-	0.1	-	-	2.3

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

HCM Unsignalized Intersection Capacity Analysis

5: SW Tualatin Road & SW 112th Avenue

10/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶		↶	↷
Traffic Volume (veh/h)	12	503	973	14	8	2
Future Volume (Veh/h)	12	503	973	14	8	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	559	1081	16	9	2
Pedestrians			2		3	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage (veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1100				1679	1092
vC1, stage 1 conf vol					1092	
vC2, stage 2 conf vol					587	
vCu, unblocked vol	1100				1679	1092
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	99
cM capacity (veh/h)	633				283	260

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	13	559	1097	11
Volume Left	13	0	0	9
Volume Right	0	0	16	2
cSH	633	1700	1700	278
Volume to Capacity	0.02	0.33	0.65	0.04
Queue Length 95th (ft)	2	0	0	3
Control Delay (s/veh)	10.8	0.0	0.0	18.5
Lane LOS	B			C
Approach Delay (s/veh)	0.2		0.0	18.5
Approach LOS				C

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		62.1%	ICU Level of Service
Analysis Period (min)		15	B

HCM 7th TWSC
5: SW Tualatin Road & SW 112th Avenue

10/01/2024

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↕	↕		↙	
Traffic Vol, veh/h	12	503	973	14	8	2
Future Vol, veh/h	12	503	973	14	8	2
Conflicting Peds, #/hr	3	0	0	3	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	25	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	4	2	8	2	2
Mvmt Flow	13	559	1081	16	9	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1100	0	-	0	1679 1092
Stage 1	-	-	-	-	1092 -
Stage 2	-	-	-	-	588 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	635	-	-	-	104 261
Stage 1	-	-	-	-	322 -
Stage 2	-	-	-	-	555 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	633	-	-	-	101 260
Mov Cap-2 Maneuver	-	-	-	-	225 -
Stage 1	-	-	-	-	314 -
Stage 2	-	-	-	-	554 -

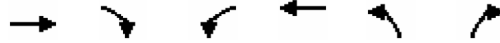
Approach	EB	WB	SB
HCM Control Delay, s/v	0.25	0	21.38
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	633	-	-	-	231
HCM Lane V/C Ratio	0.021	-	-	-	0.048
HCM Control Delay (s/veh)	10.8	-	-	-	21.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

HCM Unsignalized Intersection Capacity Analysis

6: SW 108th Ave & SW Tualatin Road

10/01/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→		←	→	↔	
Traffic Volume (veh/h)	452	50	10	907	51	24
Future Volume (Veh/h)	452	50	10	907	51	24
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	491	54	11	986	55	26
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	TWLTL		TWLTL			
Median storage veh	2		2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			546		1527	519
vC1, stage 1 conf vol					519	
vC2, stage 2 conf vol					1008	
vCu, unblocked vol			546		1527	519
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		82	95
cM capacity (veh/h)			1022		312	556

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	545	11	986	81
Volume Left	0	11	0	55
Volume Right	54	0	0	26
cSH	1700	1022	1700	363
Volume to Capacity	0.32	0.01	0.58	0.22
Queue Length 95th (ft)	0	1	0	21
Control Delay (s/veh)	0.0	8.6	0.0	17.7
Lane LOS		A		C
Approach Delay (s/veh)	0.0	0.1		17.7
Approach LOS				C

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		58.7%	ICU Level of Service
Analysis Period (min)		15	B

HCM 7th TWSC
6: SW 108th Ave & SW Tualatin Road

10/01/2024

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	↑
Traffic Vol, veh/h	452	50	10	907	51	24
Future Vol, veh/h	452	50	10	907	51	24
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	2	2	2	2
Mvmt Flow	491	54	11	986	55	26

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	547	0	1527 519
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	1008 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1023	-	129 556
Stage 1	-	-	-	-	597 -
Stage 2	-	-	-	-	353 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1022	-	128 556
Mov Cap-2 Maneuver	-	-	-	-	254 -
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	349 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.09	20.89
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	307	-	-	1022	-
HCM Lane V/C Ratio	0.265	-	-	0.011	-
HCM Control Delay (s/veh)	20.9	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0	-

HCM Unsignalized Intersection Capacity Analysis

7: SW 108th Ave & North Access

10/01/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	75	60	0
Future Volume (Veh/h)	0	0	0	75	60	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	82	65	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	147	65	65			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	147	65	65			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	845	999	1537			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	82	65			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1537	1700			
Volume to Capacity	0.00	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s/veh)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s/veh)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	7.3%			ICU Level of Service	A	
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	75	60	0
Future Vol, veh/h	0	0	0	75	60	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	0	0	0	82	65	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	147	65	65	0	0
Stage 1	65	-	-	-	-
Stage 2	82	-	-	-	-
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	846	999	1537	-	-
Stage 1	957	-	-	-	-
Stage 2	942	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	846	999	1537	-	-
Mov Cap-2 Maneuver	846	-	-	-	-
Stage 1	957	-	-	-	-
Stage 2	942	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1537	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Unsignalized Intersection Capacity Analysis

8: SW 108th Ave & Center Access

10/01/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	104	21	61	58	2
Future Volume (Veh/h)	8	104	21	61	58	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	113	23	66	63	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	64	65			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	64	65			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	89	99			
cM capacity (veh/h)	802	1000	1537			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	122	89	65			
Volume Left	9	23	0			
Volume Right	113	0	2			
cSH	982	1537	1700			
Volume to Capacity	0.12	0.01	0.04			
Queue Length 95th (ft)	11	1	0			
Control Delay (s/veh)	9.2	2.0	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.2	2.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			24.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 7th TWSC
8: SW 108th Ave & Center Access

10/01/2024

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	104	21	61	58	2
Future Vol, veh/h	8	104	21	61	58	2
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	9	113	23	66	63	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	176	64	65	0	0
Stage 1	64	-	-	-	-
Stage 2	112	-	-	-	-
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	814	1000	1537	-	-
Stage 1	959	-	-	-	-
Stage 2	913	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	801	1000	1537	-	-
Mov Cap-2 Maneuver	801	-	-	-	-
Stage 1	944	-	-	-	-
Stage 2	913	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.18	1.89	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	461	-	983	-	-
HCM Lane V/C Ratio	0.015	-	0.124	-	-
HCM Control Delay (s/veh)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

HCM Unsignalized Intersection Capacity Analysis

9: SW 108th Ave & South Access

10/01/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	32	7	68	197	2
Future Volume (Veh/h)	8	32	7	68	197	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	35	8	74	214	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	1116					
pX, platoon unblocked						
vC, conflicting volume	305	215	216			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	215	216			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	99			
cM capacity (veh/h)	683	825	1354			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	44	82	216			
Volume Left	9	8	0			
Volume Right	35	0	2			
cSH	791	1354	1700			
Volume to Capacity	0.06	0.01	0.13			
Queue Length 95th (ft)	4	0	0			
Control Delay (s/veh)	9.8	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s/veh)	9.8	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			20.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	8	32	7	68	197	2
Future Vol, veh/h	8	32	7	68	197	2
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	9	35	8	74	214	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	304	215	216	0	0
Stage 1	215	-	-	-	-
Stage 2	89	-	-	-	-
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	688	825	1353	-	-
Stage 1	821	-	-	-	-
Stage 2	934	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	683	825	1353	-	-
Mov Cap-2 Maneuver	683	-	-	-	-
Stage 1	816	-	-	-	-
Stage 2	934	-	-	-	-

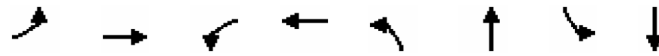
Approach	EB	NB	SB
HCM Control Delay, s/v	9.81	0.72	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	168	-	792	-	-
HCM Lane V/C Ratio	0.006	-	0.055	-	-
HCM Control Delay (s/veh)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Queues

10: SW 124th Avenue & SW Leveton Drive

10/01/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	36	89	249	5	735	53	470
v/c Ratio	0.07	0.10	0.25	0.41	0.01	0.56	0.13	0.31
Control Delay (s/veh)	33.8	17.4	31.6	6.0	11.6	20.0	12.1	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.8	17.4	31.6	6.0	11.6	20.0	12.1	13.8
Queue Length 50th (ft)	8	6	30	1	1	122	9	47
Queue Length 95th (ft)	38	31	104	54	8	278	42	168
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	629	1186	432	1120	598	2448	969	2506
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.03	0.21	0.22	0.01	0.30	0.05	0.19

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 10: SW 124th Avenue & SW Leveton Drive

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	16	16	81	2	225	5	648	21	48	421	6
Future Volume (vph)	21	16	16	81	2	225	5	648	21	48	421	6
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		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.85		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1690		1770	1580		1128	3506		1671	3425	
Flt Permitted	0.95	1.00		0.95	1.00		0.47	1.00		0.26	1.00	
Satd. Flow (perm)	1770	1690		1770	1580		553	3506		454	3425	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	23	18	18	89	2	247	5	712	23	53	463	7
RTOR Reduction (vph)	0	15	0	0	187	0	0	2	0	0	1	0
Lane Group Flow (vph)	23	21	0	89	62	0	5	733	0	53	469	0
Confl. Peds. (#/hr)									3	3		
Heavy Vehicles (%)	2%	2%	6%	2%	50%	2%	60%	2%	15%	8%	5%	17%
Turn Type	Prot	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							6			2		
Actuated Green, G (s)	2.2	9.2		7.2	14.2		25.9	22.0		25.9	25.2	
Effective Green, g (s)	3.2	10.2		8.2	15.2		27.9	23.0		25.9	25.2	
Actuated g/C Ratio	0.05	0.16		0.13	0.24		0.45	0.37		0.42	0.40	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	90	276		232	385		263	1294		264	1385	
v/s Ratio Prot	0.01	0.01		c0.05	c0.04		0.00	c0.21		c0.01	c0.14	
v/s Ratio Perm							0.01			0.07		
v/c Ratio	0.26	0.08		0.38	0.16		0.02	0.57		0.20	0.34	
Uniform Delay, d1	28.4	22.1		24.7	18.5		9.5	15.7		11.4	12.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.1		1.1	0.2		0.0	0.6		0.4	0.1	
Delay (s)	29.9	22.2		25.8	18.7		9.6	16.2		11.8	12.9	
Level of Service	C	C		C	B		A	B		B	B	
Approach Delay (s/veh)		25.2			20.6			16.2			12.8	
Approach LOS		C			C			B			B	

Intersection Summary		
HCM 2000 Control Delay (s/veh)	16.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.42	B
Actuated Cycle Length (s)	62.3	Sum of lost time (s)
Intersection Capacity Utilization	53.5%	17.0
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 10: SW 124th Avenue & SW Leveton Drive

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	16	16	81	2	225	5	648	21	48	421	6
Future Volume (veh/h)	21	16	16	81	2	225	5	648	21	48	421	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1811	1870	1159	1870	1011	1870	1678	1781	1826	1648
Adj Flow Rate, veh/h	23	18	18	89	2	247	5	712	23	53	463	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	6	2	50	2	60	2	15	8	5	17
Cap, veh/h	94	227	227	185	2	308	263	998	32	304	1184	18
Arrive On Green	0.05	0.26	0.25	0.10	0.32	0.30	0.02	0.28	0.27	0.08	0.34	0.34
Sat Flow, veh/h	1781	858	858	1781	8	976	963	3513	113	1697	3498	53
Grp Volume(v), veh/h	23	0	36	89	0	249	5	360	375	53	229	241
Grp Sat Flow(s),veh/h/ln	1781	0	1716	1781	0	983	963	1777	1849	1697	1735	1816
Q Serve(g_s), s	0.8	0.0	1.0	3.0	0.0	14.7	0.2	11.4	11.4	1.3	6.3	6.3
Cycle Q Clear(g_c), s	0.8	0.0	1.0	3.0	0.0	14.7	0.2	11.4	11.4	1.3	6.3	6.3
Prop In Lane	1.00		0.50	1.00		0.99	1.00		0.06	1.00		0.03
Lane Grp Cap(c), veh/h	94	0	454	185	0	310	263	505	526	304	587	615
V/C Ratio(X)	0.24	0.00	0.08	0.48	0.00	0.80	0.02	0.71	0.71	0.17	0.39	0.39
Avail Cap(c_a), veh/h	454	0	847	312	0	485	563	877	913	849	1105	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	17.5	26.6	0.0	20.2	12.6	20.2	20.2	15.0	15.8	15.8
Incr Delay (d2), s/veh	1.3	0.0	0.1	1.9	0.0	5.3	0.0	1.9	1.8	0.3	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	1.2	0.0	3.4	0.0	4.3	4.5	0.5	2.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.9	0.0	17.6	28.5	0.0	25.4	12.6	22.1	22.0	15.3	16.3	16.2
LnGrp LOS	C		B	C		C	B	C	C	B	B	B
Approach Vol, veh/h		59			338			740			523	
Approach Delay, s/veh		22.4			26.2			22.0			16.2	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	21.8	10.5	20.6	5.4	26.3	7.3	23.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	25.0	30.0	10.0	30.0	20.0	40.0	15.0	30.0				
Max Q Clear Time (g_c+I1), s	3.3	13.4	5.0	3.0	2.2	8.3	2.8	16.7				
Green Ext Time (p_c), s	0.1	3.3	0.1	0.2	0.0	2.2	0.0	2.2				

Intersection Summary

HCM 7th Control Delay, s/veh	21.0
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM Unsignalized Intersection Capacity Analysis
 11: SW 118th Drive/JAE Access & SW Leveton Drive

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	59	9	28	277	22	22	3	12	0	2	13
Future Volume (vph)	6	59	9	28	277	22	22	3	12	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	8	80	12	38	374	30	30	4	16	0	3	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	100	442	50	21
Volume Left (vph)	8	38	30	0
Volume Right (vph)	12	30	16	18
Hadj (s)	0.04	0.01	0.12	-0.48
Departure Headway (s)	4.6	4.2	5.3	4.7
Degree Utilization, x	0.13	0.52	0.07	0.03
Capacity (veh/h)	756	835	618	673
Control Delay (s/veh)	8.2	11.6	8.7	7.8
Approach Delay (s/veh)	8.2	11.6	8.7	7.8
Approach LOS	A	B	A	A

Intersection Summary			
Delay		10.7	
Level of Service		B	
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)		15	

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	59	9	28	277	22	22	3	12	0	2	13
Future Vol, veh/h	6	59	9	28	277	22	22	3	12	0	2	13
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	5	11	2	2	2	5	2	25	2	2	2
Mvmt Flow	8	80	12	38	374	30	30	4	16	0	3	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

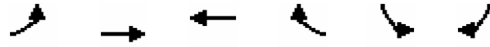
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.2	11.6	8.5	7.8
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	59%	8%	9%	0%
Vol Thru, %	8%	80%	85%	13%
Vol Right, %	32%	12%	7%	87%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	74	327	15
LT Vol	22	6	28	0
Through Vol	3	59	277	2
RT Vol	12	9	22	13
Lane Flow Rate	50	100	442	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.071	0.125	0.517	0.026
Departure Headway (Hd)	5.12	4.497	4.209	4.668
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	699	798	862	765
Service Time	3.154	2.519	2.209	2.705
HCM Lane V/C Ratio	0.072	0.125	0.513	0.026
HCM Control Delay, s/veh	8.5	8.2	11.6	7.8
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.4	3	0.1

HCM Unsignalized Intersection Capacity Analysis

12: SW Lave-ton Drive & West Access

10/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (veh/h)	1	69	322	0	2	0
Future Volume (Veh/h)	1	69	322	0	2	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	1	91	424	0	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	424				517	424
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	424				517	424
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1099				516	630
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	92	424	3	0		
Volume Left	1	0	3	0		
Volume Right	0	0	0	0		
cSH	1099	1700	516	1700		
Volume to Capacity	0.00	0.25	0.01	0.00		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s/veh)	0.1	0.0	12.0	0.0		
Lane LOS	A		B	A		
Approach Delay (s/veh)	0.1	0.0	12.0			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			26.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 12: SW Leveton Drive & West Access

10/01/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	1	69	322	0	2	0
Future Vol, veh/h	1	69	322	0	2	0
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	76	76	76	76	76	76
Heavy Vehicles, %	9	9	2	2	3	2
Mvmt Flow	1	91	424	0	3	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	424	0	-	0	517 424
Stage 1	-	-	-	-	424 -
Stage 2	-	-	-	-	93 -
Critical Hdwy	4.19	-	-	-	6.43 6.22
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.281	-	-	-	3.527 3.318
Pot Cap-1 Maneuver	1099	-	-	-	517 630
Stage 1	-	-	-	-	658 -
Stage 2	-	-	-	-	928 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1099	-	-	-	516 630
Mov Cap-2 Maneuver	-	-	-	-	516 -
Stage 1	-	-	-	-	657 -
Stage 2	-	-	-	-	928 -

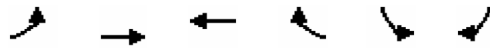
Approach	EB	WB	SB
HCM Control Delay, s/v	0.12	0	12.01
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	26	-	-	-	516	-
HCM Lane V/C Ratio	0.001	-	-	-	0.005	-
HCM Control Delay (s/veh)	8.3	0	-	-	12	0
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-

HCM Unsignalized Intersection Capacity Analysis

13: SW Lave-ton Drive & Center Access

10/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (veh/h)	19	66	217	16	81	100
Future Volume (Veh/h)	19	66	217	16	81	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	25	86	282	21	105	130
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	318				444	308
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318				444	308
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				81	82
cM capacity (veh/h)	1224				552	722
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	111	303	105	130		
Volume Left	25	0	105	0		
Volume Right	0	21	0	130		
cSH	1224	1700	552	722		
Volume to Capacity	0.02	0.18	0.19	0.18		
Queue Length 95th (ft)	2	0	17	16		
Control Delay (s/veh)	1.9	0.0	13.0	11.1		
Lane LOS	A		B	B		
Approach Delay (s/veh)	1.9	0.0	12.0			
Approach LOS			B			
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			31.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 7th TWSC
 13: SW Lefevon Drive & Center Access

10/01/2024

Intersection

Int Delay, s/veh 4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	19	66	217	16	81	100
Future Vol, veh/h	19	66	217	16	81	100
Conflicting Peds, #/hr	15	0	0	15	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	77	77	77	77	77	77
Heavy Vehicles, %	2	5	2	2	2	2
Mvmt Flow	25	86	282	21	105	130

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	318	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1242	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1225	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.79	0	12.02
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	402	-	-	-	545	722
HCM Lane V/C Ratio	0.02	-	-	-	0.193	0.18
HCM Control Delay (s/veh)	8	0	-	-	13.2	11.1
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.7

HCM Unsignalized Intersection Capacity Analysis

14: Calmax Technology Access/East Access & SW Leveton Drive

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	143	8	6	183	0	27	0	14	0	0	0
Future Volume (Veh/h)	0	143	8	6	183	0	27	0	14	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	191	11	8	244	0	36	0	19	0	0	0
Pedestrians								4			15	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	259			206			461	476	201	491	481	259
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			206			461	476	201	491	481	259
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			93	100	98	100	100	100
cM capacity (veh/h)	1287			1360			500	476	837	462	473	768
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	202	252	55	0								
Volume Left	0	8	36	0								
Volume Right	11	0	19	0								
cSH	1287	1360	581	1700								
Volume to Capacity	0.00	0.01	0.09	0.00								
Queue Length 95th (ft)	0	0	8	0								
Control Delay (s/veh)	0.0	0.3	11.8	0.0								
Lane LOS		A	B	A								
Approach Delay (s/veh)	0.0	0.3	11.8	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			24.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	143	8	6	183	0	27	0	14	0	0	0
Future Vol, veh/h	0	143	8	6	183	0	27	0	14	0	0	0
Conflicting Peds, #/hr	15	0	4	4	0	15	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	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	0	191	11	8	244	0	36	0	19	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	259	0	0	205
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1306	-	-	1366
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1287	-	-	1361
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.24	11.78	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	585	1287	-	-	57	-	-	-
HCM Lane V/C Ratio	0.093	-	-	-	0.006	-	-	-
HCM Control Delay (s/veh)	11.8	0	-	-	7.7	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

HCM Unsignalized Intersection Capacity Analysis

15: SW 108th Ave & SW Leveton Drive

10/01/2024



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	156	30	52	161	132
Future Volume (Veh/h)	23	156	30	52	161	132
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	30	203	39	68	209	171
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)	861					
pX, platoon unblocked						
vC, conflicting volume	442	296	381			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	442	296	381			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	95	73	97			
cM capacity (veh/h)	547	743	1171			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	233	107	380			
Volume Left	30	39	0			
Volume Right	203	0	171			
cSH	710	1171	1700			
Volume to Capacity	0.33	0.03	0.22			
Queue Length 95th (ft)	36	3	0			
Control Delay (s/veh)	12.5	3.2	0.0			
Lane LOS	B	A				
Approach Delay (s/veh)	12.5	3.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			41.9%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	23	156	30	52	161	132
Future Vol, veh/h	23	156	30	52	161	132
Conflicting Peds, #/hr	0	0	1	0	0	1
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	77	77	77	77	77	77
Heavy Vehicles, %	6	2	3	9	7	2
Mvmt Flow	30	203	39	68	209	171

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	441	296	382	0	0
Stage 1	296	-	-	-	-
Stage 2	145	-	-	-	-
Critical Hdwy	6.46	6.22	4.13	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.227	-	-
Pot Cap-1 Maneuver	566	744	1171	-	-
Stage 1	746	-	-	-	-
Stage 2	872	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	545	743	1170	-	-
Mov Cap-2 Maneuver	545	-	-	-	-
Stage 1	719	-	-	-	-
Stage 2	871	-	-	-	-

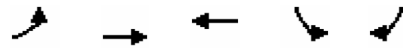
Approach	EB	NB	SB
HCM Control Delay, s/v	12.52	2.99	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	659	-	710	-	-
HCM Lane V/C Ratio	0.033	-	0.327	-	-
HCM Control Delay (s/veh)	8.2	0	12.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

Queues

16: SW Herman Road & SW 108th Ave

10/01/2024



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	8	348	586	333	23
v/c Ratio	0.02	0.41	0.72	0.53	0.04
Control Delay (s/veh)	6.6	10.9	19.0	20.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.6	10.9	19.0	20.9	8.6
Queue Length 50th (ft)	1	62	123	77	0
Queue Length 95th (ft)	8	159	398	253	17
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	538	1718	1645	1144	1002
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.01	0.20	0.36	0.29	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis

16: SW Herman Road & SW 108th Ave

10/01/2024



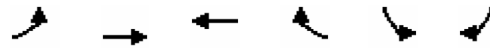
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	320	464	75	306	21
Future Volume (vph)	7	320	464	75	306	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1583	1776	1759		1770	1538
Flt Permitted	0.23	1.00	1.00		0.95	1.00
Satd. Flow (perm)	389	1776	1759		1770	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	348	504	82	333	23
RTOR Reduction (vph)	0	0	6	0	0	15
Lane Group Flow (vph)	8	348	580	0	333	8
Heavy Vehicles (%)	14%	7%	6%	6%	2%	5%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	25.4	30.8	24.8		17.5	17.5
Effective Green, g (s)	28.2	32.2	26.2		20.0	20.0
Actuated g/C Ratio	0.47	0.53	0.44		0.33	0.33
Clearance Time (s)	5.4	5.4	5.4		6.5	6.5
Vehicle Extension (s)	2.0	3.1	3.1		2.6	2.6
Lane Grp Cap (vph)	221	949	765		588	510
v/s Ratio Prot	0.00	c0.20	c0.33		c0.19	
v/s Ratio Perm	0.02					0.00
v/c Ratio	0.04	0.37	0.76		0.57	0.01
Uniform Delay, d1	16.6	8.1	14.3		16.5	13.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.3	4.4		1.1	0.0
Delay (s)	16.6	8.4	18.7		17.6	13.5
Level of Service	B	A	B		B	B
Approach Delay (s/veh)		8.5	18.7		17.3	
Approach LOS		A	B		B	

Intersection Summary

HCM 2000 Control Delay (s/veh)	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 7th Signalized Intersection Summary
 16: SW Herman Road & SW 108th Ave

10/01/2024

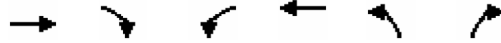


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	320	464	75	306	21
Future Volume (veh/h)	7	320	464	75	306	21
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1693	1796	1811	1811	1870	1826
Adj Flow Rate, veh/h	8	348	504	82	333	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	14	7	6	6	2	5
Cap, veh/h	385	1122	808	131	451	392
Arrive On Green	0.03	0.62	0.53	0.51	0.25	0.25
Sat Flow, veh/h	1612	1796	1519	247	1781	1547
Grp Volume(v), veh/h	8	348	0	586	333	23
Grp Sat Flow(s),veh/h/ln	1612	1796	0	1767	1781	1547
Q Serve(g_s), s	0.0	5.9	0.0	15.3	11.2	0.7
Cycle Q Clear(g_c), s	0.0	5.9	0.0	15.3	11.2	0.7
Prop In Lane	1.00			0.14	1.00	1.00
Lane Grp Cap(c), veh/h	385	1122	0	939	451	392
V/C Ratio(X)	0.02	0.31	0.00	0.62	0.74	0.06
Avail Cap(c_a), veh/h	615	1274	0	1766	885	769
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	5.7	0.0	10.8	22.4	18.5
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.7	1.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.7	0.0	5.0	4.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	14.8	5.9	0.0	11.5	24.4	18.6
LnGrp LOS	B	A		B	C	B
Approach Vol, veh/h		356	586		356	
Approach Delay, s/veh		6.1	11.5		24.0	
Approach LOS		A	B		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.9		20.6	6.1	38.8
Change Period (Y+Rc), s		5.4		6.5	5.4	5.4
Max Green Setting (Gmax), s		45.0		30.0	10.0	64.0
Max Q Clear Time (g_c+I1), s		7.9		13.2	2.0	17.3
Green Ext Time (p_c), s		7.6		0.9	0.0	16.1
Intersection Summary						
HCM 7th Control Delay, s/veh			13.5			
HCM 7th LOS			B			

HCM Unsignalized Intersection Capacity Analysis

17: SW Teton Avenue & SW Tualatin Road

10/01/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻		↻	↻	↻	↻
Traffic Volume (veh/h)	376	106	45	755	157	70
Future Volume (Veh/h)	376	106	45	755	157	70
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	413	116	49	830	173	77
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None		TWLTL			
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			530		1400	472
vC1, stage 1 conf vol					472	
vC2, stage 2 conf vol					928	
vCu, unblocked vol			530		1400	472
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)					5.4	
tF (s)			2.3		3.5	3.4
p0 queue free %			95		47	87
cM capacity (veh/h)			1011		329	583

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	529	49	830	173	77
Volume Left	0	49	0	173	0
Volume Right	116	0	0	0	77
cSH	1700	1011	1700	329	583
Volume to Capacity	0.31	0.05	0.49	0.53	0.13
Queue Length 95th (ft)	0	4	0	72	11
Control Delay (s/veh)	0.0	8.7	0.0	27.4	12.1
Lane LOS	A		D B		
Approach Delay (s/veh)	0.0	0.5	22.7		
Approach LOS				C	

Intersection Summary					
Average Delay			3.7		
Intersection Capacity Utilization			55.1%	ICU Level of Service	B
Analysis Period (min)	15				

HCM 7th TWSC
 17: SW Teton Avenue & SW Tualatin Road

10/01/2024

Intersection

Int Delay, s/veh 20.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	376	106	45	755	157	70
Future Vol, veh/h	376	106	45	755	157	70
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	5	7	2	3	6
Mvmt Flow	413	116	49	830	173	77

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	531
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.17
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.263
Pot Cap-1 Maneuver	-	-	1012
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1011
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.49	136.56
HCM LOS			F

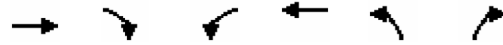
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	146	583	-	-	1011	-
HCM Lane V/C Ratio	1.181	0.132	-	-	0.049	-
HCM Control Delay (s/veh)	192	12.1	-	-	8.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	9.9	0.5	-	-	0.2	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis
 18: SW 115th Avenue & SW Hazelbrook Road

10/01/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	10	12	60	100	287	21
Future Volume (Veh/h)	10	12	60	100	287	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	16	19	94	156	448	33
Pedestrians					37	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					4	
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			72		407	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		407	63
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			93		17	97
cM capacity (veh/h)			1444		538	959
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	35	250	481			
Volume Left	0	94	448			
Volume Right	19	0	33			
cSH	1700	1444	555			
Volume to Capacity	0.02	0.07	0.87			
Queue Length 95th (ft)	0	5	240			
Control Delay (s/veh)	0.0	3.2	40.1			
Lane LOS			A	E		
Approach Delay (s/veh)	0.0	3.2	40.1			
Approach LOS			E			
Intersection Summary						
Average Delay			26.2			
Intersection Capacity Utilization			39.1%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	26.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	12	60	100	287	21
Future Vol, veh/h	10	12	60	100	287	21
Conflicting Peds, #/hr	0	37	37	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	64	64	64	64	64	64
Heavy Vehicles, %	2	25	7	6	4	5
Mvmt Flow	16	19	94	156	448	33

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	71	0	406 62
Stage 1	-	-	-	-	62 -
Stage 2	-	-	-	-	344 -
Critical Hdwy	-	-	4.17	-	6.44 6.25
Critical Hdwy Stg 1	-	-	-	-	5.44 -
Critical Hdwy Stg 2	-	-	-	-	5.44 -
Follow-up Hdwy	-	-	2.263	-	3.536 3.345
Pot Cap-1 Maneuver	-	-	1498	-	597 995
Stage 1	-	-	-	-	956 -
Stage 2	-	-	-	-	714 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1445	-	535 959
Mov Cap-2 Maneuver	-	-	-	-	535 -
Stage 1	-	-	-	-	922 -
Stage 2	-	-	-	-	663 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.87	40.91
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	552	-	-	675	-
HCM Lane V/C Ratio	0.872	-	-	0.065	-
HCM Control Delay (s/veh)	40.9	-	-	7.7	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	9.7	-	-	0.2	-

HCM Unsignalized Intersection Capacity Analysis
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

10/01/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↘		↕
Traffic Volume (veh/h)	0	319	1651	30	0	1831
Future Volume (Veh/h)	0	319	1651	30	0	1831
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	347	1795	33	0	1990
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2791	899			1796	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2791	899			1796	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	2			100	
cM capacity (veh/h)	15	356			340	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	347	898	898	33	995	995
Volume Left	0	0	0	0	0	0
Volume Right	347	0	0	33	0	0
cSH	356	1700	1700	1700	1700	1700
Volume to Capacity	0.98	0.53	0.53	0.02	0.59	0.59
Queue Length 95th (ft)	272	0	0	0	0	0
Control Delay (s/veh)	76.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s/veh)	76.5	0.0			0.0	
Approach LOS	F					

Intersection Summary						
Average Delay			6.4			
Intersection Capacity Utilization			72.1%	ICU Level of Service		C
Analysis Period (min)			15			

* User Entered Value

HCM 7th TWSC
 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

10/01/2024

Intersection

Int Delay, s/veh 14.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	319	1651	30	0	1831
Future Vol, veh/h	0	319	1651	30	0	1831
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	335	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	3	4	2	2
Mvmt Flow	0	347	1795	33	0	1990

Major/Minor

	Minor1	Major1	Major2
Conflicting Flow All	-	897	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.96	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.33	-
Pot Cap-1 Maneuver	0 ~ 281	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	- ~ 281	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s/70.35		0	0
HCM LOS	F		

Minor Lane/Major Mvmt

	NBTWBLn1	SBT
Capacity (veh/h)	- 281	-
HCM Lane V/C Ratio	- 1.235	-
HCM Control Delay (s/veh)	- 170.3	-
HCM Lane LOS	- F	-
HCM 95th %tile Q(veh)	- 16.3	-

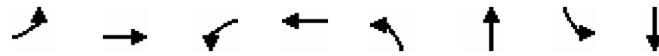
Notes

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

Queues

20: SW Teton Avenue & SW Herman Road

10/01/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	699	50	366	229	229	21	197
v/c Ratio	0.02	0.84	0.22	0.37	0.64	0.42	0.07	0.70
Control Delay (s/veh)	13.7	37.5	15.3	18.0	35.8	34.4	25.0	56.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.7	37.5	15.3	18.0	35.8	34.4	25.0	56.9
Queue Length 50th (ft)	2	430	16	140	126	126	10	134
Queue Length 95th (ft)	10	#640	36	251	171	196	24	193
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	587	829	394	986	395	893	488	837
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.84	0.13	0.37	0.58	0.26	0.04	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

20: SW Teton Avenue & SW Herman Road

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	254	305	40	264	29	183	150	33	17	129	29
Future Volume (vph)	6	254	305	40	264	29	183	150	33	17	129	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	0.99		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1543	1657		1626	1803		1596	1733		1703	1617	
Flt Permitted	0.49	1.00		0.15	1.00		0.36	1.00		0.62	1.00	
Satd. Flow (perm)	797	1657		262	1803		611	1733		1104	1617	
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	8	318	381	50	330	36	229	188	41	21	161	36
RTOR Reduction (vph)	0	19	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	8	680	0	50	365	0	229	229	0	21	191	0
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	17%	2%	8%	11%	4%	2%	13%	6%	10%	6%	16%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	58.2	57.2		66.2	61.2		41.5	35.2		23.8	21.5	
Effective Green, g (s)	58.2	57.7		66.2	61.7		41.5	35.7		23.8	22.0	
Actuated g/C Ratio	0.49	0.49		0.56	0.52		0.35	0.30		0.20	0.19	
Clearance Time (s)	4.0	5.5		4.0	5.5		4.0	5.5		4.0	5.5	
Vehicle Extension (s)	2.0	3.2		2.0	3.2		2.0	3.2		2.0	3.2	
Lane Grp Cap (vph)	397	805		203	937		346	521		232	299	
v/s Ratio Prot	0.00	c0.41		c0.01	0.20		c0.09	0.13		0.00	0.12	
v/s Ratio Perm	0.01			0.13			c0.14			0.02		
v/c Ratio	0.02	0.84		0.25	0.39		0.66	0.44		0.09	0.64	
Uniform Delay, d1	15.6	26.6		18.4	17.2		29.9	33.4		38.4	44.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	8.2		0.2	0.3		3.7	0.6		0.1	4.5	
Delay (s)	15.6	34.8		18.7	17.4		33.6	34.1		38.5	49.2	
Level of Service	B	C		B	B		C	C		D	D	
Approach Delay (s/veh)		34.6			17.6			33.8			48.2	
Approach LOS		C			B			C			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
 20: SW Teton Avenue & SW Herman Road

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	254	305	40	264	29	183	150	33	17	129	29
Future Volume (veh/h)	6	254	305	40	264	29	183	150	33	17	129	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1648	1870	1781	1737	1841	1870	1707	1811	1752	1811	1663	1841
Adj Flow Rate, veh/h	8	318	381	50	330	36	229	188	41	21	161	36
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	17	2	8	11	4	2	13	6	10	6	16	4
Cap, veh/h	438	379	454	225	843	92	326	383	84	275	199	45
Arrive On Green	0.01	0.49	0.48	0.04	0.52	0.51	0.14	0.27	0.26	0.02	0.15	0.15
Sat Flow, veh/h	1570	775	928	1654	1631	178	1626	1440	314	1725	1315	294
Grp Volume(v), veh/h	8	0	699	50	0	366	229	0	229	21	0	197
Grp Sat Flow(s),veh/h/ln	1570	0	1703	1654	0	1809	1626	0	1754	1725	0	1609
Q Serve(g_s), s	0.3	0.0	34.7	1.4	0.0	11.9	11.1	0.0	10.7	1.0	0.0	11.5
Cycle Q Clear(g_c), s	0.3	0.0	34.7	1.4	0.0	11.9	11.1	0.0	10.7	1.0	0.0	11.5
Prop In Lane	1.00		0.55	1.00		0.10	1.00		0.18	1.00		0.18
Lane Grp Cap(c), veh/h	438	0	833	225	0	935	326	0	466	275	0	244
V/C Ratio(X)	0.02	0.00	0.84	0.22	0.00	0.39	0.70	0.00	0.49	0.08	0.00	0.81
Avail Cap(c_a), veh/h	745	0	953	502	0	993	438	0	1035	591	0	917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	0.0	21.7	18.1	0.0	14.3	28.7	0.0	30.2	34.1	0.0	40.0
Incr Delay (d2), s/veh	0.0	0.0	6.2	0.2	0.0	0.3	1.6	0.0	0.9	0.0	0.0	6.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	13.6	0.5	0.0	4.7	4.3	0.0	4.5	0.4	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.0	0.0	27.9	18.2	0.0	14.5	30.2	0.0	31.1	34.1	0.0	46.8
LnGrp LOS	B		C	B		B	C		C	C		D
Approach Vol, veh/h		707			416			458				218
Approach Delay, s/veh		27.7			15.0			30.7				45.6
Approach LOS		C			B			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	52.6	17.3	19.8	5.0	55.4	6.2	30.9				
Change Period (Y+Rc), s	4.0	5.5	4.0	5.5	4.0	5.5	4.0	5.5				
Max Green Setting (Gmax), s	20.0	54.0	20.0	55.0	20.0	53.0	20.0	57.0				
Max Q Clear Time (g_c+I1), s	3.4	36.7	13.1	13.5	2.3	13.9	3.0	12.7				
Green Ext Time (p_c), s	0.0	10.4	0.2	0.7	0.0	8.4	0.1	3.3				
Intersection Summary												
HCM 7th Control Delay, s/veh			27.7									
HCM 7th LOS			C									

Queues

21: OR 99W (Pacific Highway) & SW Fischer Road

10/01/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	205	362	410	1789	1645	341
v/c Ratio	1.01	0.87	1.05	0.61	0.83	0.35
Control Delay (s/veh)	127.4	36.3	110.6	5.2	33.5	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	127.4	36.3	110.6	5.2	33.5	7.6
Queue Length 50th (ft)	~193	74	~404	238	813	58
Queue Length 95th (ft)	#361	#253	#614	279	m875	m80
Internal Link Dist (ft)	1134			1909	2372	
Turn Bay Length (ft)	275		435			200
Base Capacity (vph)	202	417	391	2932	1989	964
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.87	1.05	0.61	0.83	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 21: OR 99W (Pacific Highway) & SW Fischer Road

10/01/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	189	333	377	1646	0	1513	314
Future Volume (vph)	189	333	377	1646	0	1513	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95		0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (prot)	1770	1493	1770	3539		3438	1509
Flt Permitted	0.95	1.00	0.95	1.00		1.00	1.00
Satd. Flow (perm)	1770	1493	1770	3539		3438	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	362	410	1789	0	1645	341
RTOR Reduction (vph)	0	247	0	0	0	0	91
Lane Group Flow (vph)	205	115	410	1789	0	1645	250
Confl. Peds. (#/hr)		21	9				9
Heavy Vehicles (%)	2%	5%	2%	2%	2%	5%	2%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	15.0	15.0	29.5	114.0		79.0	79.0
Effective Green, g (s)	16.0	16.0	31.0	116.0		81.0	81.0
Actuated g/C Ratio	0.11	0.11	0.22	0.83		0.58	0.58
Clearance Time (s)	5.0	5.0	5.5	6.0		6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5		4.5	4.5
Lane Grp Cap (vph)	202	170	391	2932		1989	873
v/s Ratio Prot	c0.12		c0.23	0.51		c0.48	
v/s Ratio Perm		0.08					0.17
v/c Ratio	1.01	0.68	1.05	0.61		0.83	0.29
Uniform Delay, d1	62.0	59.5	54.5	4.2		23.8	14.9
Progression Factor	1.00	1.00	1.00	1.00		1.27	1.31
Incremental Delay, d2	67.2	9.3	58.8	1.0		2.5	0.5
Delay (s)	129.2	68.8	113.3	5.1		32.8	20.0
Level of Service	F	E	F	A		C	C
Approach Delay (s/veh)	90.6			25.3		30.6	
Approach LOS	F			C		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary

21: OR 99W (Pacific Highway) & SW Fischer Road

10/01/2024



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	189	333	377	1646	0	1513	314
Future Volume (veh/h)	189	333	377	1646	0	1513	314
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Work Zone On Approach	No			No		No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1870		1826	1870
Adj Flow Rate, veh/h	205	362	410	1789		1645	341
Peak Hour Factor	0.92	0.92	0.92	0.92		0.92	0.92
Percent Heavy Veh, %	2	5	2	2		5	2
Cap, veh/h	204	177	394	2944		2007	910
Arrive On Green	0.11	0.11	0.22	0.83		1.00	1.00
Sat Flow, veh/h	1781	1547	1781	3647		3561	1573
Grp Volume(v), veh/h	205	362	410	1789		1645	341
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1777		1735	1573
Q Serve(g_s), s	16.0	16.0	31.0	24.3		0.0	0.0
Cycle Q Clear(g_c), s	16.0	16.0	31.0	24.3		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	204	177	394	2944		2007	910
V/C Ratio(X)	1.01	2.05	1.04	0.61		0.82	0.37
Avail Cap(c_a), veh/h	204	177	394	2944		2007	910
HCM Platoon Ratio	1.00	1.00	1.00	1.00		2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		0.45	0.45
Uniform Delay (d), s/veh	62.0	62.0	54.5	4.1		0.0	0.0
Incr Delay (d2), s/veh	64.9	490.3	55.9	0.9		1.8	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	37.0	19.7	6.0		0.5	0.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	126.9	552.3	110.4	5.1		1.8	0.5
LnGrp LOS	F	F	F	A		A	A
Approach Vol, veh/h	567			2199		1986	
Approach Delay, s/veh	398.5			24.7		1.6	
Approach LOS	F			C		A	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		120.0		20.0	35.0	85.0	
Change Period (Y+Rc), s		6.0		5.0	5.5	6.0	
Max Green Setting (Gmax), s		94.0		15.0	29.5	79.0	
Max Q Clear Time (g_c+I1), s		26.3		18.0	33.0	2.0	
Green Ext Time (p_c), s		63.7		0.0	0.0	67.2	

Intersection Summary

HCM 7th Control Delay, s/veh	59.6
HCM 7th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

Queues

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

10/01/2024



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	182	330	332	426	166	1385	265	496	1229	23
v/c Ratio	0.52	0.96	0.95	0.71	0.97	1.02	0.27	0.92	0.79	0.03
Control Delay (s/veh)	42.4	93.3	92.0	17.1	114.6	66.6	3.9	80.3	37.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.4	93.3	92.0	17.1	114.6	66.6	3.9	80.3	37.7	0.1
Queue Length 50th (ft)	51	314	316	54	154	~695	22	230	496	0
Queue Length 95th (ft)	92	#531	#531	184	m#290	m#824	m51	#326	590	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	393	345	349	597	171	1355	976	556	1547	757
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.96	0.95	0.71	0.97	1.02	0.27	0.89	0.79	0.03

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

10/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↖	↖	↖	↕↕	↖	↖↖	↕↕	↖
Traffic Volume (vph)	24	80	67	544	78	400	156	1302	249	466	1155	22
Future Volume (vph)	24	80	67	544	78	400	156	1302	249	466	1155	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frbp, ped/bikes		1.00		1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3296		1681	1701	1533	1770	3505	1561	3433	3438	1547
Flt Permitted		0.99		0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3296		1681	1701	1533	1770	3505	1561	3433	3438	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	26	85	71	579	83	426	166	1385	265	496	1229	23
RTOR Reduction (vph)	0	65	0	0	0	283	0	0	59	0	0	13
Lane Group Flow (vph)	0	117	0	330	332	143	166	1385	206	496	1229	10
Confl. Peds. (#/hr)	7					7	1		7	7		1
Heavy Vehicles (%)	2%	2%	3%	2%	3%	3%	2%	3%	2%	2%	5%	2%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1		6
Permitted Phases						4			2			6
Actuated Green, G (s)		12.2		28.8	28.8	28.8	13.6	54.2	83.0	22.1	63.0	63.0
Effective Green, g (s)		12.2		28.8	28.8	28.8	13.6	54.2	83.0	22.1	63.0	63.0
Actuated g/C Ratio		0.09		0.21	0.21	0.21	0.10	0.39	0.59	0.16	0.45	0.45
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		287		345	349	315	171	1356	925	541	1547	696
v/s Ratio Prot		c0.04		c0.20	0.20		0.09	c0.40	0.05	c0.14	0.36	
v/s Ratio Perm						0.09			0.09			0.01
v/c Ratio		0.41		0.96	0.95	0.45	0.97	1.02	0.22	0.92	0.79	0.01
Uniform Delay, d1		60.5		55.0	54.9	48.7	63.0	42.9	13.4	58.0	33.0	21.3
Progression Factor		1.00		1.00	1.00	1.00	1.00	0.93	1.06	1.00	1.00	1.00
Incremental Delay, d2		0.6		36.6	35.3	0.6	51.2	26.8	0.1	20.2	4.3	0.0
Delay (s)		61.0		91.6	90.2	49.3	113.9	66.8	14.2	78.3	37.3	21.4
Level of Service		E		F	F	D	F	E	B	E	D	C
Approach Delay (s/veh)		61.0			74.6			63.5			48.7	
Approach LOS		E			E			E			D	

Intersection Summary

HCM 2000 Control Delay (s/veh)	60.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

APPENDIX I.
**MITIGATION
CALCULATIONS**

HCM Signalized Intersection Capacity Analysis

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	706	183	76	226	132	16	4	11	41	2	30
Future Volume (vph)	64	706	183	76	226	132	16	4	11	41	2	30
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	1.00		1.00	1.00		1.00	1.00			1.00	
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.89			0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1751	1786		1719	1644		1570	1509			1566	
Flt Permitted	0.52	1.00		0.12	1.00		0.78	1.00			0.82	
Satd. Flow (perm)	955	1786		211	1644		1288	1509			1315	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	767	199	83	246	143	17	4	12	45	2	33
RTOR Reduction (vph)	0	9	0	0	19	0	0	11	0	0	29	0
Lane Group Flow (vph)	70	957	0	83	370	0	17	5	0	0	51	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	3%	2%	5%	5%	9%	7%	15%	2%	15%	10%	2%	14%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	46.8	42.6		50.0	44.2		8.1	8.1			8.1	
Effective Green, g (s)	46.8	42.6		50.0	44.2		8.1	8.1			8.1	
Actuated g/C Ratio	0.68	0.62		0.73	0.65		0.12	0.12			0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lane Grp Cap (vph)	701	1110		281	1060		152	178			155	
v/s Ratio Prot	0.01	c0.54		c0.02	0.22			0.00				
v/s Ratio Perm	0.06			0.19			0.01				c0.04	
v/c Ratio	0.10	0.86		0.30	0.35		0.11	0.03			0.33	
Uniform Delay, d1	3.6	10.6		9.1	5.6		27.0	26.7			27.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	7.0		0.4	0.1		0.2	0.1			0.9	
Delay (s)	3.6	17.6		9.6	5.7		27.2	26.8			28.6	
Level of Service	A	B		A	A		C	C			C	
Approach Delay (s)		16.6			6.4			27.0			28.6	
Approach LOS		B			A			C			C	

Intersection Summary

HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	706	183	76	226	132	16	4	11	41	2	30
Future Volume (veh/h)	64	706	183	76	226	132	16	4	11	41	2	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1826	1826	1767	1796	1678	1870	1678	1752	1870	1693
Adj Flow Rate, veh/h	70	767	199	83	246	143	17	4	12	45	2	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	5	5	9	7	15	2	15	10	2	14
Cap, veh/h	728	883	229	334	649	377	273	38	115	179	13	58
Arrive On Green	0.05	0.62	0.62	0.05	0.62	0.62	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1767	1425	370	1739	1038	604	1232	412	1236	745	140	621
Grp Volume(v), veh/h	70	0	966	83	0	389	17	0	16	80	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1794	1739	0	1642	1232	0	1648	1506	0	0
Q Serve(g_s), s	0.7	0.0	22.8	0.8	0.0	6.0	0.0	0.0	0.5	2.1	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	22.8	0.8	0.0	6.0	0.5	0.0	0.5	2.6	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.37	1.00		0.75	0.56		0.41
Lane Grp Cap(c), veh/h	728	0	1112	334	0	1026	273	0	154	250	0	0
V/C Ratio(X)	0.10	0.00	0.87	0.25	0.00	0.38	0.06	0.00	0.10	0.32	0.00	0.00
Avail Cap(c_a), veh/h	950	0	1776	544	0	1625	588	0	576	628	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.3	0.0	8.1	8.8	0.0	4.8	21.4	0.0	21.4	22.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.4	0.3	0.0	0.2	0.1	0.0	0.2	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.6	0.3	0.0	1.2	0.2	0.0	0.2	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.3	0.0	10.5	9.1	0.0	4.9	21.5	0.0	21.6	22.9	0.0	0.0
LnGrp LOS	A	A	B	A	A	A	C	A	C	C	A	A
Approach Vol, veh/h		1036			472			33				80
Approach Delay, s/veh		10.0			5.7			21.5				22.9
Approach LOS		A			A			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		8.8	6.5	36.2		8.8	6.8	35.9				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.0	9.0	51.0		18.0	9.0	51.0				
Max Q Clear Time (g_c+I1), s		4.6	2.7	8.0		2.5	2.8	24.8				
Green Ext Time (p_c), s		0.2	0.0	2.2		0.1	0.1	7.1				
Intersection Summary												
HCM 6th Ctrl Delay			9.6									
HCM 6th LOS			A									

HCM Signalized Intersection Capacity Analysis

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	383	16	18	626	250	129	37	78	21	2	23
Future Volume (vph)	49	383	16	18	626	250	129	37	78	21	2	23
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	1.00		1.00	1.00		1.00	1.00			1.00	
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.90			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1770	1850		1770	1768		1766	1550			1545	
Flt Permitted	0.13	1.00		0.48	1.00		0.73	1.00			0.85	
Satd. Flow (perm)	251	1850		901	1768		1349	1550			1348	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	403	17	19	659	263	136	39	82	22	2	24
RTOR Reduction (vph)	0	1	0	0	14	0	0	67	0	0	20	0
Lane Group Flow (vph)	52	419	0	19	908	0	136	54	0	0	28	0
Confl. Peds. (#/hr)	4					4	1					1
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	14%	5%	2%	17%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			6				2
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	47.5	44.6		45.1	43.4		12.6	12.6				12.6
Effective Green, g (s)	47.5	44.6		45.1	43.4		12.6	12.6				12.6
Actuated g/C Ratio	0.67	0.63		0.64	0.61		0.18	0.18				0.18
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0				4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5				2.5
Lane Grp Cap (vph)	230	1163		593	1082		239	275				239
v/s Ratio Prot	c0.01	0.23		0.00	c0.51			0.03				
v/s Ratio Perm	0.14			0.02			c0.10					0.02
v/c Ratio	0.23	0.36		0.03	0.84		0.57	0.19				0.12
Uniform Delay, d1	9.2	6.3		4.8	11.0		26.7	24.8				24.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00				1.00
Incremental Delay, d2	0.4	0.1		0.0	5.7		2.5	0.3				0.2
Delay (s)	9.6	6.4		4.8	16.7		29.2	25.1				24.6
Level of Service	A	A		A	B		C	C				C
Approach Delay (s)		6.8			16.5			27.3				24.6
Approach LOS		A			B			C				C

Intersection Summary

HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	383	16	18	626	250	129	37	78	21	2	23
Future Volume (veh/h)	49	383	16	18	626	250	129	37	78	21	2	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1693	1826	1870	1648
Adj Flow Rate, veh/h	52	403	17	19	659	263	136	39	82	22	2	24
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	14	5	2	17
Cap, veh/h	313	1116	47	669	763	305	340	68	143	138	37	75
Arrive On Green	0.04	0.63	0.63	0.02	0.61	0.61	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	1780	75	1781	1261	503	1381	536	1127	302	290	592
Grp Volume(v), veh/h	52	0	420	19	0	922	136	0	121	48	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1855	1781	0	1765	1381	0	1662	1185	0	0
Q Serve(g_s), s	0.6	0.0	5.8	0.2	0.0	22.8	0.2	0.0	3.6	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	5.8	0.2	0.0	22.8	3.9	0.0	3.6	3.7	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.29	1.00		0.68	0.46		0.50
Lane Grp Cap(c), veh/h	313	0	1163	669	0	1068	340	0	212	250	0	0
V/C Ratio(X)	0.17	0.00	0.36	0.03	0.00	0.86	0.40	0.00	0.57	0.19	0.00	0.00
Avail Cap(c_a), veh/h	545	0	2141	940	0	2037	634	0	566	555	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	4.7	4.0	0.0	8.6	21.8	0.0	21.7	20.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.0	1.7	0.6	0.0	1.8	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.3	0.0	0.0	5.7	1.5	0.0	1.4	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	4.9	4.0	0.0	10.3	22.4	0.0	23.5	21.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	B	C	A	C	C	A	A
Approach Vol, veh/h		472			941			257				48
Approach Delay, s/veh		5.3			10.2			22.9				21.0
Approach LOS		A			B			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.7	6.1	36.0		10.7	5.0	37.1				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.0	9.0	61.0		18.0	9.0	61.0				
Max Q Clear Time (g_c+I1), s		5.7	2.6	24.8		5.9	2.2	7.8				
Green Ext Time (p_c), s		0.1	0.0	7.1		0.7	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay				11.0								
HCM 6th LOS				B								

HCM Signalized Intersection Capacity Analysis

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	726	220	97	233	136	21	6	15	42	2	31
Future Volume (vph)	66	726	220	97	233	136	21	6	15	42	2	31
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	1.00		1.00	1.00		1.00	1.00			1.00	
Frbp, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.97		1.00	0.94		1.00	0.90			0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1751	1776		1719	1644		1570	1532			1565	
Flt Permitted	0.51	1.00		0.10	1.00		0.75	1.00			0.81	
Satd. Flow (perm)	945	1776		183	1644		1235	1532			1309	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	789	239	105	253	148	23	7	16	46	2	34
RTOR Reduction (vph)	0	10	0	0	18	0	0	14	0	0	27	0
Lane Group Flow (vph)	72	1018	0	105	383	0	23	9	0	0	55	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	3%	2%	5%	5%	9%	7%	15%	2%	15%	10%	2%	14%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	53.8	49.5		57.6	51.4		8.7	8.7			8.7	
Effective Green, g (s)	53.8	49.5		57.6	51.4		8.7	8.7			8.7	
Actuated g/C Ratio	0.70	0.65		0.75	0.67		0.11	0.11			0.11	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lane Grp Cap (vph)	710	1150		262	1106		140	174			149	
v/s Ratio Prot	0.01	c0.57		c0.03	0.23			0.01				
v/s Ratio Perm	0.07			0.27			0.02				c0.04	
v/c Ratio	0.10	0.89		0.40	0.35		0.16	0.05			0.37	
Uniform Delay, d1	3.5	11.1		11.7	5.3		30.6	30.2			31.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	8.4		0.7	0.1		0.4	0.1			1.1	
Delay (s)	3.5	19.5		12.5	5.5		31.0	30.3			32.4	
Level of Service	A	B		B	A		C	C			C	
Approach Delay (s)		18.4			6.9			30.6				32.4
Approach LOS		B			A			C				C

Intersection Summary

HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	726	220	97	233	136	21	6	15	42	2	31
Future Volume (veh/h)	66	726	220	97	233	136	21	6	15	42	2	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1870	1826	1826	1767	1796	1678	1870	1678	1752	1870	1693
Adj Flow Rate, veh/h	72	789	239	105	253	148	23	7	16	46	2	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	5	5	9	7	15	2	15	10	2	14
Cap, veh/h	740	891	270	312	683	399	254	46	106	160	14	56
Arrive On Green	0.05	0.65	0.65	0.06	0.66	0.66	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1767	1370	415	1739	1036	606	1231	506	1156	711	149	610
Grp Volume(v), veh/h	72	0	1028	105	0	401	23	0	23	82	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1785	1739	0	1642	1231	0	1662	1470	0	0
Q Serve(g_s), s	0.8	0.0	28.1	1.1	0.0	6.5	0.0	0.0	0.8	2.4	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	28.1	1.1	0.0	6.5	0.8	0.0	0.8	3.2	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.37	1.00		0.70	0.56		0.41
Lane Grp Cap(c), veh/h	740	0	1161	312	0	1082	254	0	152	229	0	0
V/C Ratio(X)	0.10	0.00	0.89	0.34	0.00	0.37	0.09	0.00	0.15	0.36	0.00	0.00
Avail Cap(c_a), veh/h	926	0	1839	480	0	1691	515	0	505	543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	0.0	8.5	11.0	0.0	4.6	24.8	0.0	24.8	25.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.9	0.5	0.0	0.2	0.1	0.0	0.3	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	7.3	0.7	0.0	1.4	0.3	0.0	0.3	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.2	0.0	11.5	11.5	0.0	4.7	24.9	0.0	25.1	26.6	0.0	0.0
LnGrp LOS	A	A	B	B	A	A	C	A	C	C	A	A
Approach Vol, veh/h		1100			506			46			82	
Approach Delay, s/veh		10.9			6.1			25.0			26.6	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.4	6.8	43.0		9.4	7.3	42.5				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.0	9.0	61.0		18.0	9.0	61.0				
Max Q Clear Time (g_c+I1), s		5.2	2.8	8.5		2.8	3.1	30.1				
Green Ext Time (p_c), s		0.2	0.0	2.3		0.1	0.1	8.4				
Intersection Summary												
HCM 6th Ctrl Delay			10.6									
HCM 6th LOS			B									

HCM Signalized Intersection Capacity Analysis

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	394	21	21	644	257	158	45	99	22	2	24
Future Volume (vph)	50	394	21	21	644	257	158	45	99	22	2	24
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	1.00		1.00	1.00		1.00	1.00			1.00	
Frbp, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.90			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1770	1847		1770	1768		1766	1545			1545	
Flt Permitted	0.12	1.00		0.47	1.00		0.82	1.00			0.85	
Satd. Flow (perm)	230	1847		871	1768		1522	1545			1337	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	415	22	22	678	271	166	47	104	23	2	25
RTOR Reduction (vph)	0	2	0	0	14	0	0	71	0	0	20	0
Lane Group Flow (vph)	53	435	0	22	935	0	166	80	0	0	30	0
Confl. Peds. (#/hr)	4					4	1					1
Confl. Bikes (#/hr)			1			2						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	14%	5%	2%	17%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			6				2
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	52.5	49.6		50.1	48.4		14.7	14.7				14.7
Effective Green, g (s)	52.5	49.6		50.1	48.4		14.7	14.7				14.7
Actuated g/C Ratio	0.67	0.64		0.64	0.62		0.19	0.19				0.19
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0				4.0
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5				2.5
Lane Grp Cap (vph)	212	1174		579	1097		286	291				251
v/s Ratio Prot	c0.01	0.24		0.00	c0.53			0.05				
v/s Ratio Perm	0.16			0.02			c0.11					0.02
v/c Ratio	0.25	0.37		0.04	0.85		0.58	0.28				0.12
Uniform Delay, d1	10.7	6.8		5.2	11.9		28.8	27.1				26.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00				1.00
Incremental Delay, d2	0.5	0.1		0.0	6.5		2.5	0.4				0.2
Delay (s)	11.2	6.9		5.2	18.4		31.3	27.5				26.4
Level of Service	B	A		A	B		C	C				C
Approach Delay (s)		7.4			18.1			29.5				26.4
Approach LOS		A			B			C				C

Intersection Summary

HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

4: Quakenbush Lane/SW 115th Avenue & SW Tualatin Road

06/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	394	21	21	644	257	158	45	99	22	2	24
Future Volume (veh/h)	50	394	21	21	644	257	158	45	99	22	2	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1693	1826	1870	1648
Adj Flow Rate, veh/h	53	415	22	22	678	271	166	47	104	23	2	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	14	5	2	17
Cap, veh/h	277	1104	59	640	769	307	339	82	181	133	35	83
Arrive On Green	0.04	0.63	0.63	0.02	0.61	0.61	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	1758	93	1781	1261	504	1380	517	1143	303	221	524
Grp Volume(v), veh/h	53	0	437	22	0	949	166	0	151	50	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1851	1781	0	1765	1380	0	1660	1048	0	0
Q Serve(g_s), s	0.7	0.0	7.1	0.3	0.0	28.2	1.6	0.0	5.2	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.7	0.0	7.1	0.3	0.0	28.2	6.9	0.0	5.2	5.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.29	1.00		0.69	0.46		0.50
Lane Grp Cap(c), veh/h	277	0	1163	640	0	1076	339	0	263	251	0	0
V/C Ratio(X)	0.19	0.00	0.38	0.03	0.00	0.88	0.49	0.00	0.57	0.20	0.00	0.00
Avail Cap(c_a), veh/h	466	0	2116	862	0	2018	521	0	481	436	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	0.0	5.6	4.6	0.0	10.2	24.9	0.0	24.2	22.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.0	1.9	0.8	0.0	1.5	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.9	0.1	0.0	8.0	2.3	0.0	2.1	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	0.0	5.8	4.6	0.0	12.2	25.7	0.0	25.7	23.0	0.0	0.0
LnGrp LOS	B	A	A	A	A	B	C	A	C	C	A	A
Approach Vol, veh/h		490			971			317				50
Approach Delay, s/veh		6.4			12.0			25.7				23.0
Approach LOS		A			B			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.8	6.4	41.9		13.8	5.3	43.0				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		18.0	9.0	71.0		18.0	9.0	71.0				
Max Q Clear Time (g_c+I1), s		7.3	2.7	30.2		8.9	2.3	9.1				
Green Ext Time (p_c), s		0.1	0.0	7.7		0.8	0.0	2.3				
Intersection Summary												
HCM 6th Ctrl Delay				13.2								
HCM 6th LOS				B								

APPENDIX J.
QUEUING ANALYSIS

Queuing and Blocking Report
2024 Existing Conditions

10/01/2024

Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	1300	1367	410	730	615	276	259	166	144	207	226
Average Queue (ft)	631	654	330	410	252	80	93	52	55	59	67
95th Queue (ft)	1202	1257	516	685	482	206	201	116	118	143	155
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		46	17							0	
Queuing Penalty (veh)		201	79							0	

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	111	174	208	407	221	380	431	146
Average Queue (ft)	43	50	63	188	28	217	74	51
95th Queue (ft)	93	131	141	338	109	364	256	124
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							3	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	39	12		20		13	0	
Queuing Penalty (veh)	73	6		5		46	2	

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	WB	NB	NB	SB
Directions Served	L	L	L	TR	LTR
Maximum Queue (ft)	56	36	35	47	98
Average Queue (ft)	18	2	3	3	43
95th Queue (ft)	49	17	23	23	81
Link Distance (ft)			552	552	1330
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	25	25			
Storage Blk Time (%)	2	0			
Queuing Penalty (veh)	15	1			

Queuing and Blocking Report
 2024 Existing Conditions

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Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	14	73
Average Queue (ft)	1	23
95th Queue (ft)	10	56
Link Distance (ft)		540
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	5	72	46
Average Queue (ft)	0	22	5
95th Queue (ft)	4	57	25
Link Distance (ft)	1064		285
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	
Storage Blk Time (%)		5	
Queuing Penalty (veh)		16	

Intersection: 8: SW 108th Ave & Center Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report
 2024 Existing Conditions

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Intersection: 9: SW 108th Ave & South Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	62	196	69	81	70	80	193	139	170	185
Average Queue (ft)	6	85	9	26	18	24	75	61	47	68
95th Queue (ft)	33	168	43	66	51	63	146	113	133	155
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)		10						0	0	
Queuing Penalty (veh)		1						0	1	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	96	70	55	49
Average Queue (ft)	59	25	17	5
95th Queue (ft)	87	55	41	28
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
2024 Existing Conditions

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Intersection: 12: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	53	40	56
Average Queue (ft)	14	9	16
95th Queue (ft)	47	34	48
Link Distance (ft)	1030	531	531
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	40	14	35
Average Queue (ft)	3	1	5
95th Queue (ft)	20	11	25
Link Distance (ft)	860	353	353
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	45	10	21	79
Average Queue (ft)	9	0	1	10
95th Queue (ft)	36	5	12	47
Link Distance (ft)	362	556	617	361
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
 2024 Existing Conditions

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Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	74	40	6
Average Queue (ft)	36	7	0
95th Queue (ft)	61	30	5
Link Distance (ft)	556	796	207
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	63	158	162	77	38
Average Queue (ft)	8	45	49	23	5
95th Queue (ft)	35	118	117	56	22
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)	0	1			
Queuing Penalty (veh)	0	0			

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (ft)	22	90	46	132	94
Average Queue (ft)	2	31	1	53	42
95th Queue (ft)	14	70	20	105	80
Link Distance (ft)	169		1000		1711
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		100	
Storage Blk Time (%)		10		2	0
Queuing Penalty (veh)		31		1	0

Queuing and Blocking Report
2024 Existing Conditions

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Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	44	132
Average Queue (ft)	4	55
95th Queue (ft)	23	97
Link Distance (ft)	1163	1330
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	SB	SB
Directions Served	R	T	T
Maximum Queue (ft)	197	136	130
Average Queue (ft)	21	7	7
95th Queue (ft)	113	98	107
Link Distance (ft)	1290	1944	1944
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	53	283	70	292	154	176	88	171
Average Queue (ft)	4	116	12	115	84	49	15	64
95th Queue (ft)	27	226	45	228	144	131	53	129
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		10	0	9	12	3	1	10
Queuing Penalty (veh)		1	0	2	13	8	1	2

Queuing and Blocking Report
2024 Existing Conditions

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Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	456	657	432	672	679	932	558	331
Average Queue (ft)	279	289	314	258	253	245	224	55
95th Queue (ft)	467	563	517	670	642	659	498	224
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	20	15	15	2		6	9	
Queuing Penalty (veh)	78	34	96	2		0	11	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	145	205	326	397	269	151	540	575	315	343	426	359
Average Queue (ft)	29	93	188	230	109	56	307	316	167	202	238	197
95th Queue (ft)	101	170	309	363	206	124	517	538	364	304	348	322
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)		0	0	3			0	25	2	1	5	2
Queuing Penalty (veh)		0	1	5			0	86	11	4	23	10

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	373	22
Average Queue (ft)	192	2
95th Queue (ft)	319	12
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Zone Summary

Zone wide Queuing Penalty: 871

Queuing and Blocking Report
2024 Existing Conditions

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Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	1311	1306	410	585	460	399	438	472	510	410	248
Average Queue (ft)	626	608	215	284	209	179	191	258	257	128	89
95th Queue (ft)	1252	1242	497	520	405	378	397	405	423	315	195
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)	1	1						0	1		
Queuing Penalty (veh)	0	0						1	4		
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		48	0						11	0	0
Queuing Penalty (veh)		95	1						71	0	0

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	121	399	246	334	125	397	502	272
Average Queue (ft)	33	136	117	193	28	159	63	60
95th Queue (ft)	83	303	205	297	82	325	260	175
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							0	0
Queuing Penalty (veh)							2	0
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	32	21		22		8		
Queuing Penalty (veh)	158	7		10		17		

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	TR	LTR
Maximum Queue (ft)	81	32	14	41	59	92
Average Queue (ft)	29	1	0	2	10	34
95th Queue (ft)	66	23	7	18	41	71
Link Distance (ft)		1193		800	552	1330
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	25		25			
Storage Blk Time (%)	9		0	0		
Queuing Penalty (veh)	33		0	0		

Queuing and Blocking Report
 2024 Existing Conditions

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Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	44	52	48	40
Average Queue (ft)	9	2	3	10
95th Queue (ft)	35	22	25	36
Link Distance (ft)		800	1064	540
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	25			
Storage Blk Time (%)	2	0		
Queuing Penalty (veh)	8	0		

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	27	70
Average Queue (ft)	2	27
95th Queue (ft)	14	59
Link Distance (ft)		285
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	2	

Intersection: 8: SW 108th Ave & Center Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report
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Intersection: 9: SW 108th Ave & South Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	80	91	76	146	50	194	188	68	133	152
Average Queue (ft)	16	19	30	57	2	81	77	22	40	66
95th Queue (ft)	50	58	65	100	16	151	154	55	105	128
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)		0		0		1			0	
Queuing Penalty (veh)		0		0		0			0	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	67	102	59	40
Average Queue (ft)	29	47	18	12
95th Queue (ft)	55	77	44	39
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
 2024 Existing Conditions

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Intersection: 12: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	28	73	113
Average Queue (ft)	2	36	49
95th Queue (ft)	14	62	83
Link Distance (ft)	1030	531	531
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	19	46	58
Average Queue (ft)	1	20	23
95th Queue (ft)	10	48	54
Link Distance (ft)	860	353	353
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	35	74
Average Queue (ft)	4	36
95th Queue (ft)	23	64
Link Distance (ft)	617	361
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
 2024 Existing Conditions

10/01/2024

Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	80	19
Average Queue (ft)	44	1
95th Queue (ft)	68	8
Link Distance (ft)	556	796
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	50	159	243	116	30
Average Queue (ft)	4	61	103	56	5
95th Queue (ft)	24	116	184	99	19
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)	0	1		0	
Queuing Penalty (veh)	0	0		0	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	17	43	174	241
Average Queue (ft)	0	14	93	57
95th Queue (ft)	4	42	169	162
Link Distance (ft)	169			1711
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	100	
Storage Blk Time (%)		2	16	0
Queuing Penalty (veh)		15	10	0

Queuing and Blocking Report
 2024 Existing Conditions

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Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	54	129
Average Queue (ft)	5	61
95th Queue (ft)	30	104
Link Distance (ft)	1163	1330
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	NB	SB	SB
Directions Served	R	T	T	T
Maximum Queue (ft)	435	27	108	106
Average Queue (ft)	157	1	5	7
95th Queue (ft)	440	15	79	90
Link Distance (ft)	1290	1829	1944	1944
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	26	244	114	201	141	154	56	192
Average Queue (ft)	4	120	24	87	50	51	9	64
95th Queue (ft)	17	205	75	164	107	116	38	136
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		10	0	5	5	4	0	11
Queuing Penalty (veh)		1	1	2	9	6	0	2

Queuing and Blocking Report
2024 Existing Conditions

10/01/2024

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	460	834	460	1454	1458	1300	1329	400
Average Queue (ft)	278	345	427	743	685	632	645	183
95th Queue (ft)	470	676	534	1606	1639	1250	1291	462
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)				0	4			
Queuing Penalty (veh)				0	33			
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	19	25	47	1		25	32	0
Queuing Penalty (veh)	61	45	340	2		0	97	2

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	171	230	375	794	768	674	808	833	315	345	419	594
Average Queue (ft)	54	119	329	508	322	188	467	486	224	219	263	326
95th Queue (ft)	137	204	428	896	768	429	721	745	429	318	391	507
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)				6	6							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)			14	39			5	42	0	2	8	15
Queuing Penalty (veh)			45	101			7	94	1	9	42	65

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	591	19
Average Queue (ft)	331	4
95th Queue (ft)	500	15
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	3	
Queuing Penalty (veh)	1	

Zone Summary

Zone wide Queuing Penalty: 1399

Queuing and Blocking Report
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Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	114	450	359	543	335	399	422	344
Average Queue (ft)	33	225	185	294	57	197	78	72
95th Queue (ft)	85	402	306	470	218	362	282	202
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							1	0
Queuing Penalty (veh)							3	0
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	29	34		35		12	0	
Queuing Penalty (veh)	143	12		17		27	2	

Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	1283	1316	410	1106	1061	706	625	160	167	183	202
Average Queue (ft)	731	752	318	704	566	212	166	61	64	57	63
95th Queue (ft)	1587	1649	507	1236	1145	698	529	128	129	138	146
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)	3	5									
Queuing Penalty (veh)	0	0									
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		40	24								0
Queuing Penalty (veh)		199	112								0

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	114	145	210	416	124	388	408	182
Average Queue (ft)	45	46	86	207	24	255	123	71
95th Queue (ft)	94	111	177	356	81	397	340	159
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							2	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	43	12		24		19	0	
Queuing Penalty (veh)	83	6		7		80	2	

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	LTR
Maximum Queue (ft)	64	9	42	5	38	38	105
Average Queue (ft)	20	0	3	0	2	4	42
95th Queue (ft)	53	6	19	4	19	24	80
Link Distance (ft)		1193		800	552	552	1330
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	3	0	1	0			
Queuing Penalty (veh)	23	0	2	0			

Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	21	62
Average Queue (ft)	1	23
95th Queue (ft)	12	54
Link Distance (ft)		540
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	62	81	45	50
Average Queue (ft)	2	25	2	7
95th Queue (ft)	30	64	29	32
Link Distance (ft)	1064		727	285
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25		
Storage Blk Time (%)		6	0	
Queuing Penalty (veh)		22	0	

Intersection: 8: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	39
Average Queue (ft)	16	8
95th Queue (ft)	44	32
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	38
Average Queue (ft)	7	4
95th Queue (ft)	29	22
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	84	206	68	75	69	154	238	229	248	214
Average Queue (ft)	5	93	14	26	17	42	98	87	56	73
95th Queue (ft)	35	173	50	60	51	105	186	171	152	163
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)	0	10				0		2	0	
Queuing Penalty (veh)	0	1				0		6	1	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	151	58	71	40
Average Queue (ft)	73	30	21	4
95th Queue (ft)	112	54	51	23
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	72	52	47
Average Queue (ft)	19	8	13
95th Queue (ft)	55	32	43
Link Distance (ft)	1030	531	531
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	55	27	35
Average Queue (ft)	5	2	5
95th Queue (ft)	28	14	24
Link Distance (ft)	860	353	353
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	6	31	46	60
Average Queue (ft)	0	2	13	3
95th Queue (ft)	4	13	42	25
Link Distance (ft)	362	556	617	361
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

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Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	124	58
Average Queue (ft)	62	10
95th Queue (ft)	98	41
Link Distance (ft)	556	796
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	56	160	171	89	35
Average Queue (ft)	9	59	69	29	5
95th Queue (ft)	38	131	140	61	22
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)	0	1		0	
Queuing Penalty (veh)	0	0		0	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (ft)	41	73	49	137	123
Average Queue (ft)	3	32	2	59	46
95th Queue (ft)	19	64	26	114	89
Link Distance (ft)	169		1000		1711
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		100	
Storage Blk Time (%)		11		3	0
Queuing Penalty (veh)		35		2	0

Queuing and Blocking Report
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Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	42	131
Average Queue (ft)	4	57
95th Queue (ft)	22	100
Link Distance (ft)	1163	1330
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	158	6
Average Queue (ft)	25	0
95th Queue (ft)	121	5
Link Distance (ft)	1290	1944
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	96	300	105	314	158	253	73	165
Average Queue (ft)	5	122	19	136	96	63	12	69
95th Queue (ft)	46	228	71	258	163	172	46	136
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		9	0	12	17	4	1	13
Queuing Penalty (veh)		0	0	2	20	12	1	3

Queuing and Blocking Report
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Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	460	838	459	918	903	534	541	400
Average Queue (ft)	287	330	309	401	397	221	221	47
95th Queue (ft)	475	696	548	1012	996	477	481	203
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	14	22	32	2		5	8	
Queuing Penalty (veh)	57	51	214	2		0	11	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	157	205	301	366	297	148	548	569	315	329	353	396
Average Queue (ft)	36	104	184	224	103	62	331	348	185	196	228	220
95th Queue (ft)	113	182	273	323	200	127	528	549	392	294	325	349
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)		0	0	2			0	27	2	1	4	4
Queuing Penalty (veh)		0	0	3			0	98	13	4	20	16

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	402	16
Average Queue (ft)	206	3
95th Queue (ft)	344	11
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Zone Summary

Zone wide Queuing Penalty: 1111

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Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	932	922	410	663	573	457	474	495	522	410	265
Average Queue (ft)	486	468	198	390	286	218	226	290	295	187	111
95th Queue (ft)	892	893	462	648	535	422	436	468	501	401	228
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)								0	4		
Queuing Penalty (veh)								3	21		
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		40	0						20	0	0
Queuing Penalty (veh)		86	1						153	1	0

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	112	600	354	607	335	400	498	240
Average Queue (ft)	35	239	158	279	60	210	92	76
95th Queue (ft)	88	611	282	504	225	364	302	181
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)		0					1	
Queuing Penalty (veh)		1					4	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	30	33		35		15	0	
Queuing Penalty (veh)	155	12		17		36	1	

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	TR	TR	LTR
Maximum Queue (ft)	64	14	54	55	90
Average Queue (ft)	29	1	4	12	35
95th Queue (ft)	60	11	26	43	72
Link Distance (ft)			800	552	1330
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	25	25			
Storage Blk Time (%)	10	0	0		
Queuing Penalty (veh)	37	1	0		

Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	45	41	43	45
Average Queue (ft)	8	2	2	11
95th Queue (ft)	33	22	19	39
Link Distance (ft)		800	1064	540
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	25			
Storage Blk Time (%)	2	0		
Queuing Penalty (veh)	6	0		

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	34	107
Average Queue (ft)	5	41
95th Queue (ft)	25	80
Link Distance (ft)		285
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	1	
Queuing Penalty (veh)	6	

Intersection: 8: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	89	18
Average Queue (ft)	44	0
95th Queue (ft)	66	6
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 9: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	74	34
Average Queue (ft)	27	1
95th Queue (ft)	58	13
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	55	84	120	188	64	225	238	91	121	141
Average Queue (ft)	16	21	49	81	6	100	105	35	42	68
95th Queue (ft)	43	56	98	146	33	179	200	73	100	125
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)		0	0	1		2			0	
Queuing Penalty (veh)		0	0	1		0			0	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	159	62	34
Average Queue (ft)	37	65	18	12
95th Queue (ft)	61	112	43	38
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	33	91	142
Average Queue (ft)	2	37	51
95th Queue (ft)	15	69	92
Link Distance (ft)	1030	531	531
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	33	60	62
Average Queue (ft)	2	20	27
95th Queue (ft)	18	51	57
Link Distance (ft)	860	353	353
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	WB	NB
Directions Served	LTR	LTR
Maximum Queue (ft)	34	62
Average Queue (ft)	3	27
95th Queue (ft)	17	56
Link Distance (ft)	556	617
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	105	50
Average Queue (ft)	49	10
95th Queue (ft)	78	37
Link Distance (ft)	556	796
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	45	175	270	173	40
Average Queue (ft)	6	80	120	85	9
95th Queue (ft)	29	142	210	149	28
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)		2		1	
Queuing Penalty (veh)		0		0	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	14	51	192	316
Average Queue (ft)	1	14	104	63
95th Queue (ft)	8	43	186	210
Link Distance (ft)	169			1711
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	100	
Storage Blk Time (%)		3	20	0
Queuing Penalty (veh)		25	14	0

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	100	302
Average Queue (ft)	9	75
95th Queue (ft)	60	180
Link Distance (ft)	1163	1330
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	NB	NB	NB	SB	SB
Directions Served	R	T	T	R	T	T
Maximum Queue (ft)	626	263	249	85	132	130
Average Queue (ft)	215	43	40	0	5	5
95th Queue (ft)	662	341	336	0	88	84
Link Distance (ft)	1290	1829	1829		1944	1944
Upstream Blk Time (%)	3					
Queuing Penalty (veh)	8					
Storage Bay Dist (ft)				335		
Storage Blk Time (%)			2			
Queuing Penalty (veh)			1			

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	62	386	115	231	155	228	60	228
Average Queue (ft)	3	172	27	95	69	73	10	83
95th Queue (ft)	31	328	77	175	142	177	36	173
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		17	0	6	9	9	0	18
Queuing Penalty (veh)		1	0	3	17	14	0	3

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Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	460	952	460	1631	1623	1577	1598	400
Average Queue (ft)	313	447	434	834	773	800	825	176
95th Queue (ft)	506	875	522	1743	1742	1675	1723	453
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)		0		2	7	0	0	
Queuing Penalty (veh)		0		17	60	0	0	
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	22	41	51	0		28	34	0
Queuing Penalty (veh)	70	75	400	0		0	103	2

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	213	265	375	893	846	674	1085	1103	315	364	464	896
Average Queue (ft)	61	133	336	603	474	268	696	720	215	246	310	374
95th Queue (ft)	153	218	437	1042	1024	659	1146	1168	430	367	470	673
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)				16	16							0
Queuing Penalty (veh)				0	0							0
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)	0	0	19	43			22	50	0	6	16	17
Queuing Penalty (veh)	0	0	64	113			28	117	0	33	88	79

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	859	106
Average Queue (ft)	373	8
95th Queue (ft)	637	72
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	7	
Queuing Penalty (veh)	1	

Zone Summary

Zone wide Queuing Penalty: 1880

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	124	792	687	848	335	398	451	237
Average Queue (ft)	37	293	232	405	77	218	85	70
95th Queue (ft)	102	539	485	740	276	356	257	161
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)			0	1			0	
Queuing Penalty (veh)			0	3			1	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	28	44		45		19	0	
Queuing Penalty (veh)	147	16		21		45	1	

Queuing and Blocking Report
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Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	1554	1640	410	1374	1305	1028	898	142	155	208	188
Average Queue (ft)	939	981	377	962	839	416	312	58	64	60	65
95th Queue (ft)	1769	1822	501	1513	1467	1000	829	120	130	147	147
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)	6	10									
Queuing Penalty (veh)	0	0									
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		56	33								0
Queuing Penalty (veh)		288	153								0

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	120	181	184	430	193	400	510	212
Average Queue (ft)	41	55	67	205	44	319	182	76
95th Queue (ft)	89	136	148	345	137	449	493	165
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							2	
Queuing Penalty (veh)							15	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	44	13		23		27	1	
Queuing Penalty (veh)	92	6		11		100	11	

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	LTR
Maximum Queue (ft)	74	92	120	190	118	77	158
Average Queue (ft)	19	9	55	18	28	19	64
95th Queue (ft)	55	45	114	104	87	62	129
Link Distance (ft)		1193		800	552	552	1330
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	2	0	20	0			
Queuing Penalty (veh)	20	0	71	0			

Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	32	7	58
Average Queue (ft)	2	0	25
95th Queue (ft)	16	5	55
Link Distance (ft)		1064	540
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	1		

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	11	60	12	90
Average Queue (ft)	0	20	0	40
95th Queue (ft)	6	55	9	74
Link Distance (ft)	1064		727	285
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25		
Storage Blk Time (%)		4	0	
Queuing Penalty (veh)		15	0	

Intersection: 8: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	46	46
Average Queue (ft)	14	6
95th Queue (ft)	43	30
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 9: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	39
Average Queue (ft)	7	3
95th Queue (ft)	29	18
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	89	216	58	85	72	90	261	140	180	192
Average Queue (ft)	8	94	14	28	19	26	95	51	59	80
95th Queue (ft)	45	188	47	64	54	69	193	102	142	161
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)	0	12						0	0	
Queuing Penalty (veh)	0	1						0	1	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	126	75	71	42
Average Queue (ft)	61	32	24	6
95th Queue (ft)	97	60	51	27
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & West Access

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	20	39
Average Queue (ft)	1	4
95th Queue (ft)	9	22
Link Distance (ft)	531	531
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	64	7	40	41
Average Queue (ft)	15	0	7	11
95th Queue (ft)	48	7	30	38
Link Distance (ft)	860	362	353	353
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	24	28	41	38
Average Queue (ft)	1	2	16	3
95th Queue (ft)	13	16	45	20
Link Distance (ft)	362	556	617	361
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
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Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	118	54	5
Average Queue (ft)	62	8	0
95th Queue (ft)	101	36	4
Link Distance (ft)	556	796	207
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	67	190	209	93	39
Average Queue (ft)	12	63	76	34	4
95th Queue (ft)	46	154	154	72	21
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)	0	2		0	
Queuing Penalty (veh)	0	0		0	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (ft)	53	86	33	128	114
Average Queue (ft)	2	32	1	58	40
95th Queue (ft)	21	69	24	109	83
Link Distance (ft)	169		1000		1711
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		100	
Storage Blk Time (%)		10		3	0
Queuing Penalty (veh)		32		1	0

Queuing and Blocking Report
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Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	6	36	102
Average Queue (ft)	0	4	52
95th Queue (ft)	4	22	85
Link Distance (ft)	1290	1163	1330
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	SB	SB
Directions Served	R	T	T
Maximum Queue (ft)	144	109	96
Average Queue (ft)	11	5	3
95th Queue (ft)	76	56	55
Link Distance (ft)	1290	1944	1944
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	57	360	96	363	158	275	95	194
Average Queue (ft)	4	144	15	141	103	71	14	70
95th Queue (ft)	27	277	56	276	166	196	47	148
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		14	0	13	21	4	0	14
Queuing Penalty (veh)		1	0	3	24	11	1	3

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Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	455	649	460	1203	1202	579	579	400
Average Queue (ft)	291	345	396	602	571	269	256	68
95th Queue (ft)	490	618	567	1244	1231	548	534	267
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	23	27	51	4		6	11	
Queuing Penalty (veh)	90	63	347	6		0	14	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	150	189	319	378	219	159	566	620	315	324	390	444
Average Queue (ft)	31	94	190	231	101	60	331	351	182	199	234	232
95th Queue (ft)	104	167	290	348	179	124	518	569	386	299	345	385
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)			0	2			0	28	2	1	5	5
Queuing Penalty (veh)			0	4			0	100	12	3	25	21

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	422	16
Average Queue (ft)	228	2
95th Queue (ft)	378	9
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Zone Summary

Zone wide Queuing Penalty: 1546

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Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	873	858	410	627	527	503	495	494	506	410	293
Average Queue (ft)	434	417	175	351	276	222	235	299	300	168	102
95th Queue (ft)	767	762	420	580	487	452	462	470	487	381	212
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)								0	2		
Queuing Penalty (veh)								3	13		
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		37	0						19	0	0
Queuing Penalty (veh)		81	0						146	1	0

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	B46	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	T	R	L	T	T
Maximum Queue (ft)	124	713	32	244	409	228	399	499	200
Average Queue (ft)	45	241	1	120	214	42	189	86	79
95th Queue (ft)	100	551	23	215	361	149	331	260	161
Link Distance (ft)		1173	1193	1027	1027			496	496
Upstream Blk Time (%)		0						1	
Queuing Penalty (veh)		3						3	
Storage Bay Dist (ft)	25					150	200		
Storage Blk Time (%)	36	28			26		13	1	
Queuing Penalty (veh)	232	13			13		31	2	

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	LTR
Maximum Queue (ft)	87	74	34	63	250	172	82
Average Queue (ft)	31	3	4	5	101	64	32
95th Queue (ft)	72	36	22	29	215	133	68
Link Distance (ft)		1193		800	552	552	1330
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	10	0	0	0			
Queuing Penalty (veh)	40	0	4	0			

Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	40	20	40
Average Queue (ft)	8	1	9
95th Queue (ft)	32	14	33
Link Distance (ft)		1064	540
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	2		
Queuing Penalty (veh)	8		

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	35	120
Average Queue (ft)	5	48
95th Queue (ft)	24	95
Link Distance (ft)		285
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	1	
Queuing Penalty (veh)	7	

Intersection: 8: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	95	20
Average Queue (ft)	44	1
95th Queue (ft)	76	10
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 9: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	64	33
Average Queue (ft)	26	2
95th Queue (ft)	57	16
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	79	125	110	138	65	185	198	90	148	174
Average Queue (ft)	19	29	45	60	8	83	88	32	48	72
95th Queue (ft)	55	81	87	107	38	153	157	72	120	140
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)		2	0	0		1			0	
Queuing Penalty (veh)		0	0	0		0			0	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	74	122	56	45
Average Queue (ft)	36	57	20	14
95th Queue (ft)	62	92	44	42
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & West Access

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	14	27
Average Queue (ft)	0	1
95th Queue (ft)	7	12
Link Distance (ft)	1030	531
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	49	14	66	73
Average Queue (ft)	5	0	34	39
95th Queue (ft)	28	7	57	65
Link Distance (ft)	860	362	353	353
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	WB	NB
Directions Served	LTR	LTR
Maximum Queue (ft)	6	75
Average Queue (ft)	0	31
95th Queue (ft)	5	62
Link Distance (ft)	556	617
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	90	46	7
Average Queue (ft)	47	8	0
95th Queue (ft)	75	34	5
Link Distance (ft)	556	796	207
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	37	173	241	188	25
Average Queue (ft)	7	79	122	88	6
95th Queue (ft)	30	144	209	153	21
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)		2		1	
Queuing Penalty (veh)		0		0	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	61	199	307
Average Queue (ft)	17	104	70
95th Queue (ft)	49	190	206
Link Distance (ft)			1711
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25	100	
Storage Blk Time (%)	3	24	0
Queuing Penalty (veh)	20	17	0

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Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	83	423
Average Queue (ft)	11	138
95th Queue (ft)	68	498
Link Distance (ft)	1163	1330
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	T	T	T
Maximum Queue (ft)	811	84	70	188	405
Average Queue (ft)	413	11	8	7	22
95th Queue (ft)	1107	82	63	128	332
Link Distance (ft)	1290	1829	1829	1944	1944
Upstream Blk Time (%)	5				0
Queuing Penalty (veh)	15				0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	98	439	120	256	151	319	65	211
Average Queue (ft)	9	189	26	104	73	81	10	71
95th Queue (ft)	65	368	71	197	141	210	37	151
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		19	0	7	12	7	0	15
Queuing Penalty (veh)		1	0	3	23	13	0	3

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	460	935	460	1651	1634	1852	1849	400
Average Queue (ft)	307	449	437	889	950	870	896	191
95th Queue (ft)	516	953	524	1785	2093	1738	1779	467
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)		2		1	17			
Queuing Penalty (veh)		0		6	155			
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	26	31	53	0		32	37	0
Queuing Penalty (veh)	86	57	423	1		0	111	2

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	201	252	375	849	685	596	1048	1080	315	350	464	545
Average Queue (ft)	60	129	331	483	308	240	642	665	237	217	269	343
95th Queue (ft)	155	219	428	781	633	558	1029	1054	433	319	411	504
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)		0	13	41			19	48	0	1	7	15
Queuing Penalty (veh)		0	45	107			28	115	1	7	39	68

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	549	116
Average Queue (ft)	347	9
95th Queue (ft)	502	74
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	4	
Queuing Penalty (veh)	1	

Zone Summary

Zone wide Queuing Penalty: 1950

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Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	124	709	728	827	335	399	505	267
Average Queue (ft)	45	349	284	435	95	252	145	83
95th Queue (ft)	109	636	632	836	304	412	415	191
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)			0	4			7	0
Queuing Penalty (veh)			0	17			34	0
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	30	39		49	0	31	0	
Queuing Penalty (veh)	194	18		25	0	75	1	

Queuing and Blocking Report
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Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	1715	1732	410	1522	1463	1240	1129	267	252	222	232
Average Queue (ft)	1312	1335	378	1015	864	448	294	84	90	63	63
95th Queue (ft)	2244	2268	504	1713	1698	1181	866	180	183	153	152
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)	22	39		0	0	0					
Queuing Penalty (veh)	0	0		0	1	1					
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		55	41					0	0	0	0
Queuing Penalty (veh)		304	199					1	0	0	0

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (ft)	115	228	238	405	284	400	513	228
Average Queue (ft)	47	60	88	213	48	329	212	76
95th Queue (ft)	100	149	177	364	158	456	539	172
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							3	
Queuing Penalty (veh)							25	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	42	15		24	0	31	2	
Queuing Penalty (veh)	93	8		12	0	115	17	

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	LTR
Maximum Queue (ft)	80	133	123	420	174	96	226
Average Queue (ft)	16	13	63	57	49	25	68
95th Queue (ft)	53	66	119	278	127	75	153
Link Distance (ft)		1193		800	552	552	1330
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		25				
Storage Blk Time (%)	2	0	27	0			
Queuing Penalty (veh)	22	0	101	0			

Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	28	71
Average Queue (ft)	2	24
95th Queue (ft)	16	59
Link Distance (ft)		540
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	7	58	110
Average Queue (ft)	0	18	48
95th Queue (ft)	5	52	94
Link Distance (ft)	1064		285
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	
Storage Blk Time (%)		4	
Queuing Penalty (veh)		14	

Intersection: 8: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	47	39
Average Queue (ft)	16	8
95th Queue (ft)	45	31
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	31
Average Queue (ft)	7	2
95th Queue (ft)	30	17
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	75	218	88	80	75	135	231	148	207	225
Average Queue (ft)	7	102	18	26	19	34	98	55	66	88
95th Queue (ft)	43	191	65	63	55	91	182	112	155	174
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)	0	13	0		0	0		1	1	
Queuing Penalty (veh)	0	1	0		0	0		2	1	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	122	93	69	62
Average Queue (ft)	64	33	24	7
95th Queue (ft)	100	69	48	36
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & West Access

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	7	35
Average Queue (ft)	0	3
95th Queue (ft)	5	19
Link Distance (ft)	531	531
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	83	5	34	45
Average Queue (ft)	13	0	9	14
95th Queue (ft)	48	4	33	43
Link Distance (ft)	860	362	353	353
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	13	40	45	54
Average Queue (ft)	0	4	15	4
95th Queue (ft)	7	21	43	30
Link Distance (ft)	362	556	617	361
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
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Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	139	71	5
Average Queue (ft)	64	9	0
95th Queue (ft)	110	40	4
Link Distance (ft)	556	796	207
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	68	188	198	115	23
Average Queue (ft)	11	68	86	37	3
95th Queue (ft)	41	150	163	84	15
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)		2		0	
Queuing Penalty (veh)		0		0	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	55	79	141	129
Average Queue (ft)	3	29	56	49
95th Queue (ft)	27	66	108	102
Link Distance (ft)	169			1711
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	100	
Storage Blk Time (%)		9	3	1
Queuing Penalty (veh)		31	2	1

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	42	133
Average Queue (ft)	3	57
95th Queue (ft)	22	98
Link Distance (ft)	1163	1330
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	SB	SB
Directions Served	R	T	T
Maximum Queue (ft)	191	63	37
Average Queue (ft)	24	3	1
95th Queue (ft)	119	53	15
Link Distance (ft)	1290	1944	1944
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	82	317	87	400	159	366	78	210
Average Queue (ft)	5	147	13	161	113	93	16	77
95th Queue (ft)	39	270	55	301	175	262	52	157
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		15	0	17	23	4	1	16
Queuing Penalty (veh)		1	0	3	27	14	1	4

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	460	1043	459	1001	997	606	598	400
Average Queue (ft)	336	461	307	381	380	256	253	57
95th Queue (ft)	537	891	517	1185	1179	536	538	234
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	26	36	23	0		6	10	
Queuing Penalty (veh)	105	83	156	1		0	14	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	162	215	327	364	291	261	607	640	315	344	417	490
Average Queue (ft)	35	101	203	243	117	71	320	335	166	200	236	240
95th Queue (ft)	115	178	313	356	237	178	514	557	370	312	357	389
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)			0	5			0	26	2	2	5	5
Queuing Penalty (veh)			1	8			0	94	14	8	28	24

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	430	20
Average Queue (ft)	232	2
95th Queue (ft)	369	10
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Zone Summary

Zone wide Queuing Penalty: 1539

Queuing and Blocking Report
2030 Post-Development

10/03/2024

Intersection: 1: SW 124th Avenue & OR 99W (Pacific Highway)

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R	R
Maximum Queue (ft)	943	960	410	826	715	558	564	503	514	410	260
Average Queue (ft)	448	431	202	443	333	237	242	299	308	194	108
95th Queue (ft)	823	819	462	754	636	463	471	469	502	423	213
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)								0	3		
Queuing Penalty (veh)								3	20		
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		36	3						22	0	0
Queuing Penalty (veh)		81	11						178	0	0

Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	B46	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	T	R	L	T	T
Maximum Queue (ft)	124	833	46	310	458	282	399	448	232
Average Queue (ft)	43	283	3	149	223	40	226	107	77
95th Queue (ft)	104	696	38	256	361	149	372	322	168
Link Distance (ft)		1173	1193	1027	1027			496	496
Upstream Blk Time (%)		1						4	
Queuing Penalty (veh)		6						17	
Storage Bay Dist (ft)	25					150	200		
Storage Blk Time (%)	34	28			31		19	0	
Queuing Penalty (veh)	235	14			16		47	2	

Intersection: 4: Site Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	B46	WB	WB	NB	NB	SB
Directions Served	L	TR	T	L	TR	L	TR	LTR
Maximum Queue (ft)	85	322	237	35	350	437	314	128
Average Queue (ft)	35	69	48	6	81	186	109	40
95th Queue (ft)	83	518	421	28	457	411	309	98
Link Distance (ft)		1193	1173		800	552	552	1330
Upstream Blk Time (%)		5	3		5	6	1	
Queuing Penalty (veh)		23	15		50	0	0	
Storage Bay Dist (ft)	25			25				
Storage Blk Time (%)	19			1	8			
Queuing Penalty (veh)	77			7	2			

Intersection: 5: SW Tualatin Road & SW 112th Avenue

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	40	13	452	50
Average Queue (ft)	9	0	84	11
95th Queue (ft)	34	5	538	40
Link Distance (ft)		800	1064	540
Upstream Blk Time (%)			3	
Queuing Penalty (veh)			32	
Storage Bay Dist (ft)	25			
Storage Blk Time (%)	1	0		
Queuing Penalty (veh)	7	0		

Intersection: 6: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	WB	B40	NB
Directions Served	TR	L	T	T	LR
Maximum Queue (ft)	5	50	329	87	182
Average Queue (ft)	0	4	45	7	57
95th Queue (ft)	4	27	337	66	134
Link Distance (ft)	1064		727	169	285
Upstream Blk Time (%)			3	2	0
Queuing Penalty (veh)			30	14	0
Storage Bay Dist (ft)		25			
Storage Blk Time (%)		0	4		
Queuing Penalty (veh)		4	0		

Intersection: 8: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	89	20
Average Queue (ft)	42	1
95th Queue (ft)	72	10
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
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Intersection: 9: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	75	34
Average Queue (ft)	27	3
95th Queue (ft)	60	19
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: SW 124th Avenue & SW Leveton Drive

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	60	79	106	148	62	186	200	97	188	204
Average Queue (ft)	17	22	49	62	6	83	88	29	40	64
95th Queue (ft)	49	55	94	112	35	156	162	69	114	135
Link Distance (ft)		1016		1226		1440	1440		1027	1027
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100		150		150			150		
Storage Blk Time (%)	0	0	0	0		1			0	
Queuing Penalty (veh)	0	0	0	0		0			0	

Intersection: 11: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	83	100	50	39
Average Queue (ft)	36	59	18	14
95th Queue (ft)	61	88	42	42
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & West Access

Movement	SB
Directions Served	L
Maximum Queue (ft)	33
Average Queue (ft)	3
95th Queue (ft)	19
Link Distance (ft)	531
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: SW Leveton Drive & Center Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	44	7	91	79
Average Queue (ft)	5	0	37	43
95th Queue (ft)	26	5	70	71
Link Distance (ft)	860	362	353	353
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Calmax Technology Access/East Access & SW Leveton Drive

Movement	WB	NB
Directions Served	LTR	LTR
Maximum Queue (ft)	6	85
Average Queue (ft)	0	30
95th Queue (ft)	4	66
Link Distance (ft)	556	617
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	106	66
Average Queue (ft)	47	11
95th Queue (ft)	81	43
Link Distance (ft)	556	796
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: SW Herman Road & SW 108th Ave

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	62	219	340	209	115
Average Queue (ft)	9	89	142	99	10
95th Queue (ft)	37	164	261	173	59
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)	0	4		2	
Queuing Penalty (veh)	0	0		0	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (ft)	28	65	217	200	439
Average Queue (ft)	1	18	17	115	133
95th Queue (ft)	15	48	194	212	442
Link Distance (ft)	169		1000		1711
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		100	
Storage Blk Time (%)		3	2	32	1
Queuing Penalty (veh)		20	1	23	1

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Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	299	644
Average Queue (ft)	68	268
95th Queue (ft)	399	974
Link Distance (ft)	1163	1330
Upstream Blk Time (%)	0	8
Queuing Penalty (veh)	0	27
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 19: OR 99W (Pacific Highway) & SW Hazelbrook Road

Movement	WB	NB	NB	NB	SB
Directions Served	R	T	T	R	T
Maximum Queue (ft)	947	639	642	85	16
Average Queue (ft)	533	87	79	6	1
95th Queue (ft)	1295	603	574	89	8
Link Distance (ft)	1290	1829	1829		1944
Upstream Blk Time (%)	13	0	0		
Queuing Penalty (veh)	44	0	0		
Storage Bay Dist (ft)				335	
Storage Blk Time (%)				4	
Queuing Penalty (veh)				1	

Intersection: 20: SW Teton Avenue & SW Herman Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	37	624	116	267	157	287	49	234
Average Queue (ft)	4	239	32	106	79	86	11	76
95th Queue (ft)	21	469	85	207	147	204	41	163
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		24	0	7	15	10	1	18
Queuing Penalty (veh)		2	1	3	31	19	1	3

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	460	926	460	1695	1673	1554	1569	400
Average Queue (ft)	302	402	442	1018	987	813	839	198
95th Queue (ft)	504	772	513	1978	2058	1569	1621	480
Link Distance (ft)		1160		1944	1944	2374	2374	
Upstream Blk Time (%)		0		3	15			
Queuing Penalty (veh)		0		33	143			
Storage Bay Dist (ft)	275		435					200
Storage Blk Time (%)	21	31	57	0		30	35	0
Queuing Penalty (veh)	70	59	471	1		0	110	1

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	208	254	375	929	692	675	1240	1272	315	358	464	662
Average Queue (ft)	55	130	335	552	338	304	677	700	222	228	293	372
95th Queue (ft)	153	218	432	947	764	646	1132	1153	434	335	448	567
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)				8	7							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)		0	14	42			20	49	0	2	10	19
Queuing Penalty (veh)		0	49	115			32	122	1	12	55	87

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	670	291
Average Queue (ft)	383	21
95th Queue (ft)	577	163
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	7	
Queuing Penalty (veh)	2	

Zone Summary

Zone wide Queuing Penalty: 2433

Queuing and Blocking Report
 2030 Post-Development

10/09/2024

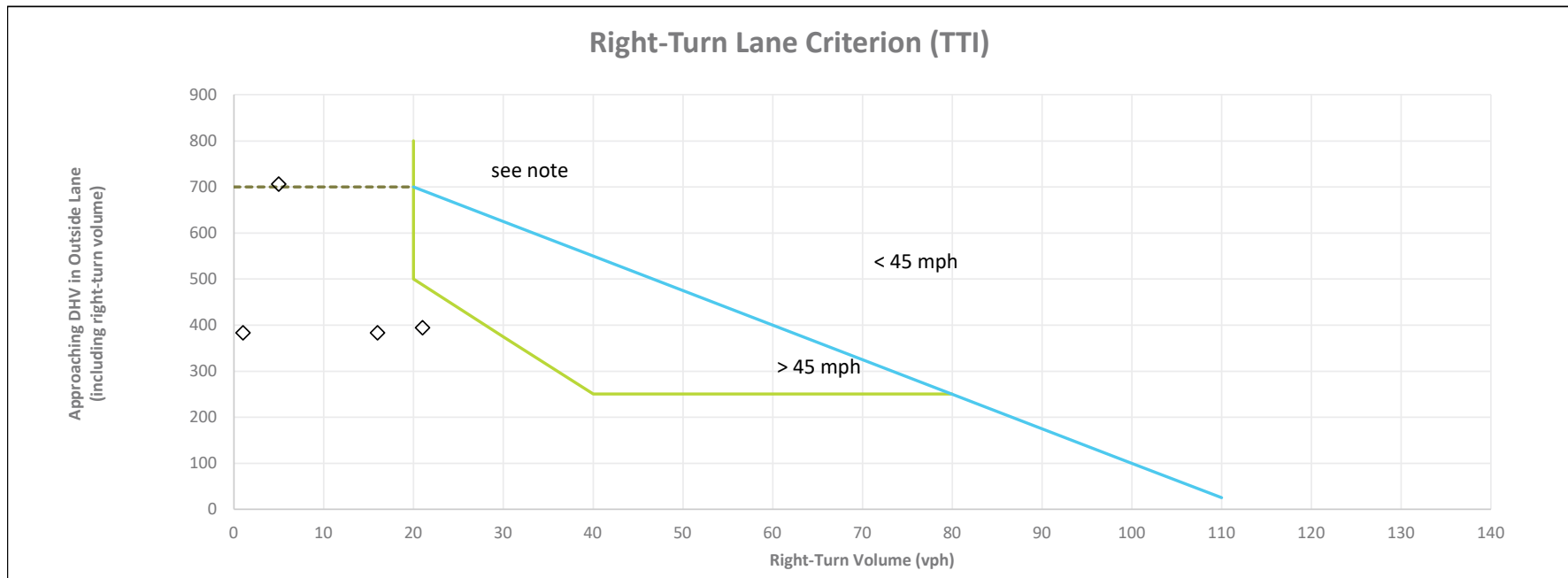
Intersection: 2: SW 124th Avenue & SW Tualatin Road

Movement	WB	WB	B46	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	T	R	L	T	T
Maximum Queue (ft)	120	1062	26	691	792	335	400	515	314
Average Queue (ft)	34	468	1	366	539	103	245	124	93
95th Queue (ft)	98	959	19	841	1066	326	381	370	207
Link Distance (ft)		1173	1193	1027	1027			496	496
Upstream Blk Time (%)		0		0	9			4	0
Queuing Penalty (veh)		4		2	39			21	0
Storage Bay Dist (ft)	25					150	200		
Storage Blk Time (%)	21	42			58		29	0	
Queuing Penalty (veh)	150	20			30		71	1	

APPENDIX K.
WARRANTS

Project: Lam TUX
Job #: 2240022.00
Date: 6/25/2024
Subject: EB Right-Turn Lane Evaluation - Tualatin/115th Site Access

Condition	Posted Speed	AM Peak Hour			PM Peak Hour		
		Volume		Result	Volume		Result
		Approaching	Right		Approaching	Right	
2027 Pre-Development	35	706	5	Possible Shoulder	383	1	None
2027 Post-Development	35	706	185	Possible Lane	383	16	None
2030 Post-Development	35	726	224	Possible Lane	394	21	None



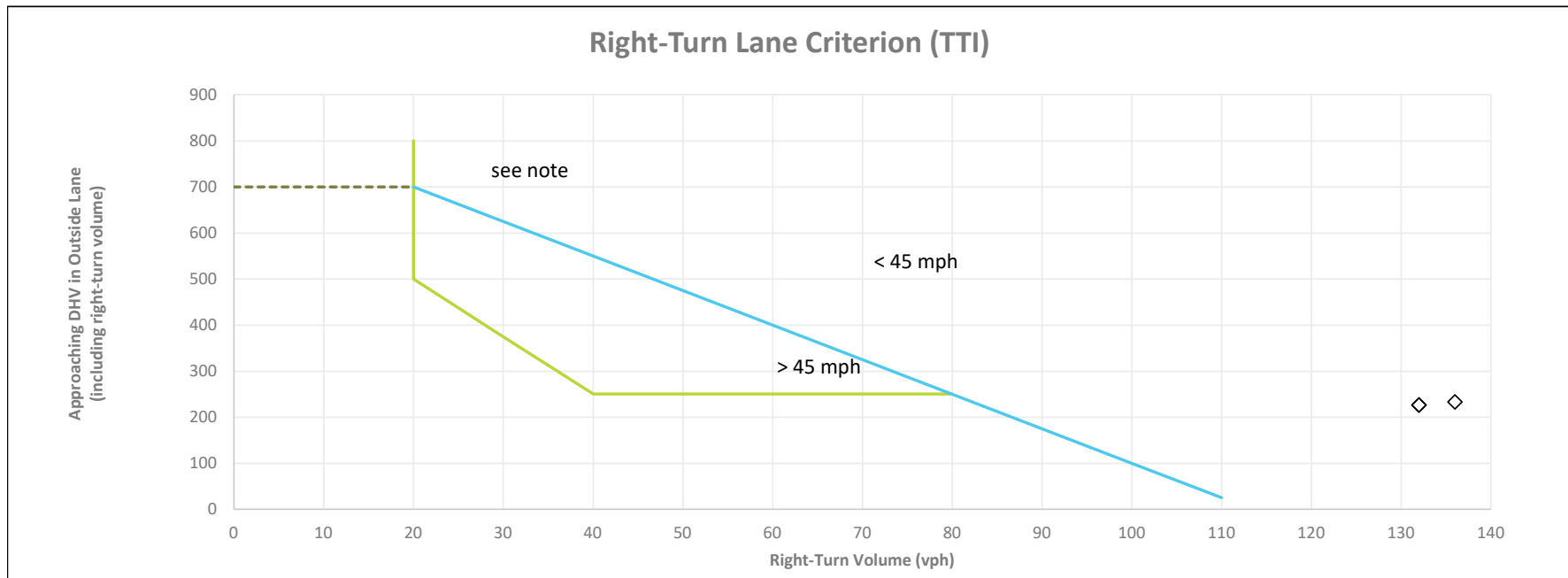
Source: Texas Transportation Institute

Note: If there is no right-turn lane, a shoulder needs to be provided.
 If this intersection is in a rural area and is a connection to a public street, a right-turn lane is needed.



Project: Lam TUX
Job #: 2240022.00
Date: 6/25/2024
Subject: WB Right-Turn Lane Evaluation - Tualatin/115th Site Access

Condition	Posted Speed	AM Peak Hour			PM Peak Hour		
		Volume		Result	Volume		Result
		Approaching	Right		Approaching	Right	
2027 Pre-Development	35	226	132	Possible Lane	626	250	Possible Lane
2027 Post-Development	35	226	132	Possible Lane	626	250	Possible Lane
2030 Post-Development	35	233	136	Possible Lane	644	257	Possible Lane



Source: Texas Transportation Institute

Note: If there is no right-turn lane, a shoulder needs to be provided.
 If this intersection is in a rural area and is a connection to a public street, a right-turn lane is needed.



TRAFFIC SIGNAL WARRANTS - BASED ON 2009 MUTCD

10/1/2024

INTERSECTION INFORMATION						
City:	Tualatin		Condition:	2027 Post-Development		
Population:	28,000					
Intersection Location: (Rural/Urban)	Urban					
Major Street Name:	SW Tualatin Road		Minor Street Name:	SW 115th Avenue/Site Acce		
Number of Moving Lanes for Each Approach:	1		Number of Moving Lanes for Each Approach:	1		
Speed:	35 mph		Speed:	35 mph		
Street Width:	36 ft		Street Width:	36 ft		
Direction:	EB	WB	Direction:	NB	SB	Total
Hour Beginning:			Hour Beginning:			
12:00 AM			12:00 AM			0
1:00 AM			1:00 AM			0
2:00 AM			2:00 AM			0
3:00 AM			3:00 AM			0
4:00 AM			4:00 AM			0
5:00 AM			5:00 AM			0
6:00 AM			6:00 AM			0
7:00 AM			7:00 AM			0
8:00 AM	955	430	8:00 AM	31	73	1,489
9:00 AM			9:00 AM			0
10:00 AM			10:00 AM			0
11:00 AM			11:00 AM			0
12:00 PM			12:00 PM			0
1:00 PM			1:00 PM			0
2:00 PM			2:00 PM			0
3:00 PM			3:00 PM			0
4:00 PM	448	894	4:00 PM	247	46	1,635
5:00 PM			5:00 PM			0
6:00 PM			6:00 PM			0
7:00 PM			7:00 PM			0
8:00 PM			8:00 PM			0
9:00 PM			9:00 PM			0
10:00 PM			10:00 PM			0
11:00 PM			11:00 PM			0
24-hour Total	1,403	1,324	24-hour Total	278	119	3,124

Warrants Evaluated:

- Warrant 1, 8-Hour Vehicular Volume - Evaluated for Conditions A & B
- Warrant 2, 4-Hour Vehicular Volume - Evaluated
- Warrant 3, Peak Hour - Evaluated for Conditions A-2, A-3 (A-1 needs to be evaluated separately), and Condition B
- Warrant 4, Pedestrian Volume - Not Analyzed
- Warrant 5, School Crossing - Not Analyzed
- Warrant 6, Coordinated Signal System - Not Analyzed
- Warrant 7, Accident Experience - Not Analyzed
- Warrant 8, Roadway Network - Not Analyzed
- Warrant 9, Intersection Near a Grade Crossing - Not Analyzed

WARRANT 3, PEAK HOUR VEHICULAR VOLUME									
	MAJOR			MINOR		Calculated Max	Calculated Threshold (B)	A-2&3	B
	EB	WB	Total	NB	SB				
4:00 PM	448	894	1,342	247	46	247	118	Y	Y
8:00 AM	955	430	1,385	31	73	73	111	N	N
12:00 AM	0	0	0	0	0	0	885	N	N
12:00 PM	0	0	0	0	0	0	885	N	N

Warrant Requirements:
 Major Street Lanes: 1
 Minor Street Lanes: 1

CONDITION A-1 - Stopped Delay
 Cannot be evaluated based on volumes alone. Condition met if traffic on one minor-street approach (one direction only) controlled by STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.

CONDITION A-2 - Minor Street Volume
 Minimum Volume on Higher Minor Street Approach: 100

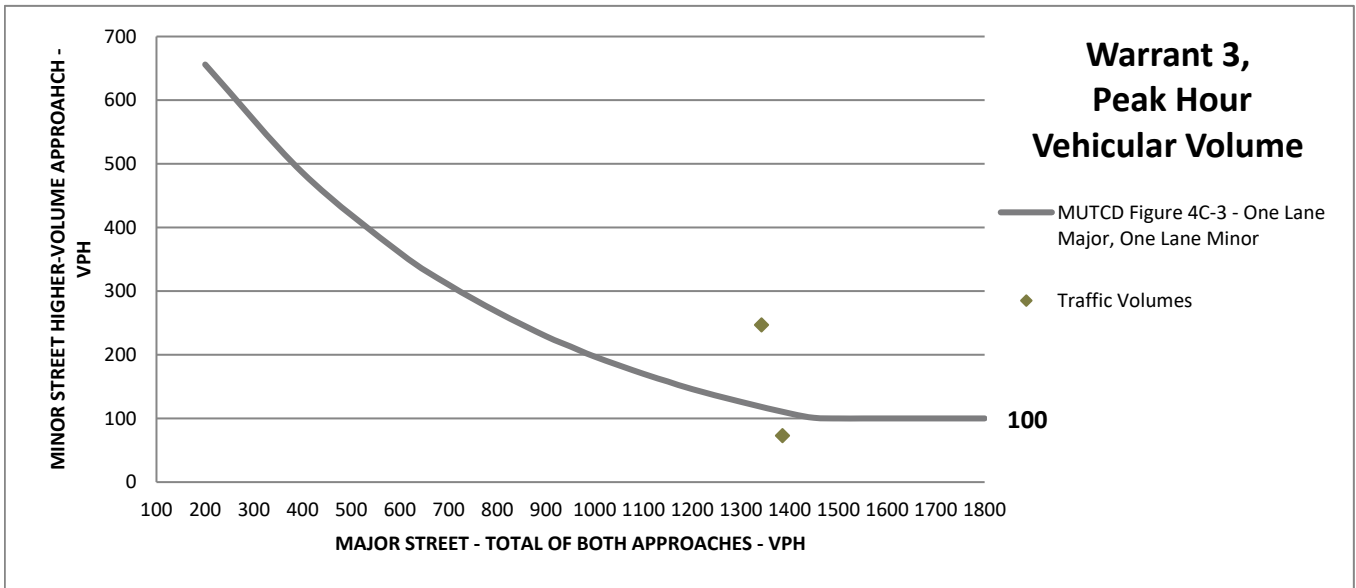
CONDITION A-3 - Total Approach Volume
 Minimum Volume of Total Approaches: 800

CONDITION B - Plot of Minor Street Volume (high vol approach) vs. Major Street Volume (Both approaches)

ARE CONDITIONS A-2 AND A-3 OF SIGNAL WARRANT 3 MET? YES *Stopped Delay Needs to be Checked*
 Note: All 3 subsections of Condition A must be met to warrant signal.

IS CONDITION B OF SIGNAL WARRANT 3 MET? YES

Note: Signal Warrant 3 is met if either Condition A or Condition B is met.



TRAFFIC SIGNAL WARRANTS - BASED ON 2009 MUTCD

10/1/2024

INTERSECTION INFORMATION						
City:	Tualatin		Condition:	2030 Post-Development		
Population:	28,000					
Intersection Location: (Rural/Urban)	Urban					
Major Street Name:	SW Tualatin Road		Minor Street Name:	SW 115th Avenue/Site Acce		
Number of Moving Lanes for Each Approach:	1		Number of Moving Lanes for Each Approach:	1		
Speed:	35 mph		Speed:	35 mph		
Street Width:	36 ft		Street Width:	36 ft		
Direction:	EB	WB	Direction:	NB	SB	Total
Hour Beginning:			Hour Beginning:			
12:00 AM			12:00 AM			0
1:00 AM			1:00 AM			0
2:00 AM			2:00 AM			0
3:00 AM			3:00 AM			0
4:00 AM			4:00 AM			0
5:00 AM			5:00 AM			0
6:00 AM			6:00 AM			0
7:00 AM			7:00 AM			0
8:00 AM	1,016	459	8:00 AM	41	75	1,591
9:00 AM			9:00 AM			0
10:00 AM			10:00 AM			0
11:00 AM			11:00 AM			0
12:00 PM			12:00 PM			0
1:00 PM			1:00 PM			0
2:00 PM			2:00 PM			0
3:00 PM			3:00 PM			0
4:00 PM	465	921	4:00 PM	307	48	1,741
5:00 PM			5:00 PM			0
6:00 PM			6:00 PM			0
7:00 PM			7:00 PM			0
8:00 PM			8:00 PM			0
9:00 PM			9:00 PM			0
10:00 PM			10:00 PM			0
11:00 PM			11:00 PM			0
24-hour Total	1,481	1,380	24-hour Total	348	123	3,332

Warrants Evaluated:

Warrant 1, 8-Hour Vehicular Volume - Evaluated for Conditions A & B

Warrant 2, 4-Hour Vehicular Volume - Evaluated

Warrant 3, Peak Hour - Evaluated for Conditions A-2, A-3 (A-1 needs to be evaluated separately), and Condition B

Warrant 4, Pedestrian Volume - Not Analyzed

Warrant 5, School Crossing - Not Analyzed

Warrant 6, Coordinated Signal System - Not Analyzed

Warrant 7, Accident Experience - Not Analyzed

Warrant 8, Roadway Network - Not Analyzed

Warrant 9, Intersection Near a Grade Crossing - Not Analyzed

WARRANT 3, PEAK HOUR VEHICULAR VOLUME									
	MAJOR			MINOR		Calculated Max	Calculated Threshold (B)	A-2&3	B
	EB	WB	Total	NB	SB				
4:00 PM	465	921	1,386	307	48	307	111	Y	Y
8:00 AM	1,016	459	1,475	41	75	75	100	N	N
12:00 AM	0	0	0	0	0	0	885	N	N
12:00 PM	0	0	0	0	0	0	885	N	N

Warrant Requirements:
 Major Street Lanes: 1
 Minor Street Lanes: 1

CONDITION A-1 - Stopped Delay
 Cannot be evaluated based on volumes alone. Condition met if traffic on one minor-street approach (one direction only) controlled by STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.

CONDITION A-2 - Minor Street Volume
 Minimum Volume on Higher Minor Street Approach: 100

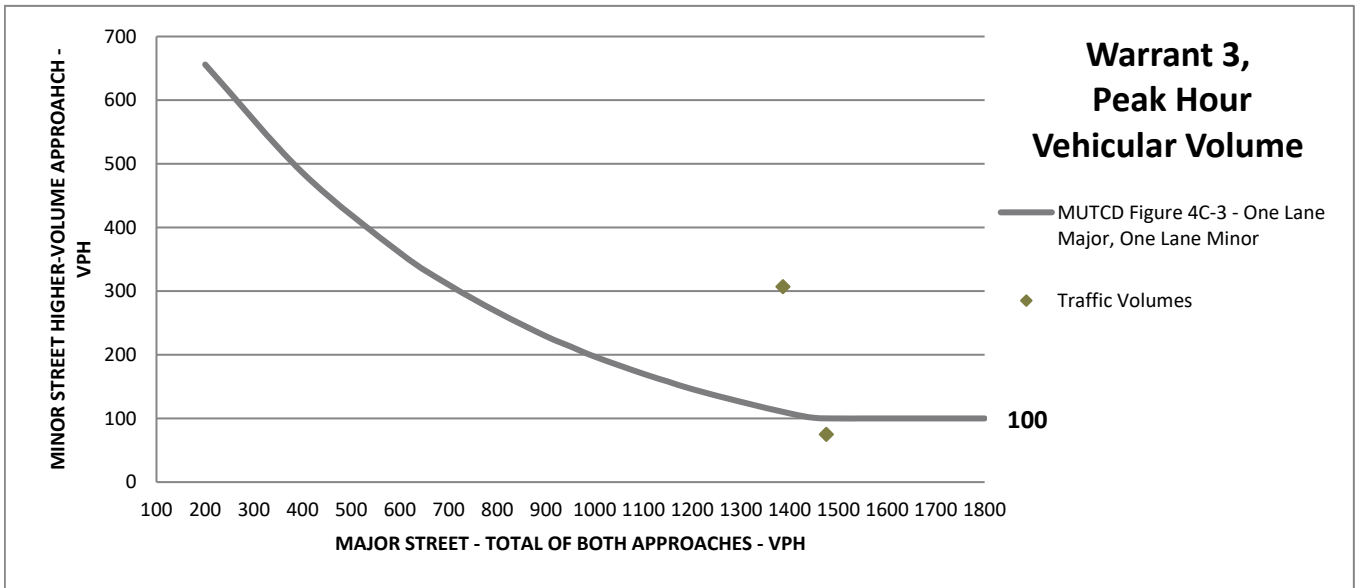
CONDITION A-3 - Total Approach Volume
 Minimum Volume of Total Approaches: 800

CONDITION B - Plot of Minor Street Volume (high vol approach) vs. Major Street Volume (Both approaches)

ARE CONDITIONS A-2 AND A-3 OF SIGNAL WARRANT 3 MET? YES *Stopped Delay Needs to be Checked*
 Note: All 3 subsections of Condition A must be met to warrant signal.

IS CONDITION B OF SIGNAL WARRANT 3 MET? YES

Note: Signal Warrant 3 is met if either Condition A or Condition B is met.



APPENDIX L.
**CALIBRATION
MATERIALS**

Critical Gap and Follow-Up

Observation ID	Time Stamp (Start)	Time Stamp (End)	Critical Gap (Seconds)	Minor Street Vehicle Departure Time	Next Minor Street Vehicle Departure Time	Follow-up Time (Seconds)	Notes	Follow-Up Time per Veh (Seconds)
1	16:01:31	16:01:39	08			00		
2	16:01:40	16:01:46	06			00		30
3	16:02:30	16:02:36	06			00		
4	16:03:38	16:03:44	06			00		
5			00	16:04:19	16:04:43	24	7 Vehicles went	3.43
6			00	16:05:25	16:06:01	36	8 Vehicles went	4.5
7	16:06:03	16:06:09	06			00		
8	16:06:35	16:06:40	05			00		
9			00	16:06:44	16:06:58	14	3 Vehicles went	4.67
10	16:08:52	16:08:58	06			00		
11	16:08:58	16:09:02	04			00		
12			00	16:11:49	16:12:10	21	6 Vehicles went	3.5
13			00	16:12:39	16:13:00	21	6 Vehicles went	3.5
14	16:13:17	16:13:22	05			00		
15	16:13:32	16:13:37	05			00		
16			00	16:13:38	16:13:55	17	4 Vehicles went	4.25
17			00	16:14:04	16:14:16	12	3 Vehicles went	4
18			00			00		
19			00			00		
20			00			00		
21			00			00		
22			00			00		
23			00			00		
24			00			00		
25			00			00		
26			00			00		
27			00			00		
28			00			00		
3.56								



Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Site Code: 16689505

Location: Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin RD

Date: 7/25/2024

Time: 7:00 AM - 9:00 AM

Peak Hour: 7:30AM

NBR	Average Delay:	00:06
	Average Queue:	1.00
NBL	Average Delay:	00:18
	Average Queue:	1.00

Study		
NBR	Average Queue	25
	Maximum Queue	25
	95th Percentile Queue	0
NBL	Average Queue	25
	Maximum Queue	100
	95th Percentile Queue	50

Delay Information						
NBR			NBL			
Vehicle Stop (Comes to a stop regardless of position in queue)	Vehicle Release (When vehicle finally crosses stop bar)	Delay Time	Vehicle Stop (Comes to a stop regardless of position in queue)	Vehicle Release (When vehicle finally crosses stop bar)	Delay Time	
1	7:04:24 AM	7:04:25 AM	00:01	7:00:17 AM	7:00:20 AM	00:03
2	7:17:27 AM	7:17:28 AM	00:01	7:01:26 AM	7:01:38 AM	00:12
3	7:19:06 AM	7:19:09 AM	00:03	7:02:50 AM	7:02:52 AM	00:02
4	7:19:28 AM	7:19:35 AM	00:07	7:07:03 AM	7:07:17 AM	00:14
5	7:21:15 AM	7:21:55 AM	00:40	7:07:11 AM	7:07:30 AM	00:19
6	7:23:46 AM	7:23:49 AM	00:03	7:07:15 AM	7:07:37 AM	00:22
7	7:26:40 AM	7:26:41 AM	00:01	7:07:17 AM	7:07:56 AM	00:39
8	7:37:13 AM	7:37:44 AM	00:31	7:09:05 AM	7:09:10 AM	00:05
9	7:42:15 AM	7:42:16 AM	00:01	7:10:36 AM	7:10:38 AM	00:02
10	7:46:31 AM	7:46:32 AM	00:01	7:12:08 AM	7:12:17 AM	00:09
11	7:47:10 AM	7:47:13 AM	00:03	7:15:58 AM	7:16:00 AM	00:02
12	7:53:42 AM	7:53:43 AM	00:01	7:19:13 AM	7:19:49 AM	00:36
13	8:00:13 AM	8:00:22 AM	00:09	7:21:06 AM	7:21:06 AM	00:00
14	8:04:37 AM	8:04:41 AM	00:04	7:21:20 AM	7:21:55 AM	00:35
15	8:07:30 AM	8:07:31 AM	00:01	7:22:52 AM	7:23:03 AM	00:11
16	8:10:21 AM	8:10:31 AM	00:10	7:24:54 AM	7:25:15 AM	00:21
17	8:11:00 AM	8:11:01 AM	00:01	7:24:55 AM	7:25:24 AM	00:29
18	8:15:59 AM	8:16:00 AM	00:01	7:24:56 AM	7:25:29 AM	00:33
19	8:22:17 AM	8:22:24 AM	00:07	7:26:41 AM	7:26:56 AM	00:15
20	8:23:47 AM	8:23:48 AM	00:01	7:26:49 AM	7:27:01 AM	00:12
21	8:23:57 AM	8:23:58 AM	00:01	7:26:52 AM	7:27:11 AM	00:19
22	8:27:56 AM	8:27:57 AM	00:01	7:28:33 AM	7:28:38 AM	00:05
23	8:37:18 AM	8:37:19 AM	00:01	7:29:30 AM	7:29:32 AM	00:02
24	8:37:23 AM	8:37:24 AM	00:01	7:29:36 AM	7:29:49 AM	00:13
25	8:38:10 AM	8:38:12 AM	00:02	7:30:00 AM	7:30:03 AM	00:03
26	8:38:32 AM	8:38:39 AM	00:07	7:30:08 AM	7:30:11 AM	00:03
27	8:41:58 AM	8:41:59 AM	00:01	7:31:22 AM	7:31:25 AM	00:03
28	8:45:07 AM	8:45:11 AM	00:04	7:33:07 AM	7:33:08 AM	00:01
29	8:46:43 AM	8:46:58 AM	00:15	7:34:22 AM	7:34:24 AM	00:02
30				7:40:34 AM	7:40:36 AM	00:02
31				7:40:56 AM	7:41:02 AM	00:06
32				7:43:41 AM	7:43:42 AM	00:01
33				7:43:49 AM	7:43:54 AM	00:05
34				7:43:50 AM	7:44:01 AM	00:11
35				7:46:43 AM	7:46:49 AM	00:06
36				7:46:45 AM	7:47:13 AM	00:28
37				7:46:47 AM	7:47:20 AM	00:33
38				7:48:38 AM	7:49:00 AM	00:22
39				7:48:53 AM	7:49:18 AM	00:25
40				7:51:18 AM	7:51:29 AM	00:11
41				7:51:19 AM	7:51:38 AM	00:19
42				7:53:13 AM	7:54:25 AM	01:12
43				7:53:16 AM	7:54:39 AM	01:23
44				7:53:18 AM	7:54:53 AM	01:35
45				7:53:50 AM	7:55:25 AM	01:35
46				7:55:29 AM	7:55:53 AM	00:24
47				7:55:33 AM	7:56:05 AM	00:32
48				7:55:34 AM	7:56:10 AM	00:36
49				7:56:36 AM	7:56:39 AM	00:03
50				7:57:09 AM	7:57:10 AM	00:01
51				7:58:28 AM	7:58:30 AM	00:02
52				7:58:34 AM	7:58:39 AM	00:05
53				7:58:36 AM	7:58:52 AM	00:16
54				7:58:46 AM	7:58:57 AM	00:11
55				7:58:53 AM	7:59:09 AM	00:16
56				7:59:02 AM	7:59:26 AM	00:24
57				8:01:22 AM	8:01:24 AM	00:02
58				8:01:37 AM	8:01:47 AM	00:10
59				8:01:53 AM	8:01:58 AM	00:05
60				8:01:56 AM	8:02:04 AM	00:08
61				8:02:09 AM	8:02:21 AM	00:12
62				8:03:13 AM	8:03:21 AM	00:08
63				8:03:15 AM	8:03:30 AM	00:15
64				8:03:18 AM	8:03:42 AM	00:24
65				8:04:40 AM	8:04:44 AM	00:04

	NBR	NBL
	Running Queue Total	Running Queue Total
7:00:00 AM	0	0
7:00:15 AM	0	0
7:00:30 AM	0	0
7:00:45 AM	0	0
7:01:00 AM	0	0
7:01:15 AM	0	0
7:01:30 AM	0	1
7:01:45 AM	0	0
7:02:00 AM	0	0
7:02:15 AM	0	0
7:02:30 AM	0	0
7:02:45 AM	0	0
7:03:00 AM	0	0
7:03:15 AM	0	0
7:03:30 AM	0	0
7:03:45 AM	0	0
7:04:00 AM	0	0
7:04:15 AM	0	0
7:04:30 AM	0	0
7:04:45 AM	0	0
7:05:00 AM	0	0
7:05:15 AM	0	0
7:05:30 AM	0	0
7:05:45 AM	0	0
7:06:00 AM	0	0
7:06:15 AM	0	0
7:06:30 AM	0	0
7:06:45 AM	0	0
7:07:00 AM	0	0
7:07:15 AM	0	2
7:07:30 AM	0	3
7:07:45 AM	0	1
7:08:00 AM	0	0
7:08:15 AM	0	0
7:08:30 AM	0	0
7:08:45 AM	0	0
7:09:00 AM	0	0
7:09:15 AM	0	0
7:09:30 AM	0	0
7:09:45 AM	0	0
7:10:00 AM	0	0
7:10:15 AM	0	0
7:10:30 AM	0	0
7:10:45 AM	0	0
7:11:00 AM	0	0
7:11:15 AM	0	0
7:11:30 AM	0	0
7:11:45 AM	0	0
7:12:00 AM	0	0
7:12:15 AM	0	1
7:12:30 AM	0	0
7:12:45 AM	0	0
7:13:00 AM	0	0
7:13:15 AM	0	0
7:13:30 AM	0	0
7:13:45 AM	0	0
7:14:00 AM	0	0
7:14:15 AM	0	0
7:14:30 AM	0	0
7:14:45 AM	0	0
7:15:00 AM	0	0
7:15:15 AM	0	0
7:15:30 AM	0	0
7:15:45 AM	0	0
7:16:00 AM	0	1

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

66			8:04:42 AM	8:04:51 AM	00:09
67			8:04:54 AM	8:04:58 AM	00:04
68			8:06:54 AM	8:06:55 AM	00:01
69			8:07:26 AM	8:07:28 AM	00:02
70			8:07:44 AM	8:07:46 AM	00:02
71			8:09:00 AM	8:09:30 AM	00:30
72			8:11:02 AM	8:11:13 AM	00:11
73			8:12:16 AM	8:12:29 AM	00:13
74			8:13:10 AM	8:13:12 AM	00:02
75			8:16:04 AM	8:16:05 AM	00:01
76			8:16:20 AM	8:16:35 AM	00:15
77			8:17:37 AM	8:17:38 AM	00:01
78			8:17:57 AM	8:18:16 AM	00:19
79			8:19:15 AM	8:19:17 AM	00:02
80			8:21:42 AM	8:21:51 AM	00:09
81			8:21:44 AM	8:22:29 AM	00:45
82			8:21:51 AM	8:22:47 AM	00:56
83			8:22:03 AM	8:22:53 AM	00:50
84			8:23:12 AM	8:23:13 AM	00:01
85			8:23:17 AM	8:23:18 AM	00:01
86			8:24:49 AM	8:25:04 AM	00:15
87			8:24:51 AM	8:25:18 AM	00:27
88			8:25:03 AM	8:25:27 AM	00:24
89			8:25:06 AM	8:25:31 AM	00:25
90			8:26:25 AM	8:26:41 AM	00:16
91			8:30:03 AM	8:30:13 AM	00:10
92			8:30:03 AM	8:30:20 AM	00:17
93			8:30:05 AM	8:30:30 AM	00:25
94			8:30:06 AM	8:30:41 AM	00:35
95			8:31:25 AM	8:31:27 AM	00:02
96			8:33:49 AM	8:33:54 AM	00:05
97			8:37:27 AM	8:37:43 AM	00:16
98			8:38:27 AM	8:38:45 AM	00:18
99			8:40:25 AM	8:40:40 AM	00:15
100			8:43:16 AM	8:43:26 AM	00:10
101			8:44:55 AM	8:45:01 AM	00:06
102			8:45:16 AM	8:45:30 AM	00:14
103			8:45:19 AM	8:45:42 AM	00:23
104			8:46:41 AM	8:47:01 AM	00:20
105			8:47:58 AM	8:48:00 AM	00:02
106			8:48:27 AM	8:48:28 AM	00:01
107			8:50:11 AM	8:50:15 AM	00:04
108			8:51:22 AM	8:51:32 AM	00:10
109			8:52:44 AM	8:52:56 AM	00:12
110			8:53:03 AM	8:53:07 AM	00:04
111			8:53:04 AM	8:53:15 AM	00:11
112			8:53:53 AM	8:53:54 AM	00:01
113			8:54:37 AM	8:54:47 AM	00:10
114			8:55:05 AM	8:55:08 AM	00:03
115			8:56:30 AM	8:56:35 AM	00:05
116			8:56:32 AM	8:56:41 AM	00:09
117			8:56:33 AM	8:56:52 AM	00:19
118			8:57:44 AM	8:57:48 AM	00:04
119			8:57:53 AM	8:58:01 AM	00:08
120			8:57:55 AM	8:58:09 AM	00:14
121			8:57:57 AM	8:58:16 AM	00:19
122			8:58:13 AM	8:58:22 AM	00:09
123			8:59:24 AM	8:59:28 AM	00:04
124			8:59:32 AM	8:59:33 AM	00:01
125			8:59:36 AM	8:59:46 AM	00:10
126			8:59:38 AM	8:59:50 AM	00:12
127			8:59:40 AM	8:59:56 AM	00:16
128			8:59:48 AM	9:00:00 AM	00:12
129			8:59:50 AM	9:00:00 AM	00:10

7:16:15 AM	0	0
7:16:30 AM	0	0
7:16:45 AM	0	0
7:17:00 AM	0	0
7:17:15 AM	0	0
7:17:30 AM	0	0
7:17:45 AM	0	0
7:18:00 AM	0	0
7:18:15 AM	0	0
7:18:30 AM	0	0
7:18:45 AM	0	0
7:19:00 AM	0	0
7:19:15 AM	0	1
7:19:30 AM	1	1
7:19:45 AM	0	1
7:20:00 AM	0	0
7:20:15 AM	0	0
7:20:30 AM	0	0
7:20:45 AM	0	0
7:21:00 AM	0	0
7:21:15 AM	0	0
7:21:30 AM	1	1
7:21:45 AM	1	1
7:22:00 AM	0	0
7:22:15 AM	0	0
7:22:30 AM	0	0
7:22:45 AM	0	0
7:23:00 AM	0	1
7:23:15 AM	0	0
7:23:30 AM	0	0
7:23:45 AM	0	0
7:24:00 AM	0	0
7:24:15 AM	0	0
7:24:30 AM	0	0
7:24:45 AM	0	0
7:25:00 AM	0	3
7:25:15 AM	0	3
7:25:30 AM	0	0
7:25:45 AM	0	0
7:26:00 AM	0	0
7:26:15 AM	0	0
7:26:30 AM	0	0
7:26:45 AM	0	1
7:27:00 AM	0	2
7:27:15 AM	0	0
7:27:30 AM	0	0
7:27:45 AM	0	0
7:28:00 AM	0	0
7:28:15 AM	0	0
7:28:30 AM	0	0
7:28:45 AM	0	0
7:29:00 AM	0	0
7:29:15 AM	0	0
7:29:30 AM	0	0
7:29:45 AM	0	1
7:30:00 AM	0	0
7:30:15 AM	0	0
7:30:30 AM	0	0
7:30:45 AM	0	0
7:31:00 AM	0	0
7:31:15 AM	0	0
7:31:30 AM	0	0
7:31:45 AM	0	0
7:32:00 AM	0	0
7:32:15 AM	0	0
7:32:30 AM	0	0
7:32:45 AM	0	0
7:33:00 AM	0	0
7:33:15 AM	0	0
7:33:30 AM	0	0
7:33:45 AM	0	0
7:34:00 AM	0	0
7:34:15 AM	0	0
7:34:30 AM	0	0
7:34:45 AM	0	0
7:35:00 AM	0	0
7:35:15 AM	0	0
7:35:30 AM	0	0
7:35:45 AM	0	0
7:36:00 AM	0	0
7:36:15 AM	0	0
7:36:30 AM	0	0
7:36:45 AM	0	0
7:37:00 AM	0	0
7:37:15 AM	1	0
7:37:30 AM	1	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

7:37:45 AM	0	0
7:38:00 AM	0	0
7:38:15 AM	0	0
7:38:30 AM	0	0
7:38:45 AM	0	0
7:39:00 AM	0	0
7:39:15 AM	0	0
7:39:30 AM	0	0
7:39:45 AM	0	0
7:40:00 AM	0	0
7:40:15 AM	0	0
7:40:30 AM	0	0
7:40:45 AM	0	0
7:41:00 AM	0	1
7:41:15 AM	0	0
7:41:30 AM	0	0
7:41:45 AM	0	0
7:42:00 AM	0	0
7:42:15 AM	0	0
7:42:30 AM	0	0
7:42:45 AM	0	0
7:43:00 AM	0	0
7:43:15 AM	0	0
7:43:30 AM	0	0
7:43:45 AM	0	0
7:44:00 AM	0	1
7:44:15 AM	0	0
7:44:30 AM	0	0
7:44:45 AM	0	0
7:45:00 AM	0	0
7:45:15 AM	0	0
7:45:30 AM	0	0
7:45:45 AM	0	0
7:46:00 AM	0	0
7:46:15 AM	0	0
7:46:30 AM	0	0
7:46:45 AM	0	1
7:47:00 AM	0	2
7:47:15 AM	0	1
7:47:30 AM	0	0
7:47:45 AM	0	0
7:48:00 AM	0	0
7:48:15 AM	0	0
7:48:30 AM	0	0
7:48:45 AM	0	1
7:49:00 AM	0	2
7:49:15 AM	0	1
7:49:30 AM	0	0
7:49:45 AM	0	0
7:50:00 AM	0	0
7:50:15 AM	0	0
7:50:30 AM	0	0
7:50:45 AM	0	0
7:51:00 AM	0	0
7:51:15 AM	0	0
7:51:30 AM	0	1
7:51:45 AM	0	0
7:52:00 AM	0	0
7:52:15 AM	0	0
7:52:30 AM	0	0
7:52:45 AM	0	0
7:53:00 AM	0	0
7:53:15 AM	0	1
7:53:30 AM	0	3
7:53:45 AM	0	3
7:54:00 AM	0	4
7:54:15 AM	0	4
7:54:30 AM	0	3
7:54:45 AM	0	2
7:55:00 AM	0	1
7:55:15 AM	0	1
7:55:30 AM	0	1
7:55:45 AM	0	3
7:56:00 AM	0	2
7:56:15 AM	0	0
7:56:30 AM	0	0
7:56:45 AM	0	0
7:57:00 AM	0	0
7:57:15 AM	0	0
7:57:30 AM	0	0
7:57:45 AM	0	0
7:58:00 AM	0	0
7:58:15 AM	0	0
7:58:30 AM	0	1
7:58:45 AM	0	1
7:59:00 AM	0	1

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

7:59:15 AM	0	1
7:59:30 AM	0	0
7:59:45 AM	0	0
8:00:00 AM	0	0
8:00:15 AM	1	0
8:00:30 AM	0	0
8:00:45 AM	0	0
8:01:00 AM	0	0
8:01:15 AM	0	0
8:01:30 AM	0	0
8:01:45 AM	0	1
8:02:00 AM	0	1
8:02:15 AM	0	1
8:02:30 AM	0	0
8:02:45 AM	0	0
8:03:00 AM	0	0
8:03:15 AM	0	1
8:03:30 AM	0	2
8:03:45 AM	0	0
8:04:00 AM	0	0
8:04:15 AM	0	0
8:04:30 AM	0	0
8:04:45 AM	0	1
8:05:00 AM	0	0
8:05:15 AM	0	0
8:05:30 AM	0	0
8:05:45 AM	0	0
8:06:00 AM	0	0
8:06:15 AM	0	0
8:06:30 AM	0	0
8:06:45 AM	0	0
8:07:00 AM	0	0
8:07:15 AM	0	0
8:07:30 AM	0	0
8:07:45 AM	0	1
8:08:00 AM	0	0
8:08:15 AM	0	0
8:08:30 AM	0	0
8:08:45 AM	0	0
8:09:00 AM	0	0
8:09:15 AM	0	1
8:09:30 AM	0	1
8:09:45 AM	0	0
8:10:00 AM	0	0
8:10:15 AM	0	0
8:10:30 AM	1	0
8:10:45 AM	0	0
8:11:00 AM	0	0
8:11:15 AM	0	0
8:11:30 AM	0	0
8:11:45 AM	0	0
8:12:00 AM	0	0
8:12:15 AM	0	0
8:12:30 AM	0	0
8:12:45 AM	0	0
8:13:00 AM	0	0
8:13:15 AM	0	0
8:13:30 AM	0	0
8:13:45 AM	0	0
8:14:00 AM	0	0
8:14:15 AM	0	0
8:14:30 AM	0	0
8:14:45 AM	0	0
8:15:00 AM	0	0
8:15:15 AM	0	0
8:15:30 AM	0	0
8:15:45 AM	0	0
8:16:00 AM	1	0
8:16:15 AM	0	0
8:16:30 AM	0	1
8:16:45 AM	0	0
8:17:00 AM	0	0
8:17:15 AM	0	0
8:17:30 AM	0	0
8:17:45 AM	0	0
8:18:00 AM	0	1
8:18:15 AM	0	1
8:18:30 AM	0	0
8:18:45 AM	0	0
8:19:00 AM	0	0
8:19:15 AM	0	0
8:19:30 AM	0	0
8:19:45 AM	0	0
8:20:00 AM	0	0
8:20:15 AM	0	0
8:20:30 AM	0	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

8:20:45 AM	0	0
8:21:00 AM	0	0
8:21:15 AM	0	0
8:21:30 AM	0	0
8:21:45 AM	0	2
8:22:00 AM	0	2
8:22:15 AM	0	3
8:22:30 AM	0	2
8:22:45 AM	0	2
8:23:00 AM	0	0
8:23:15 AM	0	0
8:23:30 AM	0	0
8:23:45 AM	0	0
8:24:00 AM	0	0
8:24:15 AM	0	0
8:24:30 AM	0	0
8:24:45 AM	0	0
8:25:00 AM	0	2
8:25:15 AM	0	3
8:25:30 AM	0	1
8:25:45 AM	0	0
8:26:00 AM	0	0
8:26:15 AM	0	0
8:26:30 AM	0	1
8:26:45 AM	0	0
8:27:00 AM	0	0
8:27:15 AM	0	0
8:27:30 AM	0	0
8:27:45 AM	0	0
8:28:00 AM	0	0
8:28:15 AM	0	0
8:28:30 AM	0	0
8:28:45 AM	0	0
8:29:00 AM	0	0
8:29:15 AM	0	0
8:29:30 AM	0	0
8:29:45 AM	0	0
8:30:00 AM	0	0
8:30:15 AM	0	3
8:30:30 AM	0	2
8:30:45 AM	0	0
8:31:00 AM	0	0
8:31:15 AM	0	0
8:31:30 AM	0	0
8:31:45 AM	0	0
8:32:00 AM	0	0
8:32:15 AM	0	0
8:32:30 AM	0	0
8:32:45 AM	0	0
8:33:00 AM	0	0
8:33:15 AM	0	0
8:33:30 AM	0	0
8:33:45 AM	0	0
8:34:00 AM	0	0
8:34:15 AM	0	0
8:34:30 AM	0	0
8:34:45 AM	0	0
8:35:00 AM	0	0
8:35:15 AM	0	0
8:35:30 AM	0	0
8:35:45 AM	0	0
8:36:00 AM	0	0
8:36:15 AM	0	0
8:36:30 AM	0	0
8:36:45 AM	0	0
8:37:00 AM	0	0
8:37:15 AM	0	0
8:37:30 AM	0	1
8:37:45 AM	0	0
8:38:00 AM	0	0
8:38:15 AM	0	0
8:38:30 AM	0	1
8:38:45 AM	0	1
8:39:00 AM	0	0
8:39:15 AM	0	0
8:39:30 AM	0	0
8:39:45 AM	0	0
8:40:00 AM	0	0
8:40:15 AM	0	0
8:40:30 AM	0	1
8:40:45 AM	0	0
8:41:00 AM	0	0
8:41:15 AM	0	0
8:41:30 AM	0	0
8:41:45 AM	0	0
8:42:00 AM	0	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

8:42:15 AM	0	0
8:42:30 AM	0	0
8:42:45 AM	0	0
8:43:00 AM	0	0
8:43:15 AM	0	0
8:43:30 AM	0	0
8:43:45 AM	0	0
8:44:00 AM	0	0
8:44:15 AM	0	0
8:44:30 AM	0	0
8:44:45 AM	0	0
8:45:00 AM	0	1
8:45:15 AM	0	0
8:45:30 AM	0	2
8:45:45 AM	0	0
8:46:00 AM	0	0
8:46:15 AM	0	0
8:46:30 AM	0	0
8:46:45 AM	1	1
8:47:00 AM	0	1
8:47:15 AM	0	0
8:47:30 AM	0	0
8:47:45 AM	0	0
8:48:00 AM	0	1
8:48:15 AM	0	0
8:48:30 AM	0	0
8:48:45 AM	0	0
8:49:00 AM	0	0
8:49:15 AM	0	0
8:49:30 AM	0	0
8:49:45 AM	0	0
8:50:00 AM	0	0
8:50:15 AM	0	1
8:50:30 AM	0	0
8:50:45 AM	0	0
8:51:00 AM	0	0
8:51:15 AM	0	0
8:51:30 AM	0	1
8:51:45 AM	0	0
8:52:00 AM	0	0
8:52:15 AM	0	0
8:52:30 AM	0	0
8:52:45 AM	0	1
8:53:00 AM	0	0
8:53:15 AM	0	1
8:53:30 AM	0	0
8:53:45 AM	0	0
8:54:00 AM	0	0
8:54:15 AM	0	0
8:54:30 AM	0	0
8:54:45 AM	0	1
8:55:00 AM	0	0
8:55:15 AM	0	0
8:55:30 AM	0	0
8:55:45 AM	0	0
8:56:00 AM	0	0
8:56:15 AM	0	0
8:56:30 AM	0	0
8:56:45 AM	0	1
8:57:00 AM	0	0
8:57:15 AM	0	0
8:57:30 AM	0	0
8:57:45 AM	0	1
8:58:00 AM	0	3
8:58:15 AM	0	2
8:58:30 AM	0	0
8:58:45 AM	0	0
8:59:00 AM	0	0
8:59:15 AM	0	0
8:59:30 AM	0	0
8:59:45 AM	0	3

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Site Code: 16689506
Location: Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin RD
Date: 7/25/2024
Time: 4:00 PM - 6:00 PM
Peak Hour: 4:00PM

NBR	Average Delay:	00:08
	Average Queue:	1.00
NBL	Average Delay:	00:43
	Average Queue:	2.00

Study		
NBR	Average Queue	25
	Maximum Queue	50
	95th Percentile Queue	25
NBL	Average Queue	50
	Maximum Queue	225
	95th Percentile Queue	150

Delay Information						
NBR			NBL			
Vehicle Stop (Comes to a stop regardless of position in queue)	Vehicle Release (When vehicle finally crosses stop bar)	Delay Time	Vehicle Stop (Comes to a stop regardless of position in queue)	Vehicle Release (When vehicle finally crosses stop bar)	Delay Time	
1	4:00:31 PM	4:00:38 PM	00:07	4:00:00 PM	4:00:11 PM	00:11
	4:06:08 PM	4:06:10 PM	00:02	4:00:00 PM	4:00:23 PM	00:23
2	4:12:36 PM	4:12:38 PM	00:02	4:00:00 PM	4:00:35 PM	00:35
3	4:18:57 PM	4:19:05 PM	00:08	4:00:00 PM	4:00:54 PM	00:54
4	4:19:38 PM	4:19:51 PM	00:13	4:00:03 PM	4:01:29 PM	01:26
5	4:19:48 PM	4:20:02 PM	00:14	4:00:06 PM	4:01:31 PM	01:25
6	4:24:29 PM	4:24:34 PM	00:05	4:00:07 PM	4:01:45 PM	01:38
7	4:25:45 PM	4:25:48 PM	00:03	4:00:17 PM	4:01:53 PM	01:36
8	4:27:21 PM	4:27:26 PM	00:05	4:01:25 PM	4:02:12 PM	00:47
9	4:28:58 PM	4:29:01 PM	00:03	4:01:25 PM	4:02:17 PM	00:52
10	4:34:07 PM	4:34:08 PM	00:01	4:01:28 PM	4:02:23 PM	00:55
11	4:34:16 PM	4:34:51 PM	00:35	4:02:10 PM	4:02:30 PM	00:20
12	4:34:28 PM	4:34:54 PM	00:26	4:03:27 PM	4:03:42 PM	00:15
13	4:35:38 PM	4:35:46 PM	00:08	4:03:28 PM	4:03:49 PM	00:21
14	4:35:57 PM	4:35:59 PM	00:02	4:03:33 PM	4:03:52 PM	00:19
15	4:37:17 PM	4:37:18 PM	00:01	4:03:37 PM	4:03:57 PM	00:20
16	4:38:22 PM	4:38:40 PM	00:18	4:04:16 PM	4:05:01 PM	00:45
17	4:39:14 PM	4:39:32 PM	00:18	4:04:52 PM	4:05:13 PM	00:21
18	4:39:34 PM	4:39:40 PM	00:06	4:05:08 PM	4:05:17 PM	00:09
19	4:40:16 PM	4:40:17 PM	00:01	4:05:12 PM	4:05:21 PM	00:09
20	4:40:23 PM	4:40:33 PM	00:10	4:05:13 PM	4:05:30 PM	00:17
21	4:47:03 PM	4:47:05 PM	00:02	4:05:26 PM	4:06:04 PM	00:38
22	4:50:48 PM	4:50:51 PM	00:03	4:06:38 PM	4:06:43 PM	00:05
23	4:51:02 PM	4:51:03 PM	00:01	4:06:40 PM	4:06:49 PM	00:09
24	4:53:09 PM	4:53:19 PM	00:10	4:06:51 PM	4:06:53 PM	00:02
25	4:55:45 PM	4:56:01 PM	00:16	4:06:55 PM	4:06:58 PM	00:03
26	4:58:40 PM	4:58:42 PM	00:02	4:07:02 PM	4:07:27 PM	00:25
27	5:06:07 PM	5:06:13 PM	00:06	4:07:03 PM	4:07:30 PM	00:27
28	5:06:18 PM	5:06:25 PM	00:07	4:07:10 PM	4:07:34 PM	00:24
29	5:07:24 PM	5:07:26 PM	00:02	4:08:15 PM	4:08:21 PM	00:06
30	5:08:02 PM	5:08:25 PM	00:23	4:09:43 PM	4:09:48 PM	00:05
31	5:08:37 PM	5:08:39 PM	00:02	4:09:46 PM	4:09:58 PM	00:12
32	5:21:59 PM	5:22:03 PM	00:04	4:12:27 PM	4:12:43 PM	00:16
33	5:23:30 PM	5:23:33 PM	00:03	4:12:33 PM	4:13:19 PM	00:46
34	5:32:41 PM	5:32:43 PM	00:02	4:12:38 PM	4:14:10 PM	01:32
35	5:38:55 PM	5:38:57 PM	00:02	4:13:01 PM	4:14:14 PM	01:13
36	5:42:15 PM	5:42:18 PM	00:03	4:13:11 PM	4:14:21 PM	01:10
37	5:43:33 PM	5:43:35 PM	00:02	4:13:14 PM	4:15:09 PM	01:55
38	5:45:04 PM	5:45:05 PM	00:01	4:13:19 PM	4:15:20 PM	02:01
39	5:54:34 PM	5:54:47 PM	00:13	4:14:11 PM	4:15:40 PM	01:29
40	5:54:41 PM	5:54:51 PM	00:10	4:14:50 PM	4:15:54 PM	01:04
41	5:55:40 PM	5:55:41 PM	00:01	4:14:56 PM	4:15:57 PM	01:01
42	5:55:44 PM	5:55:45 PM	00:01	4:15:13 PM	4:16:18 PM	01:05
43	5:58:27 PM	5:58:28 PM	00:01	4:15:15 PM	4:16:33 PM	01:18
44	5:58:37 PM	5:58:38 PM	00:01	4:15:17 PM	4:16:51 PM	01:34
45	5:59:33 PM	5:59:34 PM	00:01	4:16:10 PM	4:17:38 PM	01:28
46				4:16:25 PM	4:18:03 PM	01:38
47				4:16:58 PM	4:18:33 PM	01:35
48				4:17:00 PM	4:18:36 PM	01:36
49				4:18:03 PM	4:18:46 PM	00:43
50				4:18:15 PM	4:18:51 PM	00:36
51				4:18:45 PM	4:19:05 PM	00:20
52				4:21:40 PM	4:21:48 PM	00:08
53				4:21:46 PM	4:22:04 PM	00:18
54				4:21:53 PM	4:22:25 PM	00:32
55				4:22:10 PM	4:22:34 PM	00:24
56				4:23:21 PM	4:23:59 PM	00:38
57				4:23:25 PM	4:24:04 PM	00:39
58				4:23:26 PM	4:24:21 PM	00:55
59				4:23:33 PM	4:24:31 PM	00:58
60				4:24:34 PM	4:24:55 PM	00:21
61				4:24:35 PM	4:25:29 PM	00:54
62				4:26:05 PM	4:26:33 PM	00:28
63				4:27:15 PM	4:27:19 PM	00:04
64				4:27:26 PM	4:27:31 PM	00:05

	NBR	NBL
	Running Queue Total	Running Queue Total
4:00:00 PM	0	4
4:00:15 PM	0	6
4:00:30 PM	0	6
4:00:45 PM	0	5
4:01:00 PM	0	4
4:01:15 PM	0	4
4:01:30 PM	0	6
4:01:45 PM	0	4
4:02:00 PM	0	3
4:02:15 PM	0	3
4:02:30 PM	0	0
4:02:45 PM	0	0
4:03:00 PM	0	0
4:03:15 PM	0	0
4:03:30 PM	0	2
4:03:45 PM	0	3
4:04:00 PM	0	0
4:04:15 PM	0	0
4:04:30 PM	0	1
4:04:45 PM	0	1
4:05:00 PM	0	2
4:05:15 PM	0	3
4:05:30 PM	0	1
4:05:45 PM	0	1
4:06:00 PM	0	1
4:06:15 PM	0	0
4:06:30 PM	0	0
4:06:45 PM	0	1
4:07:00 PM	0	0
4:07:15 PM	0	3
4:07:30 PM	0	1
4:07:45 PM	0	0
4:08:00 PM	0	0
4:08:15 PM	0	1
4:08:30 PM	0	0
4:08:45 PM	0	0
4:09:00 PM	0	0
4:09:15 PM	0	0
4:09:30 PM	0	0
4:09:45 PM	0	1
4:10:00 PM	0	0
4:10:15 PM	0	0
4:10:30 PM	0	0
4:10:45 PM	0	0
4:11:00 PM	0	0
4:11:15 PM	0	0
4:11:30 PM	0	0
4:11:45 PM	0	0
4:12:00 PM	0	0
4:12:15 PM	0	0
4:12:30 PM	0	1
4:12:45 PM	0	2
4:13:00 PM	0	2
4:13:15 PM	0	5
4:13:30 PM	0	5
4:13:45 PM	0	5
4:14:00 PM	0	5
4:14:15 PM	0	4
4:14:30 PM	0	3
4:14:45 PM	0	3
4:15:00 PM	0	5
4:15:15 PM	0	6
4:15:30 PM	0	6
4:15:45 PM	0	5
4:16:00 PM	0	3

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

65			4:28:24 PM	4:28:27 PM	00:03
66			4:28:37 PM	4:29:01 PM	00:24
67			4:28:38 PM	4:29:07 PM	00:29
68			4:28:40 PM	4:29:31 PM	00:51
69			4:28:45 PM	4:29:43 PM	00:58
70			4:28:46 PM	4:29:52 PM	01:06
71			4:28:50 PM	4:30:17 PM	01:27
72			4:28:54 PM	4:30:27 PM	01:33
73			4:29:18 PM	4:30:32 PM	01:14
74			4:30:23 PM	4:30:52 PM	00:29
75			4:31:28 PM	4:32:06 PM	00:38
76			4:32:12 PM	4:32:18 PM	00:06
77			4:32:15 PM	4:32:32 PM	00:17
78			4:32:16 PM	4:32:43 PM	00:27
79			4:32:31 PM	4:32:52 PM	00:21
80			4:32:40 PM	4:32:56 PM	00:16
81			4:32:42 PM	4:33:00 PM	00:18
82			4:33:19 PM	4:33:49 PM	00:30
83			4:33:22 PM	4:33:54 PM	00:32
84			4:33:29 PM	4:33:57 PM	00:28
85			4:33:39 PM	4:34:04 PM	00:25
86			4:33:42 PM	4:34:08 PM	00:26
87			4:33:53 PM	4:35:16 PM	01:23
88			4:34:14 PM	4:35:20 PM	01:06
89			4:34:18 PM	4:35:22 PM	01:04
90			4:34:37 PM	4:35:24 PM	00:47
91			4:34:39 PM	4:36:24 PM	01:45
92			4:35:34 PM	4:36:32 PM	00:58
93			4:36:09 PM	4:36:44 PM	00:35
94			4:36:15 PM	4:36:54 PM	00:39
95			4:36:53 PM	4:36:57 PM	00:04
96			4:36:58 PM	4:37:01 PM	00:03
97			4:37:06 PM	4:38:58 PM	01:52
98			4:37:43 PM	4:39:02 PM	01:19
99			4:38:07 PM	4:39:32 PM	01:25
100			4:38:09 PM	4:39:40 PM	01:31
101			4:38:11 PM	4:39:51 PM	01:40
102			4:38:12 PM	4:40:13 PM	02:01
103			4:38:30 PM	4:40:39 PM	02:09
104			4:38:38 PM	4:40:42 PM	02:04
105			4:38:39 PM	4:40:54 PM	02:15
106			4:38:55 PM	4:41:04 PM	02:09
107			4:39:37 PM	4:41:17 PM	01:40
108			4:40:19 PM	4:41:23 PM	01:04
109			4:40:20 PM	4:41:47 PM	01:27
110			4:41:59 PM	4:42:16 PM	00:17
111			4:42:20 PM	4:42:27 PM	00:07
112			4:42:26 PM	4:42:38 PM	00:12
113			4:42:26 PM	4:42:42 PM	00:16
114			4:42:57 PM	4:43:11 PM	00:14
115			4:43:31 PM	4:43:39 PM	00:08
116			4:45:31 PM	4:45:37 PM	00:06
117			4:46:04 PM	4:46:37 PM	00:33
118			4:46:16 PM	4:46:48 PM	00:32
119			4:46:59 PM	4:47:04 PM	00:05
120			4:47:00 PM	4:47:29 PM	00:29
121			4:47:02 PM	4:47:34 PM	00:32
122			4:47:12 PM	4:48:14 PM	01:02
123			4:47:12 PM	4:48:23 PM	01:11
124			4:48:38 PM	4:48:41 PM	00:03
125			4:48:48 PM	4:48:48 PM	00:00
126			4:49:01 PM	4:49:04 PM	00:03
127			4:50:37 PM	4:50:39 PM	00:02
128			4:50:45 PM	4:50:51 PM	00:06
129			4:50:46 PM	4:51:06 PM	00:20
130			4:51:10 PM	4:51:12 PM	00:02
131			4:52:48 PM	4:52:55 PM	00:07
132			4:53:10 PM	4:53:21 PM	00:11
133			4:53:16 PM	4:53:24 PM	00:08
134			4:53:32 PM	4:54:11 PM	00:39
135			4:55:26 PM	4:55:30 PM	00:04
136			4:55:38 PM	4:56:10 PM	00:32
137			4:55:46 PM	4:56:16 PM	00:30
138			4:57:10 PM	4:57:17 PM	00:07
139			4:58:07 PM	4:58:09 PM	00:02
140			4:58:55 PM	4:59:52 PM	00:57
141			4:58:57 PM	5:00:00 PM	01:03
142			4:59:00 PM	5:00:08 PM	01:08
143			4:59:47 PM	5:00:32 PM	00:45
144			5:00:08 PM	5:00:32 PM	00:24
145			5:00:18 PM	5:00:36 PM	00:18
146			5:00:18 PM	5:00:42 PM	00:24
147			5:00:22 PM	5:00:54 PM	00:32
148			5:01:42 PM	5:02:02 PM	00:20
149			5:01:44 PM	5:02:11 PM	00:27
150			5:01:45 PM	5:02:34 PM	00:49

4:16:15 PM	0	4
4:16:30 PM	0	4
4:16:45 PM	0	3
4:17:00 PM	0	4
4:17:15 PM	0	4
4:17:30 PM	0	4
4:17:45 PM	0	3
4:18:00 PM	0	3
4:18:15 PM	0	4
4:18:30 PM	0	4
4:18:45 PM	0	3
4:19:00 PM	1	1
4:19:15 PM	0	0
4:19:30 PM	0	0
4:19:45 PM	1	0
4:20:00 PM	1	0
4:20:15 PM	0	0
4:20:30 PM	0	0
4:20:45 PM	0	0
4:21:00 PM	0	0
4:21:15 PM	0	0
4:21:30 PM	0	0
4:21:45 PM	0	1
4:22:00 PM	0	2
4:22:15 PM	0	2
4:22:30 PM	0	1
4:22:45 PM	0	0
4:23:00 PM	0	0
4:23:15 PM	0	0
4:23:30 PM	0	3
4:23:45 PM	0	4
4:24:00 PM	0	3
4:24:15 PM	0	2
4:24:30 PM	1	1
4:24:45 PM	0	2
4:25:00 PM	0	1
4:25:15 PM	0	1
4:25:30 PM	0	0
4:25:45 PM	1	0
4:26:00 PM	0	0
4:26:15 PM	0	1
4:26:30 PM	0	1
4:26:45 PM	0	0
4:27:00 PM	0	0
4:27:15 PM	0	1
4:27:30 PM	0	1
4:27:45 PM	0	0
4:28:00 PM	0	0
4:28:15 PM	0	0
4:28:30 PM	0	0
4:28:45 PM	0	4
4:29:00 PM	1	7
4:29:15 PM	0	5
4:29:30 PM	0	6
4:29:45 PM	0	4
4:30:00 PM	0	3
4:30:15 PM	0	3
4:30:30 PM	0	2
4:30:45 PM	0	1
4:31:00 PM	0	0
4:31:15 PM	0	0
4:31:30 PM	0	1
4:31:45 PM	0	1
4:32:00 PM	0	1
4:32:15 PM	0	2
4:32:30 PM	0	2
4:32:45 PM	0	3
4:33:00 PM	0	0
4:33:15 PM	0	0
4:33:30 PM	0	3
4:33:45 PM	0	5
4:34:00 PM	0	3
4:34:15 PM	0	2
4:34:30 PM	2	3
4:34:45 PM	2	5
4:35:00 PM	0	5
4:35:15 PM	0	5
4:35:30 PM	0	1
4:35:45 PM	1	2
4:36:00 PM	0	2
4:36:15 PM	0	4
4:36:30 PM	0	3
4:36:45 PM	0	1
4:37:00 PM	0	1
4:37:15 PM	0	1
4:37:30 PM	0	1

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

151			5:01:48 PM	5:03:04 PM	01:16	4:37:45 PM	0	2
152			5:01:51 PM	5:03:23 PM	01:32	4:38:00 PM	0	2
153			5:03:02 PM	5:03:34 PM	00:32	4:38:15 PM	0	6
154			5:03:19 PM	5:03:55 PM	00:36	4:38:30 PM	1	7
155			5:03:19 PM	5:04:11 PM	00:52	4:38:45 PM	0	9
156			5:03:19 PM	5:04:29 PM	01:10	4:39:00 PM	0	9
157			5:03:50 PM	5:04:36 PM	00:46	4:39:15 PM	1	8
158			5:04:04 PM	5:04:57 PM	00:53	4:39:30 PM	1	8
159			5:04:21 PM	5:05:09 PM	00:48	4:39:45 PM	0	7
160			5:04:21 PM	5:05:14 PM	00:53	4:40:00 PM	0	6
161			5:04:33 PM	5:05:29 PM	00:56	4:40:15 PM	0	5
162			5:04:50 PM	5:06:05 PM	01:15	4:40:30 PM	1	7
163			5:04:50 PM	5:06:58 PM	02:08	4:40:45 PM	0	5
164			5:04:50 PM	5:07:08 PM	02:18	4:41:00 PM	0	4
165			5:05:41 PM	5:07:20 PM	01:39	4:41:15 PM	0	3
166			5:05:50 PM	5:07:27 PM	01:37	4:41:30 PM	0	1
167			5:06:21 PM	5:07:39 PM	01:18	4:41:45 PM	0	1
168			5:06:24 PM	5:07:46 PM	01:22	4:42:00 PM	0	1
169			5:06:33 PM	5:08:26 PM	01:53	4:42:15 PM	0	1
170			5:06:41 PM	5:08:36 PM	01:55	4:42:30 PM	0	2
171			5:08:04 PM	5:08:38 PM	00:34	4:42:45 PM	0	0
172			5:08:34 PM	5:08:46 PM	00:12	4:43:00 PM	0	1
173			5:08:44 PM	5:09:16 PM	00:32	4:43:15 PM	0	0
174			5:09:39 PM	5:09:41 PM	00:02	4:43:30 PM	0	0
175			5:09:40 PM	5:09:48 PM	00:08	4:43:45 PM	0	0
176			5:09:50 PM	5:09:51 PM	00:01	4:44:00 PM	0	0
177			5:11:22 PM	5:11:29 PM	00:07	4:44:15 PM	0	0
178			5:11:34 PM	5:11:57 PM	00:23	4:44:30 PM	0	0
179			5:11:37 PM	5:12:02 PM	00:25	4:44:45 PM	0	0
180			5:11:40 PM	5:12:05 PM	00:25	4:45:00 PM	0	0
181			5:11:41 PM	5:12:11 PM	00:30	4:45:15 PM	0	0
182			5:12:26 PM	5:12:29 PM	00:03	4:45:30 PM	0	0
183			5:13:01 PM	5:13:29 PM	00:28	4:45:45 PM	0	0
184			5:13:03 PM	5:13:42 PM	00:39	4:46:00 PM	0	0
185			5:13:53 PM	5:14:14 PM	00:21	4:46:15 PM	0	1
186			5:13:56 PM	5:14:34 PM	00:38	4:46:30 PM	0	2
187			5:15:16 PM	5:15:22 PM	00:06	4:46:45 PM	0	1
188			5:15:20 PM	5:15:27 PM	00:07	4:47:00 PM	0	2
189			5:15:29 PM	5:15:32 PM	00:03	4:47:15 PM	0	4
190			5:15:36 PM	5:15:44 PM	00:08	4:47:30 PM	0	3
191			5:15:37 PM	5:16:00 PM	00:23	4:47:45 PM	0	2
192			5:15:38 PM	5:16:07 PM	00:29	4:48:00 PM	0	2
193			5:15:41 PM	5:16:12 PM	00:31	4:48:15 PM	0	1
194			5:15:41 PM	5:16:21 PM	00:40	4:48:30 PM	0	0
195			5:16:26 PM	5:16:29 PM	00:03	4:48:45 PM	0	0
196			5:16:52 PM	5:16:57 PM	00:05	4:49:00 PM	0	0
197			5:17:02 PM	5:17:08 PM	00:06	4:49:15 PM	0	0
198			5:18:14 PM	5:18:16 PM	00:02	4:49:30 PM	0	0
199			5:18:22 PM	5:19:00 PM	00:38	4:49:45 PM	0	0
200			5:19:10 PM	5:19:15 PM	00:05	4:50:00 PM	0	0
201			5:19:21 PM	5:19:25 PM	00:04	4:50:15 PM	0	0
202			5:19:23 PM	5:19:33 PM	00:10	4:50:30 PM	0	0
203			5:19:40 PM	5:19:59 PM	00:19	4:50:45 PM	0	1
204			5:20:39 PM	5:20:44 PM	00:05	4:51:00 PM	0	1
205			5:21:42 PM	5:21:51 PM	00:09	4:51:15 PM	0	0
206			5:23:34 PM	5:23:41 PM	00:07	4:51:30 PM	0	0
207			5:23:36 PM	5:23:45 PM	00:09	4:51:45 PM	0	0
208			5:23:50 PM	5:23:58 PM	00:08	4:52:00 PM	0	0
209			5:24:06 PM	5:24:08 PM	00:02	4:52:15 PM	0	0
210			5:25:22 PM	5:25:50 PM	00:28	4:52:30 PM	0	0
211			5:25:22 PM	5:25:59 PM	00:37	4:52:45 PM	0	0
212			5:25:25 PM	5:26:31 PM	01:06	4:53:00 PM	0	0
213			5:25:31 PM	5:26:38 PM	01:07	4:53:15 PM	1	1
214			5:25:31 PM	5:27:00 PM	01:29	4:53:30 PM	0	0
215			5:27:19 PM	5:27:52 PM	00:33	4:53:45 PM	0	1
216			5:28:47 PM	5:29:39 PM	00:52	4:54:00 PM	0	1
217			5:28:51 PM	5:30:04 PM	01:13	4:54:15 PM	0	0
218			5:28:56 PM	5:30:14 PM	01:18	4:54:30 PM	0	0
219			5:28:58 PM	5:30:23 PM	01:25	4:54:45 PM	0	0
220			5:29:01 PM	5:30:39 PM	01:38	4:55:00 PM	0	0
221			5:29:01 PM	5:30:47 PM	01:46	4:55:15 PM	0	0
222			5:30:02 PM	5:31:25 PM	01:23	4:55:30 PM	0	0
223			5:32:47 PM	5:32:49 PM	00:02	4:55:45 PM	1	1
224			5:32:54 PM	5:32:56 PM	00:02	4:56:00 PM	1	2
225			5:34:08 PM	5:34:10 PM	00:02	4:56:15 PM	0	1
226			5:34:53 PM	5:34:55 PM	00:02	4:56:30 PM	0	0
227			5:35:00 PM	5:35:04 PM	00:04	4:56:45 PM	0	0
228			5:35:01 PM	5:35:08 PM	00:07	4:57:00 PM	0	0
229			5:35:03 PM	5:35:13 PM	00:10	4:57:15 PM	0	1
230			5:35:06 PM	5:35:39 PM	00:33	4:57:30 PM	0	0
231			5:35:20 PM	5:36:23 PM	01:03	4:57:45 PM	0	0
232			5:36:14 PM	5:36:35 PM	00:21	4:58:00 PM	0	0
233			5:36:22 PM	5:36:45 PM	00:23	4:58:15 PM	0	0
234			5:36:24 PM	5:37:01 PM	00:37	4:58:30 PM	0	0
235			5:36:34 PM	5:37:07 PM	00:33	4:58:45 PM	0	0
236			5:38:44 PM	5:39:24 PM	00:40	4:59:00 PM	0	3

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

237			5:38:52 PM	5:39:33 PM	00:41
238			5:38:56 PM	5:40:03 PM	01:07
239			5:40:15 PM	5:40:19 PM	00:04
240			5:42:05 PM	5:42:08 PM	00:03
241			5:42:06 PM	5:42:14 PM	00:08
242			5:42:13 PM	5:42:14 PM	00:01
243			5:42:20 PM	5:42:36 PM	00:16
244			5:42:21 PM	5:42:42 PM	00:21
245			5:42:21 PM	5:42:47 PM	00:26
246			5:42:30 PM	5:42:58 PM	00:28
247			5:44:09 PM	5:44:15 PM	00:06
248			5:44:09 PM	5:44:24 PM	00:15
249			5:44:57 PM	5:45:25 PM	00:28
250			5:45:13 PM	5:45:29 PM	00:16
251			5:45:21 PM	5:45:45 PM	00:24
252			5:45:22 PM	5:45:54 PM	00:32
253			5:45:22 PM	5:46:16 PM	00:54
254			5:45:26 PM	5:46:25 PM	00:59
255			5:45:32 PM	5:46:28 PM	00:56
256			5:46:33 PM	5:47:10 PM	00:37
257			5:46:59 PM	5:47:43 PM	00:44
258			5:47:46 PM	5:47:52 PM	00:06
259			5:48:58 PM	5:49:03 PM	00:05
260			5:50:52 PM	5:51:09 PM	00:17
261			5:50:52 PM	5:51:16 PM	00:24
262			5:50:53 PM	5:51:26 PM	00:33
263			5:50:56 PM	5:51:43 PM	00:47
264			5:50:58 PM	5:51:52 PM	00:54
265			5:51:23 PM	5:51:59 PM	00:36
266			5:52:29 PM	5:52:32 PM	00:03
267			5:52:35 PM	5:53:08 PM	00:33
268			5:54:23 PM	5:55:26 PM	01:03
269			5:54:28 PM	5:55:36 PM	01:08
270			5:54:34 PM	5:55:48 PM	01:14
271			5:55:45 PM	5:55:52 PM	00:07
272			5:55:46 PM	5:55:56 PM	00:10
273			5:56:01 PM	5:56:05 PM	00:04
274			5:56:03 PM	5:56:09 PM	00:06
275			5:57:22 PM	5:57:27 PM	00:05
276			5:57:23 PM	5:57:36 PM	00:13
277			5:57:32 PM	5:57:40 PM	00:08
278			5:58:04 PM	5:58:24 PM	00:20
279			5:58:20 PM	5:58:31 PM	00:11
280			5:58:22 PM	5:58:35 PM	00:13
281			5:59:37 PM	5:59:38 PM	00:01
282			5:59:43 PM	5:59:53 PM	00:10
283			5:59:44 PM	5:59:56 PM	00:12
284					

4:59:15 PM	0	3
4:59:30 PM	0	3
4:59:45 PM	0	3
5:00:00 PM	0	2
5:00:15 PM	0	2
5:00:30 PM	0	5
5:00:45 PM	0	1
5:01:00 PM	0	0
5:01:15 PM	0	0
5:01:30 PM	0	0
5:01:45 PM	0	3
5:02:00 PM	0	5
5:02:15 PM	0	3
5:02:30 PM	0	3
5:02:45 PM	0	2
5:03:00 PM	0	2
5:03:15 PM	0	2
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5:03:45 PM	0	3
5:04:00 PM	0	3
5:04:15 PM	0	3
5:04:30 PM	0	4
5:04:45 PM	0	4
5:05:00 PM	0	6
5:05:15 PM	0	4
5:05:30 PM	0	3
5:05:45 PM	0	4
5:06:00 PM	0	5
5:06:15 PM	0	4
5:06:30 PM	0	6
5:06:45 PM	0	8
5:07:00 PM	0	7
5:07:15 PM	0	6
5:07:30 PM	0	4
5:07:45 PM	0	3
5:08:00 PM	0	2
5:08:15 PM	1	3
5:08:30 PM	0	2
5:08:45 PM	0	2
5:09:00 PM	0	1
5:09:15 PM	0	1
5:09:30 PM	0	0
5:09:45 PM	0	1
5:10:00 PM	0	0
5:10:15 PM	0	0
5:10:30 PM	0	0
5:10:45 PM	0	0
5:11:00 PM	0	0
5:11:15 PM	0	0
5:11:30 PM	0	0
5:11:45 PM	0	4
5:12:00 PM	0	3
5:12:15 PM	0	0
5:12:30 PM	0	0
5:12:45 PM	0	0
5:13:00 PM	0	0
5:13:15 PM	0	2
5:13:30 PM	0	1
5:13:45 PM	0	0
5:14:00 PM	0	2
5:14:15 PM	0	1
5:14:30 PM	0	1
5:14:45 PM	0	0
5:15:00 PM	0	0
5:15:15 PM	0	0
5:15:30 PM	0	1
5:15:45 PM	0	4
5:16:00 PM	0	3
5:16:15 PM	0	1
5:16:30 PM	0	0
5:16:45 PM	0	0
5:17:00 PM	0	0
5:17:15 PM	0	0
5:17:30 PM	0	0
5:17:45 PM	0	0
5:18:00 PM	0	0
5:18:15 PM	0	1
5:18:30 PM	0	1
5:18:45 PM	0	1
5:19:00 PM	0	0
5:19:15 PM	0	0
5:19:30 PM	0	1
5:19:45 PM	0	1
5:20:00 PM	0	0
5:20:15 PM	0	0
5:20:30 PM	0	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

5:20:45 PM	0	0
5:21:00 PM	0	0
5:21:15 PM	0	0
5:21:30 PM	0	0
5:21:45 PM	0	1
5:22:00 PM	1	0
5:22:15 PM	0	0
5:22:30 PM	0	0
5:22:45 PM	0	0
5:23:00 PM	0	0
5:23:15 PM	0	0
5:23:30 PM	1	0
5:23:45 PM	0	0
5:24:00 PM	0	0
5:24:15 PM	0	0
5:24:30 PM	0	0
5:24:45 PM	0	0
5:25:00 PM	0	0
5:25:15 PM	0	0
5:25:30 PM	0	3
5:25:45 PM	0	5
5:26:00 PM	0	3
5:26:15 PM	0	3
5:26:30 PM	0	3
5:26:45 PM	0	1
5:27:00 PM	0	0
5:27:15 PM	0	0
5:27:30 PM	0	1
5:27:45 PM	0	1
5:28:00 PM	0	0
5:28:15 PM	0	0
5:28:30 PM	0	0
5:28:45 PM	0	0
5:29:00 PM	0	4
5:29:15 PM	0	6
5:29:30 PM	0	6
5:29:45 PM	0	5
5:30:00 PM	0	5
5:30:15 PM	0	4
5:30:30 PM	0	3
5:30:45 PM	0	2
5:31:00 PM	0	1
5:31:15 PM	0	1
5:31:30 PM	0	0
5:31:45 PM	0	0
5:32:00 PM	0	0
5:32:15 PM	0	0
5:32:30 PM	0	0
5:32:45 PM	0	0
5:33:00 PM	0	0
5:33:15 PM	0	0
5:33:30 PM	0	0
5:33:45 PM	0	0
5:34:00 PM	0	0
5:34:15 PM	0	0
5:34:30 PM	0	0
5:34:45 PM	0	0
5:35:00 PM	0	1
5:35:15 PM	0	1
5:35:30 PM	0	2
5:35:45 PM	0	1
5:36:00 PM	0	1
5:36:15 PM	0	2
5:36:30 PM	0	3
5:36:45 PM	0	2
5:37:00 PM	0	2
5:37:15 PM	0	0
5:37:30 PM	0	0
5:37:45 PM	0	0
5:38:00 PM	0	0
5:38:15 PM	0	0
5:38:30 PM	0	0
5:38:45 PM	0	1
5:39:00 PM	0	3
5:39:15 PM	0	3
5:39:30 PM	0	2
5:39:45 PM	0	1
5:40:00 PM	0	1
5:40:15 PM	0	1
5:40:30 PM	0	0
5:40:45 PM	0	0
5:41:00 PM	0	0
5:41:15 PM	0	0
5:41:30 PM	0	0
5:41:45 PM	0	0
5:42:00 PM	0	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

5:42:15 PM	1	0
5:42:30 PM	0	4
5:42:45 PM	0	2
5:43:00 PM	0	0
5:43:15 PM	0	0
5:43:30 PM	0	0
5:43:45 PM	0	0
5:44:00 PM	0	0
5:44:15 PM	0	1
5:44:30 PM	0	0
5:44:45 PM	0	0
5:45:00 PM	0	1
5:45:15 PM	0	2
5:45:30 PM	0	4
5:45:45 PM	0	4
5:46:00 PM	0	3
5:46:15 PM	0	3
5:46:30 PM	0	0
5:46:45 PM	0	1
5:47:00 PM	0	2
5:47:15 PM	0	1
5:47:30 PM	0	1
5:47:45 PM	0	0
5:48:00 PM	0	0
5:48:15 PM	0	0
5:48:30 PM	0	0
5:48:45 PM	0	0
5:49:00 PM	0	1
5:49:15 PM	0	0
5:49:30 PM	0	0
5:49:45 PM	0	0
5:50:00 PM	0	0
5:50:15 PM	0	0
5:50:30 PM	0	0
5:50:45 PM	0	0
5:51:00 PM	0	5
5:51:15 PM	0	4
5:51:30 PM	0	3
5:51:45 PM	0	2
5:52:00 PM	0	0
5:52:15 PM	0	0
5:52:30 PM	0	1
5:52:45 PM	0	1
5:53:00 PM	0	1
5:53:15 PM	0	0
5:53:30 PM	0	0
5:53:45 PM	0	0
5:54:00 PM	0	0
5:54:15 PM	0	0
5:54:30 PM	0	2
5:54:45 PM	2	3
5:55:00 PM	0	3
5:55:15 PM	0	3
5:55:30 PM	0	2
5:55:45 PM	0	2
5:56:00 PM	0	0
5:56:15 PM	0	0
5:56:30 PM	0	0
5:56:45 PM	0	0
5:57:00 PM	0	0
5:57:15 PM	0	0
5:57:30 PM	0	1
5:57:45 PM	0	0
5:58:00 PM	0	0
5:58:15 PM	0	1
5:58:30 PM	0	2
5:58:45 PM	0	0
5:59:00 PM	0	0
5:59:15 PM	0	0
5:59:30 PM	0	0
5:59:45 PM	0	2

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Site Code: 16689507
Location: Queue and Delay - SW Hazelbrook Rd and to OR 99W
Date: 7/25/2024
Time: 7:00 AM - 9:00 AM
Peak Hour: 7:00AM

WBR	Average Delay:	00:10
	Average Queue:	1.00

Study	
Average Queue	25
Maximum Queue	125
95th Percentile Queue	50

Delay Information			
WBR			
Vehicle Stop (Comes to a stop regardless of position in queue)	Vehicle Release (When vehicle finally crosses stop bar)	Delay Time	
1	7:00:50 AM	7:00:52 AM	00:02
2	7:01:15 AM	7:02:11 AM	00:56
3	7:01:51 AM	7:02:20 AM	00:29
4	7:02:54 AM	7:02:55 AM	00:01
5	7:02:57 AM	7:02:58 AM	00:01
6	7:03:02 AM	7:03:06 AM	00:04
7	7:03:32 AM	7:03:33 AM	00:01
8	7:03:57 AM	7:04:17 AM	00:20
9	7:04:56 AM	7:04:57 AM	00:01
10	7:05:08 AM	7:05:14 AM	00:06
11	7:05:33 AM	7:05:38 AM	00:05
12	7:06:39 AM	7:06:40 AM	00:01
13	7:07:19 AM	7:07:22 AM	00:03
14	7:07:46 AM	7:07:47 AM	00:01
15	7:07:53 AM	7:07:54 AM	00:01
16	7:08:02 AM	7:08:15 AM	00:13
17	7:08:06 AM	7:08:18 AM	00:12
18	7:08:37 AM	7:08:38 AM	00:01
19	7:08:42 AM	7:08:45 AM	00:03
20	7:08:46 AM	7:08:47 AM	00:01
21	7:08:51 AM	7:08:52 AM	00:01
22	7:09:03 AM	7:09:04 AM	00:01
23	7:09:15 AM	7:10:10 AM	00:55
24	7:09:58 AM	7:10:12 AM	00:14
25	7:10:35 AM	7:10:36 AM	00:01
26	7:10:38 AM	7:10:40 AM	00:02
27	7:12:25 AM	7:12:26 AM	00:01
28	7:12:57 AM	7:12:58 AM	00:01
29	7:14:24 AM	7:14:52 AM	00:28
30	7:14:34 AM	7:15:03 AM	00:29
31	7:14:44 AM	7:15:05 AM	00:21
32	7:14:50 AM	7:15:09 AM	00:19
33	7:14:52 AM	7:15:13 AM	00:21
34	7:14:57 AM	7:15:16 AM	00:19
35	7:15:35 AM	7:15:36 AM	00:01
36	7:16:01 AM	7:16:16 AM	00:15
37	7:16:12 AM	7:16:19 AM	00:07
38	7:16:22 AM	7:16:23 AM	00:01
39	7:16:26 AM	7:16:27 AM	00:01
40	7:19:04 AM	7:19:05 AM	00:01
41	7:19:33 AM	7:19:34 AM	00:01
42	7:19:36 AM	7:19:37 AM	00:01
43	7:21:29 AM	7:21:30 AM	00:01
44	7:21:31 AM	7:21:33 AM	00:02
45	7:22:18 AM	7:22:24 AM	00:06
46	7:22:20 AM	7:22:28 AM	00:08
47	7:22:35 AM	7:22:40 AM	00:05
48	7:22:46 AM	7:22:47 AM	00:01
49	7:23:44 AM	7:24:20 AM	00:36
50	7:24:04 AM	7:24:24 AM	00:20
51	7:24:58 AM	7:24:59 AM	00:01
52	7:25:53 AM	7:25:58 AM	00:05
53	7:26:11 AM	7:26:13 AM	00:02
54	7:27:30 AM	7:27:42 AM	00:12
55	7:27:36 AM	7:27:45 AM	00:09
56	7:28:10 AM	7:28:11 AM	00:01
57	7:28:18 AM	7:28:20 AM	00:02
58	7:29:31 AM	7:29:40 AM	00:09
59	7:29:35 AM	7:29:43 AM	00:08
60	7:30:45 AM	7:31:18 AM	00:33
61	7:31:24 AM	7:31:34 AM	00:10
62	7:31:37 AM	7:31:38 AM	00:01
63	7:31:41 AM	7:31:42 AM	00:01
64	7:31:51 AM	7:31:54 AM	00:03
65	7:31:58 AM	7:32:02 AM	00:04
66	7:32:12 AM	7:32:13 AM	00:01
67	7:32:34 AM	7:32:38 AM	00:04
68	7:32:39 AM	7:32:40 AM	00:01
69	7:32:53 AM	7:33:10 AM	00:17
70	7:32:57 AM	7:33:23 AM	00:26
71	7:33:08 AM	7:33:26 AM	00:18
72	7:34:53 AM	7:35:24 AM	00:31
73	7:35:03 AM	7:35:27 AM	00:24
74	7:35:48 AM	7:35:49 AM	00:01
75	7:35:52 AM	7:35:53 AM	00:01
76	7:35:58 AM	7:35:59 AM	00:01
77	7:36:06 AM	7:36:11 AM	00:05
78	7:36:29 AM	7:36:30 AM	00:01

WBR	
Running	Queue Total
7:00:00 AM	0
7:00:15 AM	0
7:00:30 AM	0
7:00:45 AM	0
7:01:00 AM	0
7:01:15 AM	1
7:01:30 AM	1
7:01:45 AM	1
7:02:00 AM	2
7:02:15 AM	1
7:02:30 AM	0
7:02:45 AM	0
7:03:00 AM	0
7:03:15 AM	0
7:03:30 AM	0
7:03:45 AM	0
7:04:00 AM	1
7:04:15 AM	1
7:04:30 AM	0
7:04:45 AM	0
7:05:00 AM	0
7:05:15 AM	0
7:05:30 AM	0
7:05:45 AM	0
7:06:00 AM	0
7:06:15 AM	0
7:06:30 AM	0
7:06:45 AM	0
7:07:00 AM	0
7:07:15 AM	0
7:07:30 AM	0
7:07:45 AM	0
7:08:00 AM	0
7:08:15 AM	2
7:08:30 AM	0
7:08:45 AM	1
7:09:00 AM	0
7:09:15 AM	0
7:09:30 AM	1
7:09:45 AM	1
7:10:00 AM	2
7:10:15 AM	0
7:10:30 AM	0
7:10:45 AM	0
7:11:00 AM	0
7:11:15 AM	0
7:11:30 AM	0
7:11:45 AM	0
7:12:00 AM	0
7:12:15 AM	0
7:12:30 AM	0
7:12:45 AM	0
7:13:00 AM	0
7:13:15 AM	0
7:13:30 AM	0
7:13:45 AM	0
7:14:00 AM	0
7:14:15 AM	0
7:14:30 AM	1
7:14:45 AM	3
7:15:00 AM	5
7:15:15 AM	1
7:15:30 AM	0
7:15:45 AM	0
7:16:00 AM	0
7:16:15 AM	2
7:16:30 AM	0
7:16:45 AM	0
7:17:00 AM	0
7:17:15 AM	0
7:17:30 AM	0
7:17:45 AM	0
7:18:00 AM	0
7:18:15 AM	0
7:18:30 AM	0
7:18:45 AM	0
7:19:00 AM	0
7:19:15 AM	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

79	7:37:10 AM	7:37:11 AM	00:01	7:19:30 AM	0
80	7:37:49 AM	7:37:50 AM	00:01	7:19:45 AM	0
81	7:39:04 AM	7:39:05 AM	00:01	7:20:00 AM	0
82	7:39:38 AM	7:40:00 AM	00:22	7:20:15 AM	0
83	7:39:42 AM	7:40:02 AM	00:20	7:20:30 AM	0
84	7:39:48 AM	7:40:08 AM	00:20	7:20:45 AM	0
85	7:40:31 AM	7:40:32 AM	00:01	7:21:00 AM	0
86	7:40:59 AM	7:41:07 AM	00:08	7:21:15 AM	0
87	7:41:40 AM	7:42:01 AM	00:21	7:21:30 AM	1
88	7:41:45 AM	7:42:03 AM	00:18	7:21:45 AM	0
89	7:42:46 AM	7:42:47 AM	00:01	7:22:00 AM	0
90	7:43:06 AM	7:43:24 AM	00:18	7:22:15 AM	0
91	7:43:53 AM	7:43:54 AM	00:01	7:22:30 AM	0
92	7:43:57 AM	7:43:58 AM	00:01	7:22:45 AM	0
93	7:44:45 AM	7:44:53 AM	00:08	7:23:00 AM	0
94	7:44:49 AM	7:44:57 AM	00:08	7:23:15 AM	0
95	7:44:58 AM	7:44:59 AM	00:01	7:23:30 AM	0
96	7:45:42 AM	7:45:47 AM	00:05	7:23:45 AM	1
97	7:45:46 AM	7:45:49 AM	00:03	7:24:00 AM	1
98	7:45:53 AM	7:45:54 AM	00:01	7:24:15 AM	2
99	7:46:26 AM	7:46:27 AM	00:01	7:24:30 AM	0
100	7:46:32 AM	7:46:33 AM	00:01	7:24:45 AM	0
101	7:46:35 AM	7:46:36 AM	00:01	7:25:00 AM	0
102	7:47:01 AM	7:47:18 AM	00:17	7:25:15 AM	0
103	7:47:04 AM	7:47:22 AM	00:18	7:25:30 AM	0
104	7:47:12 AM	7:47:43 AM	00:31	7:25:45 AM	0
105	7:47:19 AM	7:47:49 AM	00:30	7:26:00 AM	0
106	7:47:37 AM	7:47:51 AM	00:14	7:26:15 AM	0
107	7:47:58 AM	7:48:06 AM	00:08	7:26:30 AM	0
108	7:48:29 AM	7:48:34 AM	00:05	7:26:45 AM	0
109	7:48:30 AM	7:48:38 AM	00:08	7:27:00 AM	0
110	7:48:43 AM	7:49:23 AM	00:40	7:27:15 AM	0
111	7:48:44 AM	7:49:24 AM	00:40	7:27:30 AM	0
112	7:49:18 AM	7:49:51 AM	00:33	7:27:45 AM	1
113	7:49:40 AM	7:50:07 AM	00:27	7:28:00 AM	0
114	7:49:41 AM	7:50:11 AM	00:30	7:28:15 AM	0
115	7:49:47 AM	7:50:16 AM	00:29	7:28:30 AM	0
116	7:50:03 AM	7:50:20 AM	00:17	7:28:45 AM	0
117	7:50:29 AM	7:50:30 AM	00:01	7:29:00 AM	0
118	7:51:22 AM	7:51:32 AM	00:10	7:29:15 AM	0
119	7:51:26 AM	7:51:36 AM	00:10	7:29:30 AM	0
120	7:52:44 AM	7:52:45 AM	00:01	7:29:45 AM	0
121	7:52:49 AM	7:52:50 AM	00:01	7:30:00 AM	0
122	7:53:07 AM	7:53:08 AM	00:01	7:30:15 AM	0
123	7:53:39 AM	7:53:40 AM	00:01	7:30:30 AM	0
124	7:54:44 AM	7:54:48 AM	00:04	7:30:45 AM	0
125	7:54:50 AM	7:54:51 AM	00:01	7:31:00 AM	1
126	7:55:34 AM	7:55:35 AM	00:01	7:31:15 AM	1
127	7:56:00 AM	7:56:02 AM	00:02	7:31:30 AM	1
128	7:56:03 AM	7:56:04 AM	00:01	7:31:45 AM	0
129	7:56:15 AM	7:56:16 AM	00:01	7:32:00 AM	1
130	7:56:35 AM	7:56:37 AM	00:02	7:32:15 AM	0
131	7:56:58 AM	7:57:10 AM	00:12	7:32:30 AM	0
132	7:57:05 AM	7:57:26 AM	00:21	7:32:45 AM	0
133	7:57:15 AM	7:57:30 AM	00:15	7:33:00 AM	2
134	7:57:18 AM	7:57:34 AM	00:16	7:33:15 AM	2
135	7:57:40 AM	7:57:41 AM	00:01	7:33:30 AM	0
136	7:57:43 AM	7:57:44 AM	00:01	7:33:45 AM	0
137	7:58:15 AM	7:58:16 AM	00:01	7:34:00 AM	0
138	7:58:29 AM	7:58:30 AM	00:01	7:34:15 AM	0
139	7:58:34 AM	7:58:35 AM	00:01	7:34:30 AM	0
140	7:59:14 AM	7:59:45 AM	00:31	7:34:45 AM	0
141	7:59:18 AM	7:59:48 AM	00:30	7:35:00 AM	1
142	7:59:49 AM	7:59:54 AM	00:05	7:35:15 AM	2
143	8:00:39 AM	8:00:47 AM	00:08	7:35:30 AM	0
144	8:01:09 AM	8:01:35 AM	00:26	7:35:45 AM	0
145	8:01:13 AM	8:01:38 AM	00:25	7:36:00 AM	0
146	8:01:41 AM	8:01:43 AM	00:02	7:36:15 AM	0
147	8:01:45 AM	8:01:47 AM	00:02	7:36:30 AM	1
148	8:01:50 AM	8:01:58 AM	00:08	7:36:45 AM	0
149	8:03:22 AM	8:03:33 AM	00:11	7:37:00 AM	0
150	8:03:24 AM	8:03:36 AM	00:12	7:37:15 AM	0
151	8:03:44 AM	8:03:45 AM	00:01	7:37:30 AM	0
152	8:03:48 AM	8:03:49 AM	00:01	7:37:45 AM	0
153	8:04:02 AM	8:04:03 AM	00:01	7:38:00 AM	0
154	8:05:39 AM	8:05:40 AM	00:01	7:38:15 AM	0
155	8:05:47 AM	8:06:01 AM	00:14	7:38:30 AM	0
156	8:06:03 AM	8:06:06 AM	00:03	7:38:45 AM	0
157	8:06:36 AM	8:06:42 AM	00:06	7:39:00 AM	0
158	8:06:49 AM	8:06:50 AM	00:01	7:39:15 AM	0
159	8:07:01 AM	8:07:02 AM	00:01	7:39:30 AM	0
160	8:07:06 AM	8:07:34 AM	00:28	7:39:45 AM	2
161	8:07:08 AM	8:07:44 AM	00:36	7:40:00 AM	3
162	8:07:29 AM	8:07:48 AM	00:19	7:40:15 AM	0
163	8:09:24 AM	8:09:41 AM	00:17	7:40:30 AM	0
164	8:09:35 AM	8:09:50 AM	00:15	7:40:45 AM	0
165	8:09:39 AM	8:09:52 AM	00:13	7:41:00 AM	1
166	8:09:55 AM	8:09:56 AM	00:01	7:41:15 AM	0
167	8:10:00 AM	8:10:01 AM	00:01	7:41:30 AM	0
168	8:10:10 AM	8:10:11 AM	00:01	7:41:45 AM	1
169	8:10:47 AM	8:10:48 AM	00:01	7:42:00 AM	2
170	8:11:58 AM	8:11:59 AM	00:01	7:42:15 AM	0
171	8:12:02 AM	8:12:03 AM	00:01	7:42:30 AM	0
172	8:12:11 AM	8:12:17 AM	00:06	7:42:45 AM	0
173	8:12:12 AM	8:12:21 AM	00:09	7:43:00 AM	0
174	8:12:47 AM	8:12:48 AM	00:01	7:43:15 AM	1
175	8:13:24 AM	8:13:33 AM	00:09	7:43:30 AM	0
176	8:13:25 AM	8:13:38 AM	00:13	7:43:45 AM	0
177	8:13:47 AM	8:13:56 AM	00:09	7:44:00 AM	0
178	8:13:58 AM	8:13:59 AM	00:01	7:44:15 AM	0
179	8:14:14 AM	8:14:15 AM	00:01	7:44:30 AM	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

180	8:14:17 AM	8:14:18 AM	00:01
181	8:14:23 AM	8:14:30 AM	00:07
182	8:14:33 AM	8:14:34 AM	00:01
183	8:15:36 AM	8:15:43 AM	00:07
184	8:15:37 AM	8:15:47 AM	00:10
185	8:16:38 AM	8:16:39 AM	00:01
186	8:16:45 AM	8:16:47 AM	00:02
187	8:16:51 AM	8:16:52 AM	00:01
188	8:16:58 AM	8:16:59 AM	00:01
189	8:17:02 AM	8:17:03 AM	00:01
190	8:17:17 AM	8:17:18 AM	00:01
191	8:17:56 AM	8:18:03 AM	00:07
192	8:18:14 AM	8:18:18 AM	00:04
193	8:18:25 AM	8:18:26 AM	00:01
194	8:18:30 AM	8:18:31 AM	00:01
195	8:18:44 AM	8:18:48 AM	00:04
196	8:18:57 AM	8:19:34 AM	00:37
197	8:19:09 AM	8:19:50 AM	00:41
198	8:19:49 AM	8:19:55 AM	00:06
199	8:20:23 AM	8:20:24 AM	00:01
200	8:20:43 AM	8:20:44 AM	00:01
201	8:20:52 AM	8:21:17 AM	00:25
202	8:21:20 AM	8:21:21 AM	00:01
203	8:21:29 AM	8:21:31 AM	00:02
204	8:22:11 AM	8:22:20 AM	00:09
205	8:22:16 AM	8:22:30 AM	00:14
206	8:22:39 AM	8:22:40 AM	00:01
207	8:23:32 AM	8:23:34 AM	00:02
208	8:23:36 AM	8:23:37 AM	00:01
209	8:23:59 AM	8:24:00 AM	00:01
210	8:24:13 AM	8:25:16 AM	01:03
211	8:24:21 AM	8:25:18 AM	00:57
212	8:24:28 AM	8:25:25 AM	00:57
213	8:24:45 AM	8:25:40 AM	00:55
214	8:24:50 AM	8:25:44 AM	00:54
215	8:25:17 AM	8:25:47 AM	00:30
216	8:25:18 AM	8:25:50 AM	00:32
217	8:25:52 AM	8:25:54 AM	00:02
218	8:26:06 AM	8:26:07 AM	00:01
219	8:27:27 AM	8:27:29 AM	00:02
220	8:29:03 AM	8:29:27 AM	00:24
221	8:29:32 AM	8:29:44 AM	00:12
222	8:29:54 AM	8:29:56 AM	00:02
223	8:30:30 AM	8:30:31 AM	00:01
224	8:30:58 AM	8:31:42 AM	00:44
225	8:31:35 AM	8:32:02 AM	00:27
226	8:32:40 AM	8:32:41 AM	00:01
227	8:32:44 AM	8:32:45 AM	00:01
228	8:32:47 AM	8:32:48 AM	00:01
229	8:32:53 AM	8:32:57 AM	00:04
230	8:33:02 AM	8:33:04 AM	00:02
231	8:33:08 AM	8:33:38 AM	00:30
232	8:33:54 AM	8:33:55 AM	00:01
233	8:33:57 AM	8:33:58 AM	00:01
234	8:34:21 AM	8:34:26 AM	00:05
235	8:34:47 AM	8:34:59 AM	00:12
236	8:35:04 AM	8:35:15 AM	00:11
237	8:35:17 AM	8:35:18 AM	00:01
238	8:35:45 AM	8:35:47 AM	00:02
239	8:35:48 AM	8:35:50 AM	00:02
240	8:36:23 AM	8:36:26 AM	00:03
241	8:36:30 AM	8:36:31 AM	00:01
242	8:36:39 AM	8:36:52 AM	00:13
243	8:38:25 AM	8:38:26 AM	00:01
244	8:40:14 AM	8:40:28 AM	00:14
245	8:41:50 AM	8:41:56 AM	00:06
246	8:42:59 AM	8:43:07 AM	00:08
247	8:43:49 AM	8:43:50 AM	00:01
248	8:43:58 AM	8:44:00 AM	00:02
249	8:44:09 AM	8:44:10 AM	00:01
250	8:44:24 AM	8:44:25 AM	00:01
251	8:44:33 AM	8:44:34 AM	00:01
252	8:44:42 AM	8:44:46 AM	00:04
253	8:45:38 AM	8:45:40 AM	00:02
254	8:45:42 AM	8:45:43 AM	00:01
255	8:45:48 AM	8:45:57 AM	00:09
256	8:46:08 AM	8:46:10 AM	00:02
257	8:46:53 AM	8:46:54 AM	00:01
258	8:46:59 AM	8:47:00 AM	00:01
259	8:47:36 AM	8:47:44 AM	00:08
260	8:48:11 AM	8:48:19 AM	00:08
261	8:48:12 AM	8:48:22 AM	00:10
262	8:48:25 AM	8:48:26 AM	00:01
263	8:49:24 AM	8:49:25 AM	00:01
264	8:49:27 AM	8:49:30 AM	00:03
265	8:49:46 AM	8:50:20 AM	00:34
266	8:50:09 AM	8:50:24 AM	00:15
267	8:50:12 AM	8:50:27 AM	00:15
268	8:51:02 AM	8:51:04 AM	00:02
269	8:51:51 AM	8:52:02 AM	00:11
270	8:52:37 AM	8:52:41 AM	00:04
271	8:53:40 AM	8:53:53 AM	00:13
272	8:54:23 AM	8:54:24 AM	00:01
273	8:56:43 AM	8:56:49 AM	00:06
274	8:56:51 AM	8:56:54 AM	00:03
275	8:57:07 AM	8:57:36 AM	00:29
276	8:57:54 AM	8:57:56 AM	00:02
277	8:58:17 AM	8:58:18 AM	00:01
278	8:58:53 AM	8:59:01 AM	00:08
279	8:58:58 AM	8:59:07 AM	00:09
280	8:59:15 AM	8:59:19 AM	00:04

7:44:45 AM	0
7:45:00 AM	0
7:45:15 AM	0
7:45:30 AM	0
7:45:45 AM	1
7:46:00 AM	0
7:46:15 AM	0
7:46:30 AM	0
7:46:45 AM	0
7:47:00 AM	0
7:47:15 AM	3
7:47:30 AM	2
7:47:45 AM	2
7:48:00 AM	1
7:48:15 AM	0
7:48:30 AM	1
7:48:45 AM	2
7:49:00 AM	2
7:49:15 AM	2
7:49:30 AM	1
7:49:45 AM	3
7:50:00 AM	3
7:50:15 AM	2
7:50:30 AM	1
7:50:45 AM	0
7:51:00 AM	0
7:51:15 AM	0
7:51:30 AM	2
7:51:45 AM	0
7:52:00 AM	0
7:52:15 AM	0
7:52:30 AM	0
7:52:45 AM	1
7:53:00 AM	0
7:53:15 AM	0
7:53:30 AM	0
7:53:45 AM	0
7:54:00 AM	0
7:54:15 AM	0
7:54:30 AM	0
7:54:45 AM	1
7:55:00 AM	0
7:55:15 AM	0
7:55:30 AM	0
7:55:45 AM	0
7:56:00 AM	0
7:56:15 AM	0
7:56:30 AM	0
7:56:45 AM	0
7:57:00 AM	1
7:57:15 AM	1
7:57:30 AM	2
7:57:45 AM	0
7:58:00 AM	0
7:58:15 AM	0
7:58:30 AM	1
7:58:45 AM	0
7:59:00 AM	0
7:59:15 AM	1
7:59:30 AM	2
7:59:45 AM	2
8:00:00 AM	0
8:00:15 AM	0
8:00:30 AM	0
8:00:45 AM	1
8:01:00 AM	0
8:01:15 AM	2
8:01:30 AM	2
8:01:45 AM	0
8:02:00 AM	0
8:02:15 AM	0
8:02:30 AM	0
8:02:45 AM	0
8:03:00 AM	0
8:03:15 AM	0
8:03:30 AM	2
8:03:45 AM	1
8:04:00 AM	0
8:04:15 AM	0
8:04:30 AM	0
8:04:45 AM	0
8:05:00 AM	0
8:05:15 AM	0
8:05:30 AM	0
8:05:45 AM	0
8:06:00 AM	1
8:06:15 AM	0
8:06:30 AM	0
8:06:45 AM	0
8:07:00 AM	0
8:07:15 AM	2
8:07:30 AM	3
8:07:45 AM	1
8:08:00 AM	0
8:08:15 AM	0
8:08:30 AM	0
8:08:45 AM	0
8:09:00 AM	0
8:09:15 AM	0
8:09:30 AM	1
8:09:45 AM	2

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

281	8:59:29 AM	8:59:36 AM	00:07
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8:10:00 AM	0
8:10:15 AM	0
8:10:30 AM	0
8:10:45 AM	0
8:11:00 AM	0
8:11:15 AM	0
8:11:30 AM	0
8:11:45 AM	0
8:12:00 AM	0
8:12:15 AM	2
8:12:30 AM	0
8:12:45 AM	0
8:13:00 AM	0
8:13:15 AM	0
8:13:30 AM	2
8:13:45 AM	0
8:14:00 AM	0
8:14:15 AM	1
8:14:30 AM	1
8:14:45 AM	0
8:15:00 AM	0
8:15:15 AM	0
8:15:30 AM	0
8:15:45 AM	1
8:16:00 AM	0
8:16:15 AM	0
8:16:30 AM	0
8:16:45 AM	0
8:17:00 AM	0
8:17:15 AM	0
8:17:30 AM	0
8:17:45 AM	0
8:18:00 AM	1
8:18:15 AM	1
8:18:30 AM	0
8:18:45 AM	1
8:19:00 AM	1
8:19:15 AM	2
8:19:30 AM	2
8:19:45 AM	1
8:20:00 AM	0
8:20:15 AM	0
8:20:30 AM	0
8:20:45 AM	0
8:21:00 AM	1
8:21:15 AM	1
8:21:30 AM	1
8:21:45 AM	0
8:22:00 AM	0
8:22:15 AM	1
8:22:30 AM	1
8:22:45 AM	0
8:23:00 AM	0
8:23:15 AM	0
8:23:30 AM	0
8:23:45 AM	0
8:24:00 AM	1
8:24:15 AM	1
8:24:30 AM	3
8:24:45 AM	3
8:25:00 AM	5
8:25:15 AM	5
8:25:30 AM	4
8:25:45 AM	2
8:26:00 AM	0
8:26:15 AM	0
8:26:30 AM	0
8:26:45 AM	0
8:27:00 AM	0
8:27:15 AM	0
8:27:30 AM	0
8:27:45 AM	0
8:28:00 AM	0
8:28:15 AM	0
8:28:30 AM	0
8:28:45 AM	0
8:29:00 AM	0
8:29:15 AM	1
8:29:30 AM	0
8:29:45 AM	0
8:30:00 AM	0
8:30:15 AM	0
8:30:30 AM	0
8:30:45 AM	0
8:31:00 AM	1
8:31:15 AM	1
8:31:30 AM	1
8:31:45 AM	1
8:32:00 AM	1
8:32:15 AM	0
8:32:30 AM	0
8:32:45 AM	1
8:33:00 AM	0
8:33:15 AM	1
8:33:30 AM	1
8:33:45 AM	0
8:34:00 AM	0
8:34:15 AM	0
8:34:30 AM	0
8:34:45 AM	0
8:35:00 AM	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

8:35:15 AM	1
8:35:30 AM	0
8:35:45 AM	0
8:36:00 AM	0
8:36:15 AM	0
8:36:30 AM	0
8:36:45 AM	1
8:37:00 AM	0
8:37:15 AM	0
8:37:30 AM	0
8:37:45 AM	0
8:38:00 AM	0
8:38:15 AM	0
8:38:30 AM	0
8:38:45 AM	0
8:39:00 AM	0
8:39:15 AM	0
8:39:30 AM	0
8:39:45 AM	0
8:40:00 AM	0
8:40:15 AM	1
8:40:30 AM	0
8:40:45 AM	0
8:41:00 AM	0
8:41:15 AM	0
8:41:30 AM	0
8:41:45 AM	0
8:42:00 AM	0
8:42:15 AM	0
8:42:30 AM	0
8:42:45 AM	0
8:43:00 AM	1
8:43:15 AM	0
8:43:30 AM	0
8:43:45 AM	0
8:44:00 AM	1
8:44:15 AM	0
8:44:30 AM	0
8:44:45 AM	1
8:45:00 AM	0
8:45:15 AM	0
8:45:30 AM	0
8:45:45 AM	0
8:46:00 AM	0
8:46:15 AM	0
8:46:30 AM	0
8:46:45 AM	0
8:47:00 AM	1
8:47:15 AM	0
8:47:30 AM	0
8:47:45 AM	0
8:48:00 AM	0
8:48:15 AM	2
8:48:30 AM	0
8:48:45 AM	0
8:49:00 AM	0
8:49:15 AM	0
8:49:30 AM	1
8:49:45 AM	0
8:50:00 AM	1
8:50:15 AM	3
8:50:30 AM	0
8:50:45 AM	0
8:51:00 AM	0
8:51:15 AM	0
8:51:30 AM	0
8:51:45 AM	0
8:52:00 AM	1
8:52:15 AM	0
8:52:30 AM	0
8:52:45 AM	0
8:53:00 AM	0
8:53:15 AM	0
8:53:30 AM	0
8:53:45 AM	1
8:54:00 AM	0
8:54:15 AM	0
8:54:30 AM	0
8:54:45 AM	0
8:55:00 AM	0
8:55:15 AM	0
8:55:30 AM	0
8:55:45 AM	0
8:56:00 AM	0
8:56:15 AM	0
8:56:30 AM	0
8:56:45 AM	1
8:57:00 AM	0
8:57:15 AM	1
8:57:30 AM	1
8:57:45 AM	0
8:58:00 AM	0
8:58:15 AM	0
8:58:30 AM	0
8:58:45 AM	0
8:59:00 AM	2
8:59:15 AM	0
8:59:30 AM	1
8:59:45 AM	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Site Code: 16689508
Location: Queue and Delay - SW Hazelbrook Rd and to OR 99W
Date: 7/25/2024
Time: 4:00 PM - 6:00 PM
Peak Hour: 3:50PM

WBR	Average Delay:	00:38
	Average Queue:	4.00

Study	
Average Queue	100
Maximum Queue	650
95th Percentile Queue	500

Delay Information			
WBR			
Vehicle Stop (Comes to a stop regardless of position in queue)	Vehicle Release (When vehicle finally crosses stop bar)	Delay Time	
1	4:00:07 PM	4:00:26 PM	00:19
2	4:00:16 PM	4:00:35 PM	00:19
3	4:00:18 PM	4:00:46 PM	00:28
4	4:01:09 PM	4:01:32 PM	00:23
5	4:01:49 PM	4:01:50 PM	00:01
6	4:01:55 PM	4:01:56 PM	00:01
7	4:01:58 PM	4:01:59 PM	00:01
8	4:02:42 PM	4:02:49 PM	00:07
9	4:03:18 PM	4:03:19 PM	00:01
10	4:03:36 PM	4:03:48 PM	00:12
11	4:03:55 PM	4:04:11 PM	00:16
12	4:04:02 PM	4:04:37 PM	00:35
13	4:04:24 PM	4:04:39 PM	00:15
14	4:04:24 PM	4:04:42 PM	00:18
15	4:04:47 PM	4:04:49 PM	00:02
16	4:04:54 PM	4:04:55 PM	00:01
17	4:04:55 PM	4:04:58 PM	00:03
18	4:05:02 PM	4:05:14 PM	00:12
19	4:05:41 PM	4:05:42 PM	00:01
20	4:05:48 PM	4:05:49 PM	00:01
21	4:05:53 PM	4:05:53 PM	00:00
22	4:06:05 PM	4:06:15 PM	00:10
23	4:06:30 PM	4:06:31 PM	00:01
24	4:06:35 PM	4:06:37 PM	00:02
25	4:06:43 PM	4:06:53 PM	00:10
26	4:07:33 PM	4:07:35 PM	00:02
27	4:07:38 PM	4:08:03 PM	00:25
28	4:07:42 PM	4:08:06 PM	00:24
29	4:07:58 PM	4:08:15 PM	00:17
30	4:08:53 PM	4:08:54 PM	00:01
31	4:08:56 PM	4:08:57 PM	00:01
32	4:09:07 PM	4:09:10 PM	00:03
33	4:09:11 PM	4:09:12 PM	00:01
34	4:09:27 PM	4:09:28 PM	00:01
35	4:09:30 PM	4:09:32 PM	00:02
36	4:09:41 PM	4:09:58 PM	00:17
37	4:09:50 PM	4:10:00 PM	00:10
38	4:10:09 PM	4:10:12 PM	00:03
39	4:10:12 PM	4:10:18 PM	00:06
40	4:10:19 PM	4:10:49 PM	00:30
41	4:10:39 PM	4:10:53 PM	00:14
42	4:10:44 PM	4:10:56 PM	00:12
43	4:10:59 PM	4:11:01 PM	00:02
44	4:11:02 PM	4:11:03 PM	00:01
45	4:11:09 PM	4:11:10 PM	00:01
46	4:11:25 PM	4:11:32 PM	00:07
47	4:11:25 PM	4:12:00 PM	00:35
48	4:11:57 PM	4:12:14 PM	00:17
49	4:11:59 PM	4:12:17 PM	00:18
50	4:12:10 PM	4:12:21 PM	00:11
51	4:12:22 PM	4:12:23 PM	00:01
52	4:12:25 PM	4:12:26 PM	00:01
53	4:12:40 PM	4:12:45 PM	00:05
54	4:12:42 PM	4:12:49 PM	00:07
55	4:12:55 PM	4:12:56 PM	00:01
56	4:13:02 PM	4:13:07 PM	00:05
57	4:13:25 PM	4:13:37 PM	00:12
58	4:13:39 PM	4:13:43 PM	00:04
59	4:13:46 PM	4:13:48 PM	00:02
60	4:13:57 PM	4:14:03 PM	00:06
61	4:14:41 PM	4:14:44 PM	00:03
62	4:14:45 PM	4:14:46 PM	00:01
63	4:14:58 PM	4:15:03 PM	00:05
64	4:15:01 PM	4:15:25 PM	00:24
65	4:15:09 PM	4:15:30 PM	00:21

WBR	
	Running Queue Total
4:00:00 PM	0
4:00:15 PM	1
4:00:30 PM	2
4:00:45 PM	1
4:01:00 PM	0
4:01:15 PM	1
4:01:30 PM	1
4:01:45 PM	0
4:02:00 PM	0
4:02:15 PM	0
4:02:30 PM	0
4:02:45 PM	1
4:03:00 PM	0
4:03:15 PM	0
4:03:30 PM	0
4:03:45 PM	1
4:04:00 PM	1
4:04:15 PM	1
4:04:30 PM	3
4:04:45 PM	0
4:05:00 PM	0
4:05:15 PM	0
4:05:30 PM	0
4:05:45 PM	0
4:06:00 PM	0
4:06:15 PM	0
4:06:30 PM	1
4:06:45 PM	1
4:07:00 PM	0
4:07:15 PM	0
4:07:30 PM	0
4:07:45 PM	2
4:08:00 PM	3
4:08:15 PM	0
4:08:30 PM	0
4:08:45 PM	0
4:09:00 PM	0
4:09:15 PM	0
4:09:30 PM	1
4:09:45 PM	1
4:10:00 PM	0
4:10:15 PM	1
4:10:30 PM	1
4:10:45 PM	3
4:11:00 PM	1
4:11:15 PM	0
4:11:30 PM	2
4:11:45 PM	1
4:12:00 PM	2
4:12:15 PM	2
4:12:30 PM	0
4:12:45 PM	1
4:13:00 PM	0
4:13:15 PM	0
4:13:30 PM	1
4:13:45 PM	0
4:14:00 PM	1
4:14:15 PM	0
4:14:30 PM	0
4:14:45 PM	1
4:15:00 PM	1
4:15:15 PM	4
4:15:30 PM	3
4:15:45 PM	3
4:16:00 PM	1

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

66	4:15:12 PM	4:15:33 PM	00:21
67	4:15:14 PM	4:15:47 PM	00:33
68	4:15:16 PM	4:15:57 PM	00:41
69	4:15:41 PM	4:16:10 PM	00:29
70	4:16:38 PM	4:16:39 PM	00:01
71	4:16:40 PM	4:16:41 PM	00:01
72	4:16:47 PM	4:17:01 PM	00:14
73	4:16:52 PM	4:17:12 PM	00:20
74	4:17:06 PM	4:17:12 PM	00:06
75	4:17:15 PM	4:17:16 PM	00:01
76	4:17:23 PM	4:17:24 PM	00:01
77	4:17:27 PM	4:17:29 PM	00:02
78	4:17:40 PM	4:17:42 PM	00:02
79	4:18:35 PM	4:18:36 PM	00:01
80	4:18:39 PM	4:18:41 PM	00:02
81	4:18:51 PM	4:18:51 PM	00:00
82	4:18:57 PM	4:18:58 PM	00:01
83	4:19:01 PM	4:19:03 PM	00:02
84	4:19:09 PM	4:19:25 PM	00:16
85	4:19:40 PM	4:19:41 PM	00:01
86	4:19:54 PM	4:19:55 PM	00:01
87	4:20:16 PM	4:20:39 PM	00:23
88	4:20:26 PM	4:20:40 PM	00:14
89	4:20:46 PM	4:21:06 PM	00:20
90	4:20:56 PM	4:21:08 PM	00:12
91	4:21:11 PM	4:21:13 PM	00:02
92	4:21:15 PM	4:21:16 PM	00:01
93	4:21:44 PM	4:21:49 PM	00:05
94	4:21:47 PM	4:21:53 PM	00:06
95	4:22:44 PM	4:22:48 PM	00:04
96	4:23:05 PM	4:23:15 PM	00:10
97	4:23:27 PM	4:23:30 PM	00:03
98	4:23:31 PM	4:23:33 PM	00:02
99	4:23:55 PM	4:23:57 PM	00:02
100	4:24:13 PM	4:24:29 PM	00:16
101	4:24:14 PM	4:24:31 PM	00:17
102	4:24:40 PM	4:24:45 PM	00:05
103	4:24:52 PM	4:24:55 PM	00:03
104	4:25:13 PM	4:25:16 PM	00:03
105	4:25:15 PM	4:25:26 PM	00:11
106	4:25:30 PM	4:25:47 PM	00:17
107	4:25:32 PM	4:25:53 PM	00:21
108	4:26:42 PM	4:26:45 PM	00:03
109	4:26:49 PM	4:26:56 PM	00:07
110	4:26:59 PM	4:27:06 PM	00:07
111	4:27:02 PM	4:27:23 PM	00:21
112	4:27:05 PM	4:27:25 PM	00:20
113	4:27:10 PM	4:27:38 PM	00:28
114	4:27:34 PM	4:27:46 PM	00:12
115	4:27:36 PM	4:28:18 PM	00:42
116	4:28:46 PM	4:28:57 PM	00:11
117	4:29:04 PM	4:29:06 PM	00:02
118	4:29:23 PM	4:29:24 PM	00:01
119	4:29:43 PM	4:30:17 PM	00:34
120	4:29:50 PM	4:30:24 PM	00:34
121	4:29:54 PM	4:30:27 PM	00:33
122	4:29:58 PM	4:30:30 PM	00:32
123	4:30:40 PM	4:30:42 PM	00:02
124	4:30:47 PM	4:30:49 PM	00:02
125	4:30:50 PM	4:30:51 PM	00:01
126	4:30:56 PM	4:31:01 PM	00:05
127	4:30:59 PM	4:31:06 PM	00:07
128	4:31:15 PM	4:31:16 PM	00:01
129	4:31:48 PM	4:31:52 PM	00:04
130	4:31:58 PM	4:32:01 PM	00:03
131	4:32:04 PM	4:32:11 PM	00:07
132	4:32:21 PM	4:32:38 PM	00:17
133	4:32:30 PM	4:32:43 PM	00:13
134	4:32:32 PM	4:32:47 PM	00:15
135	4:32:33 PM	4:32:59 PM	00:26
136	4:32:52 PM	4:33:09 PM	00:17
137	4:32:55 PM	4:33:11 PM	00:16
138	4:32:58 PM	4:33:16 PM	00:18
139	4:33:19 PM	4:33:31 PM	00:12
140	4:33:20 PM	4:33:32 PM	00:12
141	4:33:21 PM	4:33:36 PM	00:15
142	4:33:26 PM	4:34:06 PM	00:40
143	4:33:28 PM	4:34:15 PM	00:47
144	4:33:35 PM	4:34:23 PM	00:48
145	4:33:51 PM	4:34:26 PM	00:35
146	4:34:31 PM	4:34:39 PM	00:08
147	4:34:43 PM	4:34:44 PM	00:01
148	4:35:14 PM	4:35:21 PM	00:07
149	4:35:16 PM	4:35:24 PM	00:08
150	4:35:17 PM	4:35:27 PM	00:10
151	4:35:37 PM	4:35:47 PM	00:10

4:16:15 PM	0
4:16:30 PM	0
4:16:45 PM	0
4:17:00 PM	2
4:17:15 PM	1
4:17:30 PM	0
4:17:45 PM	0
4:18:00 PM	0
4:18:15 PM	0
4:18:30 PM	0
4:18:45 PM	0
4:19:00 PM	0
4:19:15 PM	1
4:19:30 PM	0
4:19:45 PM	0
4:20:00 PM	0
4:20:15 PM	0
4:20:30 PM	2
4:20:45 PM	0
4:21:00 PM	2
4:21:15 PM	1
4:21:30 PM	0
4:21:45 PM	1
4:22:00 PM	0
4:22:15 PM	0
4:22:30 PM	0
4:22:45 PM	1
4:23:00 PM	0
4:23:15 PM	0
4:23:30 PM	0
4:23:45 PM	0
4:24:00 PM	0
4:24:15 PM	2
4:24:30 PM	1
4:24:45 PM	0
4:25:00 PM	0
4:25:15 PM	2
4:25:30 PM	1
4:25:45 PM	2
4:26:00 PM	0
4:26:15 PM	0
4:26:30 PM	0
4:26:45 PM	0
4:27:00 PM	1
4:27:15 PM	3
4:27:30 PM	1
4:27:45 PM	2
4:28:00 PM	1
4:28:15 PM	1
4:28:30 PM	0
4:28:45 PM	0
4:29:00 PM	0
4:29:15 PM	0
4:29:30 PM	0
4:29:45 PM	1
4:30:00 PM	4
4:30:15 PM	4
4:30:30 PM	0
4:30:45 PM	0
4:31:00 PM	2
4:31:15 PM	1
4:31:30 PM	0
4:31:45 PM	0
4:32:00 PM	1
4:32:15 PM	0
4:32:30 PM	2
4:32:45 PM	2
4:33:00 PM	3
4:33:15 PM	1
4:33:30 PM	5
4:33:45 PM	3
4:34:00 PM	4
4:34:15 PM	2
4:34:30 PM	0
4:34:45 PM	0
4:35:00 PM	0
4:35:15 PM	1
4:35:30 PM	0
4:35:45 PM	1
4:36:00 PM	0
4:36:15 PM	2
4:36:30 PM	0
4:36:45 PM	0
4:37:00 PM	0
4:37:15 PM	3
4:37:30 PM	5

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

152	4:36:13 PM	4:36:25 PM	00:12
153	4:36:15 PM	4:36:27 PM	00:12
154	4:36:17 PM	4:36:29 PM	00:12
155	4:36:48 PM	4:36:51 PM	00:03
156	4:36:52 PM	4:36:53 PM	00:01
157	4:36:58 PM	4:37:00 PM	00:02
158	4:37:03 PM	4:37:05 PM	00:02
159	4:37:09 PM	4:37:20 PM	00:11
160	4:37:09 PM	4:37:26 PM	00:17
161	4:37:13 PM	4:37:29 PM	00:16
162	4:37:16 PM	4:37:41 PM	00:25
163	4:37:18 PM	4:37:46 PM	00:28
164	4:37:27 PM	4:37:56 PM	00:29
165	4:37:27 PM	4:38:07 PM	00:40
166	4:37:30 PM	4:38:42 PM	01:12
167	4:37:37 PM	4:38:59 PM	01:22
168	4:37:41 PM	4:39:07 PM	01:26
169	4:37:43 PM	4:39:54 PM	02:11
170	4:37:52 PM	4:40:07 PM	02:15
171	4:37:55 PM	4:40:11 PM	02:16
172	4:38:01 PM	4:40:21 PM	02:20
173	4:38:05 PM	4:40:33 PM	02:28
174	4:38:05 PM	4:40:40 PM	02:35
175	4:38:42 PM	4:40:50 PM	02:08
176	4:38:42 PM	4:40:55 PM	02:13
177	4:38:42 PM	4:41:03 PM	02:21
178	4:38:42 PM	4:41:10 PM	02:28
179	4:38:42 PM	4:41:20 PM	02:38
180	4:38:42 PM	4:41:26 PM	02:44
181	4:39:05 PM	4:41:37 PM	02:32
182	4:39:05 PM	4:42:04 PM	02:59
183	4:39:05 PM	4:42:13 PM	03:08
184	4:39:05 PM	4:42:19 PM	03:14
185	4:39:05 PM	4:42:30 PM	03:25
186	4:39:57 PM	4:43:06 PM	03:09
187	4:39:57 PM	4:43:16 PM	03:19
188	4:39:57 PM	4:43:23 PM	03:26
189	4:40:00 PM	4:43:28 PM	03:28
190	4:40:00 PM	4:43:46 PM	03:46
191	4:40:00 PM	4:43:56 PM	03:56
192	4:40:00 PM	4:44:02 PM	04:02
193	4:42:16 PM	4:44:08 PM	01:52
194	4:42:16 PM	4:44:18 PM	02:02
195	4:42:16 PM	4:44:24 PM	02:08
196	4:42:55 PM	4:44:33 PM	01:38
197	4:42:56 PM	4:44:43 PM	01:47
198	4:42:56 PM	4:44:54 PM	01:58
199	4:42:56 PM	4:45:07 PM	02:11
200	4:42:56 PM	4:45:15 PM	02:19
201	4:42:56 PM	4:45:24 PM	02:28
202	4:42:56 PM	4:45:39 PM	02:43
203	4:42:59 PM	4:45:45 PM	02:46
204	4:43:00 PM	4:46:35 PM	03:35
205	4:43:00 PM	4:46:43 PM	03:43
206	4:45:12 PM	4:46:44 PM	01:32
207	4:45:13 PM	4:46:51 PM	01:38
208	4:45:14 PM	4:46:58 PM	01:44
209	4:45:15 PM	4:47:09 PM	01:54
210	4:45:16 PM	4:47:52 PM	02:36
211	4:45:17 PM	4:47:56 PM	02:39
212	4:45:18 PM	4:48:13 PM	02:55
213	4:45:19 PM	4:48:20 PM	03:01
214	4:45:20 PM	4:48:34 PM	03:14
215	4:45:21 PM	4:48:42 PM	03:21
216	4:45:22 PM	4:48:48 PM	03:26
217	4:45:23 PM	4:48:54 PM	03:31
218	4:45:24 PM	4:48:54 PM	03:30
219	4:45:25 PM	4:49:03 PM	03:38
220	4:45:26 PM	4:49:10 PM	03:44
221	4:45:27 PM	4:49:38 PM	04:11
222	4:45:28 PM	4:49:47 PM	04:19
223	4:45:29 PM	4:49:56 PM	04:27
224	4:45:30 PM	4:50:04 PM	04:34
225	4:45:31 PM	4:50:09 PM	04:38
226	4:45:32 PM	4:50:15 PM	04:43
227	4:45:33 PM	4:50:20 PM	04:47
228	4:45:34 PM	4:50:26 PM	04:52
229	4:45:35 PM	4:50:30 PM	04:55
230	4:49:44 PM	4:50:36 PM	00:52
231	4:50:42 PM	4:50:42 PM	00:00
232	4:50:48 PM	4:50:48 PM	00:00
233	4:50:54 PM	4:50:58 PM	00:04
234	4:51:00 PM	4:51:02 PM	00:02
235	4:51:06 PM	4:51:11 PM	00:05
236	4:51:12 PM	4:51:16 PM	00:04
237	4:51:18 PM	4:51:22 PM	00:04

4:37:45 PM	7
4:38:00 PM	7
4:38:15 PM	9
4:38:30 PM	9
4:38:45 PM	14
4:39:00 PM	13
4:39:15 PM	17
4:39:30 PM	17
4:39:45 PM	17
4:40:00 PM	23
4:40:15 PM	21
4:40:30 PM	20
4:40:45 PM	18
4:41:00 PM	16
4:41:15 PM	14
4:41:30 PM	12
4:41:45 PM	11
4:42:00 PM	11
4:42:15 PM	9
4:42:30 PM	10
4:42:45 PM	10
4:43:00 PM	20
4:43:15 PM	19
4:43:30 PM	16
4:43:45 PM	16
4:44:00 PM	14
4:44:15 PM	12
4:44:30 PM	10
4:44:45 PM	8
4:45:00 PM	7
4:45:15 PM	9
4:45:30 PM	23
4:45:45 PM	26
4:46:00 PM	26
4:46:15 PM	26
4:46:30 PM	26
4:46:45 PM	23
4:47:00 PM	21
4:47:15 PM	20
4:47:30 PM	20
4:47:45 PM	20
4:48:00 PM	18
4:48:15 PM	17
4:48:30 PM	16
4:48:45 PM	14
4:49:00 PM	11
4:49:15 PM	9
4:49:30 PM	9
4:49:45 PM	9
4:50:00 PM	7
4:50:15 PM	4
4:50:30 PM	1
4:50:45 PM	0
4:51:00 PM	1
4:51:15 PM	1
4:51:30 PM	2
4:51:45 PM	1
4:52:00 PM	2
4:52:15 PM	4
4:52:30 PM	9
4:52:45 PM	9
4:53:00 PM	8
4:53:15 PM	6
4:53:30 PM	4
4:53:45 PM	6
4:54:00 PM	3
4:54:15 PM	4
4:54:30 PM	3
4:54:45 PM	0
4:55:00 PM	0
4:55:15 PM	0
4:55:30 PM	0
4:55:45 PM	0
4:56:00 PM	0
4:56:15 PM	0
4:56:30 PM	0
4:56:45 PM	0
4:57:00 PM	0
4:57:15 PM	0
4:57:30 PM	0
4:57:45 PM	0
4:58:00 PM	0
4:58:15 PM	0
4:58:30 PM	0
4:58:45 PM	0
4:59:00 PM	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

238	4:51:24 PM	4:51:31 PM	00:07
239	4:51:30 PM	4:51:35 PM	00:05
240	4:51:36 PM	4:51:41 PM	00:05
241	4:51:42 PM	4:51:47 PM	00:05
242	4:51:48 PM	4:51:58 PM	00:10
243	4:51:54 PM	4:52:19 PM	00:25
244	4:52:00 PM	4:52:49 PM	00:49
245	4:52:06 PM	4:53:10 PM	01:04
246	4:52:12 PM	4:53:14 PM	01:02
247	4:52:18 PM	4:53:22 PM	01:04
248	4:52:24 PM	4:53:29 PM	01:05
249	4:52:24 PM	4:53:32 PM	01:08
250	4:52:24 PM	4:53:37 PM	01:13
251	4:52:24 PM	4:53:47 PM	01:23
252	4:52:24 PM	4:53:52 PM	01:28
253	4:53:37 PM	4:54:00 PM	00:23
254	4:53:37 PM	4:54:08 PM	00:31
255	4:53:37 PM	4:54:15 PM	00:38
256	4:53:37 PM	4:54:25 PM	00:48
257	4:54:15 PM	4:54:34 PM	00:19
258	4:54:15 PM	4:54:39 PM	00:24
259	4:54:15 PM	4:54:44 PM	00:29
260	5:00:00 PM	5:00:09 PM	00:09
261	5:00:20 PM	5:00:35 PM	00:15
262	5:00:27 PM	5:00:56 PM	00:29
263	5:00:30 PM	5:00:57 PM	00:27
264	5:00:45 PM	5:01:01 PM	00:16
265	5:00:49 PM	5:01:08 PM	00:19
266	5:01:15 PM	5:01:17 PM	00:02
267	5:01:18 PM	5:01:20 PM	00:02
268	5:01:22 PM	5:01:25 PM	00:03
269	5:01:30 PM	5:01:39 PM	00:09
270	5:01:34 PM	5:02:28 PM	00:54
271	5:01:36 PM	5:02:33 PM	00:57
272	5:02:17 PM	5:02:52 PM	00:35
273	5:02:29 PM	5:02:59 PM	00:30
274	5:03:02 PM	5:03:07 PM	00:05
275	5:03:09 PM	5:03:12 PM	00:03
276	5:03:19 PM	5:03:22 PM	00:03
277	5:03:29 PM	5:03:33 PM	00:04
278	5:03:57 PM	5:04:02 PM	00:05
279	5:04:04 PM	5:04:05 PM	00:01
280	5:04:58 PM	5:05:18 PM	00:20
281	5:05:05 PM	5:05:21 PM	00:16
282	5:05:07 PM	5:05:32 PM	00:25
283	5:05:11 PM	5:05:42 PM	00:31
284	5:05:11 PM	5:05:50 PM	00:39
285	5:05:51 PM	5:06:02 PM	00:11
286	5:05:56 PM	5:06:22 PM	00:26
287	5:06:10 PM	5:06:24 PM	00:14
288	5:06:11 PM	5:06:41 PM	00:30
289	5:06:11 PM	5:06:46 PM	00:35
290	5:06:38 PM	5:06:52 PM	00:14
291	5:06:38 PM	5:06:55 PM	00:17
292	5:06:41 PM	5:06:59 PM	00:18
293	5:06:44 PM	5:07:05 PM	00:21
294	5:07:08 PM	5:07:11 PM	00:03
295	5:07:13 PM	5:07:17 PM	00:04
296	5:07:43 PM	5:07:46 PM	00:03
297	5:08:07 PM	5:08:09 PM	00:02
298	5:08:12 PM	5:08:16 PM	00:04
299	5:08:19 PM	5:08:25 PM	00:06
300	5:08:28 PM	5:08:30 PM	00:02
301	5:08:34 PM	5:08:38 PM	00:04
302	5:08:53 PM	5:08:58 PM	00:05
303	5:08:59 PM	5:09:03 PM	00:04
304	5:09:32 PM	5:09:41 PM	00:09
305	5:10:12 PM	5:10:16 PM	00:04
306	5:10:17 PM	5:10:20 PM	00:03
307	5:10:32 PM	5:10:41 PM	00:09
308	5:10:38 PM	5:10:51 PM	00:13
309	5:10:39 PM	5:10:58 PM	00:19
310	5:10:42 PM	5:11:13 PM	00:31
311	5:10:46 PM	5:11:17 PM	00:31
312	5:10:47 PM	5:11:21 PM	00:34
313	5:10:52 PM	5:11:28 PM	00:36
314	5:11:13 PM	5:11:50 PM	00:37
315	5:11:20 PM	5:12:10 PM	00:50
316	5:11:40 PM	5:12:20 PM	00:40
317	5:11:43 PM	5:12:26 PM	00:43
318	5:11:44 PM	5:12:31 PM	00:47
319	5:11:45 PM	5:12:44 PM	00:59
320	5:11:56 PM	5:12:49 PM	00:53
321	5:12:03 PM	5:13:03 PM	01:00
322	5:12:04 PM	5:13:07 PM	01:03
323	5:12:35 PM	5:13:21 PM	00:46

4:59:15 PM	0
4:59:30 PM	0
4:59:45 PM	0
5:00:00 PM	1
5:00:15 PM	0
5:00:30 PM	3
5:00:45 PM	3
5:01:00 PM	2
5:01:15 PM	1
5:01:30 PM	1
5:01:45 PM	2
5:02:00 PM	2
5:02:15 PM	2
5:02:30 PM	3
5:02:45 PM	2
5:03:00 PM	0
5:03:15 PM	0
5:03:30 PM	1
5:03:45 PM	0
5:04:00 PM	1
5:04:15 PM	0
5:04:30 PM	0
5:04:45 PM	0
5:05:00 PM	1
5:05:15 PM	5
5:05:30 PM	3
5:05:45 PM	1
5:06:00 PM	2
5:06:15 PM	4
5:06:30 PM	2
5:06:45 PM	5
5:07:00 PM	1
5:07:15 PM	1
5:07:30 PM	0
5:07:45 PM	1
5:08:00 PM	0
5:08:15 PM	1
5:08:30 PM	0
5:08:45 PM	0
5:09:00 PM	1
5:09:15 PM	0
5:09:30 PM	0
5:09:45 PM	0
5:10:00 PM	0
5:10:15 PM	1
5:10:30 PM	0
5:10:45 PM	3
5:11:00 PM	4
5:11:15 PM	4
5:11:30 PM	2
5:11:45 PM	6
5:12:00 PM	6
5:12:15 PM	7
5:12:30 PM	5
5:12:45 PM	5
5:13:00 PM	4
5:13:15 PM	2
5:13:30 PM	3
5:13:45 PM	1
5:14:00 PM	2
5:14:15 PM	2
5:14:30 PM	2
5:14:45 PM	2
5:15:00 PM	3
5:15:15 PM	3
5:15:30 PM	3
5:15:45 PM	1
5:16:00 PM	1
5:16:15 PM	0
5:16:30 PM	0
5:16:45 PM	0
5:17:00 PM	0
5:17:15 PM	0
5:17:30 PM	0
5:17:45 PM	0
5:18:00 PM	2
5:18:15 PM	4
5:18:30 PM	4
5:18:45 PM	6
5:19:00 PM	7
5:19:15 PM	8
5:19:30 PM	6
5:19:45 PM	7
5:20:00 PM	7
5:20:15 PM	7
5:20:30 PM	5

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

324	5:12:44 PM	5:13:34 PM	00:50
325	5:13:18 PM	5:13:43 PM	00:25
326	5:13:21 PM	5:13:46 PM	00:25
327	5:13:49 PM	5:13:52 PM	00:03
328	5:13:54 PM	5:14:12 PM	00:18
329	5:13:58 PM	5:14:15 PM	00:17
330	5:14:01 PM	5:14:20 PM	00:19
331	5:14:12 PM	5:14:37 PM	00:25
332	5:14:16 PM	5:14:51 PM	00:35
333	5:14:34 PM	5:15:02 PM	00:28
334	5:14:52 PM	5:15:22 PM	00:30
335	5:14:56 PM	5:15:31 PM	00:35
336	5:15:14 PM	5:15:42 PM	00:28
337	5:15:18 PM	5:15:58 PM	00:40
338	5:15:51 PM	5:16:10 PM	00:19
339	5:16:17 PM	5:16:22 PM	00:05
340	5:16:21 PM	5:16:29 PM	00:08
341	5:16:36 PM	5:16:37 PM	00:01
342	5:16:51 PM	5:16:54 PM	00:03
343	5:16:57 PM	5:16:58 PM	00:01
344	5:17:25 PM	5:17:26 PM	00:01
345	5:17:34 PM	5:17:36 PM	00:02
346	5:17:41 PM	5:17:42 PM	00:01
347	5:17:49 PM	5:18:15 PM	00:26
348	5:17:54 PM	5:19:19 PM	01:25
349	5:18:08 PM	5:19:26 PM	01:18
350	5:18:10 PM	5:19:38 PM	01:28
351	5:18:11 PM	5:19:52 PM	01:41
352	5:18:32 PM	5:20:14 PM	01:42
353	5:18:39 PM	5:20:22 PM	01:43
354	5:19:00 PM	5:20:28 PM	01:28
355	5:19:06 PM	5:20:51 PM	01:45
356	5:19:44 PM	5:20:58 PM	01:14
357	5:19:45 PM	5:21:05 PM	01:20
358	5:19:46 PM	5:21:14 PM	01:28
359	5:20:13 PM	5:21:22 PM	01:09
360	5:20:47 PM	5:21:32 PM	00:45
361	5:20:50 PM	5:21:39 PM	00:49
362	5:20:54 PM	5:21:45 PM	00:51
363	5:21:04 PM	5:21:51 PM	00:47
364	5:21:29 PM	5:21:55 PM	00:26
365	5:21:32 PM	5:21:56 PM	00:24
366	5:21:43 PM	5:22:01 PM	00:18
367	5:22:22 PM	5:22:30 PM	00:08
368	5:22:24 PM	5:22:43 PM	00:19
369	5:22:44 PM	5:22:47 PM	00:03
370	5:23:20 PM	5:23:26 PM	00:06
371	5:24:27 PM	5:24:29 PM	00:02
372	5:24:33 PM	5:24:35 PM	00:02
373	5:24:42 PM	5:24:47 PM	00:05
374	5:24:42 PM	5:25:25 PM	00:43
375	5:25:52 PM	5:26:04 PM	00:12
376	5:25:57 PM	5:26:23 PM	00:26
377	5:26:18 PM	5:26:30 PM	00:12
378	5:26:20 PM	5:26:38 PM	00:18
379	5:26:21 PM	5:26:43 PM	00:22
380	5:26:24 PM	5:26:47 PM	00:23
381	5:26:31 PM	5:26:52 PM	00:21
382	5:26:31 PM	5:27:00 PM	00:29
383	5:27:10 PM	5:27:11 PM	00:01
384	5:27:28 PM	5:27:34 PM	00:06
385	5:27:42 PM	5:27:45 PM	00:03
386	5:28:24 PM	5:28:25 PM	00:01
387	5:28:28 PM	5:28:34 PM	00:06
388	5:28:30 PM	5:28:42 PM	00:12
389	5:29:03 PM	5:29:07 PM	00:04
390	5:29:15 PM	5:29:22 PM	00:07
391	5:29:22 PM	5:30:29 PM	01:07
392	5:29:49 PM	5:30:56 PM	01:07
393	5:30:02 PM	5:30:59 PM	00:57
394	5:30:04 PM	5:31:23 PM	01:19
395	5:30:10 PM	5:31:31 PM	01:21
396	5:30:56 PM	5:32:03 PM	01:07
397	5:31:52 PM	5:32:06 PM	00:14
398	5:32:12 PM	5:32:20 PM	00:08
399	5:32:15 PM	5:32:25 PM	00:10
400	5:32:17 PM	5:32:34 PM	00:17
401	5:32:19 PM	5:32:53 PM	00:34
402	5:32:38 PM	5:32:55 PM	00:17
403	5:32:39 PM	5:33:09 PM	00:30
404	5:32:52 PM	5:33:13 PM	00:21
405	5:33:15 PM	5:33:17 PM	00:02
406	5:34:47 PM	5:34:54 PM	00:07
407	5:34:49 PM	5:34:57 PM	00:08
408	5:35:17 PM	5:35:29 PM	00:12
409	5:35:51 PM	5:36:07 PM	00:16

5:20:45 PM	5
5:21:00 PM	6
5:21:15 PM	5
5:21:30 PM	5
5:21:45 PM	4
5:22:00 PM	1
5:22:15 PM	0
5:22:30 PM	1
5:22:45 PM	1
5:23:00 PM	0
5:23:15 PM	0
5:23:30 PM	0
5:23:45 PM	0
5:24:00 PM	0
5:24:15 PM	0
5:24:30 PM	0
5:24:45 PM	2
5:25:00 PM	1
5:25:15 PM	1
5:25:30 PM	0
5:25:45 PM	0
5:26:00 PM	2
5:26:15 PM	1
5:26:30 PM	3
5:26:45 PM	3
5:27:00 PM	0
5:27:15 PM	0
5:27:30 PM	1
5:27:45 PM	0
5:28:00 PM	0
5:28:15 PM	0
5:28:30 PM	2
5:28:45 PM	0
5:29:00 PM	0
5:29:15 PM	1
5:29:30 PM	1
5:29:45 PM	1
5:30:00 PM	2
5:30:15 PM	5
5:30:30 PM	4
5:30:45 PM	4
5:31:00 PM	3
5:31:15 PM	3
5:31:30 PM	2
5:31:45 PM	1
5:32:00 PM	2
5:32:15 PM	2
5:32:30 PM	2
5:32:45 PM	3
5:33:00 PM	2
5:33:15 PM	1
5:33:30 PM	0
5:33:45 PM	0
5:34:00 PM	0
5:34:15 PM	0
5:34:30 PM	0
5:34:45 PM	0
5:35:00 PM	0
5:35:15 PM	0
5:35:30 PM	0
5:35:45 PM	0
5:36:00 PM	2
5:36:15 PM	0
5:36:30 PM	0
5:36:45 PM	1
5:37:00 PM	1
5:37:15 PM	1
5:37:30 PM	1
5:37:45 PM	0
5:38:00 PM	0
5:38:15 PM	0
5:38:30 PM	1
5:38:45 PM	0
5:39:00 PM	0
5:39:15 PM	1
5:39:30 PM	0
5:39:45 PM	0
5:40:00 PM	0
5:40:15 PM	2
5:40:30 PM	2
5:40:45 PM	0
5:41:00 PM	0
5:41:15 PM	0
5:41:30 PM	1
5:41:45 PM	0
5:42:00 PM	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

410	5:35:52 PM	5:36:11 PM	00:19
411	5:36:12 PM	5:36:13 PM	00:01
412	5:36:35 PM	5:36:38 PM	00:03
413	5:36:41 PM	5:36:57 PM	00:16
414	5:36:47 PM	5:37:08 PM	00:21
415	5:37:15 PM	5:37:18 PM	00:03
416	5:37:20 PM	5:37:22 PM	00:02
417	5:37:24 PM	5:37:29 PM	00:05
418	5:37:29 PM	5:37:35 PM	00:06
419	5:37:36 PM	5:37:38 PM	00:02
420	5:37:58 PM	5:38:00 PM	00:02
421	5:38:19 PM	5:38:28 PM	00:09
422	5:38:28 PM	5:38:31 PM	00:03
423	5:38:33 PM	5:38:36 PM	00:03
424	5:38:52 PM	5:38:58 PM	00:06
425	5:39:15 PM	5:39:17 PM	00:02
426	5:39:18 PM	5:39:19 PM	00:01
427	5:39:34 PM	5:39:37 PM	00:03
428	5:40:05 PM	5:40:15 PM	00:10
429	5:40:06 PM	5:40:33 PM	00:27
430	5:40:08 PM	5:40:36 PM	00:28
431	5:40:47 PM	5:40:51 PM	00:04
432	5:40:53 PM	5:40:54 PM	00:01
433	5:41:30 PM	5:41:32 PM	00:02
434	5:41:40 PM	5:41:41 PM	00:01
435	5:41:52 PM	5:41:55 PM	00:03
436	5:42:01 PM	5:42:09 PM	00:08
437	5:42:21 PM	5:42:51 PM	00:30
438	5:42:26 PM	5:42:53 PM	00:27
439	5:42:45 PM	5:43:02 PM	00:17
440	5:43:07 PM	5:43:11 PM	00:04
441	5:43:07 PM	5:43:15 PM	00:08
442	5:43:17 PM	5:43:19 PM	00:02
443	5:43:21 PM	5:43:23 PM	00:02
444	5:43:33 PM	5:43:36 PM	00:03
445	5:44:04 PM	5:44:12 PM	00:08
446	5:44:08 PM	5:44:14 PM	00:06
447	5:44:16 PM	5:44:22 PM	00:06
448	5:44:30 PM	5:44:32 PM	00:02
449	5:44:50 PM	5:45:12 PM	00:22
450	5:45:31 PM	5:45:36 PM	00:05
451	5:45:33 PM	5:45:40 PM	00:07
452	5:46:05 PM	5:46:11 PM	00:06
453	5:46:20 PM	5:46:22 PM	00:02
454	5:46:24 PM	5:46:25 PM	00:01
455	5:46:56 PM	5:47:03 PM	00:07
456	5:47:37 PM	5:47:39 PM	00:02
457	5:47:43 PM	5:47:45 PM	00:02
458	5:47:51 PM	5:47:53 PM	00:02
459	5:48:11 PM	5:48:14 PM	00:03
460	5:48:34 PM	5:48:41 PM	00:07
461	5:48:44 PM	5:48:47 PM	00:03
462	5:48:53 PM	5:49:07 PM	00:14
463	5:49:09 PM	5:49:11 PM	00:02
464	5:49:48 PM	5:49:49 PM	00:01
465	5:49:51 PM	5:49:53 PM	00:02
466	5:51:08 PM	5:51:10 PM	00:02
467	5:51:14 PM	5:51:16 PM	00:02
468	5:52:10 PM	5:52:12 PM	00:02
469	5:53:10 PM	5:53:14 PM	00:04
470	5:53:31 PM	5:53:39 PM	00:08
471	5:53:32 PM	5:53:43 PM	00:11
472	5:53:34 PM	5:53:48 PM	00:14
473	5:53:51 PM	5:54:12 PM	00:21
474	5:54:13 PM	5:54:20 PM	00:07
475	5:54:20 PM	5:54:24 PM	00:04
476	5:54:44 PM	5:54:47 PM	00:03
477	5:54:53 PM	5:54:56 PM	00:03
478	5:55:09 PM	5:55:15 PM	00:06
479	5:55:17 PM	5:55:19 PM	00:02
480	5:55:25 PM	5:55:30 PM	00:05
481	5:56:10 PM	5:56:26 PM	00:16
482	5:56:58 PM	5:57:01 PM	00:03
483	5:57:31 PM	5:57:48 PM	00:17
484	5:57:34 PM	5:57:59 PM	00:25
485	5:57:57 PM	5:58:18 PM	00:21
486	5:58:06 PM	5:58:20 PM	00:14
487	5:58:06 PM	5:58:26 PM	00:20
488	5:58:07 PM	5:58:34 PM	00:27
489	5:58:15 PM	5:58:38 PM	00:23
490	5:58:40 PM	5:58:41 PM	00:01
491	5:58:56 PM	5:58:59 PM	00:03
492	5:59:02 PM	5:59:03 PM	00:01
493	5:59:12 PM	5:59:13 PM	00:01
494	5:59:19 PM	5:59:20 PM	00:01
495	5:59:39 PM	5:59:41 PM	00:02

5:42:15 PM	0
5:42:30 PM	2
5:42:45 PM	3
5:43:00 PM	1
5:43:15 PM	0
5:43:30 PM	0
5:43:45 PM	0
5:44:00 PM	0
5:44:15 PM	0
5:44:30 PM	1
5:44:45 PM	0
5:45:00 PM	1
5:45:15 PM	0
5:45:30 PM	0
5:45:45 PM	0
5:46:00 PM	0
5:46:15 PM	0
5:46:30 PM	0
5:46:45 PM	0
5:47:00 PM	1
5:47:15 PM	0
5:47:30 PM	0
5:47:45 PM	0
5:48:00 PM	0
5:48:15 PM	0
5:48:30 PM	0
5:48:45 PM	1
5:49:00 PM	1
5:49:15 PM	0
5:49:30 PM	0
5:49:45 PM	0
5:50:00 PM	0
5:50:15 PM	0
5:50:30 PM	0
5:50:45 PM	0
5:51:00 PM	0
5:51:15 PM	1
5:51:30 PM	0
5:51:45 PM	0
5:52:00 PM	0
5:52:15 PM	0
5:52:30 PM	0
5:52:45 PM	0
5:53:00 PM	0
5:53:15 PM	0
5:53:30 PM	0
5:53:45 PM	1
5:54:00 PM	1
5:54:15 PM	1
5:54:30 PM	0
5:54:45 PM	1
5:55:00 PM	0
5:55:15 PM	0
5:55:30 PM	0
5:55:45 PM	0
5:56:00 PM	0
5:56:15 PM	1
5:56:30 PM	0
5:56:45 PM	0
5:57:00 PM	1
5:57:15 PM	0
5:57:30 PM	0
5:57:45 PM	2
5:58:00 PM	1
5:58:15 PM	5
5:58:30 PM	2
5:58:45 PM	0
5:59:00 PM	0
5:59:15 PM	0
5:59:30 PM	0
5:59:45 PM	0

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM

496	5:59:48 PM	5:59:57 PM	00:09
497	5:59:49 PM	6:00:00 PM	00:11
498	5:59:53 PM	6:00:00 PM	00:07
499	5:59:55 PM	6:00:00 PM	00:05

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Location: Queue - SW 124th SB left to SW Tualatin Rd

Date: 7/25/2024

Peak Hour: 7:30AM 4:30PM

Start Time	Longest Queue (number of cars)
7:00 AM	7
7:05 AM	6
7:10 AM	3
7:15 AM	4
7:20 AM	4
7:25 AM	6
7:30 AM	7
7:35 AM	3
7:40 AM	7
7:45 AM	5
7:50 AM	5
7:55 AM	11
8:00 AM	6
8:05 AM	6
8:10 AM	3
8:15 AM	8
8:20 AM	2
8:25 AM	6
8:30 AM	5
8:35 AM	9
8:40 AM	6
8:45 AM	7
8:50 AM	4
8:55 AM	1

Study		
	AM	PM
Average Queue	150	225
Maximum Queue	275	300
95th Percentile Queue	225	300

Start Time	Longest Queue (number of cars)
4:00 PM	9
4:05 PM	7
4:10 PM	15
4:15 PM	8
4:20 PM	10
4:25 PM	5
4:30 PM	11
4:35 PM	12
4:40 PM	12
4:45 PM	10
4:50 PM	9
4:55 PM	6
5:00 PM	6
5:05 PM	8
5:10 PM	12
5:15 PM	9
5:20 PM	6
5:25 PM	8
5:30 PM	13
5:35 PM	13
5:40 PM	16
5:45 PM	10
5:50 PM	3
5:55 PM	5

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Location: Queue - SW Tualatin Rd WB Right and WB Left to SW 124th Ave

Date: 7/25/2024

Peak Hour: 7:30AM

4:30PM

Study				
	AM		PM	
	WBR	WBL	WBR	WBL
Average Queue	50	25	175	50
Maximum Queue	100	75	250	125
95th Percentile Queue	75	75	250	125

WBR	
Start Time	Longest Queue (number of cars)
7:00 AM	2
7:05 AM	1
7:10 AM	1
7:15 AM	1
7:20 AM	2
7:25 AM	1
7:30 AM	2
7:35 AM	2
7:40 AM	2
7:45 AM	4
7:50 AM	1
7:55 AM	3
8:00 AM	3
8:05 AM	1
8:10 AM	1
8:15 AM	1
8:20 AM	3
8:25 AM	1
8:30 AM	3
8:35 AM	1
8:40 AM	1
8:45 AM	6
8:50 AM	1
8:55 AM	1

WBL	
Start Time	Longest Queue (number of cars)
7:00 AM	1
7:05 AM	1
7:10 AM	1
7:15 AM	1
7:20 AM	2
7:25 AM	1
7:30 AM	3
7:35 AM	1
7:40 AM	2
7:45 AM	1
7:50 AM	0
7:55 AM	1
8:00 AM	3
8:05 AM	2
8:10 AM	2
8:15 AM	0
8:20 AM	0
8:25 AM	1
8:30 AM	2
8:35 AM	1
8:40 AM	1
8:45 AM	3
8:50 AM	1
8:55 AM	1

WBR	
Start Time	Longest Queue (number of cars)
4:00 PM	5
4:05 PM	6
4:10 PM	5
4:15 PM	10+
4:20 PM	7
4:25 PM	5
4:30 PM	10+
4:35 PM	10+
4:40 PM	10+
4:45 PM	10+
4:50 PM	10+
4:55 PM	2
5:00 PM	7
5:05 PM	10
5:10 PM	10
5:15 PM	8
5:20 PM	10
5:25 PM	4
5:30 PM	5
5:35 PM	5
5:40 PM	7
5:45 PM	10
5:50 PM	2
5:55 PM	3

WBL	
Start Time	Longest Queue (number of cars)
4:00 PM	2
4:05 PM	1
4:10 PM	2
4:15 PM	0
4:20 PM	2
4:25 PM	0
4:30 PM	1
4:35 PM	1
4:40 PM	1
4:45 PM	3
4:50 PM	2
4:55 PM	4
5:00 PM	1
5:05 PM	5
5:10 PM	2
5:15 PM	5
5:20 PM	3
5:25 PM	1
5:30 PM	2
5:35 PM	2
5:40 PM	4
5:45 PM	1
5:50 PM	1
5:55 PM	1

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Location: Queue - OR 99W WB Left to SW 124th Ave
Date: 7/25/2024

	Study			
	AM		PM	
	WBL1	WBL2	WBL1	WBL2
Average Queue	375	300	350	225
Maximum Queue	600	625	475	325
95th Percentile Queue	575	575	450	325

Start Time	WBL1 Longest Queue (number of cars)	WBL2 Longest Queue (number of cars)
7:00 AM	17	10
7:05 AM	17	6
7:10 AM	11	4
7:15 AM	8	12
7:20 AM	11	10
7:25 AM	18	11
7:30 AM	12	8
7:35 AM	15	7
7:40 AM	11	4
7:45 AM	23	21
7:50 AM	24	25
7:55 AM	21	22
8:00 AM	11	8
8:05 AM	10	4
8:10 AM	10	8
8:15 AM	10	7
8:20 AM	14	11
8:25 AM	10	8
8:30 AM	9	8
8:35 AM	14	6
8:40 AM	11	5
8:45 AM	10	7
8:50 AM	8	5
8:55 AM	9	11

Start Time	WBL1 Longest Queue (number of cars)	WBL2 Longest Queue (number of cars)
4:00 PM	13	11
4:05 PM	8	5
4:10 PM	16	7
4:15 PM	7	8
4:20 PM	12	6
4:25 PM	14	9
4:30 PM	15	10
4:35 PM	17	6
4:40 PM	15	11
4:45 PM	17	13
4:50 PM	19	12
4:55 PM	16	13
5:00 PM	10	7
5:05 PM	11	11
5:10 PM	9	13
5:15 PM	14	6
5:20 PM	13	9
5:25 PM	14	6
5:30 PM	20	7
5:35 PM	14	5
5:40 PM	11	9
5:45 PM	16	6
5:50 PM	12	7
5:55 PM	11	9

Queue and Delay - Teton Ave NB Left and NB Right to SW Tualatin Rd - AM



Location: Queue - SW 124th Ave NB Right and NB Left to OR 99W
 Date: 7/25/2024

Study				
	AM		PM	
	NBR1	NBR2	NBR1	NBR2
Average Queue	75	50	200	150
Maximum Queue	125	100	275	275
95th Percentile Queue	125	75	275	250

Study				
	AM		PM	
	NBL1	NBL2	NBL1	NBL2
Average Queue	75	50	275	275
Maximum Queue	150	100	475	450
95th Percentile Queue	125	75	450	400

NBR		
Start Time	NBR1 Longest Queue (number of cars)	NBR2 Longest Queue (number of cars)
7:00 AM	2	2
7:05 AM	5	5
7:10 AM	2	2
7:15 AM	2	2
7:20 AM	3	1
7:25 AM	3	3
7:30 AM	5	2
7:35 AM	3	3
7:40 AM	2	3
7:45 AM	4	2
7:50 AM	1	4
7:55 AM	2	1
8:00 AM	5	3
8:05 AM	5	2
8:10 AM	4	1
8:15 AM	6	3
8:20 AM	2	2
8:25 AM	4	2
8:30 AM	2	1
8:35 AM	4	2
8:40 AM	4	3
8:45 AM	5	2
8:50 AM	3	3
8:55 AM	4	2

NBL		
Start Time	NBL1 Longest Queue (number of cars)	NBL2 Longest Queue (number of cars)
7:00 AM	1	1
7:05 AM	2	2
7:10 AM	3	2
7:15 AM	1	2
7:20 AM	2	3
7:25 AM	3	1
7:30 AM	2	3
7:35 AM	3	3
7:40 AM	2	2
7:45 AM	2	2
7:50 AM	4	4
7:55 AM	3	2
8:00 AM	3	2
8:05 AM	6	1
8:10 AM	3	3
8:15 AM	3	3
8:20 AM	5	2
8:25 AM	3	4
8:30 AM	2	3
8:35 AM	2	2
8:40 AM	3	3
8:45 AM	4	3
8:50 AM	2	1
8:55 AM	1	2

NBR		
Start Time	NBR1 Longest Queue (number of cars)	NBR2 Longest Queue (number of cars)
4:00 PM	6	6
4:05 PM	9	7
4:10 PM	8	6
4:15 PM	6	6
4:20 PM	5	5
4:25 PM	6	3
4:30 PM	10	7
4:35 PM	5	4
4:40 PM	11	9
4:45 PM	11	11
4:50 PM	8	6
4:55 PM	6	5
5:00 PM	4	3
5:05 PM	8	10
5:10 PM	10	10
5:15 PM	9	7
5:20 PM	8	2
5:25 PM	4	7
5:30 PM	4	2
5:35 PM	9	5
5:40 PM	6	3
5:45 PM	6	4
5:50 PM	6	5
5:55 PM	6	4

NBL		
Start Time	NBL1 Longest Queue (number of cars)	NBL2 Longest Queue (number of cars)
4:00 PM	11	10
4:05 PM	8	7
4:10 PM	7	7
4:15 PM	14	11
4:20 PM	9	9
4:25 PM	6	12
4:30 PM	12	12
4:35 PM	18	18
4:40 PM	19	13
4:45 PM	15	15
4:50 PM	6	15
4:55 PM	9	8
5:00 PM	9	11
5:05 PM	12	10
5:10 PM	11	12
5:15 PM	9	13
5:20 PM	14	13
5:25 PM	12	8
5:30 PM	10	8
5:35 PM	13	13
5:40 PM	11	11
5:45 PM	11	6
5:50 PM	8	12
5:55 PM	6	7