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LAM TUX TRANSPORTATION IMPACT ANALYSIS

To
City of Tualatin

For
Lam Research

Dated
July 8, 2024
(Revised October 10, 2024)
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I. EXECUTIVE SUMMARY

1. Three new buildings are proposed on both the east side and at the southwest corner of the Lam campus in Tualatin, Oregon.
2. TUX project includes a four-story office building with an area of up to 120,000 square feet (SF) at the southeast corner of the campus and a two-story utility building with approximately 29,000 SF and a laboratory building with approximately 85,000 SF at the southwest corner of the campus.
3. At full occupancy, the proposed campus expansion is estimated to generate an additional 244 AM peak hour, 233 PM peak hour, and 2036 daily trips.
4. 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.
5. No study area intersections were found to have a crash rate higher than 1.0 for the five-year crash data from 2019 through 2023, nor were significant patterns found that could be addressed by improvements to the intersections.
6. All public street intersections but one are projected to meet City of Tualatin and ODOT mobility standards with the proposed TUX project. The intersection of SW Hazelbrook Road/OR 99W experiences long delays in the PM peak hour for vehicles turning right onto OR 99W.
7. Queuing for all study area intersections is currently estimated to be accommodated by existing storage areas except for intersections along OR 99W.
8. Based on a review of safety, capacity, and queuing, the following mitigation measures are recommended:
    A. 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.
    B. Trim vegetation at the site access locations as needed to provide the recommended intersection sight distances.

II. INTRODUCTION

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

Project Description

The TUX project includes the addition of three buildings. Building H is a four-story office building with an area of up to 120,000 square feet (SF), Building U is a two-story utility building with approximately 29,000 SF, and Building X is a laboratory building with approximately 85,000 SF. The total area of the TUX projects adds up to approximately 234,000 SF with an estimated net gain of 600 employees to the campus when the new buildings are at full occupancy.

The new office will be located on the east side of campus replacing the existing parking between Building G and Building B. The new lab and utility buildings will be located at the southwest corner of the site, replacing the existing surface parking. The existing access to SW Leveton Drive will remain and an additional driveway adjacent to the access road and loading dock at building C will serve as truck access for deliveries to the existing and proposed buildings.

The parking areas along the north side of the campus will be expanded and additional parking will be added to the adjacent west property 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 the existing West Access from SW Leveton Drive and the North Access from SW 108th Avenue. North Access has previously been used for access to Lam's existing utility yard north of Building B and has served low volumes of employee trips. With this proposal, the driveway will be convenient for employees in the north lots, but no connection is planned to the parking lot constructed with Building G.

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 TIA scoping letter dated June 25,2025, and email requests from City of Tualatin and ODOT staff.

Study Area

The City's Traffic Study Requirements document requires all intersections along the frontage of the site and any intersection where the site is anticipated to generate more than 500 daily or 60 peak hour trips 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
- SW Leveton Drive/New Access (trucks only)
- SW Leveton Drive/Center Access
- SW Leveton Drive/East Access
- SW 108th Avenue/North 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:

- 2025 Seasonally Adjusted Existing Volumes
- 2027 2030 Pre-Development without the TUX project
- 2030 Post-Development with the TUX project

III. EXISTING CONDITIONS

The existing conditions analysis is based on a current year 2025 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 the TUX project is presented in Figure 2 in Appendix A.

Vehicular Transportation Facilities

Figure 3 in Appendix A 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	North Side
SW Teton Avenue	Minor Arterial	35 mph	2	Yes	None	Yes
SW 115th Avenue	Minor Collector	35 mph	2	Yes	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

Traffic counts were conducted at the intersections listed above on Tuesday, May 13, 2025, for standard peak periods of 7:00-9:00 AM and 4:00-6:00 PM. An extended PM time period from 3:00-6:00 PM was counted at five intersections where the nearby Hazelbrook Middle School might cause an earlier peak.

Per ODOT standards, system peak hours from 7:30 AM to 8:30 AM and 4:30 PM to 5:30 PM are proposed for the OR 99W intersections in the AM and PM. The observed site peaks from 8:00 AM to 9:00 AM and 4:45 PM to 5:45 PM are proposed as a system peak for all site driveways. The remaining intersections will be analyzed at individual intersection peaks. The site volumes are 449 (391 enter/58 exit) in the AM and 430 (67 enter/363 exit) in the PM, which is approximately 7% higher than 2024 counts, mostly due to construction activity for Building G with 85 contractors.

A summary of all intersection turning movement counts collected in 2025 is presented in Figure 4 in Appendix A.

Tualatin-Sherwood Road Construction

Traffic volumes on Tualatin Road have increased since 2024, which may be in part to construction activity on SW Tualatin-Sherwood Road and the small increase in site trips. No adjustments are proposed for this analysis.

Seasonal Adjustment

OR 99W is a state facility which requires a seasonal adjustment as specified in ODOT's Analysis Procedures Manual (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 1.03 derived from data presented in ODOT's 2023 Seasonal Trend Table for the "Commuter" trend was applied to 2025 existing through volumes on OR 99W. The 2025 seasonally adjusted traffic volumes are presented in Figure 5 in Appendix A. 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 most recent available 5-year period of 2019 through 2023 were obtained from ODOT's online crash data system and used to review crash patterns and estimate intersection crash rates.

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 2023 traffic flow data on OR 99W just west of SW 124th Avenue.

A crash rate of 1.0 crashes per MEV is typically used as a threshold above which additional traffic safety analysis is warranted. In addition, per Chapter 4 of the ODOT APM, any intersection that exceeds the 90th percentile values provided in Exhibit 4-1 of the APM should be flagged for further analysis. The ODOT 90th percentile crash rates have been provided for each intersection type in Table 2.

ODOT's Safety Priority Index System (SPIS) is a method developed to identify highway segments or locations with crash frequency, rates or severity that are in the highest 10 percent of locations statewide. We found that none of the study area intersections appear on either the ODOT or Washington County SPIS lists.

All intersections have crash rates below 1.0/MEV and below the ODOT 90th percentile crash rate threshold for intersection type. No further analysis is recommended.

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 (Crashes/ MEV)	ODOT 90th Percentile Crash Rate
	2019	2020	2021	2022	2023				
OR 99W/ SW 124th Avenue (3SG)	4	1	4	3	1	13	44,800	0.13	0.509
SW Tualatin Road/ SW 124th Avenue (3SG)	3	1	4	5	3	16	24,889	0.29	0.509
SW Tualatin Road/ SW 115th Avenue (3ST)	0	0	0	0	1	1	14,844	0.03	0.293
SW Tualatin Road/ SW 112th Avenue (3ST)	0	0	0	0	0	0	14,456	0.00	0.293
SW Tualatin Road/ SW 108th Avenue (3ST)	0	1	1	1	2	5	14,744	0.15	0.293
SW Leveton Drive/ SW 124th Avenue (4SG)	4	1	0	1	2	8	15,533	0.24	0.860
SW Leveton Drive/ SW 118th Avenue (3ST)	0	0	0	0	0	0	4,533	0.00	0.293
SW Leveton Drive/ Center Site Access (3ST)	0	0	0	2	0	2	3,233	0.28	0.293
SW Leveton Drive/ SW 108th Avenue (3ST)	0	0	0	0	1	1	4,000	0.11	0.293

TABLE 2 – INTERSECTION CRASH RATES									
Intersection (Traffic Control Type)	Year					Total Crashes	ADT	Crash Rate (Crashes/ MEV)	ODOT 90th Percentile Crash Rate
	2019	2020	2021	2022	2023				
SW Herman Road/ SW 108th Avenue (3SG)	0	1	0	0	0	1	11,967	0.04	0.509
SW Tualatin Road/ SW Teton Avenue (3ST)	2	0	0	0	1	3	15,011	0.09	0.293
SW Hazelbrook Road/ SW 115th Avenue (3ST)	0	0	0	0	0	0	4,267	0.00	0.293
SW Hazelbrook Road/ OR 99W (3ST)	1	1	0	2	0	4	38,067	0.05	0.293
SW Herman Road/ SW Teton Avenue (4SG)	2	0	2	1	1	6	15,478	0.18	0.860
OR 99W/ SW Fischer Road (3SG)	6	2	3	5	7	23	43,211	0.24	0.509
OR 99W/ SW Durham Road (4SG)	4	4	6	4	15	33	46,044	0.33	0.860

3SG: Three-legged signalized intersection
3ST: Three-legged stop-controlled intersection
4SG: Four-legged signalized intersection

Crash Data Summary

All study area intersections had crash rates below the ODOT 90th percentile crash rates, and no fatal crashes have occurred at the study area intersections within the five-year study period. Collisions that involve pedestrians and bicyclists, as well as any consistent crash patterns, are detailed below.

OR 99W/SW 124th Avenue

At the intersection of OR 99W and SW 124th Avenue, 13 crashes were reported. Eight of these were rear-end crashes, the most common crash type. These are largely due to inattention, and none resulted in serious injury (Injury Type A or B) being reported.

SW Tualatin Road/SW 124th Avenue

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).

There were 16 crashes reported at the intersection. Of these, 13 were turning movement crashes mostly caused by a failure to yield right-of-way. All left turn movements already have protected turning phases.

SW Leveton Drive/SW 124th Avenue

There were eight crashes reported at the intersection of SW Leveton Drive and SW 124th Avenue. Of these, five were turning movement crashes, mostly in the southbound and westbound directions. The remainder of the crashes were rear-ends or "non-collisions."

SW Leveton Drive/Center Site Access

One crash involving a bicyclist occurred at the center Lam site access on SW Leveton Drive in 2022, resulting in a suspected serious injury (Injury A) to the cyclist. The crash was caused by a failure to yield. One other crash was reported at the driveway: a turning movement crash which did not result in an injury (PDO only).

OR 99W/SW Fischer Road

There were 23 crashes reported at the intersection of OR 99W and SW Fischer Road. Nine of these were turning movement crashes, and ten of them were rear-ends. The remaining collisions include two fixed-object collisions and two crashes involving pedestrians 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.

OR 99W/SW Durham Road

There were two crashes involving pedestrians at the crosswalk at the intersection of OR 99W and SW Durham Road in 2020 and 2023, both resulting in a suspected minor injury (Injury B) and both caused by a driver's failure to yield. There was one crash involving a bicycle in 2023, caused by driver inattention and resulting in a suspected minor injury (Injury B).

There were 33 crashes reported at the intersection. Of these, 17 were rear-ends and most of the remainder were either sideswipe or turning movement crashes.

IV. PRE-DEVELOPMENT CONDITIONS

The pre-development conditions reflect build-out year conditions without the proposed development. This scenario includes existing year 2025 traffic volumes, a seasonal adjustment to traffic on OR 99W, a background growth to 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 2025-2029 (CIP) was reviewed for any planned transportation improvements in the area that may affect capacity. SW Herman Road will be improved from SW Cipole Road to SW 124th Avenue; 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, and appears to have resulted in an increase in volumes on Tualatin Road. For purposes of this analysis, we have not adjusted the volumes due to uncertainty in the amount of the increase attributable to the construction project. For this reason, actual intersection operation is expected to be better than presented in this report.

The City of Tualatin Transportation System Plan (TSP) 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 other in-process projects at any study area intersections included in this analysis.

Background Traffic Growth

Background traffic growth was applied to adjusted year 2025 traffic volumes to forecast future traffic demand. A linear 1% annual growth rate over three years was applied to year 2025 traffic volumes to estimate 2030 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 in Attachment A presents the background growth from 2024 to 2030 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
- KAI USA Warehouse Expansion
- Fujimi Expansion

Figure 7 in Attachment A presents the total trip assignment for the 124th Business Park, KAI USA Warehouse Expansion, 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 in Attachment A presents the Lam Building G trip assignment as approved for that project. These Lam Building G trips have been decreased by 34 trips in the AM and 32 trips in the PM to account for current Building G construction traffic showing up in the counts. This is based on the trip rate for 85 Research and Development employees. Detailed copies of the respective project trip assignment sheets are included in Appendix G.

Pre-Development Traffic

The 2030 pre-development analysis scenario is a combination of existing year 2025 traffic volumes, a seasonal adjustment factor on OR 99W, background growth of 1% over five years, and in-process trips from nearby approved developments. Figure 9 in Attachment A presents the 2030 pre-development traffic volumes during the AM and PM peak hours.

V. 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

ITE Land Use	Employees	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Research and Development Center (LUC 860)	360	124	22	146	17	123	140	1222

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.

Transportation Demand Management

According to Lam Research, there are currently no Transportation Demand Management (TDM) programs on site. Carpool and bicycle parking are provided per requirements. No other TDM programs are proposed with this project.

Leveton Access Reroutes

Construction of the TUX project will result in changes to existing campus traffic patterns. The location of Building H will displace approximately 82 parking spaces, which are conveniently accessed from the Center Leveton Access and a new truck only access between the existing Center and West Leveton Accesses will shift truck traffic away from the West Leveton Access.

The displaced parking spaces represent approximately 6% of campus trips during the peak hours, so we have shifted these trips away from the Center Leveton Access and relocated them to the recently contstructed accesses on SW 108th Avenue.

All peak hour existing truck trips at the West Access on SW Leveton Drive have been routed to the new access between the West Access and the Center Access.

Figure 10 in Attachment A presents both reroutes of existing volumes.

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 May 2025 at the active site driveways on SW Leveton Drive and SW 108th Avenue and the surrounding intersections. Employee zip code information provides more granular and accurate trip distribution assumptions than modeling or other methods. The following general percentages apply to both the AM and PM Peak hours.

- 24.5% to/from the north on Highway 99W
- 26.5% to/from the south on Highway 99W
- 13.5% to/from the east on SW Tualatin Road and SW Herman Road
  - 8.5% on SW Tualatin Road and 5% on SW Herman Road in the AM peak hour
  - 4% on SW Tualatin Road and 9.5% on SW Herman Road in the PM peak hour
- 4.5% to/from the south on SW 118th Avenue
- 10% to/from the south on SW 124th Avenue
- 21% to/from the south on SW Teton Avenue

New trips generated by the project are expected to follow a similar distribution on the roadway network, but the driveways being used will differ from existing campus traffic. Because most new employees will be assigned to Building H, available parking in its proximity will attract the employees. The expanded southeast campus lot with Building G is expected to accommodate up to 30% of the building H demand. Remaining parking demand will be primarily located to new and expanded lots at the north end of the campus. The detailed site trip distribution is based on the following assumptions:

- 30% of new site trips are expected to utilize the West Leveton Access, 20% at the Center Leveton Access, 30% split evenly between the Center and South 108th Accesses, and the remaining 20% at the North 108th Access.
- 10% of new site trips will use SW Tualatin Road to access the North 108th Access.
  - Half of these trips, or 5% total, are expected to use SW 115th Avenue and SW Hazelbrook Road to access Highway 99W when exiting the site.

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 11 in Attachment A presents the overall trip distribution at the study area intersections and routes to Interstate 5. Figure 12 in Attachment A presents the trip assignment for TUX project trips.

Post-Development Traffic

Post-Development traffic volumes are the sum of the pre-development traffic volumes, project-related reroutes, and project trips. Figure 13 presents the 2030 post-development traffic volumes for the AM and PM peak hours.

VI. 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, existing North Access on SW 108th Avenue is proposed to be opened for Lam employee access. A new access is proposed on SW Leveton Drive between the existing West and Center Accesses for trucks only.

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' and the maximum is 40' for driveways providing access for over 250 parking spaces. The existing driveways for the site meet these standards. The proposed New Access on SW Leveton Drive will meet these standards at a proposed width of 36'.

Per TDC 75.120, driveways on Minor Collectors must be spaced at a minimum of 100'. Driveways must be located at least 150' 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' 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 (feet)	Access Spacing Measured Edge-to-Edge (feet)	
				To South/East	To North/West
North Access	SW 108th Avenue	Minor Collector	100' from nearest driveway	100'	100'
New Access	SW Leveton Drive	Minor Arterial	150' from intersection with Arterial or Collector	>600'	>600'

On-Site Circulation

The parking areas along the north side of the campus will be expanded and additional parking will be added to the adjacent west property 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 the existing West Access from SW Leveton Drive and the North Access from SW 108th Avenue. North Access has previously been used for access to Lam's existing utility yard north of Building B and has served low volumes of employee trips. With this proposal, the driveway will be convenient for employees in the north lots, but no connection is planned to the parking lot constructed with Building G.

The new driveway to SW Leveton Drive is intended to serve trucks to and from the existing and new buildings.

The existing JAE access to Tualatin Road will remain available for JAE vehicles only per agreement with JAE. Because these vehicles will be traveling through the project site instead of a dedicated driveway, a gate will be used to limit access to JAE. No Lam vehicles will be allowed access through the gate. Only emergency access is allowed for Lam

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.

One existing access north of the two recently constructed accesses on SW 108th Avenue will be opened and used by employees. One new access is proposed on SW Leveton Drive between the existing West and Center Accesses, intended for trucks only.

The posted speed on 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 proposed 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
North Access SW 108th Avenue	40	Passenger Car	445'	305'	305'	500'
New Access SW Leveton Drive	40	Combination Truck	680'	305'	680'	680'

As presented in Table 5, sight distances for the North Access on SW 108th Avenue were reviewed and found to be met to the south. To the north, the access is spaced about 305' from the intersection with SW Tualatin Road, meeting required SSD and meaning that approaching vehicles are unlikely to be travelling at full speed as they make the turn from SW Tualatin Road. At the proposed New Access on SW Leveton Drive, sight distance can be made available up to 680', meeting the standards for intersection sight distance, though some landscaping and street trees may need to be trimmed.

VII. 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

Most study area intersections are located within the City of Tualatin jurisdiction with the exception of the intersections on OR 99W which are under ODOT 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. Table 7 of the OHP establishes a v/c target of 0.99 for the OR 99W intersections with SW 124th Avenue, SW Fischer Road, and SW Durham Road.

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 the v/c calculator tool from ODOT when possible and HCM 2000 reports when not 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 several intersections, Synchro and SimTraffic delay and queue results were not consistent with field observations. The City's Traffic Study Requirements document states 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 best match observed conditions in the field.

In order to calibrate the model for consistency with existing conditions, the critical gap setting was adjusted from 7 seconds to 6 seconds for right turns onto OR 99W from SW Hazelbrook Road. HCM 2000 results are reported for this intersection to show the impact of this calibration.

In some cases, alternate results were reported in all scenarios as they proved to be more consistent with existing conditions: SimTraffic delay are reported for the intersection of SW 115th Avenue/SW Tualatin Road, and HCM 2000 results are reported for SW Tualatin Road/SW Teton Avenue.

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. For unsignalized intersections, the intersection movement with the maximum v/c ratio and delay is 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)		
		2025 Existing	2030 Pre-Development	2030 Post-Development
OR 99W/ SW 124th (Signalized)	AM	0.85-C-32.9	0.91-D-43.8	0.94-D-49.8
	PM	0.75-C-28.6	0.80-C-30.4	0.82-C-31.3
SW Tualatin/ SW 124th (Signalized)	AM	0.69-B-12.8	0.72-B-14.8	0.77-B-14.9
	PM	0.70-B-19.9	0.77-C-21.8	0.81-C-23.1
SW Tualatin/ SW 115th/ JAE Access (TWSC)	AM	0.44 (SB) C-19.1 (SB)	0.51 (EBL) C-18.8 (SB)	0.53 (SB) C-19.9 (NBL)
	PM	0.20 (SB) C-19.6 (SBL)	0.23 (SB) D-22.2 (NB)	0.24 (SB) D-29.1 (NB)
SW Tualatin/ SW 112th (TWSC)	AM	0.09-C-17.0 (SB)	0.10-C-17.9 (SB)	0.10-C-18.2 (SB)
	PM	0.05-C-17.9 (SB)	0.05-C-18.8 (SB)	0.05-C-19.2 (SB)
SW Tualatin/ SW 108th (TWSC)	AM	0.07-C-18.9 (NB)	0.10-C-20.3 (NB)	0.13-C-21.4 (NB)
	PM	0.16-C-16.1 (NB)	0.22-C-17.5 (NB)	0.31-C-19.7 (NB)
SW 108th/ North Access (TWSC)	AM	0.01-A-9.6 (EB)	0.01-A-9.8 (EB)	0.02 (NBL) B-10.2 (EB)
	PM	0.01-A-8.69 (EB)	0.01-A-9.0 (EB)	0.05-A-9.0 (EB)
SW 108th/ Center Access (TWSC)	AM	0.02 (NBL) A-9.1 (EB)	0.11 (NBL) A-9.4 (EB)	0.13 (NBL) B-10.0 (EB)
	PM	0.04-A-8.7 (EB)	0.13-A-9.1 (EB)	0.17-A-9.4 (EB)
SW 108th/ South Access (TWSC)	AM	0.05 (NBL) A-8.8 (EB)	0.08 (NBL) A-9.3 (EB)	0.11 (NBL) A-9.6 (EB)
	PM	0.06-A-8.7 (EB)	0.11-A-9.6 (EB)	0.19-B-10.5 (EB)

TABLE 6 – PEAK HOUR INTERSECTION OPERATIONS				
Intersection (Control)	Peak Hour	Analysis Results (v/c-LOS-Delay in seconds)		
		2025 Existing	2030 Pre-Development	2030 Post-Development
SW 124th/ SW Leveton (Signalized)	AM	0.37-B-13.2	0.46-B-14.3	0.53-B-15.4
	PM	0.43-B-16.8	0.51-B-19.7	0.59-C-23.0
SW Leveton/ SW 118th (AWSC)	AM	0.43-A-10.0 (EB)	0.58-B-12.4 (EB)	0.72-C-17.6 (EB)
	PM	0.44-B-10.7 (WB)	0.61-B-14.3 (WB)	0.79-C-22.3 (WB)
SW Leveton/ West Access (TWSC)	AM	0.12 (EBL) B-14.4 (SBL)	0.13 (EBL) C-16.9 (SBL)	0.17 (EBL) C-22.7 (SBL)
	PM	0.11-B-10.8 (SBL)	0.26 (SBR) B-12.3 (SBL)	0.38 (SBR) B-14.4 (SBL)
SW Leveton/ New Access (TWSC)	AM	N/A	N/A	0.03 (EBL) B-10.6 (SB)
	PM	N/A	N/A	0.01-B-12.1 (SB)
SW Leveton/ Center Access (TWSC)	AM	0.02-B-10.9 (SBL)	0.03-B-12.6 (SBL)	0.04-B-14.6 (SBL)
	PM	0.06-B-10.5 (SBL)	0.08-B-11.8 (SBL)	0.10 (SBR) B-13.0 (SBL)
SW Leveton/ East Access (TWSC)	AM	No minor road volume	0.04-B-12.2 (NB)	0.04-B-13.3 (NB)
	PM	0.01-B-11.4 (NB)	0.09-B-12.3 (NB)	0.10-B-13.4 (NB)
SW Leveton/ SW 108th (TWSC)	AM	0.22-B-11.7 (EB)	0.46-C-17.3 (EB)	0.69-D-28.9 (EB)
	PM	0.16-A-9.7 (EB)	0.24-B-11.3 (EB)	0.32-B-12.9 (EB)
SW Herman/ SW 108th (Signalized)	AM	0.39-A-5.9	0.47-A-6.5	0.53-A-7.0
	PM	0.51-A-9.6	0.59-B-12.0	0.64-B-14.3
SW Tualatin/ SW Teton (TWSC)	AM	0.51 (EB) C-17.3 (NBL)	0.53 (EB) C-18.4 (NBL)	0.53 (EB) C-18.6 (NBL)
	PM	0.46 (WBT) C-20.7 (NBL)	0.49 (WBT) C-22.8 (NBL)	0.49 (WBT) C-22.9 (NBL)
SW Hazelbrook/ SW 115th (TWSC)	AM	0.44-B-14.2 (NB)	0.47-B-14.6 (NB)	0.47-C-15.0 (NB)
	PM	0.35-B-11.6 (NB)	0.37-B-11.9 (NB)	0.39-B-12.0 (NB)

TABLE 6 – PEAK HOUR INTERSECTION OPERATIONS				
Intersection (Control)	Peak Hour	Analysis Results (v/c-LOS-Delay in seconds)		
		2025 Existing	2030 Pre-Development	2030 Post-Development
SW Hazelbrook/ OR 99W (TWSC)	AM	0.47-C-20.3 (WBR)	0.52-C-22.7 (WBR)	0.53-C-23.1 (WBR)
	PM	0.80-E-39.1 (WBR)	**0.86-F-50.4 (WBR)**	**0.91-F-59.5 (WBR)**
SW Herman/ SW Teton (Signalized)	AM	0.64-C-20.9	0.70-C-23.6	0.74-C-26.3
	PM	0.73-C-24.3	0.82-C-31.3	0.88-D-37.8
OR 99W/ SW Fischer (Signalized)	AM	0.67-C-27.2	0.72-C-30.1	0.73-C-30.4
	PM	0.77-D-41.7	0.80-D-45.4	0.80-D-45.0
OR 99W/ SW Durham (Signalized)	AM	0.70-C-33.8	0.74-D-35.0	0.74-D-35.4
	PM	0.88-E-55.8	0.93-E-64.4	0.95-E-67.9

*Capacity results which exceed the City or ODOT performance thresholds are **bolded**.

As shown in Table 6, all but one 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.

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. The 95th percentile queue is not indicative of a typical queue experienced by drivers and is instead a reasonable worst-case queue possible and is measured by a calculation of 1.65 standard deviations of the average queue and is sometimes longer than the maximum queue observed in traffic modelling. Queue demand results were rounded to the nearest 25' 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.

For intersections on OR 99W, SimTraffic modelling results were reviewed against traffic count video and found to be inconsistent with existing conditions. Synchro HCM 2000 queuing results were found to match observed queuing for the 2025 Existing scenario and are reported instead for all scenarios. Synchro HCM

2000 results were also used for the SW 115th Avenue/SW Hazelbrook Road intersection, as inaccurate SimTraffic queues were shown backing up to this intersection and creating unreliable results.

Available queue lengths were estimated using Google Earth Pro software and rounded to the nearest 5'. 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 or Synchro as described above 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.

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS

Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (feet)	AM/PM Peak Hour Queue (feet)		
			2025 Existing	2030 Pre-Development	2030 Post-Development
OR 99W/ SW 124th (Signalized)	EBT1	>1,000	700/400	750/425	750/425
	EBT2	>1,000	700/400	750/425	750/425
	EBR	225/305	300/50	400/50	500/50
	WBL1	550/770	575/300	675/325	725/325
	WBL2	550/690	575/300	675/325	725/325
	WBT1	>1,000	200/325	225/325	225/325
	WBT2	>1,000	200/325	225/325	225/325
	NBL1	315/475	75/300	75/350	75/375
	NBL2	315/475	75/300	75/350	75/375
	NBR1	295/330	125/300	125/350	125/350
	NBR2	295/315	125/300	125/350	125/350
SW 124th/ SW Tualatin (Signalized)	WBL	310/350	75/100	100/100	100/100
	WBR	300/>1,000	125/400	125/500	125/500
	NBT1	995	100/275	150/425	125/600
	NBT2	995	200/375	275/600	225/825
	NBR	145/250	50/100	100/**275**	75/**325**
	SBL	200/300	**425/425**	**400/425**	**375/425**
	SBT1	450	325/150	325/200	275/225
	SBT2	450	125/125	125/175	125/150

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS					
Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (feet)	AM/PM Peak Hour Queue (feet)		
			2025 Existing	2030 Pre-Development	2030 Post-Development
SW Tualatin/ SW 115th/ JAE Access (TWSC)	EBL	60	50/50	50/50	50/50
	WBL	60	25/25	25/350	25/25
	NBL	100	25/25	25/25	25/25
	NB	100	25/50	25/25	25/50
	SB	630	100/75	75/75	75/75
SW Tualatin/ SW 112th (TWSC)	EBL	750	25/25	25/25	25/25
	SBL+R	95	50/50	50/50	50/50
SW Tualatin/ SW 108th (TWSC)	WBL	140	50/25	50/25	50/25
	NB	330	50/75	50/125	75/125
SW 108th/ North Access (TWSC)	EB L+R	TBD	25/25	25/25	50/75
SW 108th/ Center Access (TWSC)	EB L+R	60	25/50	50/75	50/75
SW 108th/ South Access (TWSC)	EB L+R	60	25/50	50/75	50/75
SW 124th/ SW Leveton (Signalized)	EBL	100/130	50/50	50/50	50/75
	EBT+R	580	150/75	175/100	200/125
	WBL	145/185	50/75	75/75	75/125
	WBT+R	>1,000	50/100	75/125	100/175
	NBL	155/230	25/25	25/25	50/25
	NBT	>1,000	100/150	100/150	100/175
	NBT+R	>1,000	175/175	175/225	200/250
	SBL	165/245	125/50	125/75	150/75
	SBT	>1,000	100/125	100/125	125/150
	SBT+R	995	125/150	150/150	125/175
SW Leveton/ SW 118th (AWSC)	EB	>1,000	100/50	125/50	150/75
	WB	>1,000	75/75	50/100	75/225
	NB	>1,000	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)		
			2025 Existing	2030 Pre-Development	2030 Post-Development
	SB	650	25/50	25/50	25/25
SW Leveton/ West Access (TWSC)	EBL	>1,000	50/25	50/25	75/25
	SBL	135	25/50	25/75	25/75
	SBR	135	50/75	50/75	50/100
SW Leveton/ New Access (TWSC)	EBL	400	N/A	N/A	50/25
	SBL	TBD	N/A	N/A	50/25
SW Leveton/ Center Access (TWSC)	EBL	450	25/25	25/25	50/25
	SBL	125	25/50	25/50	50/50
	SBR	125	25/50	25/50	50/75
SW Leveton/ East Access (TWSC)	EBL	425	25/25	25/25	25/25
	SB	105	25/25	25/25	50/25
SW Leveton/ SW 108th (TWSC)	EB	270	75/25	100/75	125/75
	NB	175	25/25	50/50	50/50
SW Herman/ SW 108th (Signalized)	EBL	100/390	25/25	50/25	50/25
	EB	>1,000	125/125	125/150	150/150
	WB	435	175/200	200/225	225/325
	SBL	135/200	50/100	50/125	75/175
	SBR	115/790	25/25	25/25	25/75
SW Tualatin/ SW Teton (TWSC)	WBL	260	75/50	75/50	75/50
	NBL	95/175	100/150	125/200	125/175
	NBR	30/>1,000	75/100	75/250	100/200
SW 115th/SW Hazelbrook (TWSC)	NB	215	50/50	50/50	75/50
OR 99W/ SW Hazelbrook	WBR	325	50/175	75/200	75/250
SW Teton/	EBL	>1,000	50/25	25/25	50/25
	EB T+R	>1,000	300/400	325/600	400/775

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS					
Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (feet)	AM/PM Peak Hour Queue (feet)		
			2025 Existing	2030 Pre-Development	2030 Post-Development
SW Herman (Signalized)	WBL	100/150	75/100	50/100	75/100
	WB T+R	500	200/225	225/275	225/275
	NBL	>1,000	150/150	175/175	175/175
	NB T+R	800	175/225	275/325	300/425
	SBL	50/100	50/25	50/50	50/50
	SB T+R	>1,000	175/150	175/175	175/200
OR 99W/ SW Fischer (Signalized)	EBL	290/400	300/250	325/300	325/275
	EBR	300/>1,000	275/125	350/175	350/175
	NBL	270/475	225/450	225/450	225/475
	NBT1	80/>1,000	525/450	575/525	600/575
	NBT2	80/>1,000	525/450	575/525	600/575
	SBU	300/425	25/25	25/25	25/25
	SBT1	330/>1,000	700/800	775/850	825/850
	SBT2	330/>1,000	700/800	775/850	825/850
	SBR	200/725	25/75	25/75	25/75
OR 99W/ SW Durham (Signalized)	EB LT	275	50/100	50/100	50/100
	EB TR	175/440	50/100	50/100	50/100
	WBL	310/440	225/**475**	250/**500**	275/**500**
	WB LT	440	225/**475**	250/**500**	250/**500**
	WBR	310/440	75/100	75/125	75/125
	NBL	550/600	100/250	100/250	100/250
	NBT1	350/>1,000	600/800	650/900	650/950
	NBT2	350/>1,000	600/800	650/900	650/950
	NBR	230/260	25/75	25/75	25/75
	SBL1	240/300	225/300	250/**325**	250/**325**
	SBL2	240/300	225/300	250/**325**	250/**325**
	SBT1	890/1,300	450/500	500/550	525/550
	SBT2	890/1,300	450/500	500/550	525/550
	SBR	400/425	25/25	25/25	25/25

TABLE 7 – 95TH PERCENTILE QUEUING ANALYSIS					
Intersection (Control)	Approach/ Movement	Striped/ Effective Storage (feet)	AM/PM Peak Hour Queue (feet)		
			2025 Existing	2030 Pre-Development	2030 Post-Development

*Queues exceeding effective storage lengths are **bolded**.

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.

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 a maximum of 10 per hour. SW Leveton Avenue has higher pedestrian volumes including less than 15 pedestrians crossing at the Center and West Accesses during peak hours.

Transit Facilities

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

VIII. RECOMMENDATIONS

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

1. 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.
2. 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 A.

FIGURES



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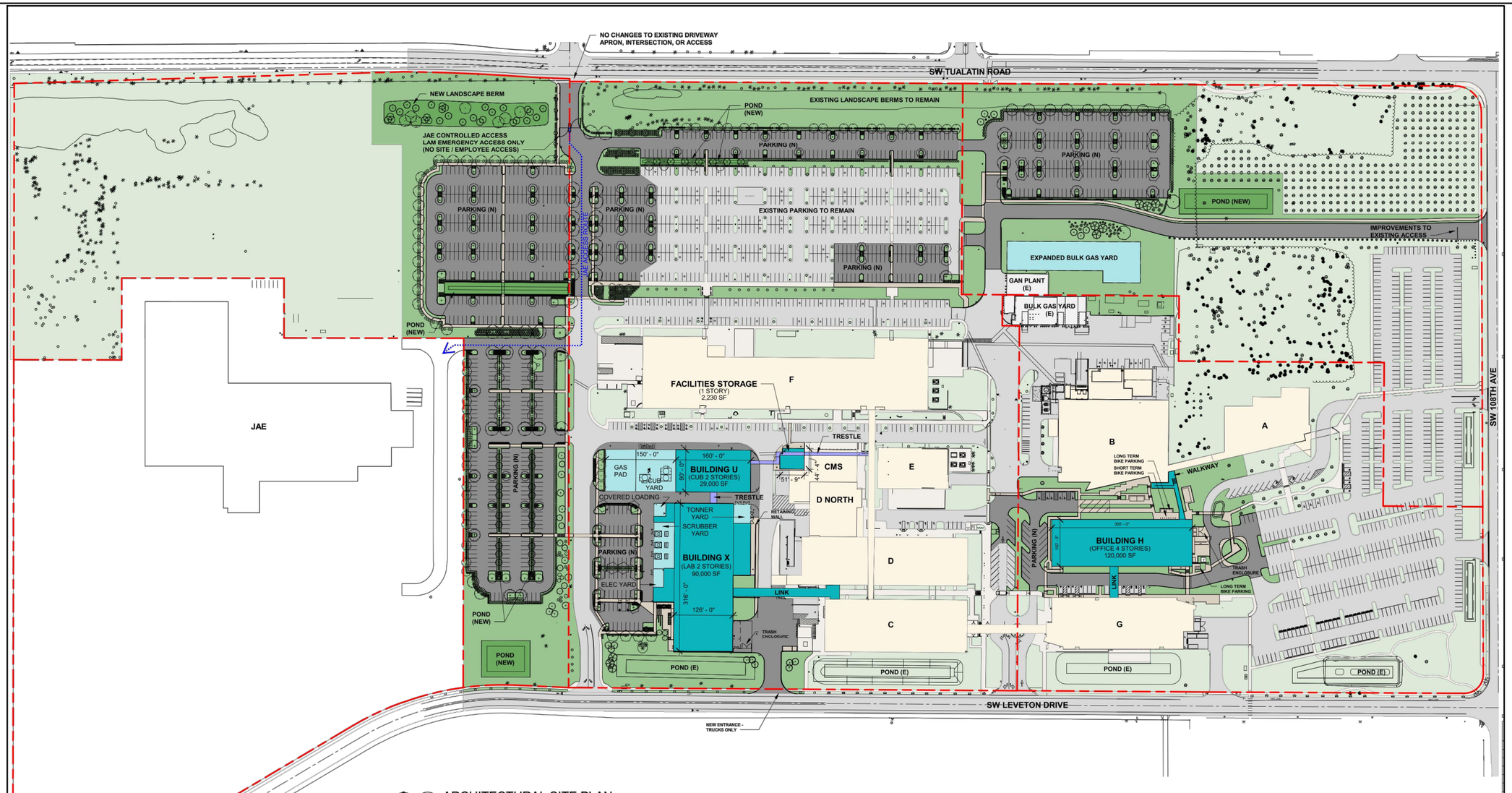
VICINITY MAP

LAM TUX
TUALATIN, OR

FIGURE
1



1 A0.01 ARCHITECTURAL SITE PLAN
1" = 100'-0"

LEGEND

- EXISTING BUILDINGS
- NEW BUILDINGS (TOTAL: 241,230 SF FT)
- NEW YARDS
- NEW TRESTLE
- NEW PEDESTRIAN
- NEW ROADS
- NEW DETENTION POND
- RETAINING WALL
- PROPERTY LINE

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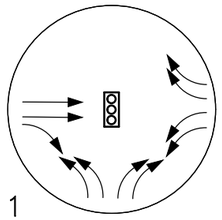
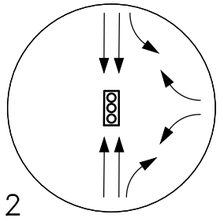
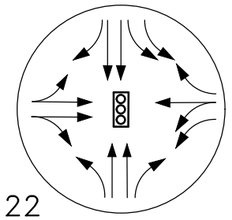
SITE PLAN

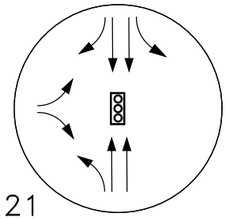
LAM TUX
TUALATIN, OR

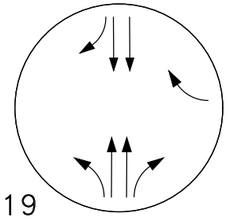
FIGURE
2

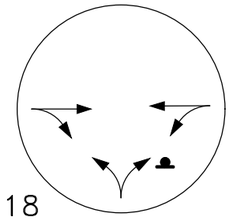


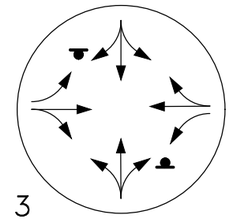


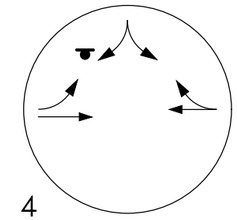


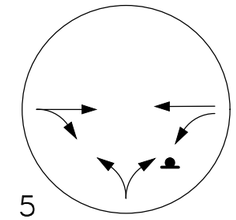


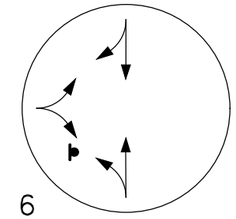


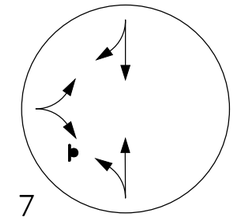


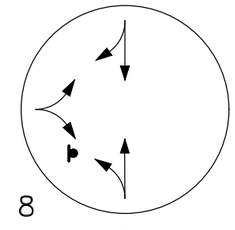


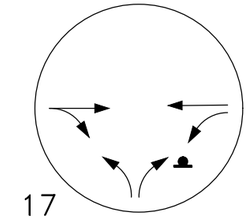


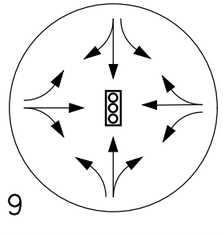


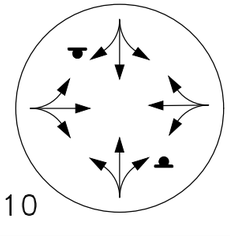


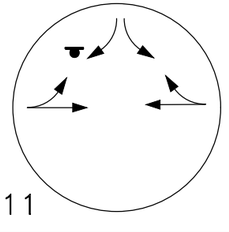


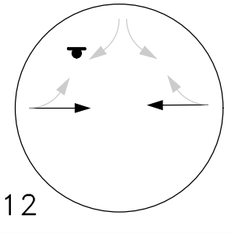


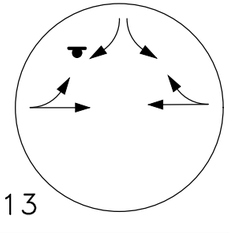


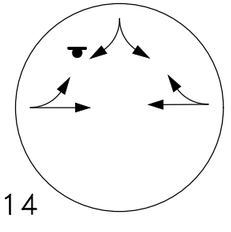


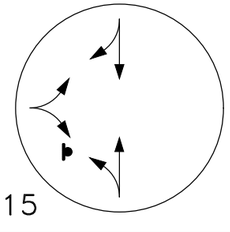


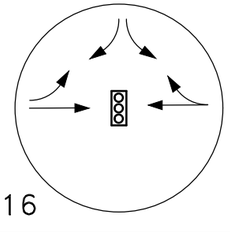


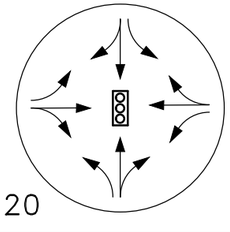


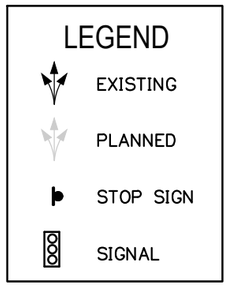












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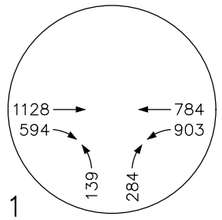
DRAWN BY: CNL
CHECKED BY: BTA
JOB NO: 225018000

EXISTING + PLANNED TRAFFIC CONTROL DEVICES + LANE CONFIGURATIONS

LAM TUX
TUALATIN, OR

FIGURE
3



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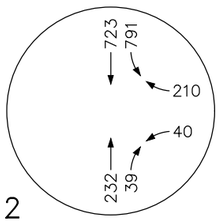

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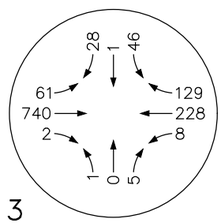

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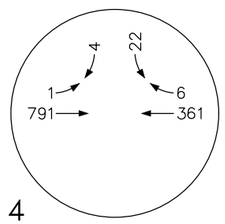

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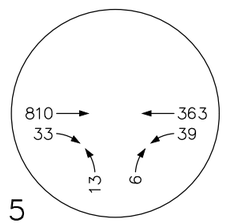

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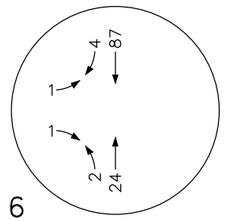

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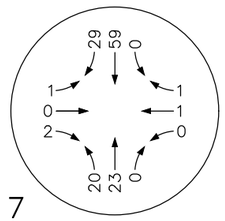

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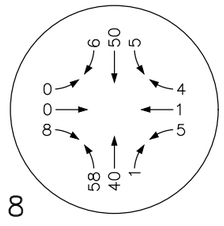

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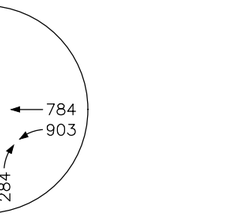

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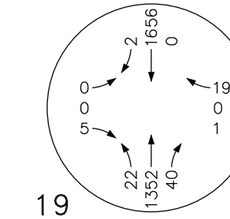

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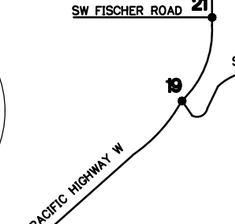

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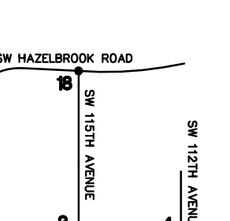

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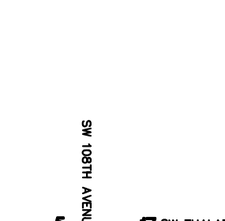

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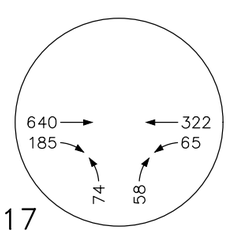

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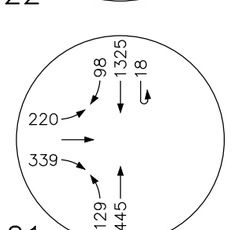

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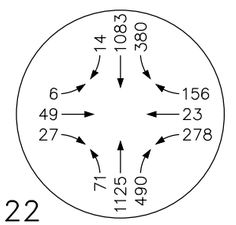

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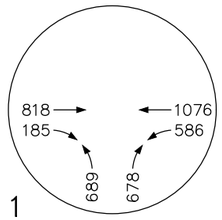
DRAWN BY: CNL
CHECKED BY: BTA
JOB NO: 225018000

2025 EXISTING TRAFFIC VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
4A



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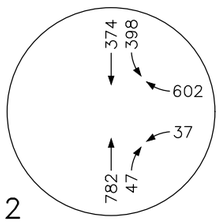

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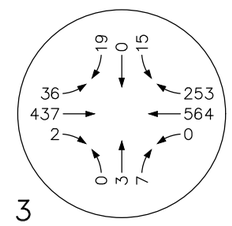

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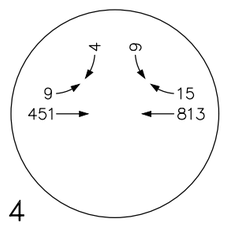

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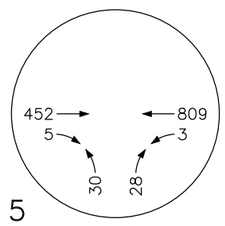

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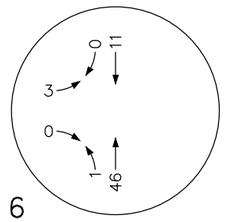

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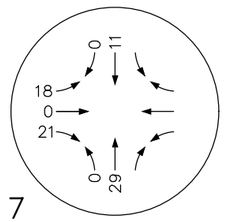

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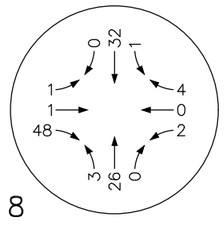

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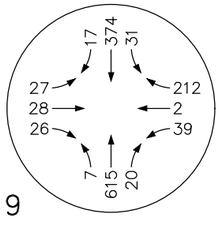

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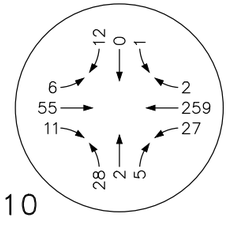

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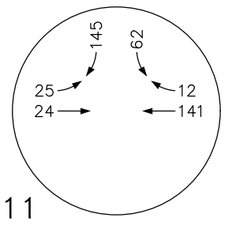

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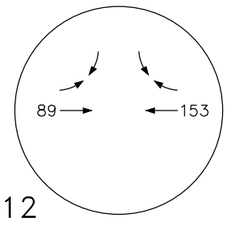

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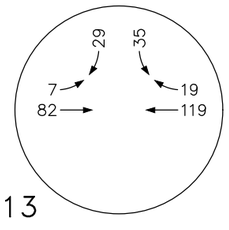

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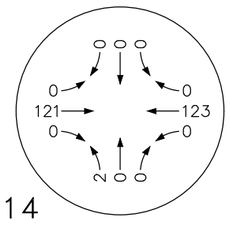

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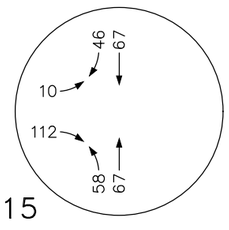

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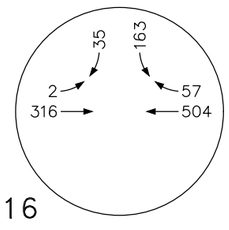

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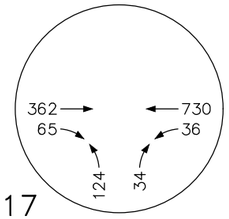

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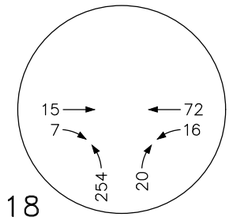

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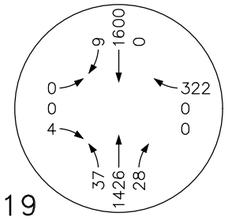

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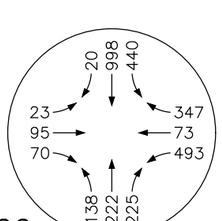

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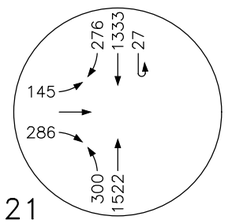

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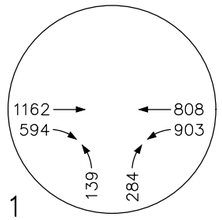
DRAWN BY: CNL
CHECKED BY: BTA
JOB NO: 225018000

2025 EXISTING TRAFFIC VOLUMES - PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
4B



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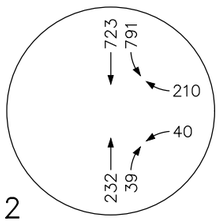

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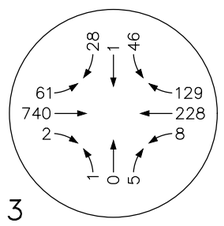

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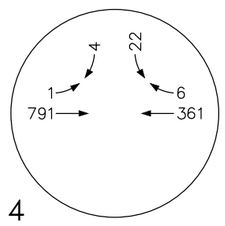

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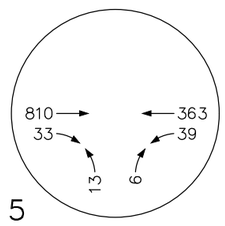

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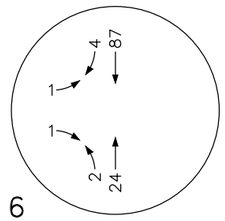

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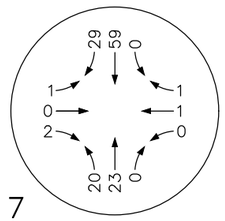

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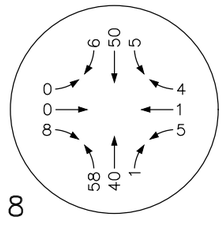

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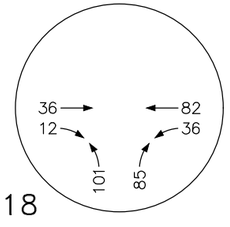

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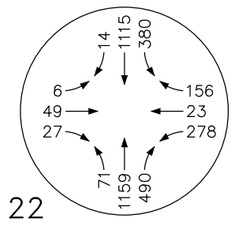

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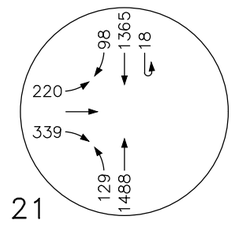

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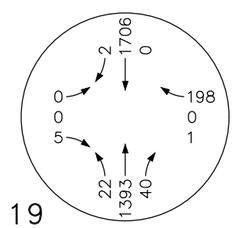

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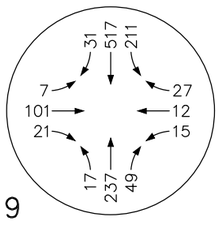

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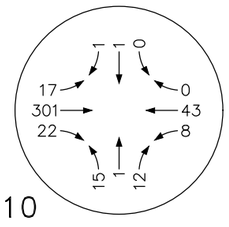

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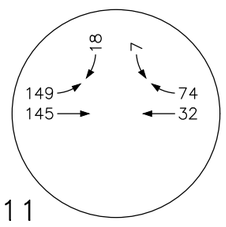

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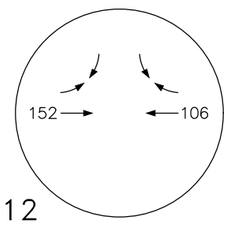

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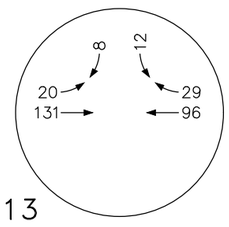

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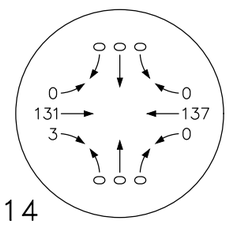

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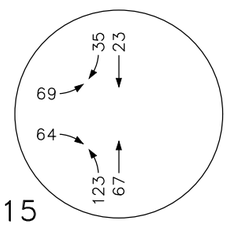

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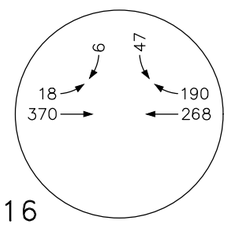

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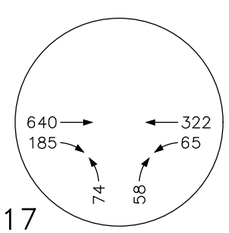

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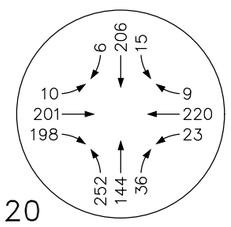

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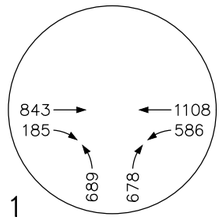
CHECKED BY: BTA
JOB NO: 225018000

2025 SEASONALLY ADJUSTED TRAFFIC VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
5A



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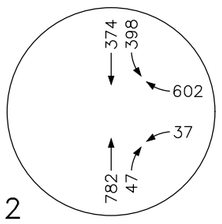

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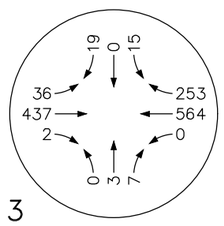

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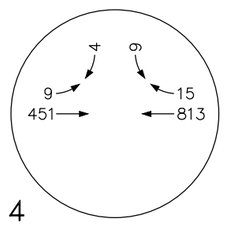

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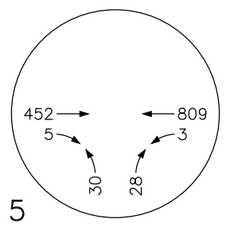

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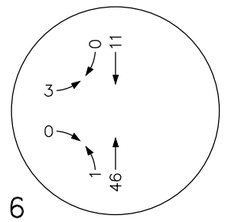

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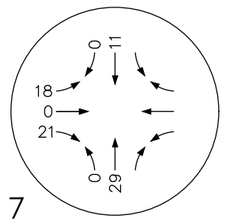

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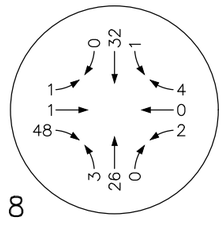

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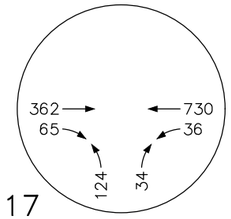

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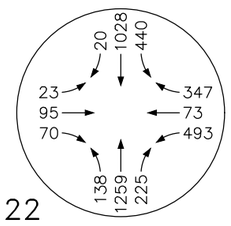

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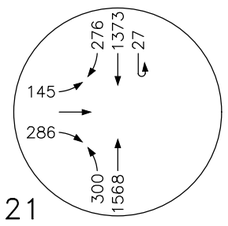

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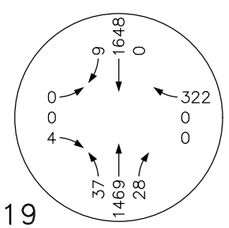

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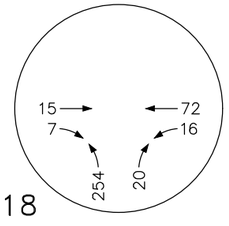

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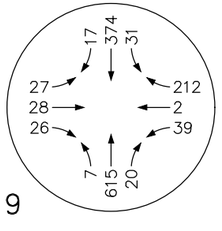

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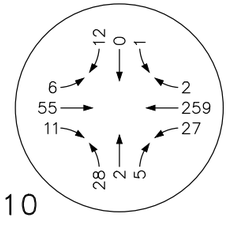

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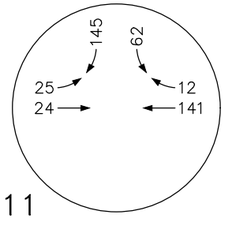

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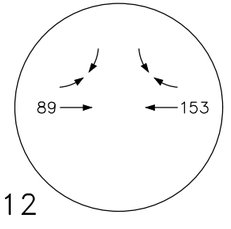

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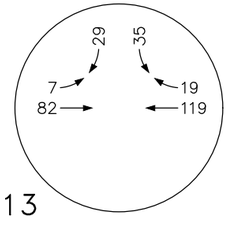

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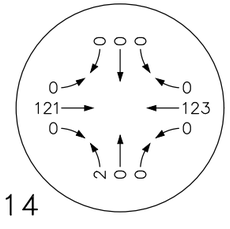

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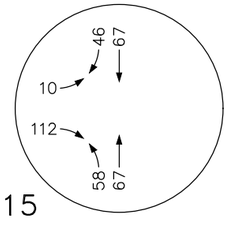

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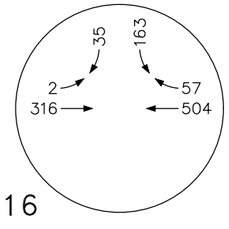

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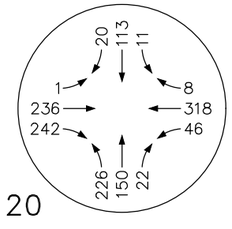

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LAM TUX
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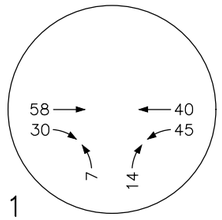
FIGURE
5B



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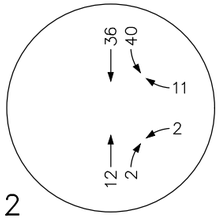

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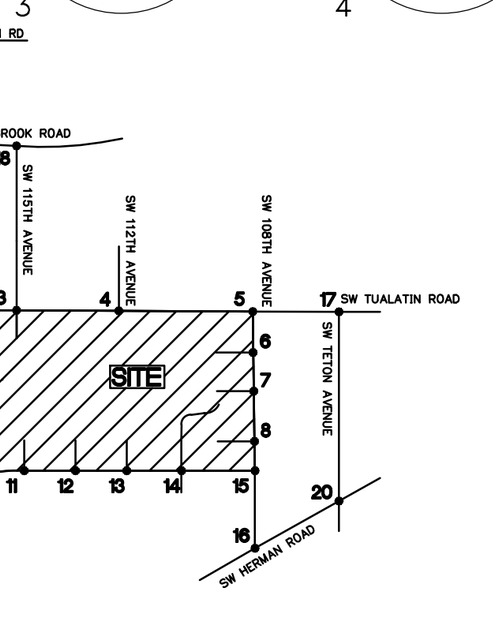

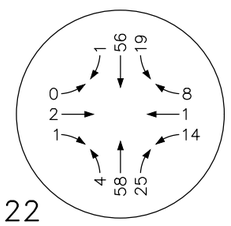

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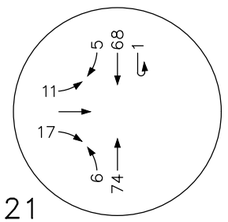

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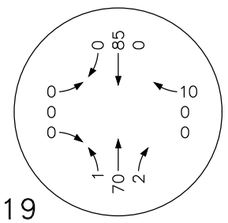

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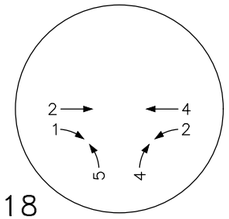

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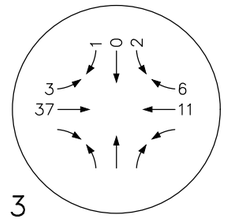

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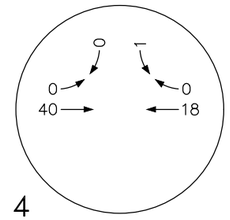

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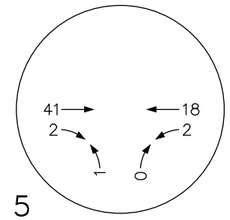

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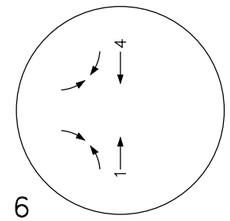

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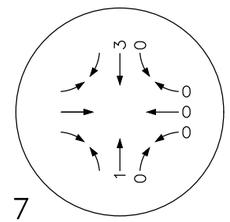

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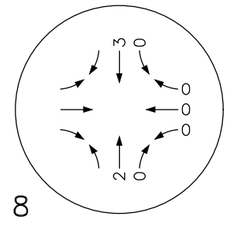

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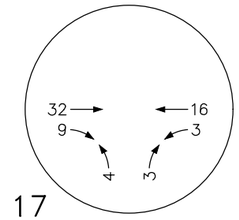

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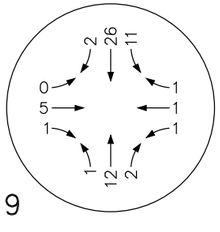

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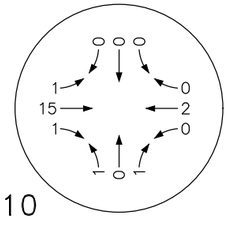

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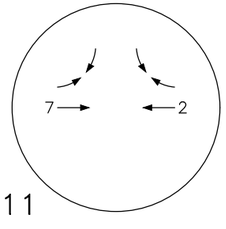

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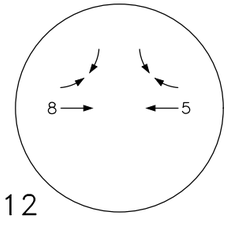

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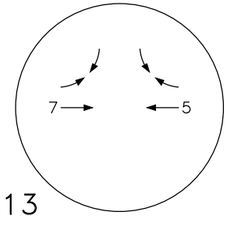

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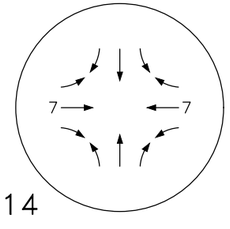

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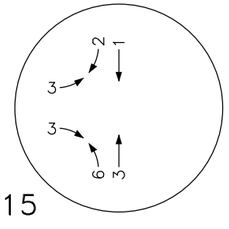

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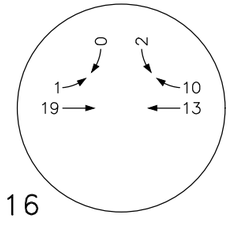

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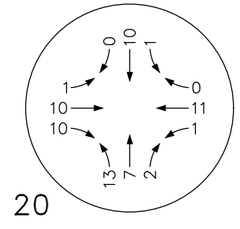

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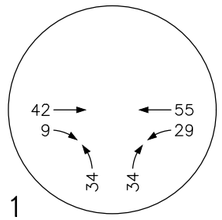
JOB NO: 225018000

BACKGROUND GROWTH TO 2030, 5 YEARS AT 1% PER YEAR – AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE 6A



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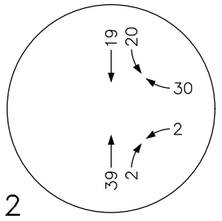

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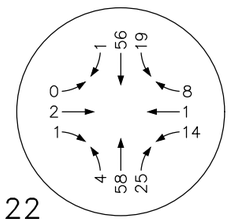

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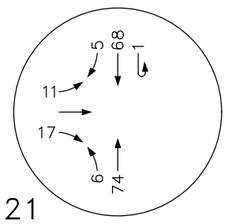

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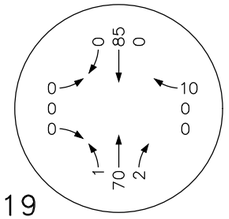

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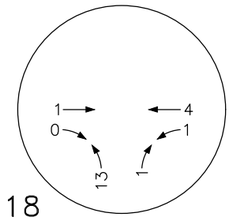

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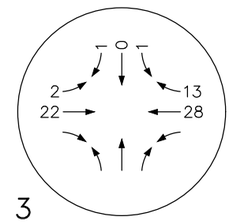

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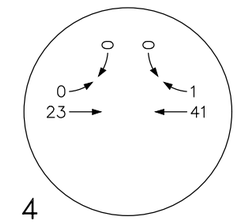

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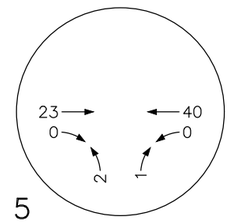

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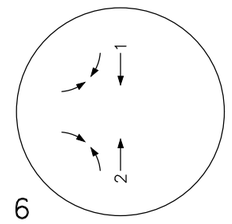

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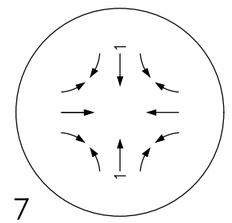

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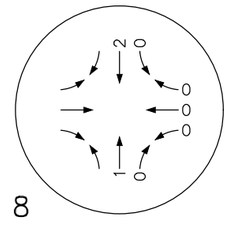

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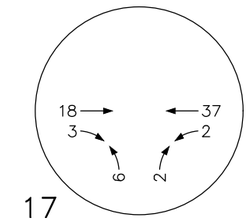

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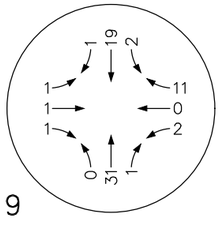

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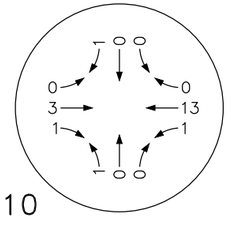

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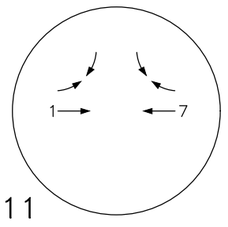

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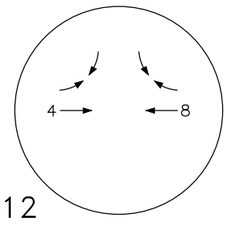

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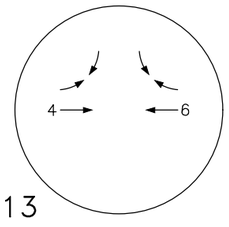

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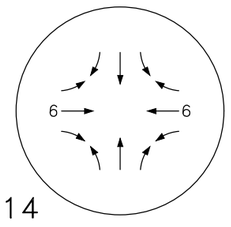

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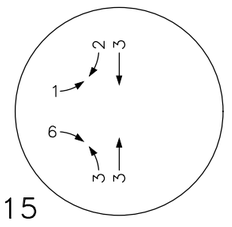

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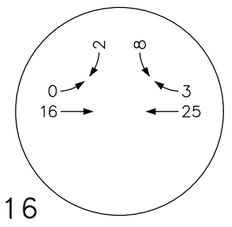

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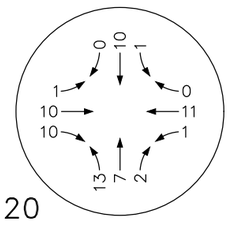

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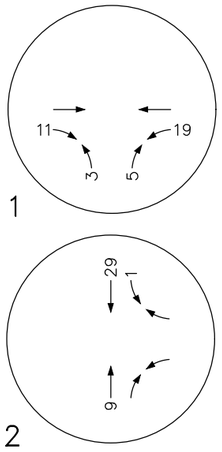
BACKGROUND GROWTH TO 2030, 5 YEARS AT 1% PER YEAR - PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE 6B



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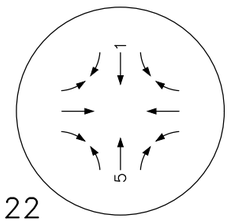

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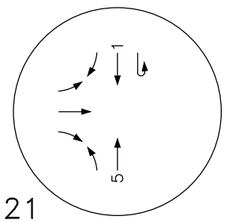

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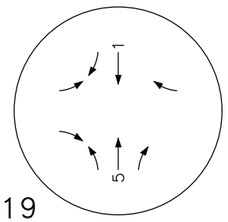

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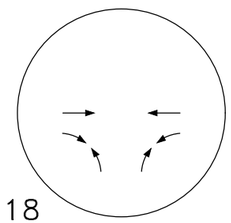

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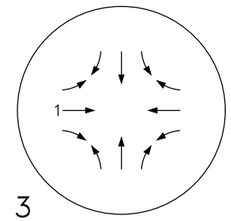

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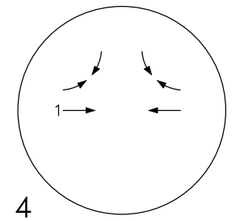

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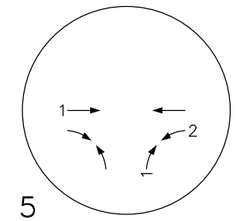

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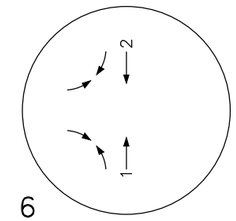

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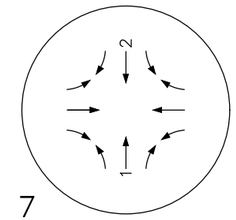

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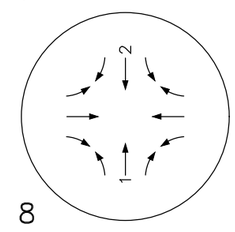

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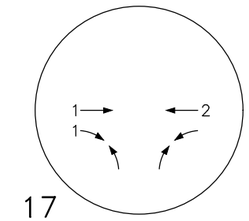

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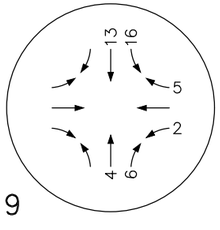

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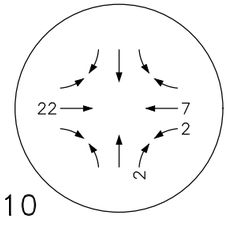

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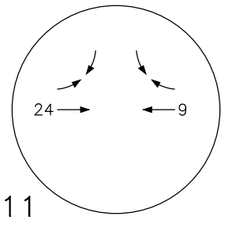

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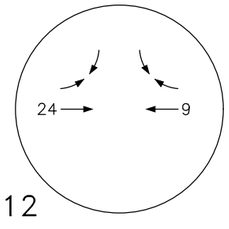

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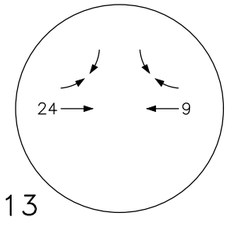

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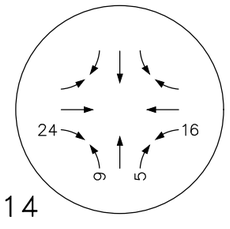

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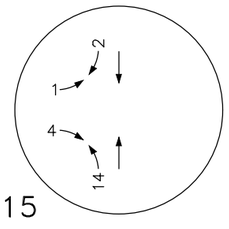

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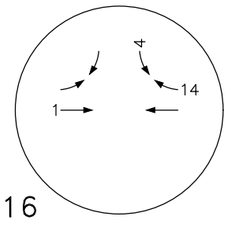

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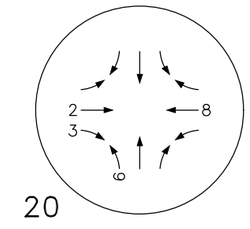

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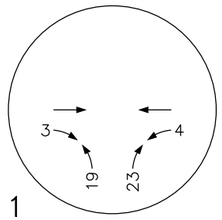
JOB NO: 225018000

IN-PROCESS PROJECTS TRAFFIC VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
7A



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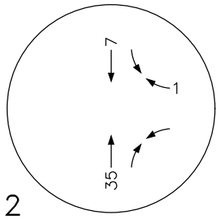

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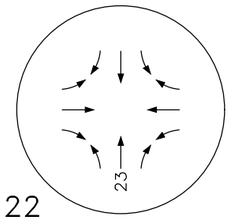

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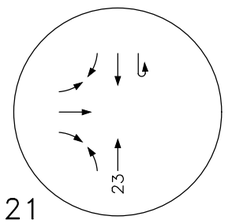

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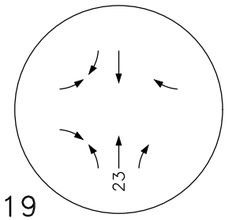

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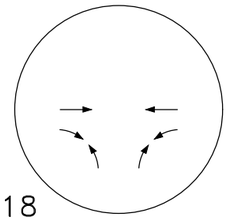

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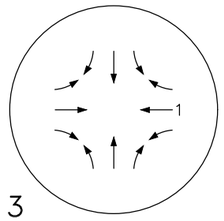

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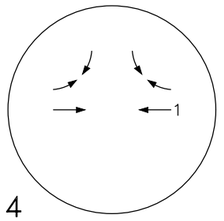

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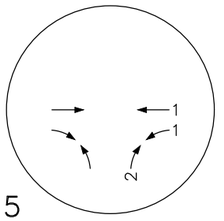

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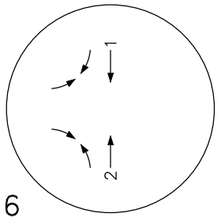

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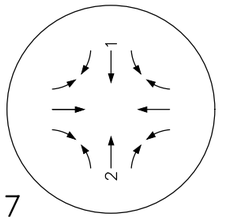

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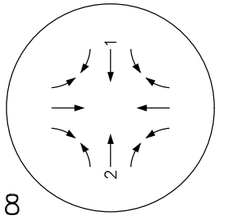

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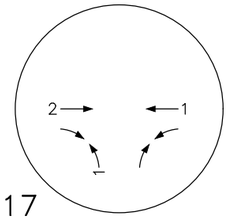

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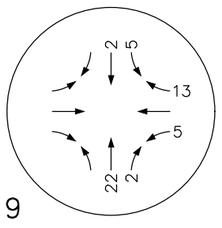

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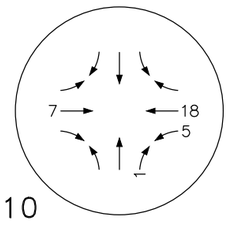

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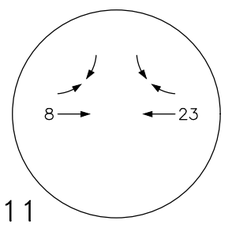

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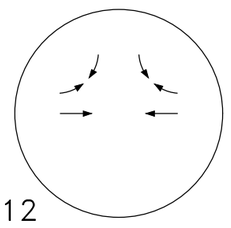

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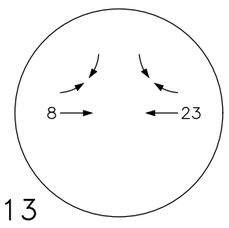

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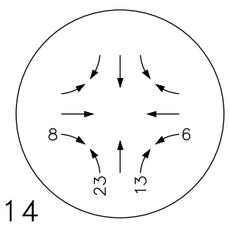

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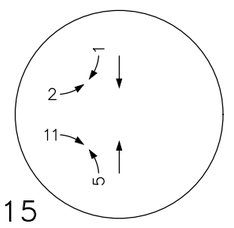

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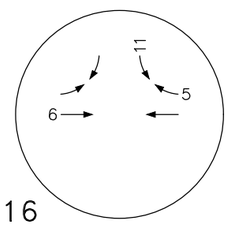

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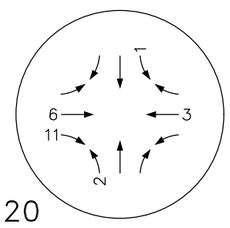

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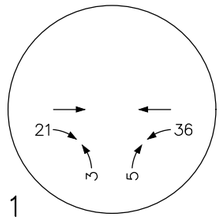
JOB NO: 225018000

IN-PROCESS PROJECTS TRAFFIC VOLUMES - PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
7B



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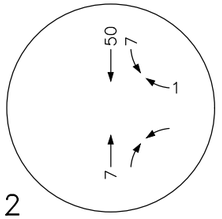

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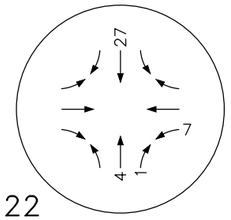

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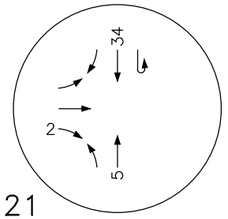

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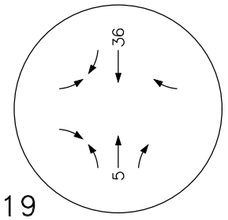

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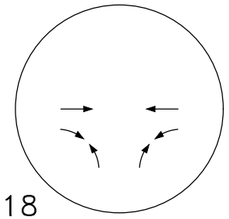

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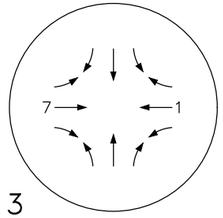

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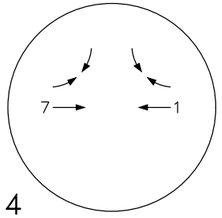

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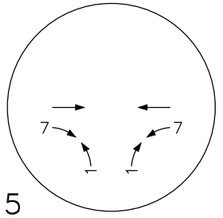

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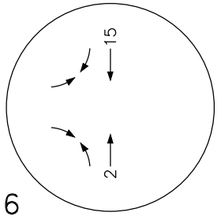

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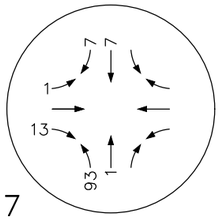

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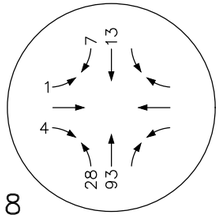

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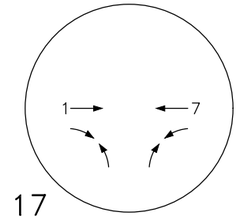

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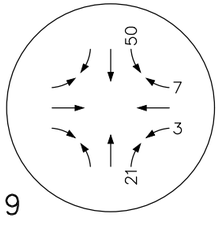

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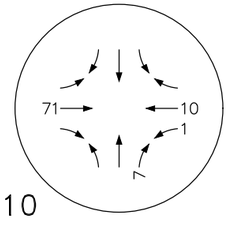

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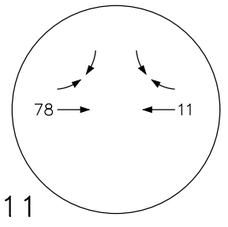

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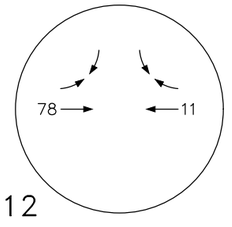

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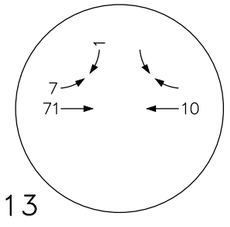

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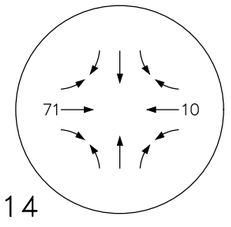

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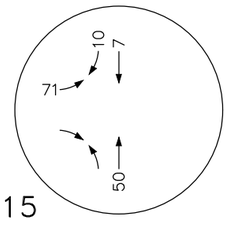

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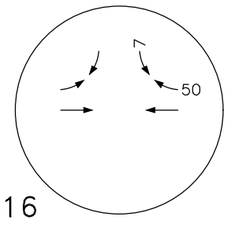

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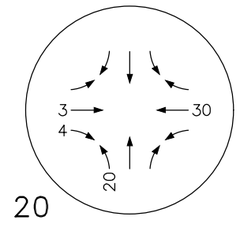

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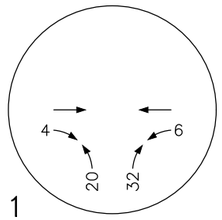
LAM TUX
TUALATIN, OR

FIGURE
8A



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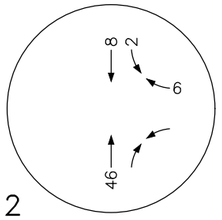

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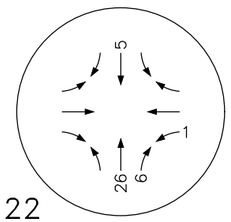

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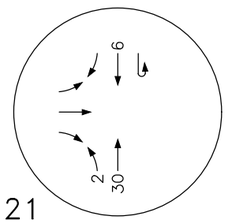

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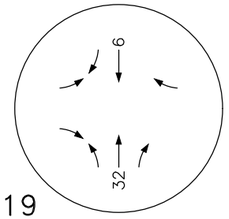

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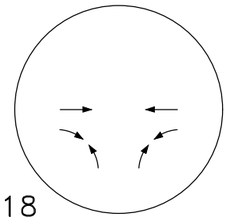

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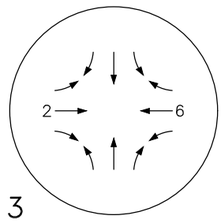

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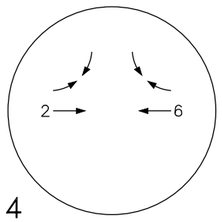

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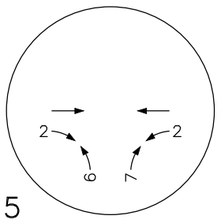

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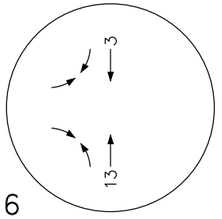

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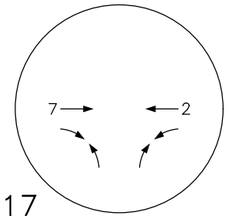

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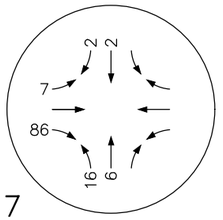

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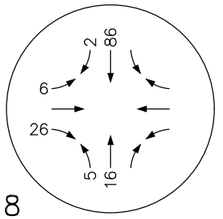

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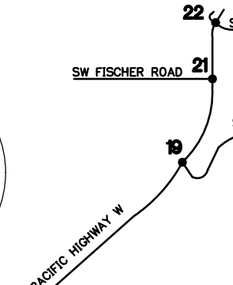

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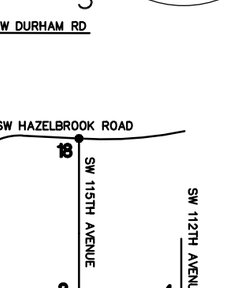

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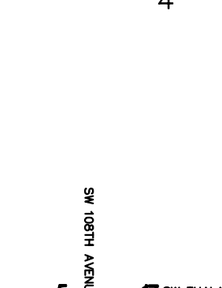

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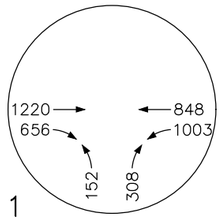
IN-PROCESS
NEW BUILDING G TRIPS -
PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
8B



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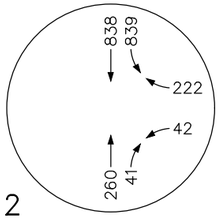

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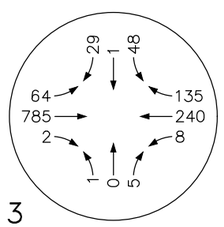

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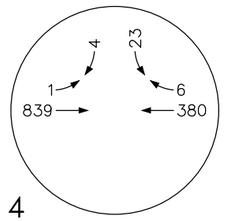

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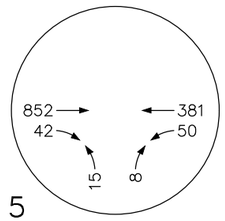

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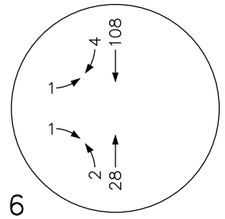

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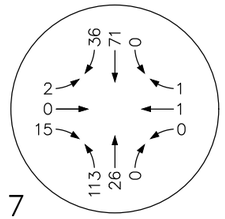

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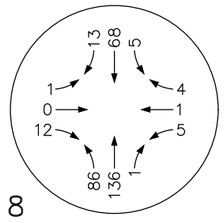

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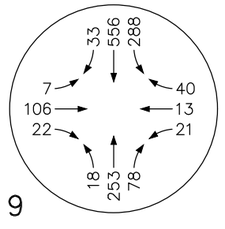

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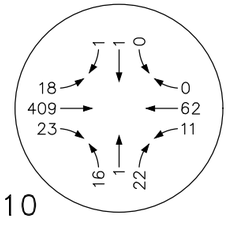

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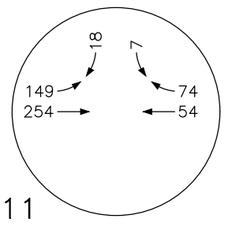

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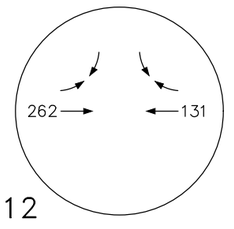

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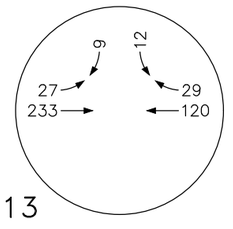

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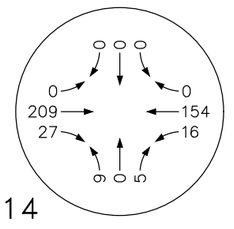

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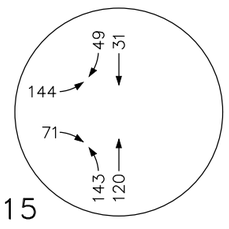

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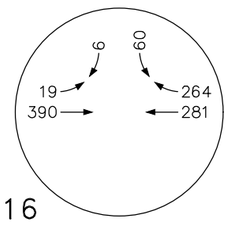

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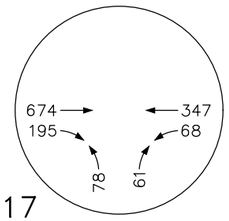

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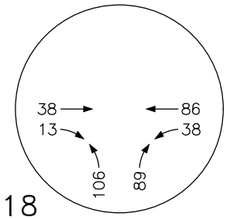

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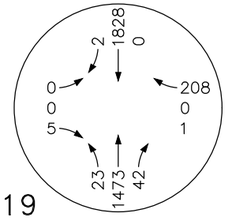

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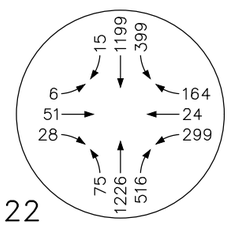

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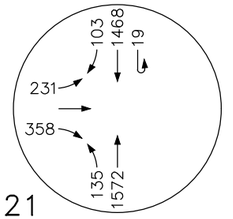

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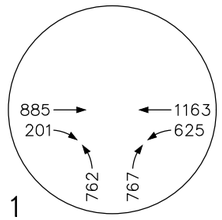
2030 PRE-DEVELOPMENT TRAFFIC VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
9A



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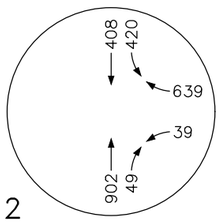

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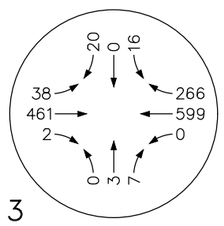

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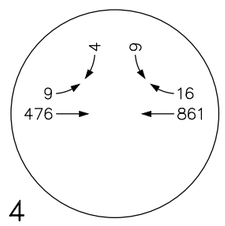

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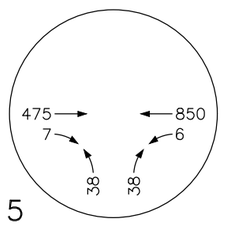

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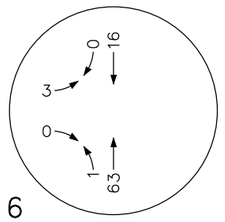

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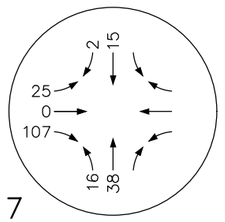

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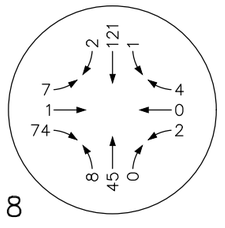

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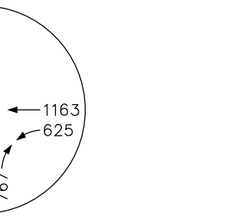

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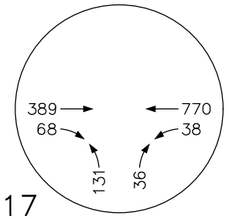

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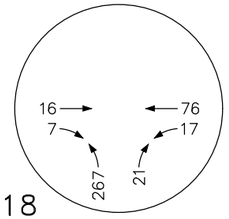

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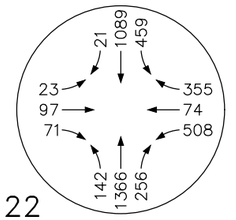

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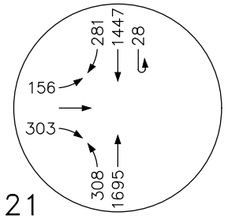

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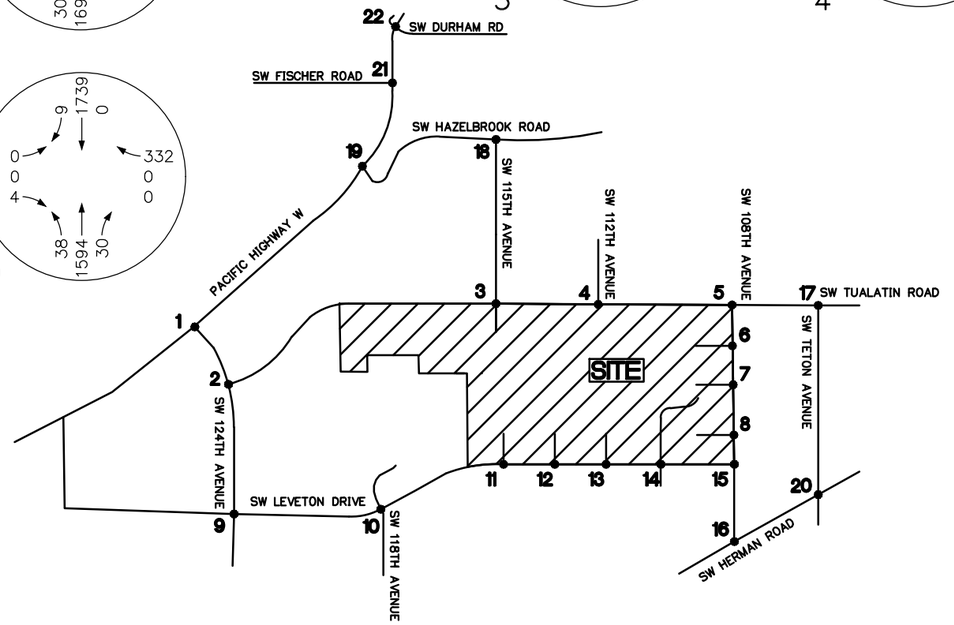

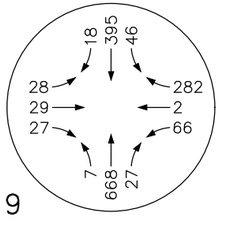

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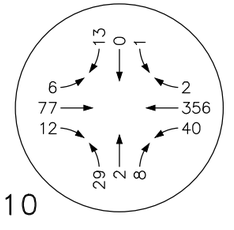

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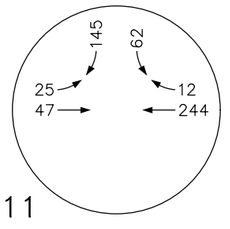

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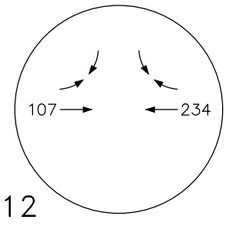

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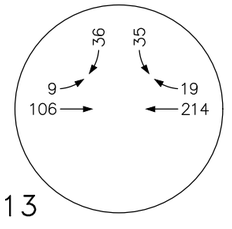

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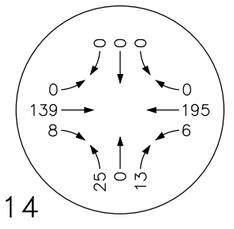

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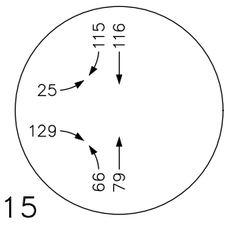

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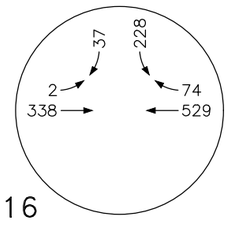

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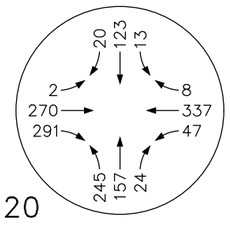

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DATE: 7.21.2025
DRAWN BY: CNL
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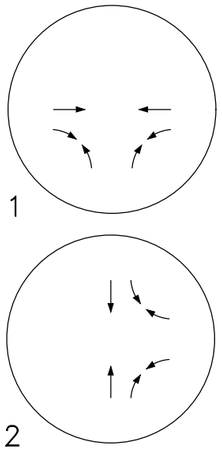
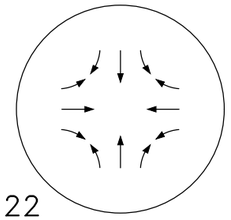
JOB NO: 225018000

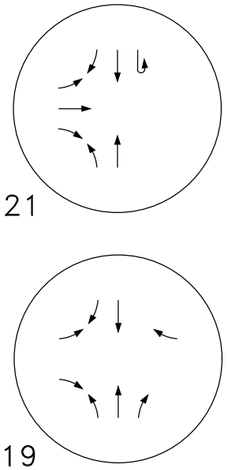
2030 PRE-DEVELOPMENT TRAFFIC VOLUMES - PM PEAK HOUR

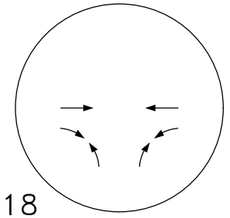
LAM TUX
TUALATIN, OR

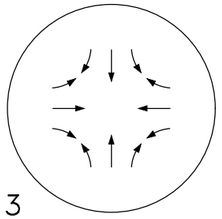
FIGURE
9B

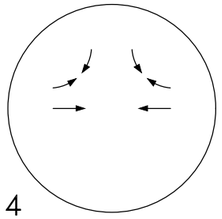


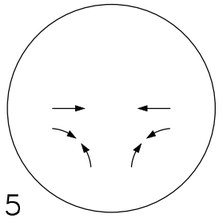


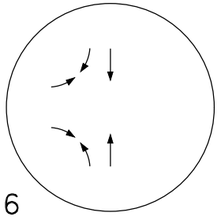


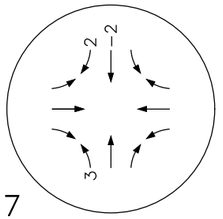


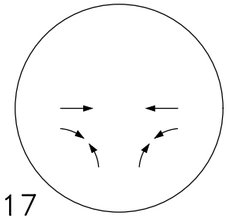


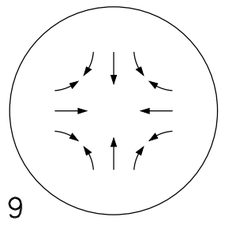


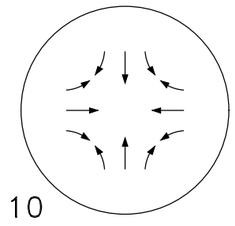


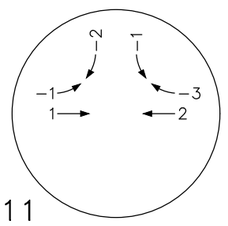


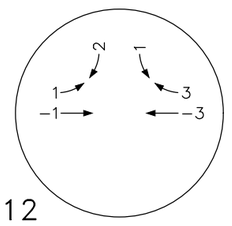


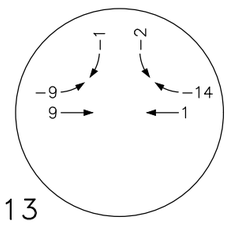


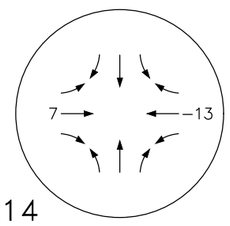


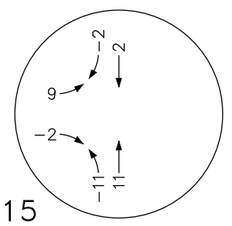


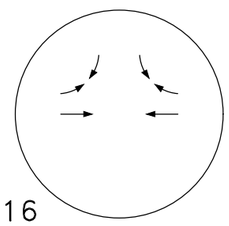


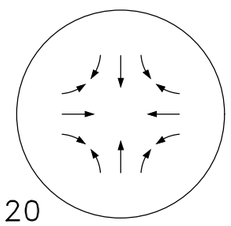












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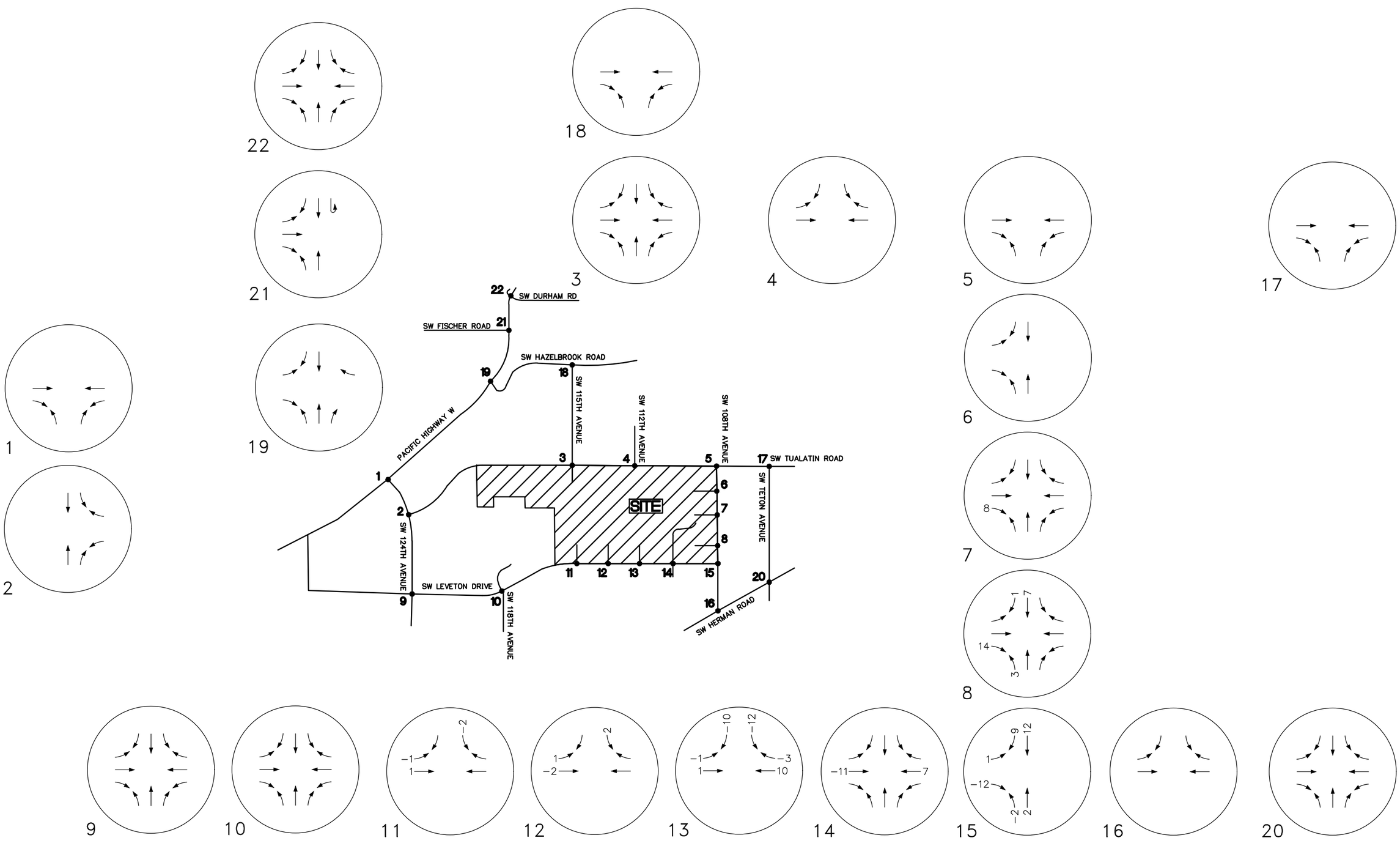
LEVETON ACCESS REROUTED VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
10A



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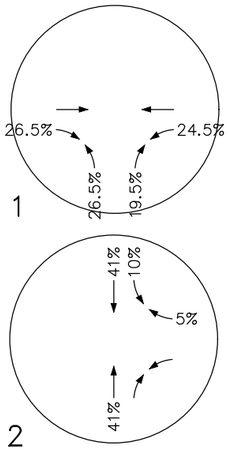
LEVETON ACCESS REROUTED VOLUMES - PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
10B



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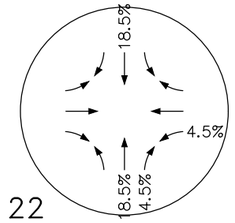

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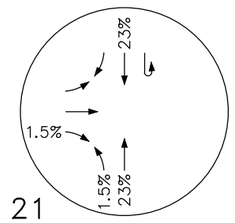

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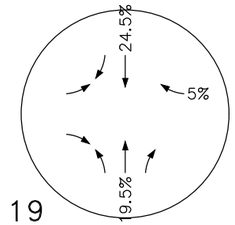

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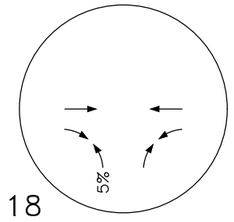

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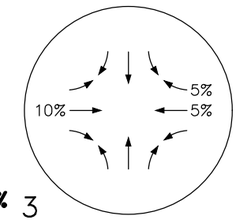

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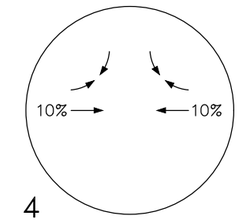

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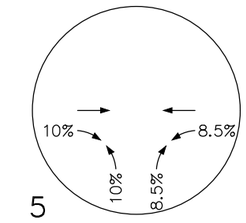

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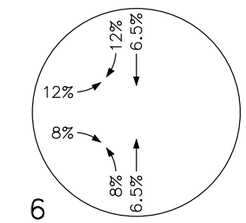

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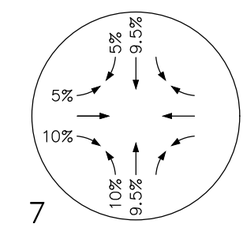

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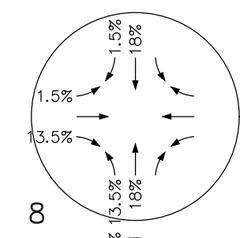

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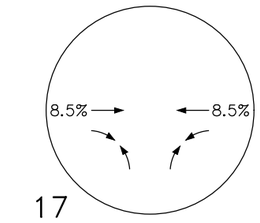

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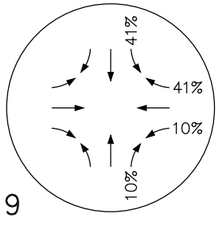

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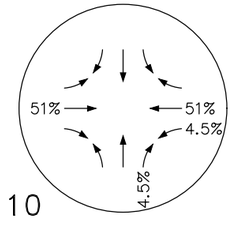

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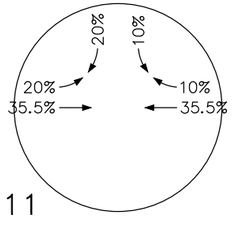

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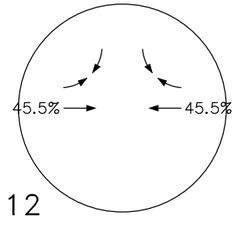

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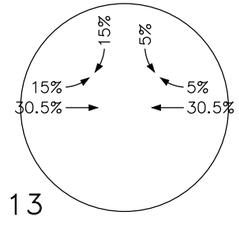

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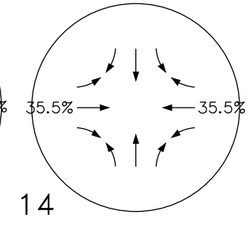

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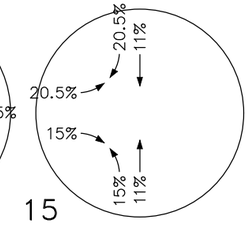

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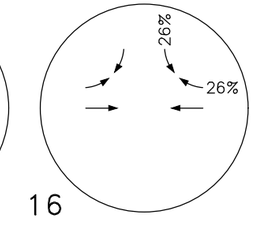

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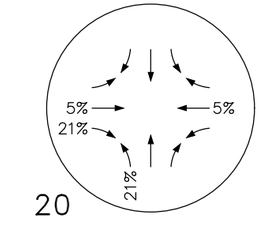

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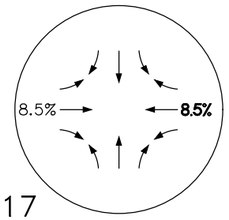
NEW TUX
TRIP DISTRIBUTION -
AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
11A



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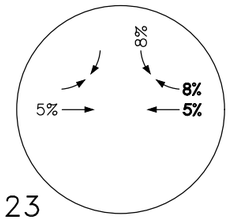

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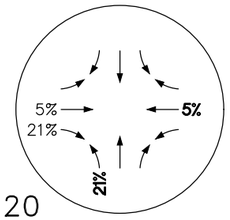

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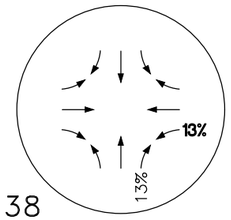

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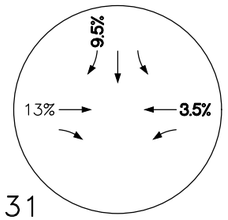

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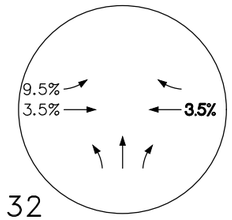

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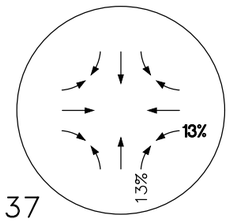

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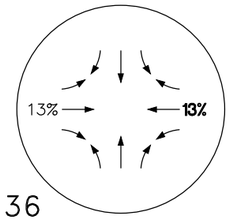

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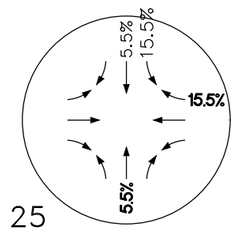

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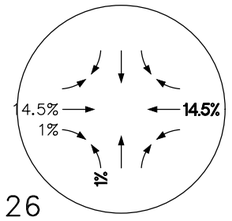

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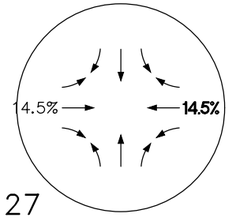

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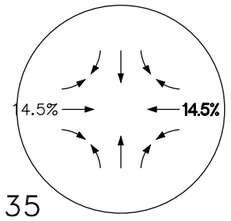

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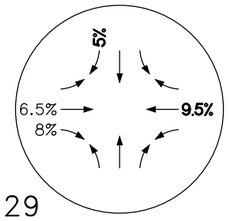

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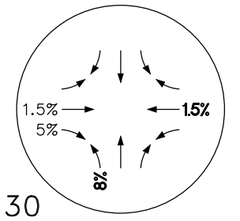

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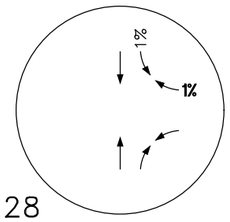

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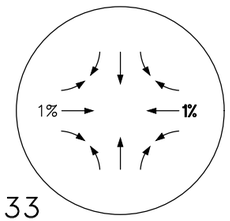

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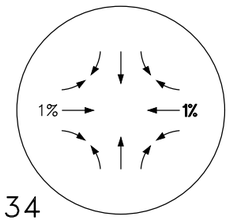

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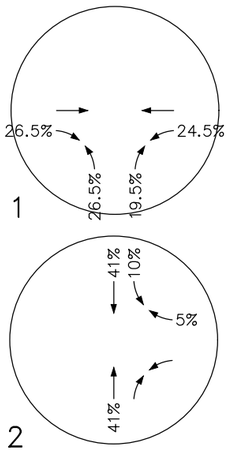

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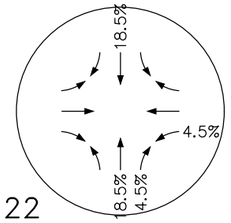

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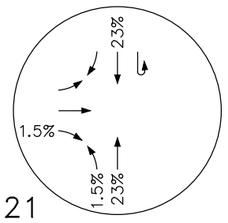

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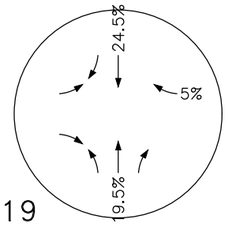

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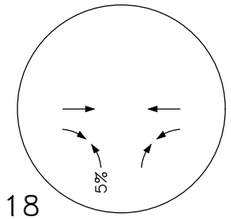

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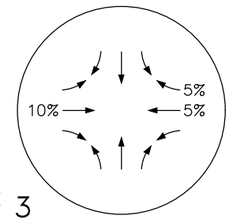

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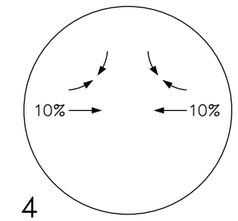

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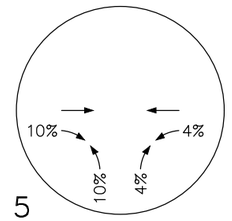

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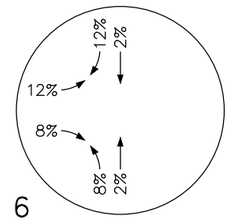

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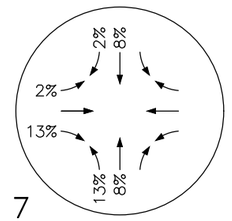

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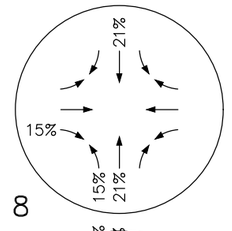

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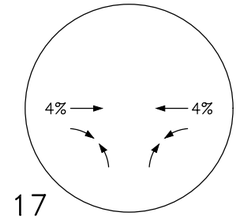

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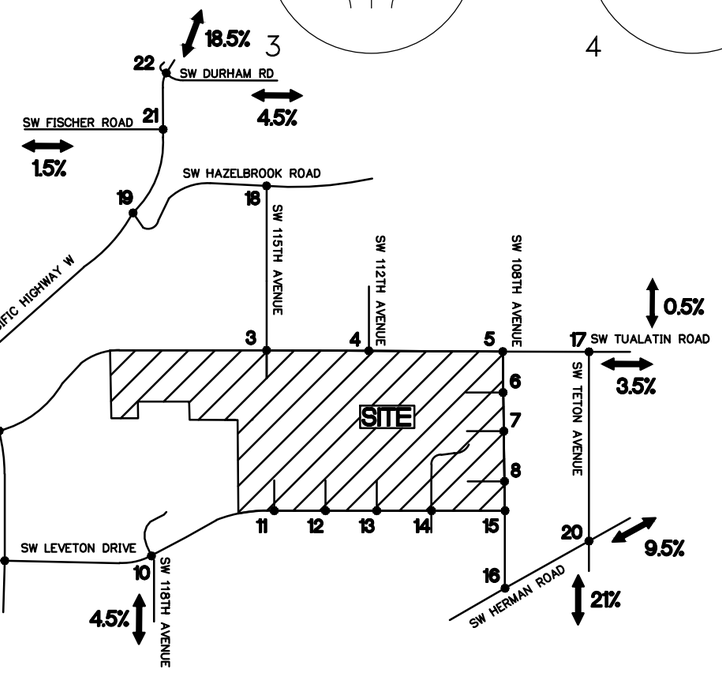

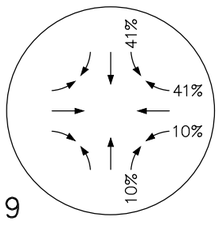

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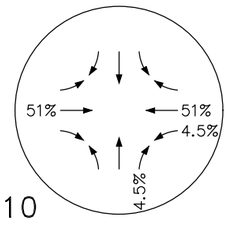

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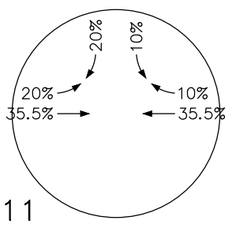

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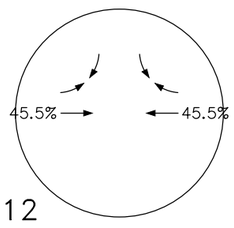

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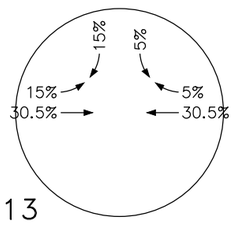

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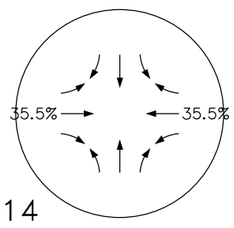

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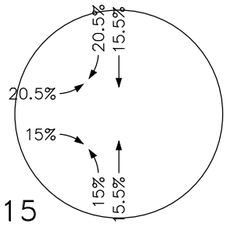

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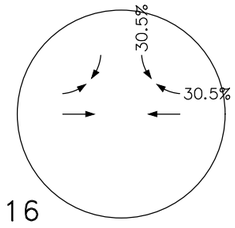

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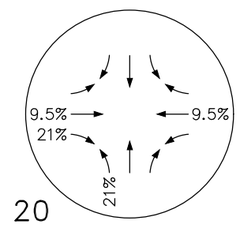

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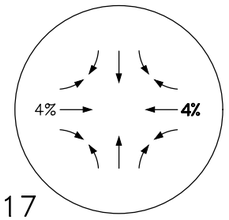

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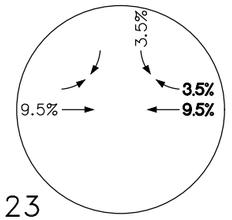

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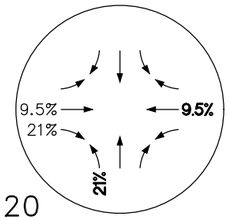

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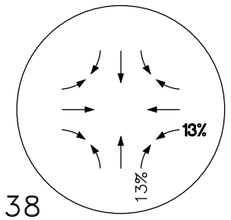

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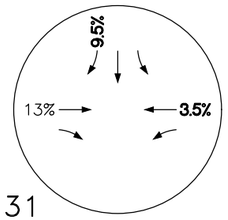

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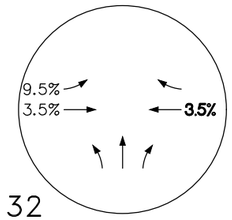

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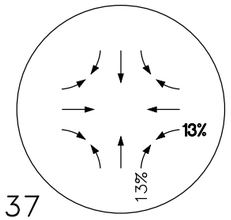

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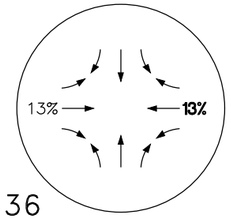

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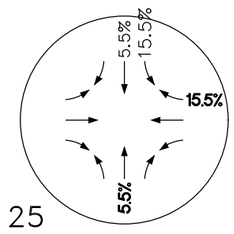

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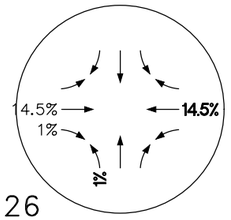

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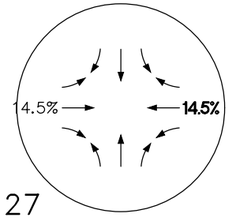

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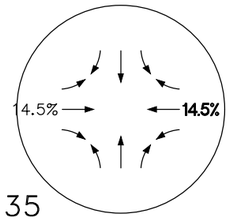

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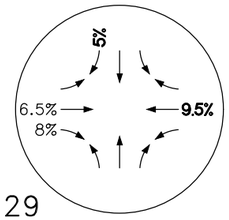

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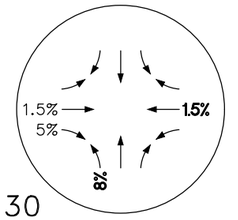

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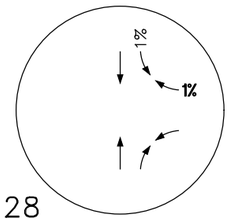

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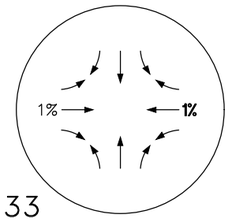

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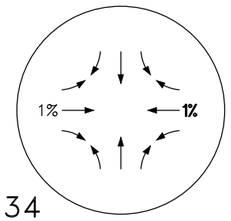

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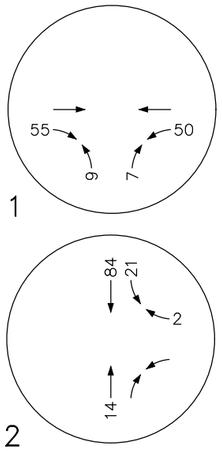

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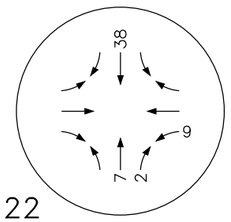

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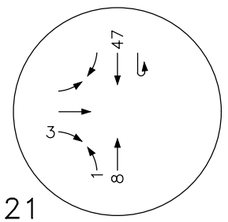

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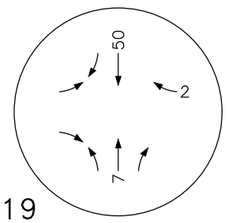

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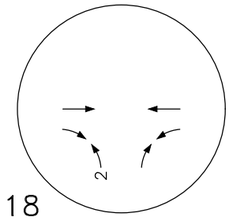

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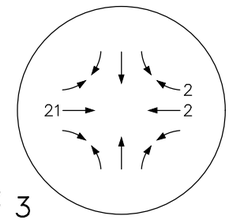

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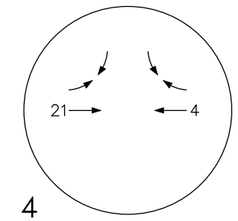

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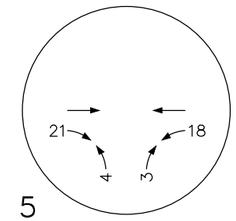

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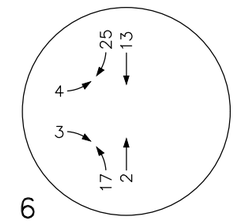

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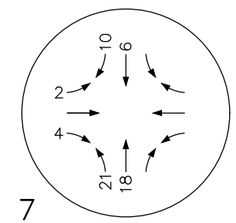

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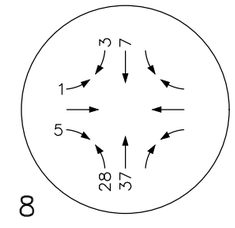

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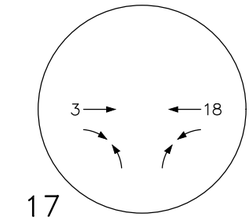

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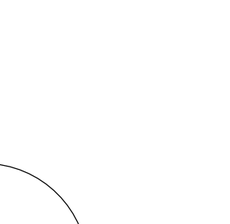

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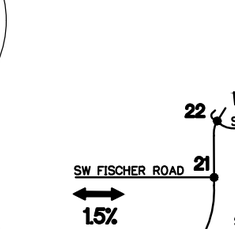

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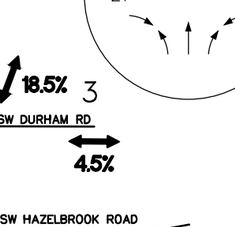

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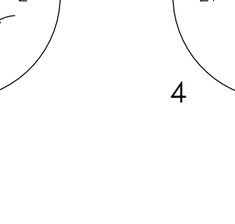

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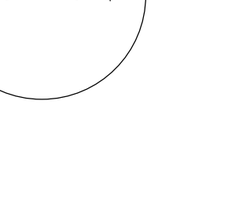

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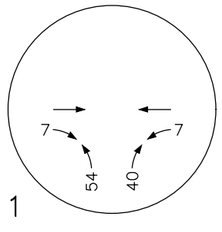
NEW TUX
TRIP ASSIGNMENT - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
12A



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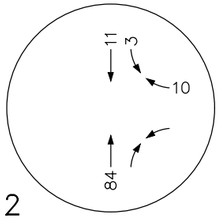

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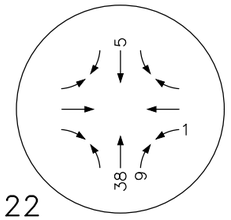

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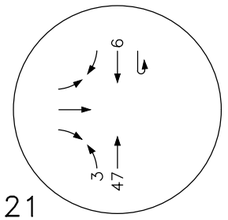

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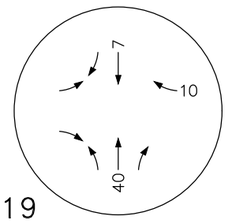

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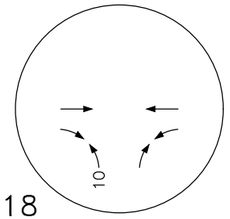

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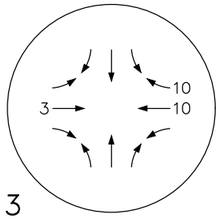

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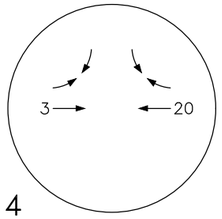

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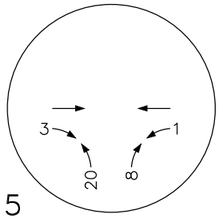

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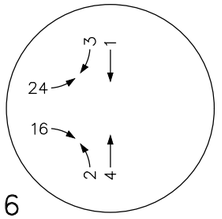

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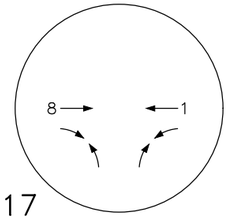

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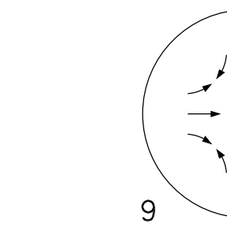

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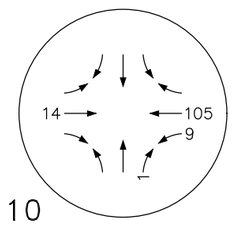

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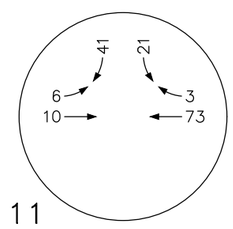

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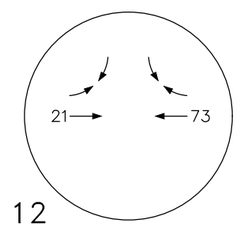

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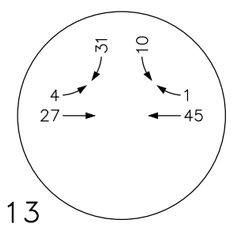

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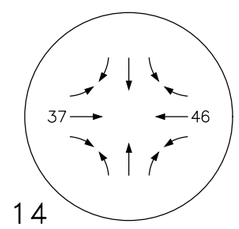

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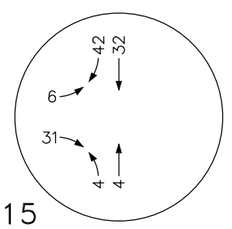

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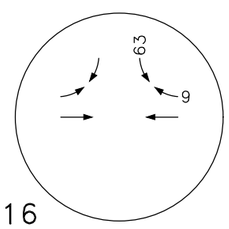

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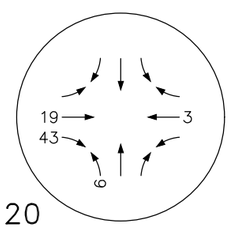

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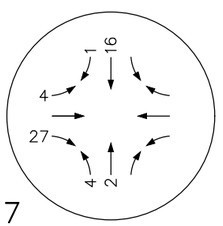

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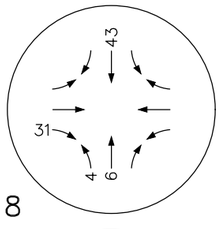

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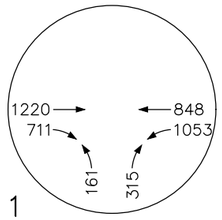
NEW TUX
TRIP ASSIGNMENT - PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
12B



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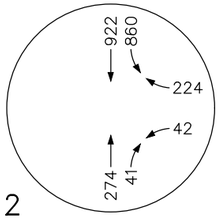

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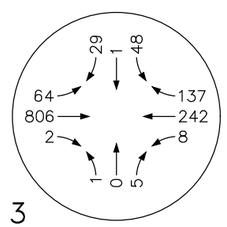

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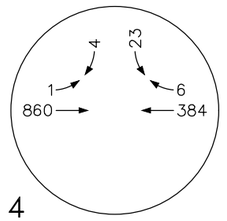

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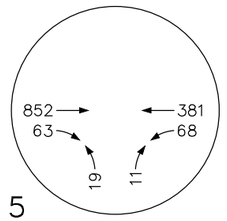

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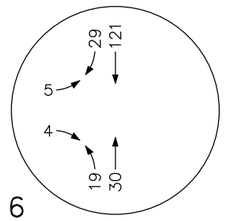

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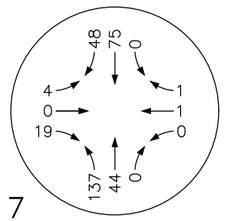

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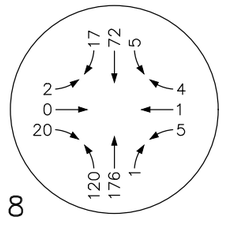

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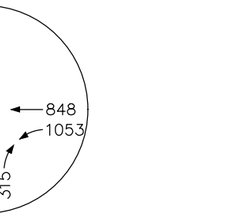

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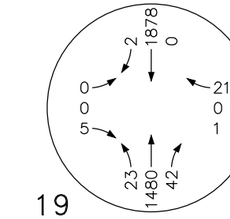

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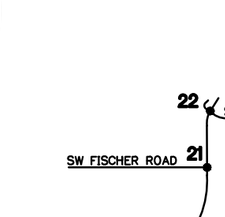

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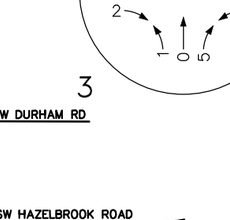

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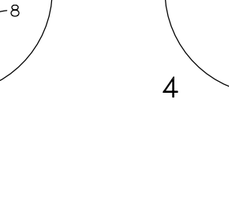

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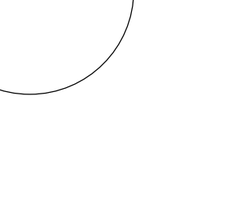

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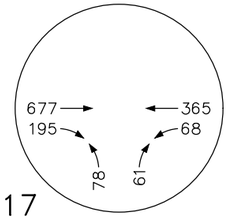

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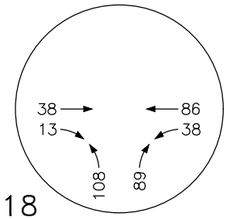

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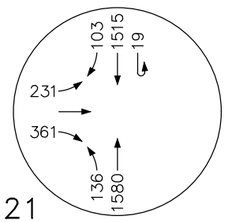

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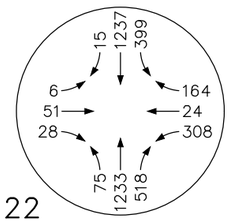

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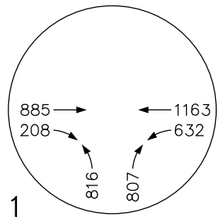
2030 POST-DEVELOPMENT TRAFFIC VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
13A



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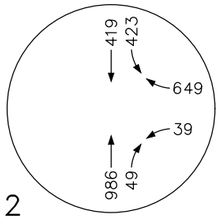

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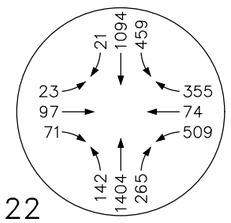

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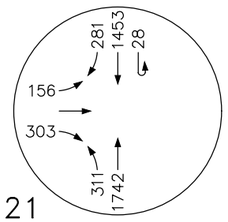

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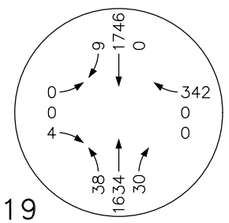

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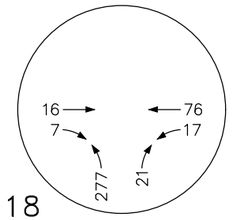

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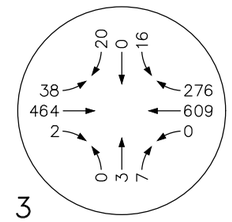

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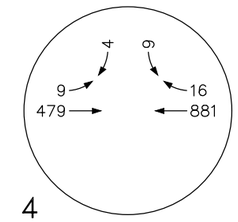

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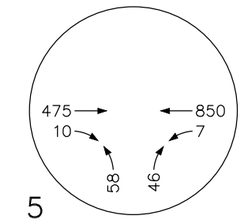

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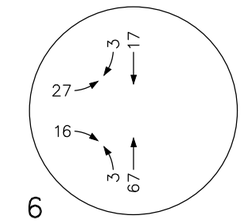

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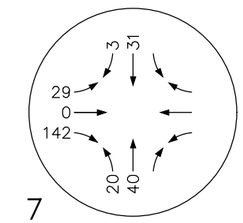

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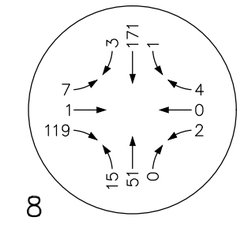

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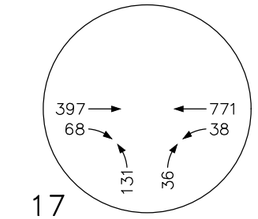

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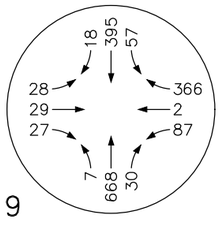

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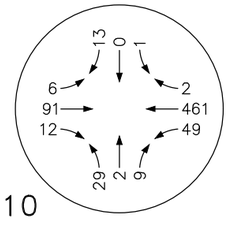

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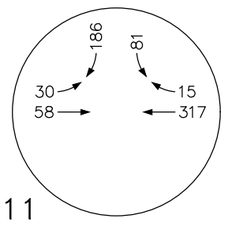

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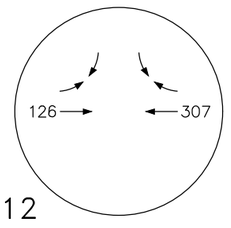

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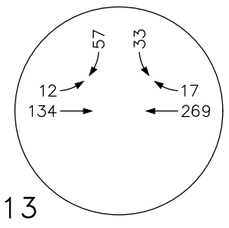

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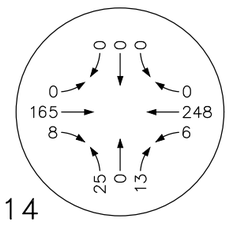

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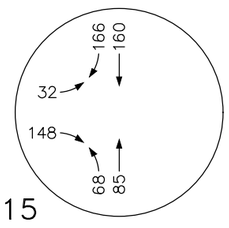

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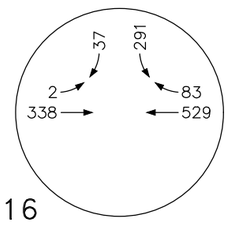

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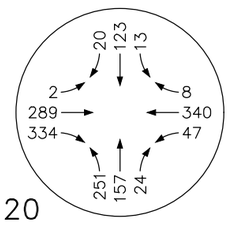

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JOB NO: 225018000

2030 POST-DEVELOPMENT TRAFFIC VOLUMES - PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
13B

APPENDIX B.

SCOPING MATERIAL

June 25, 2025

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

Re: **Lam TUX**
Updated Transportation Impact Analysis Scoping
Project Number 2250180.00

Dear Mike:

Mackenzie has prepared this updated scoping letter reflecting the updated site plan described below and planned changes to 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.

TUX Proposal

The TUX project includes the addition of three buildings. Building H is a four-story office building with an area of up to 120,000 square feet (SF), Building U is a two-story utility building with approximately 29,000 SF, and Building X is a laboratory building with approximately 85,000 SF. The total area of the TUX projects adds up to approximately 234,000 SF with an estimated net gain of 600 employees to the campus when the new buildings are at full occupancy.

The new office will be located on the east side of campus replacing the existing parking between Building G and Building B. The new lab and utility buildings will be located at the southwest corner of the site, replacing the existing surface parking. The existing access to SW Leveton Drive will remain and an additional driveway adjacent to the access road and loading dock at building C will serve as truck access for deliveries to the existing and proposed buildings.

The parking areas along the north side of the campus will be expanded and additional parking will be added to the adjacent west property 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 the existing West Access from SW Leveton Drive and the North Access from SW 108th Avenue. North Access has previously been used for access to Lam's existing utility yard north of Building B and has served low volumes of employee trips. With this proposal, the driveway will be convenient for employees in the north lots, but no connection is planned to the parking lot constructed with Building G.

Two phases of development are proposed, with all buildings in Phase 1. Phase 2 will add infrastructure such as additional parking and utilities. For this reason, we propose to analyze both phases in a single buildout year.

PARKING AND ACCESS

The project will increase the available parking spaces from 1,728 to approximately 2,384. This includes a net loss of 82 parking spaces in the center of the campus with Building H (105 removed and 23 added back) and 286 spaces in the southwest lot for the lab and CUB buildings (347 removed and 61 added back).

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The impact of these parking changes is that approximately 6% of vehicles at the site that currently park in the central area would instead use the parking lot constructed with Building G, shifting trips from the Center Access on SW Leveton Drive to the two accesses on SW 108th Avenue.

The additional parking added with the project will primarily be served by opening the North Access on SW 108th Avenue and the existing West Access on SW Leveton Drive. A smaller number of vehicles may access the new parking areas from the Center Access on SW Leveton Drive.

The attached site plan presents the proposed site plan with new parking areas identified (Attachment A).

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 campus conditions in 2024. Due to current construction on site, we are presenting a comparison to observed employment and trips in 2024. In 2024, the campus had approximately 1,160 office and lab employees assigned and working a day shift (generally 8-5) plus 400 manufacturing staff who worked 12-hour shifts with changes outside the peak hours (7-7 shift schedule). The 2024 campus driveway counts during the peak hours of the site (8-9 AM, 4:45-5:45 PM) were 371 and 378, respectively. Applying the R&D trip rate to the 1,160 employees working a typical day shift results in an estimate of 418 AM, 402 PM and 3,609 daily trips, indicating actual trip generation was 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 net new employees.

TABLE 1 – PROPOSED TRIP GENERATION

ITE LUC	ITE Land Use	Employees	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
860	Research and Development Center	600	207	37	244	28	205	233	2,036

As shown in Table 1, the planned campus expansion is estimated to generate an additional 244 AM peak hour, 233 PM peak hour, and 2,036 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 May 2025 at the active site driveways on SW Leveton Drive. With access now provided on SW 108th Avenue, there has been a small increase in trips on SW Tualatin Road. The overall distribution onto the greater roadway network remains consistent with employee zip code data provided by Lam. Unless otherwise noted, the following percentages apply to both the AM and PM peak hours.

- 24.5% to/from the north on Highway 99W.
- 26.5% to/from the south on Highway 99W.
- 13.5% to/from the east on SW Tualatin Road and SW Herman Road.
  - 8.5% on SW Tualatin Road and 5% on SW Herman Road in the AM peak hour.
  - 4% on SW Tualatin Road and 9.5% on SW Herman Road in the PM peak hour.
- 4.5% to/from the south on SW 118th Avenue.
- 10% to/from the south on SW 124th Avenue.
- 21% to/from the south on SW Teton Avenue.

The attached trip distribution figure (Attachment B) presents the percentage of trips at each study area intersection based on the locations of proposed parking and access points. Trip distribution near the site will reflect the following assumptions:

- 30% of new site trips are expected to utilize the West Leveton Access, 20% at the Center Leveton Access, 30% split evenly between the Center and South 108th Accesses, and the remaining 20% at the North 108th Access.
- 10% of new site trips will use SW Tualatin Road to access the North 108th Access.
  - Half of these trips, or 5% total, are expected to use SW 115th Avenue and SW Hazelbrook Road to access Highway 99W when exiting the site.

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.
- SW Leveton Drive/Proposed New Access (between existing West and Center Accesses).
- SW Leveton Drive/Center Access.
- SW Leveton Drive/East Access.
- SW 108th Avenue/North Access.

- SW 108th Avenue/Center Access (constructed with Building G).
- SW 108th Avenue/South Access (constructed with Building G).

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 intersections listed above for standard peak periods of 7:00-9:00 AM and 4:00-6:00 PM. An extended PM time period from 3:00-6:00 PM was counted at five intersections where the nearby Hazelbrook Middle School might cause an earlier peak. Intersections were counted on Tuesday, May 13, 2025. Raw traffic counts as well as 2025 existing traffic figures are enclosed with this letter (Attachments C and D).

Per ODOT standards, system peak hours from 7:30 AM to 8:30 AM and 4:30 PM to 5:30 PM are proposed for the OR 99W intersections in the AM and PM.

The observed site peaks from 8:00 AM to 9:00 AM and 4:45 PM to 5:45 PM are proposed as a system peak for all site driveways. The remaining intersections will be analyzed at individual intersection peaks. The site volumes are 449 (391 enter/58 exit) in the AM and 430 (67 enter/363 exit) in the PM, which is approximately 7% higher than 2024 counts, mostly due to construction activity for Building G with 85 contractors.

Traffic volumes on Tualatin Road have increased since 2024, which may be in part to construction activity on SW Tualatin-Sherwood Road and the small increase in site trips. No adjustments are proposed for this analysis.

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:

- 2025 Existing.
- 2030 Pre-Development without project.
- 2030 Post-Development with project.

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 1.03 applied to through volumes on OR 99W per ODOT's Seasonal Trend Table for count date of May 13, 2025.
- 6% of existing site trips rerouted from the Center Leveton Access to the South and Center 108th Accesses due to proposed changes to parking as noted above.
- Intersection capacity analyses will be conducted at the study area intersections using Synchro 12 software which implements the methodologies of the *Highway Capacity Manual* (HCM) 7th Edition, with v/c calculated using ODOT methodology in the APM for ODOT intersections and HCM 2000 for all other intersections.
- Trips from the approved Lam Building G project will be included as in-process volumes.

- We reviewed the prior and any new in-process project trips to include. We propose to add the KAI USA Warehouse Expansion on SW Herman Road. The land use approval has expired for Tualatin Logistics Park so it will not be included. The proposed in-process projects include the following:
  - Lam Building G.
  - Fujimi Expansion.
  - 124th Business Park.
  - KAI USA Warehouse Expansion.
  - An adjustment of site trips will be made for the existing contractors on site and is estimated to be 34 AM and 32 PM trips. Because these contractors are parking in the lot for Building G, we propose reducing the in-process trips for Building G by these amounts.
- Crash data for the most recent five years 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. Queueing will be estimated using SimTraffic, with adjustments as needed to calibrate to observed conditions and/or Synchro output. Signal warrants will follow MUTCD standards and TTI for turn lane warrants.

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,

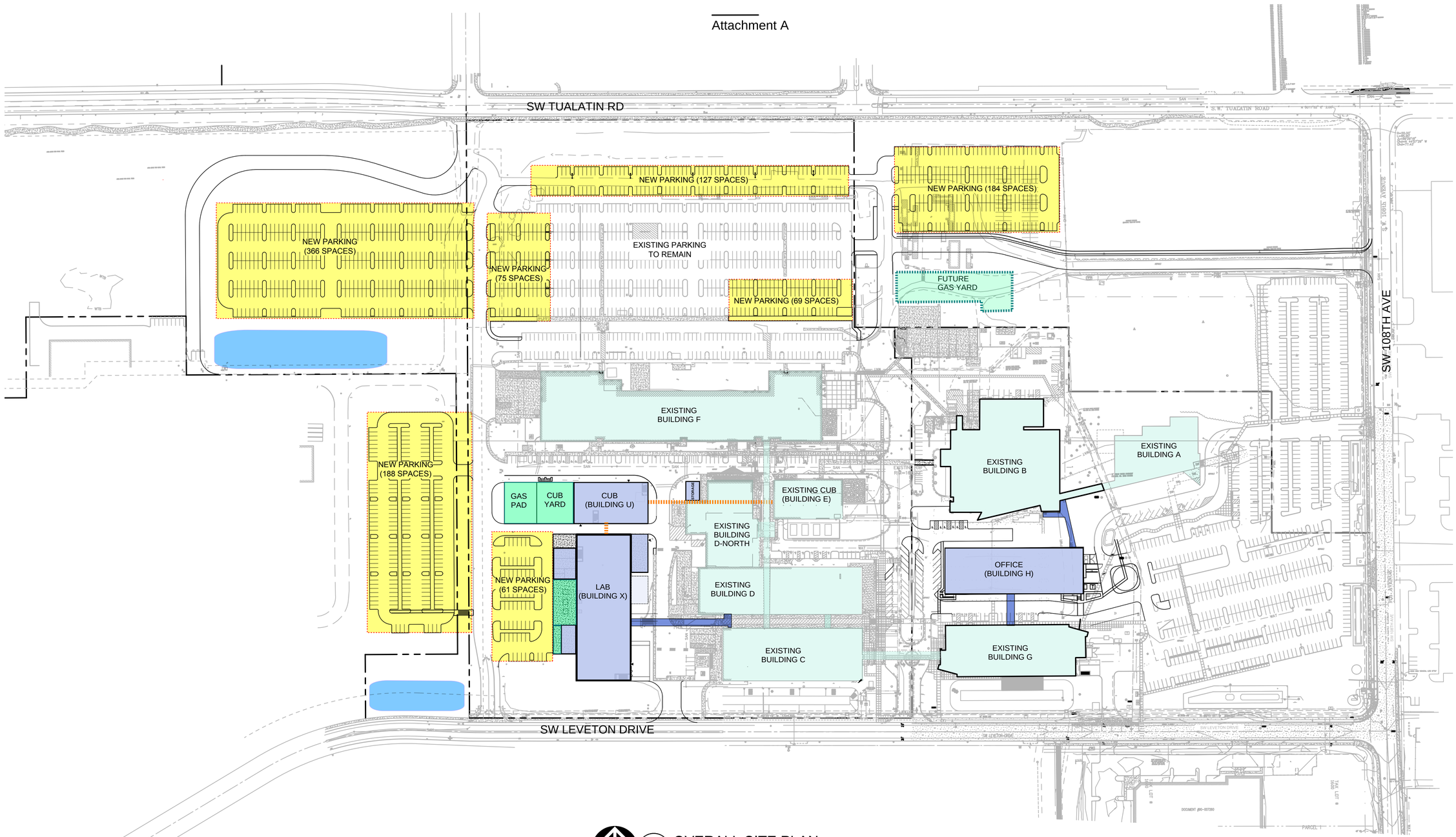


Brent Ahrend, PE
Associate Principal | Traffic Engineer

Enclosure(s): Attachment A – Site Plan
Attachment B – Existing Parking Rerouted Volumes
Attachment C – New TUX Trip Distribution
Attachment D – 2025 Existing Traffic Volumes
Attachment E – 2025 Turning Movement Counts

c: Steve Koper, Kim McMillan, Mike McCarthy, Abby McFetridge, Tony Doran, Hayden Ausland – City of Tualatin
Jinde Zhu – Washington County
John Russell – ODOT
Jennifer Otterness Majid, Mike Halvorson, Stefanie McEvers, Danielle Nonamaker, Paul Roessler, Todd Fosler – Lam Research
Joel Rabinovitz, Garth Appanaitis – DKS Associates
Suzannah Stanley, Bill Bezio, Megan Diaz, Mike Rueter, Clara Layton, Nicole Burrell – Mackenzie

Attachment A



1 EX 2 OVERALL SITE PLAN

1" = 100'-0"

100 0 50 100 200 400 1:1

(IN FEET)

1 inch = **100** ft.

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Client

Lam RESEARCH

Project

LAM RESEARCH TUALATIN

TUX

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SHEET TITLE:

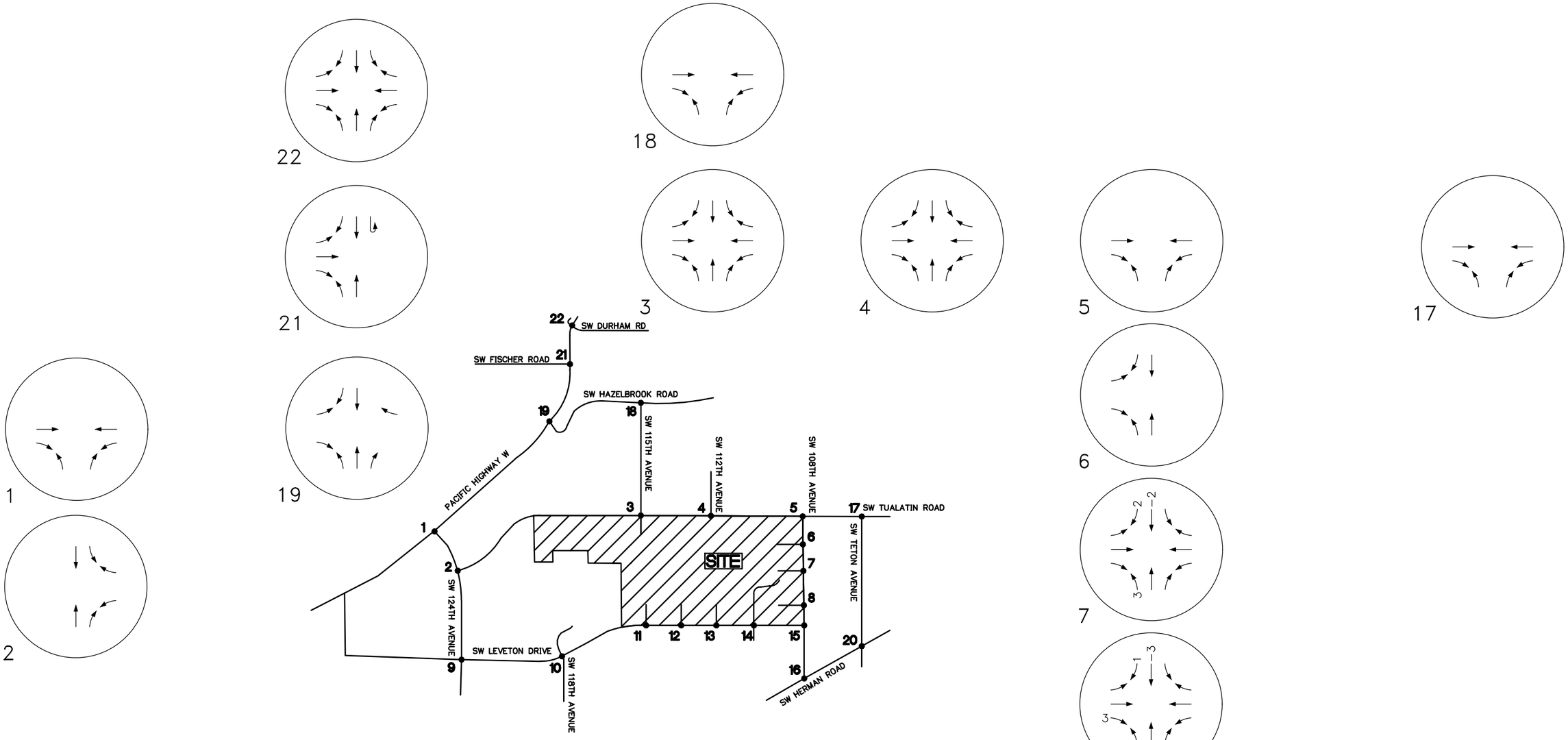
OVERALL SITE PLAN

SHEET:

EX 2

JOB NO. **2250180.00**

PRELIMINARY ONLY



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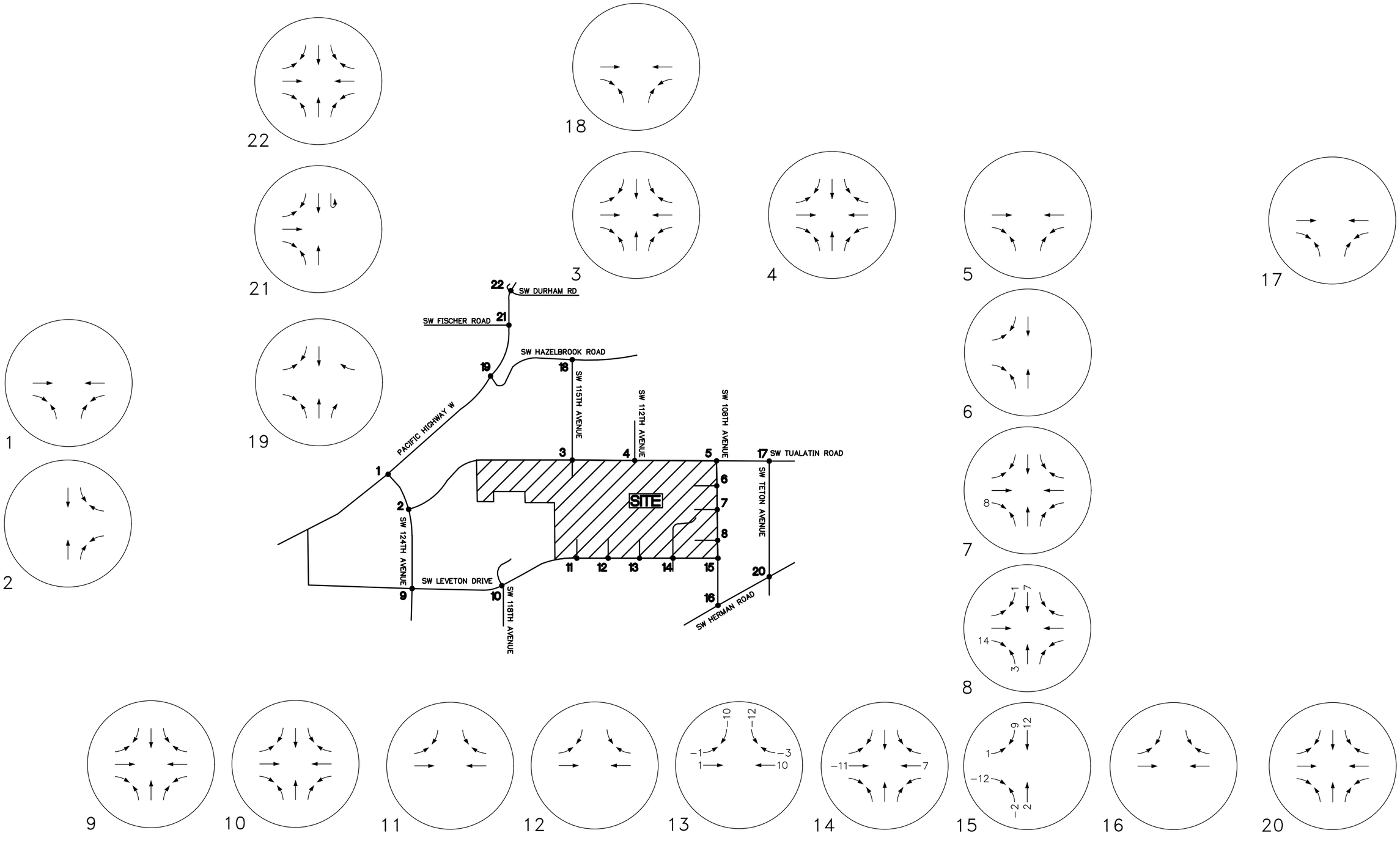
JOB NO: 225018000

EXISTING PARKING REROUTED VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
1A



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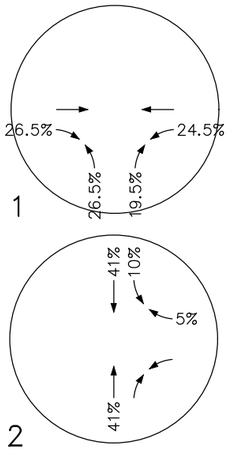
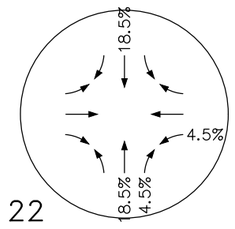
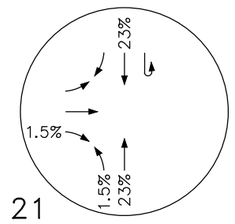
EXISTING PARKING REROUTED VOLUMES - PM PEAK HOUR

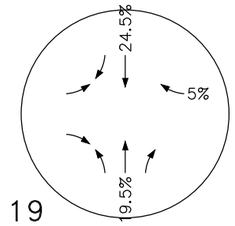
LAM TUX
TUALATIN, OR

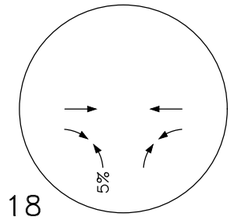
FIGURE
1B

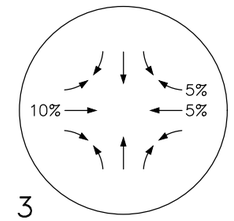


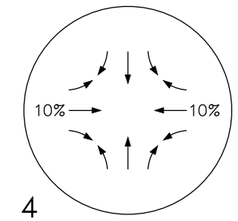


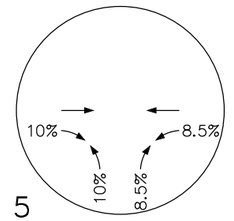


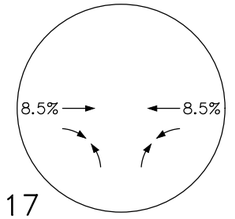


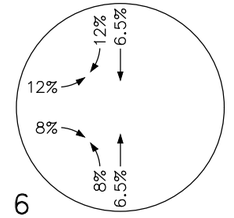


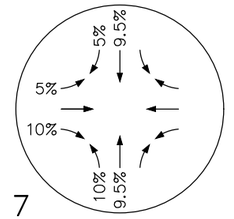


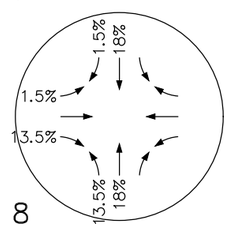


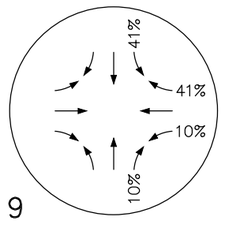


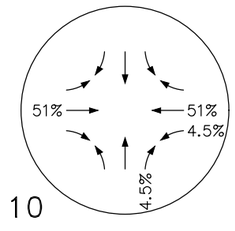


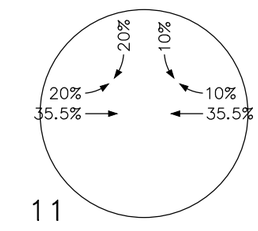


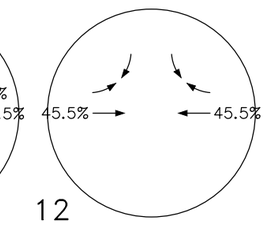


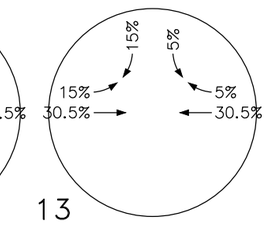


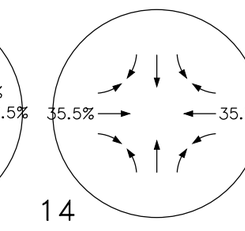


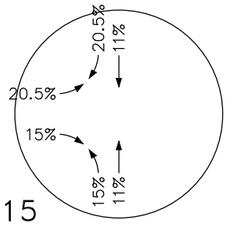


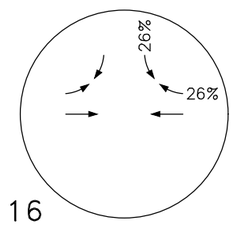


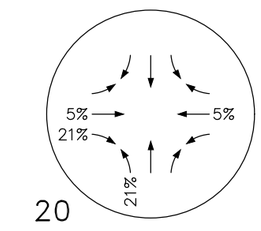












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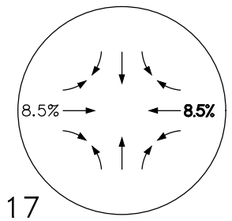

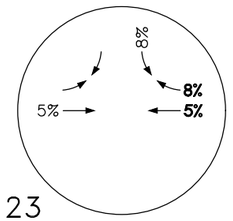

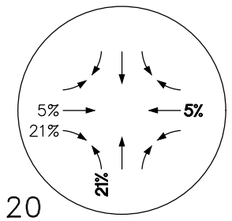

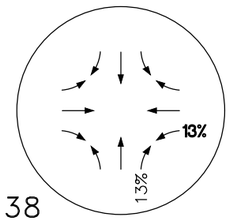

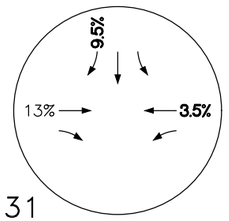

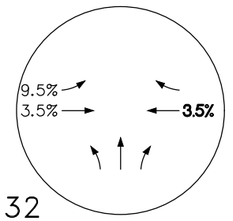

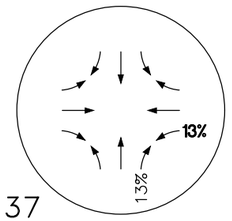

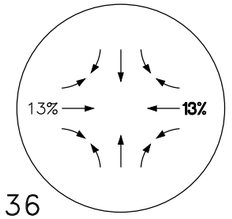

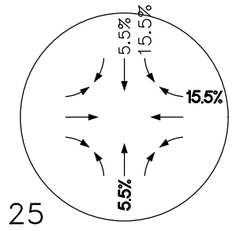

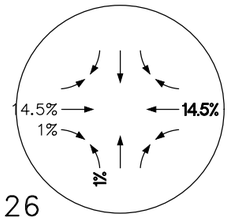

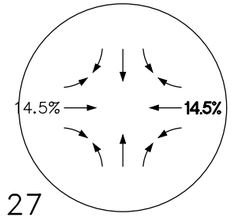

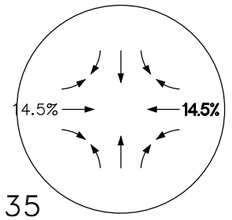

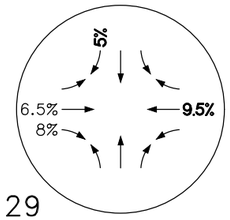

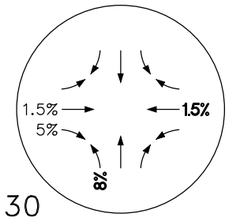

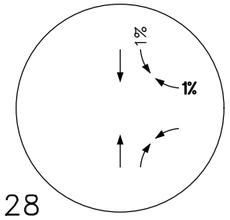

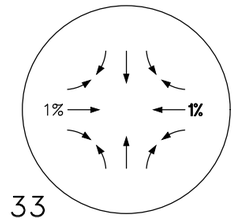

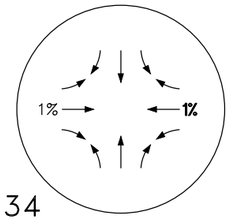

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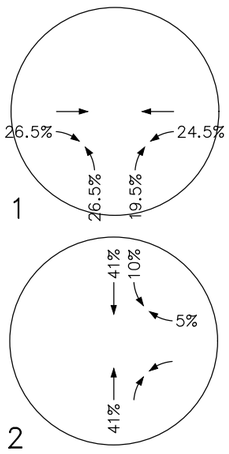

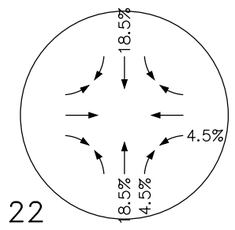

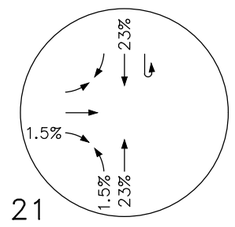

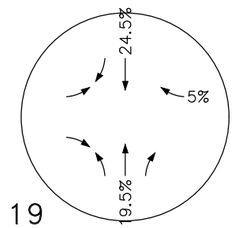

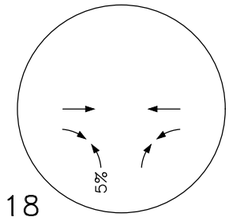

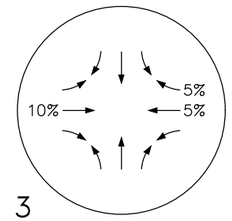

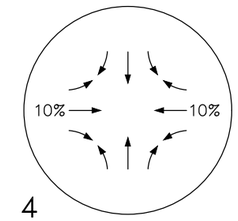

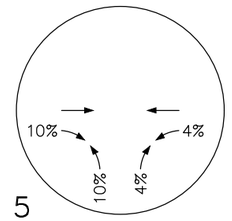

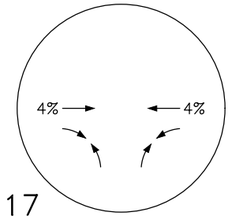

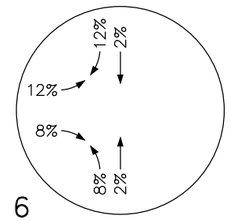

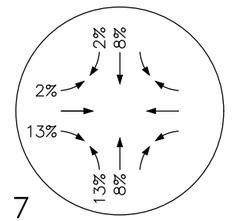

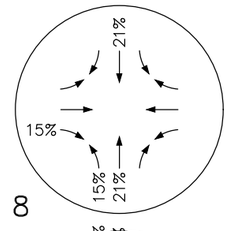

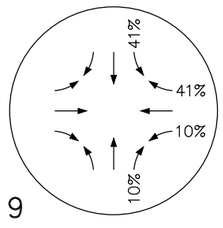

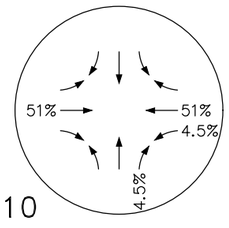

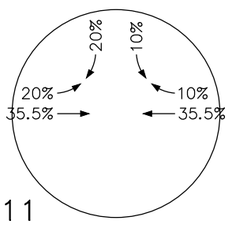

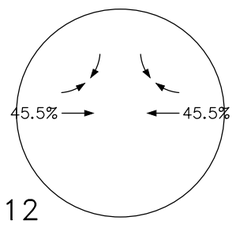

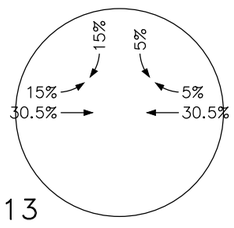

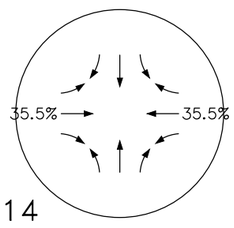

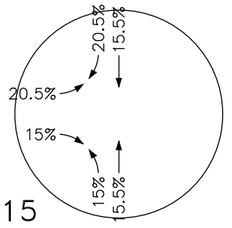

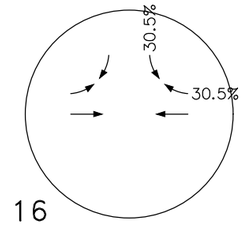

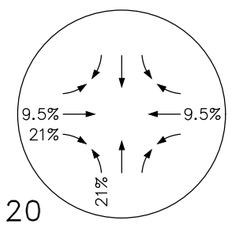

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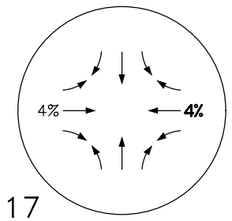
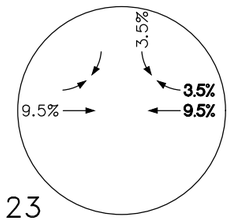
DATE: 6.24.2025
DRAWN BY: CNL
CHECKED BY: BTA
JOB NO: 225018000

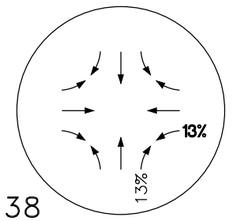
NEW TUX
TRIP DISTRIBUTION - PM PEAK HOUR

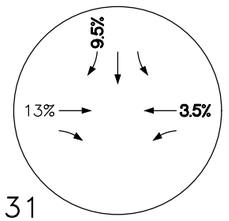
LAM TUX
TUALATIN, OR

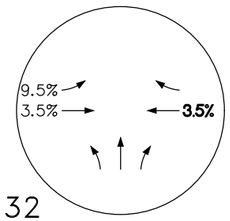
FIGURE
2C

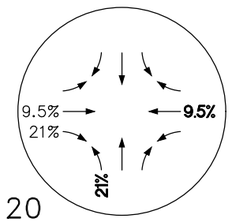


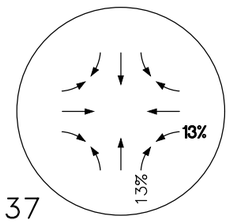


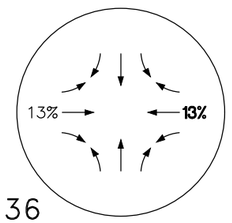


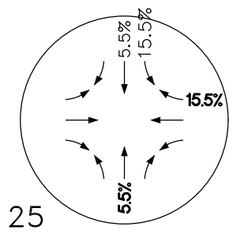


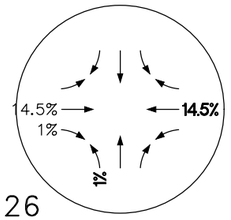


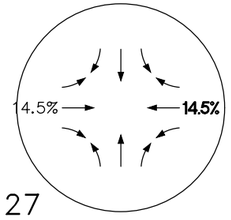


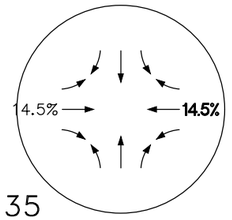


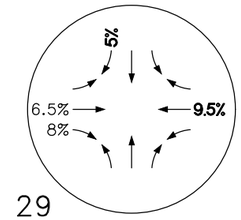


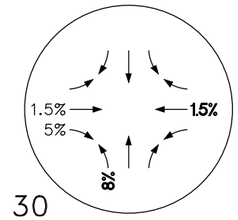


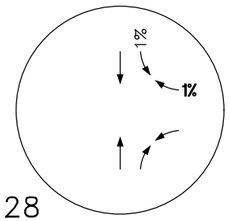


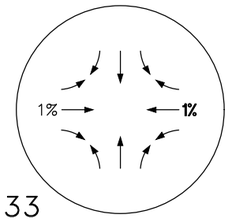


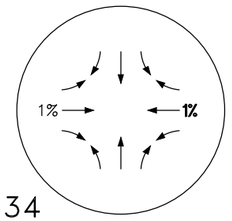












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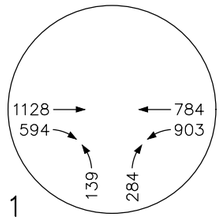

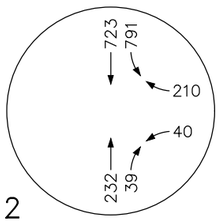

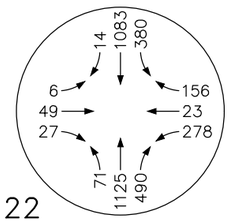

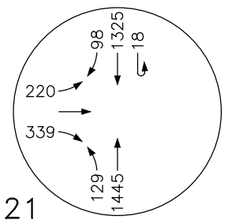

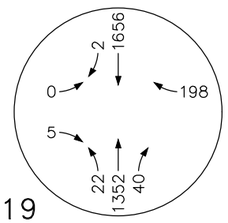

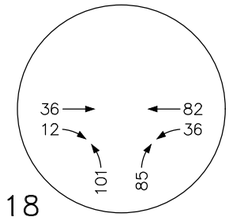

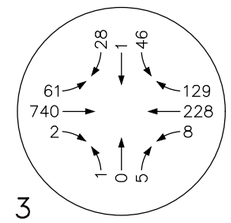

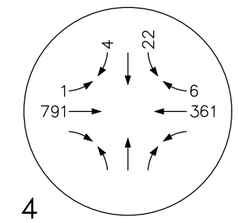

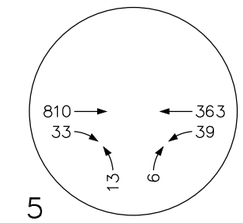

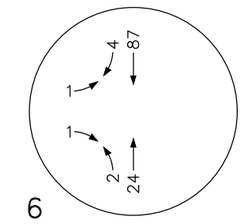

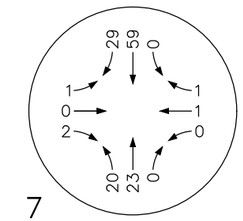

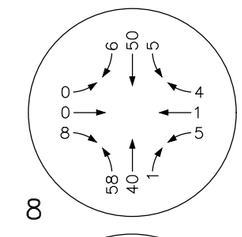

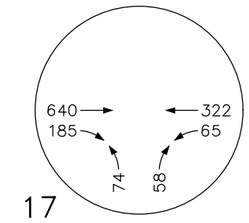

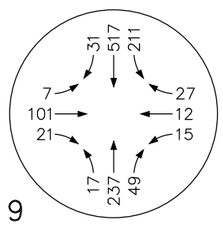

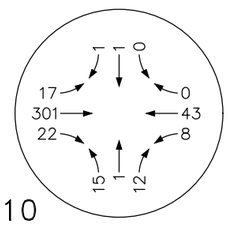

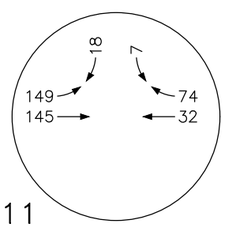

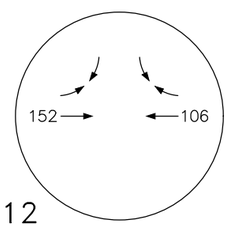

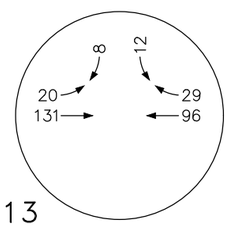

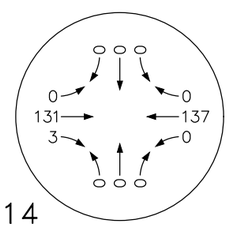

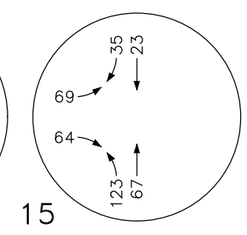

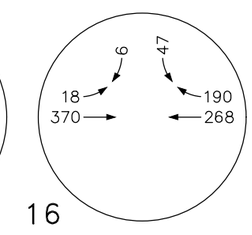

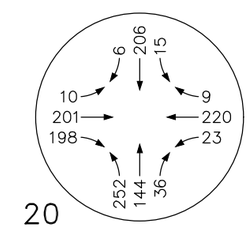

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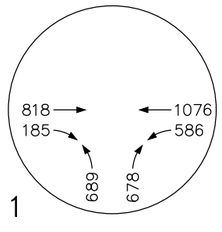
2025 EXISTING TRAFFIC VOLUMES - AM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
3A



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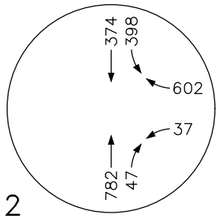

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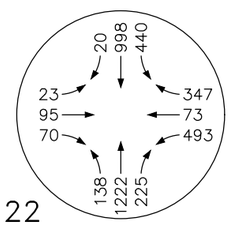

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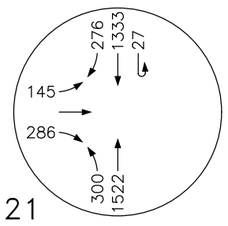

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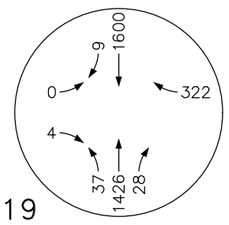

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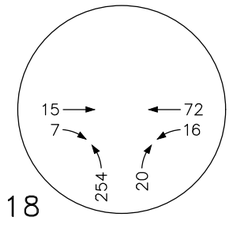

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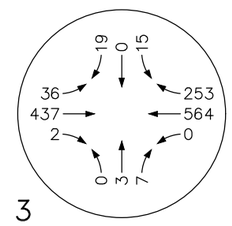

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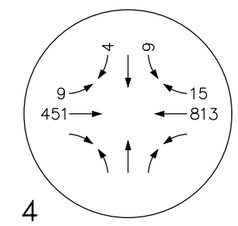

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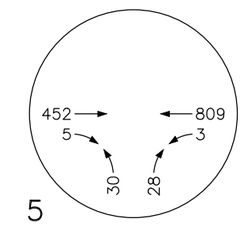

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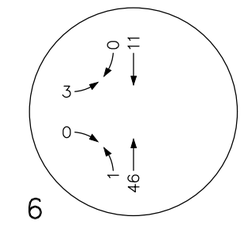

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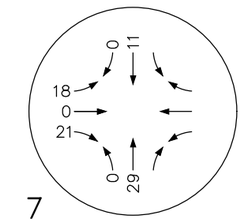

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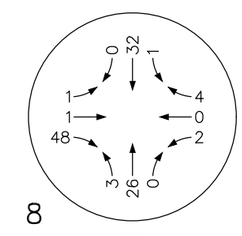

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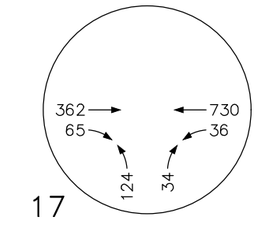

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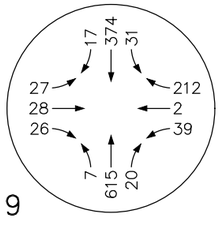

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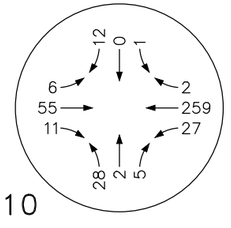

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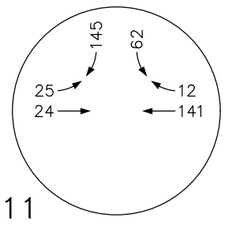

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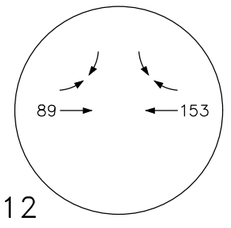

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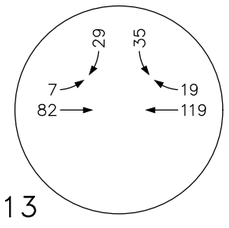

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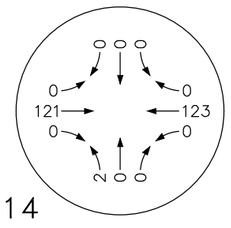

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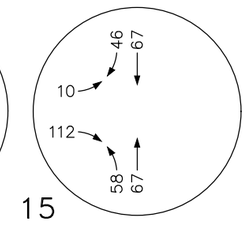

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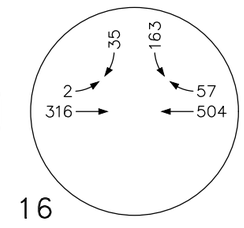

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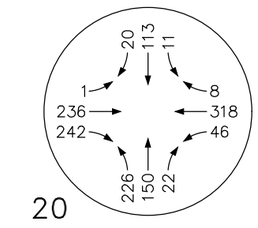

20

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DATE: 6.24.2025
DRAWN BY: CNL
CHECKED BY: BTA
JOB NO: 225018000

2025 EXISTING TRAFFIC VOLUMES - PM PEAK HOUR

LAM TUX
TUALATIN, OR

FIGURE
3B

Clara Layton

From: Mike McCarthy <mmccarthy@tualatin.gov>
Sent: Thursday, July 3, 2025 10:06 AM
To: Brent Ahrend; Clara Layton
Cc: Bill Bezio; Mike Rueter; Nicole Burrell; Suzannah Stanley; Megan Diaz; Hayden Ausland; Majid, Jen Otterness; Michael.Halvorson@lamresearch.com; McEvers, Stefanie; Nonamaker, Danielle; Roessler, Paul; Fosler, Todd; Joel Rabinovitz; Garth Appanaitis; Tony Doran; Abby McFetridge; Steve Koper; Aquilla Hurd-Ravich
Subject: RE: Tualatin Exp Lab/CUB/Bldg H
Attachments: 00LTR-City of Tualatin-LAM SMP Update TIA Scoping-250625.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Brent and Clara,

Thank you for submitting this draft scoping letter. We would not object to proceeding as planned with the following notes, modifications, and questions:

As we discussed at our meeting, please include the intersections of Hwy 99W with Fisher Rd and Durham Rd, which were included in the previous study area.

If Phase 1 is the buildings and Phase 2 is the parking and utilities, please describe where people will park for Phase 1 before Phase 2 is constructed, and show how this will be adequate parking for the demand without affecting traffic on public streets.

Table 1 ITE code lists 860 and should be corrected to 760 as reflected in the text. This does not change any assumptions/analysis

Trip Distribution/Routing - The overall distribution assumptions seem reasonable as based on zip code data. However for localized routing, it seems like more traffic leaving the site and heading north on Highway 99W might do so via Hazelbrook, especially with the internal drive aisle connecting to 115th. For traffic leaving the site and heading north on Highway 99W, the current assumption shows out of direction travel to 124th Avenue. Clarification on the traffic routing between these options should be provided.

Analysis Period - The narrative notes that the periods of 7:30 to 8:30 AM and 4:30 to 5:30 PM are proposed for the ODOT intersections based on "ODOT standards". It appears that this is just based on the system (and individual) intersection peaks for these locations, but can you include which ODOT document and standard you are referring to?

Intersection crash data - Should be analyzed generally following APM procedures including comparison to critical crash rates

Intersection queuing analysis - The narrative notes that it will be provided using a combination of SimTraffic and Synchro. SimTraffic outputs should be used unless there is a limitation that impacts the results, in which case other methods can be used as appropriate.

Analysis should use procedures from the current version of the Highway Capacity Manual (HCM 7 with ODOT-approved methodology) unless a good reason is documented for using different procedures.

Please include explanations of any Transportation Demand Management / Employee Commute Options programs that Lam uses or plans to use to help employees find options such as carpooling, transit, walking, or cycling in order to commute to work by means other than driving themselves.

Please include complete explanations for all assumptions made – such as the direction of trips, and estimates about which driveways they would use.

Our correspondence with ODOT and Washington County have not indicated a need for any further adjustments to this scope.

While we have attempted to find all the items that would need adjusting, it is possible that additional adjustments may need to be made to the final study as we see the results and/or as additional issues/questions come to light.

Thanks,

Mike McCarthy
Tualatin City Engineer
Phone: 503.691.3674
Cell: 971.666.0000

From: Brent Ahrend <BAhrend@mcknze.com>
Sent: Wednesday, June 25, 2025 1:24 PM
To: Mike McCarthy <mmccarthy@tualatin.gov>; Steve Koper <skoper@tualatin.gov>; Kim McMillan <kmcmillan@tualatin.gov>; Abby McFetridge <Amcfetridge@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>
Cc: Bill Bezio <WBezio@mcknze.com>; Mike Rueter <MRueter@mcknze.com>; Nicole Burrell <NBurrell@mcknze.com>; Suzannah Stanley <SStanley@mcknze.com>; Megan Diaz <MDiaz@mcknze.com>; Clara Layton <CLayton@mcknze.com>; Majid, Jen Otterness <jennifer.otterness@lamresearch.com>; Michael.Halvorson@lamresearch.com; McEvers, Stefanie <stefanie.mcevers@lamresearch.com>; Nonamaker, Danielle <danielle.nonamaker@lamresearch.com>; Roessler, Paul <paul.roessler@lamresearch.com>; Fosler, Todd <todd.fosler@lamresearch.com>; Joel Rabinovitz <joel.rabinovitz@dksassociates.com>; Garth Appanaitis <gaa@dksassociates.com>
Subject: Tualatin Exp Lab/CUB/Bldg H

Mike,

Please see the attached scoping letter for the updated Lam TUX site plan. Our traffic analysis will be based on this updated scoping.

We understand you will forward this to Washington County and ODOT staff for their review and input.

Let us know if you have any questions.

Thanks,

Brent Ahrend PE
D 971-346-3781 **C** 503-705-7554

Transportation Planning
Associate Principal
Professional Licenses & Certifications

Clara Layton

From: Abby McFetridge <Amcfetridge@tualatin.gov>
Sent: Tuesday, July 15, 2025 4:02 PM
To: Clara Layton; Brent Ahrend
Cc: Mike McCarthy; Rabinovitz, Joel
Subject: FW: Tualatin Exp Lab/CUB/Bldg H

Follow Up Flag: Follow up
Flag Status: Flagged

Abby McFetridge, EI
Engineering Associate
Phone: 503.691.3020

From: RUSSELL John <John.RUSSELL@odot.oregon.gov>
Sent: Monday, June 30, 2025 12:29 PM
To: Mike McCarthy <mmccarthy@tualatin.gov>; Jinde Zhu <jinde_zhu@washingtoncountyor.gov>; ODOT_R1_DevRev <ODOT_R1_DevRev@odot.oregon.gov>
Cc: Abby McFetridge <Amcfetridge@tualatin.gov>; Samuel Banceu <sbanceu@tualatin.gov>; Joel Rabinovitz <joel.rabinovitz@dksassociates.com>; Garth Appanaitis <gaa@dksassociates.com>
Subject: RE: Tualatin Exp Lab/CUB/Bldg H

Mike,

I've reviewed the scoping memo and **ODOT does not have any concerns with the proposed scope**. The only significant changes related to ODOT facilities are covered with the analysis of OR 99W at both SW 124th Ave and SW Hazelbrook Rd.

Thank you for taking the time to keep ODOT involved with this process.

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

From: Mike McCarthy <mmccarthy@tualatin.gov>
Sent: Friday, June 27, 2025 5:24 PM
To: RUSSELL John <John.RUSSELL@odot.oregon.gov>; Jinde Zhu <jinde_zhu@washingtoncountyor.gov>; ODOT_R1_DevRev <ODOT_R1_DevRev@odot.oregon.gov>
Cc: Abby McFetridge <Amcfetridge@tualatin.gov>; Samuel Banceu <sbanceu@tualatin.gov>; Joel Rabinovitz <joel.rabinovitz@dksassociates.com>; Garth Appanaitis <gaa@dksassociates.com>
Subject: FW: Tualatin Exp Lab/CUB/Bldg H

This message was sent from outside the organization. Treat attachments, links and requests with caution. Be conscious of the information you share if you respond.

Hello,

Attached is a scoping letter from Mackenzie for the updated traffic study for their revised layout. Please get us any comments you have next week.

Thanks,

Mike McCarthy
Tualatin City Engineer
Phone: 503.691.3674
Cell: 971.666.0000

From: Mike McCarthy
Sent: Wednesday, June 25, 2025 2:27 PM
To: Brent Ahrend <BAhrend@mcknze.com>; Steve Koper <skoper@tualatin.gov>; Aquilla Hurd-Ravich <ahurd-ravich@tualatin.gov>; Abby McFetridge <Amcfetridge@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>
Cc: Bill Bezio <WBezio@mcknze.com>; Mike Rueter <MRueter@mcknze.com>; Nicole Burrell <NBurrell@mcknze.com>; Suzannah Stanley <SStanley@mcknze.com>; Megan Diaz <MDiaz@mcknze.com>; Clara Layton <CLayton@mcknze.com>; Majid, Jen Otterness <jennifer.otterness@lamresearch.com>; Michael.Halvorson@lamresearch.com; McEvers, Stefanie <stefanie.mcevers@lamresearch.com>; Nonamaker, Danielle <danielle.nonamaker@lamresearch.com>; Roessler, Paul <paul.roessler@lamresearch.com>; Fosler, Todd <todd.fosler@lamresearch.com>; Joel Rabinovitz <joel.rabinovitz@dksassociates.com>; Garth Appanaitis <gaa@dksassociates.com>
Subject: RE: Tualatin Exp Lab/CUB/Bldg H

Thanks Brent – We've received this and will be reviewing it.

Mike McCarthy
Tualatin City Engineer
Phone: 503.691.3674
Cell: 971.666.0000

From: Brent Ahrend <BAhrend@mcknze.com>
Sent: Wednesday, June 25, 2025 1:24 PM
To: Mike McCarthy <mmccarthy@tualatin.gov>; Steve Koper <skoper@tualatin.gov>; Kim McMillan <kmcmillan@tualatin.gov>; Abby McFetridge <Amcfetridge@tualatin.gov>; Tony Doran <TDORAN@tualatin.gov>; Hayden Ausland <hausland@tualatin.gov>
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Subject: Tualatin Exp Lab/CUB/Bldg H

Mike,

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We understand you will forward this to Washington County and ODOT staff for their review and input.

Let us know if you have any questions.

Thanks,

Brent Ahrend PE
D 971-346-3781 **C** 503-705-7554

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APPENDIX C.

TRANSIT INFORMATION

97-Tualatin-Sherwood Rd

NORTH

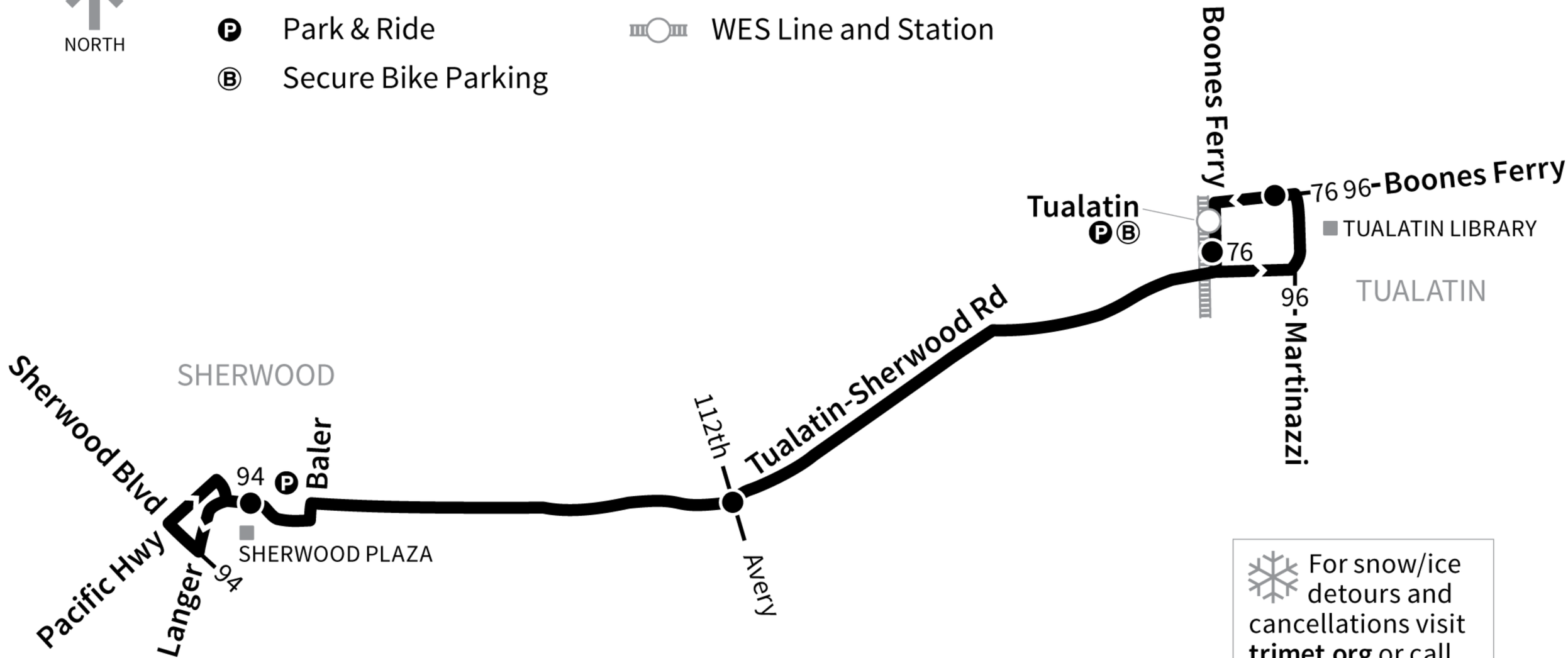
Route/Schedule Stop

Park & Ride

Secure Bike Parking

–35– Transfer Nearby

WES Line and Station



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

TRIMET

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.

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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 & Martinazzi 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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94-Tigard/Sherwood

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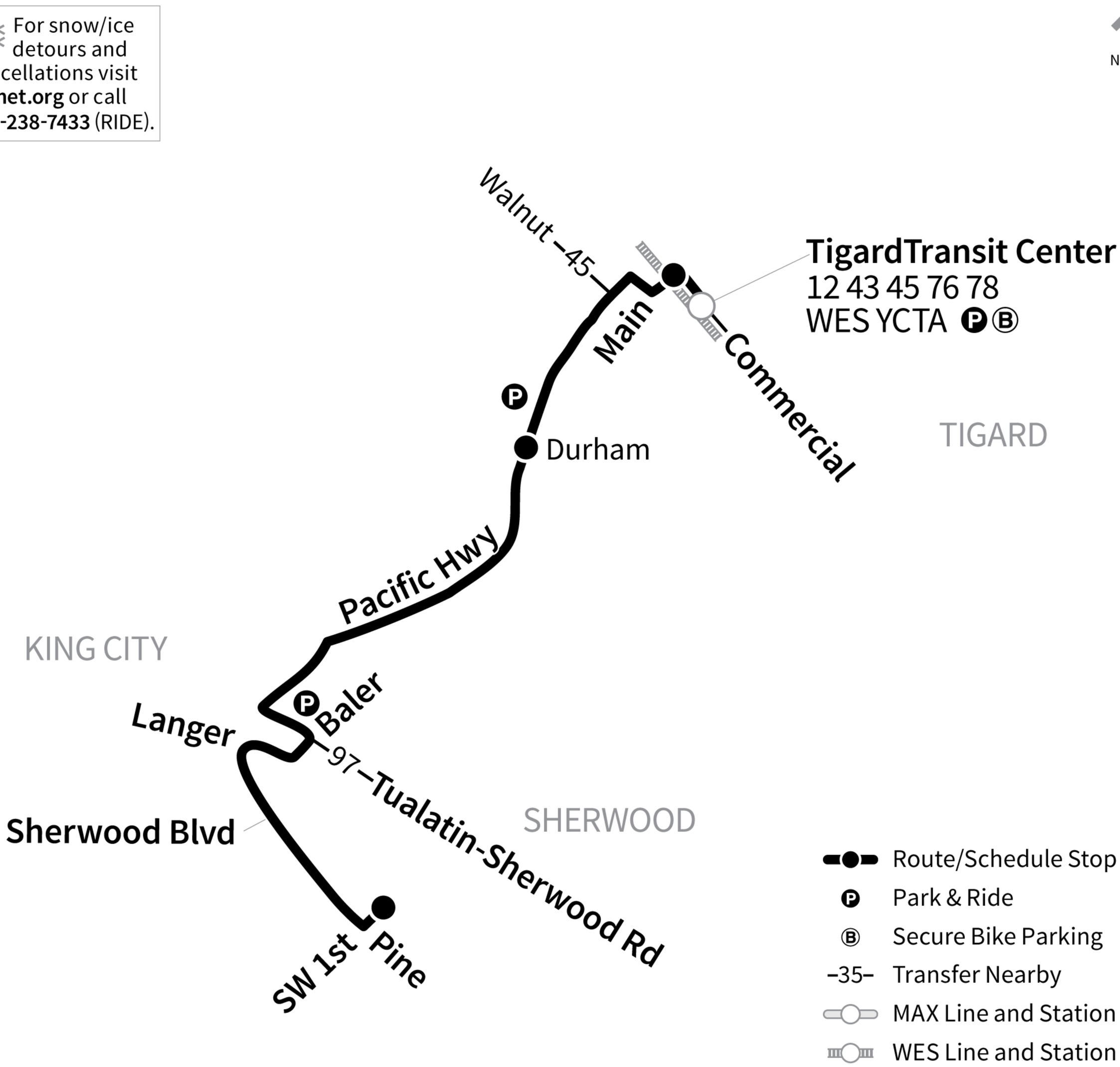

TRIMET

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**	—

Times in darker print are p.m.

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TRIMET

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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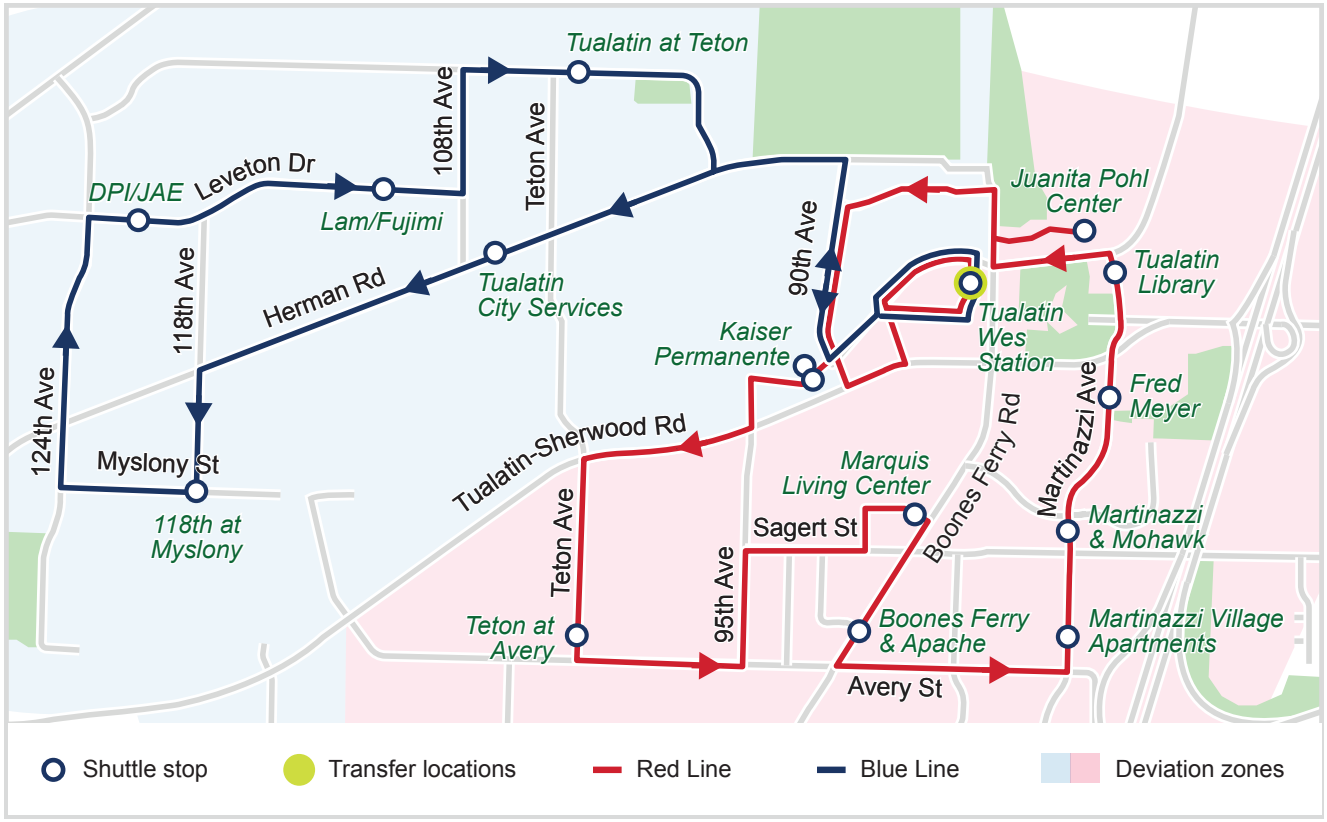

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Child passengers must be restrained in child safety seats until they weigh forty pounds or reach the upper weight limit for the car seat in use. Infants must ride rear-facing until they reach two years of age. Ride Connection does not provide/ install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

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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**

COVID-19 SAFETY

All our vehicles and drivers follow CDC protocols for COVID safe practices.

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

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To link accessible, responsive transportation alternatives with community and individual needs.

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Updated December 2022



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Ride CONNECTION

Tualatin Shuttle

PM times in bold
Transfers TM TriMet

Blue Line Schedule

Southbound WES Arrival Time TM	Tualatin WES Station TM	Tualatin City Services	118th at Myslony	DPI/JAE	SW Leveton (Fujimi & LAM Research)	SW Tualatin Rd & SW Teton Ave	Tualatin WES Station TM	Northbound WES Depart Time 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 TM	Tualatin WES Station TM	Kaiser Permanente	SW Teton Ave & SW Avery St	Marquis Living Center	Fred Meyer	Tualatin Library	Juanita Pohl Center	Tualatin WES Station TM	Northbound WES Depart Time 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 accomodate you.

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

Ride CONNECTION

APPENDIX D.

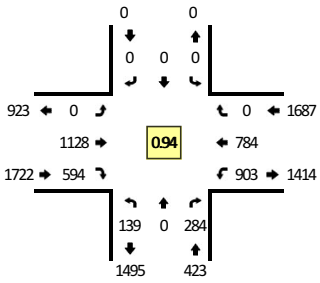
TRAFFIC COUNT SUMMARIES

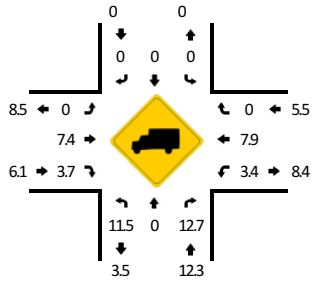
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

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

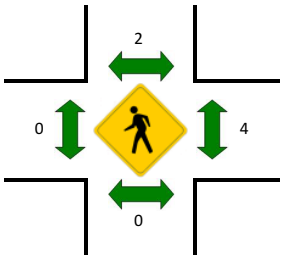
QC JOB #: 17042801
DATE: Tue, May 13 2025

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

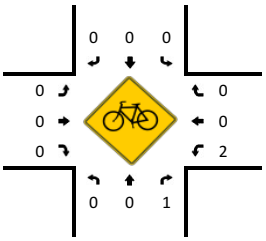


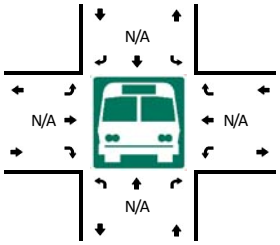


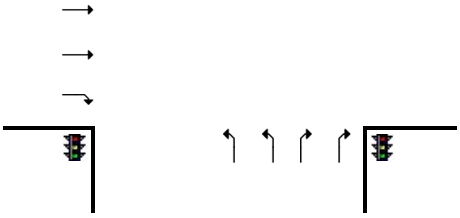
TRUE DATA TO IMPROVE MOBILITY

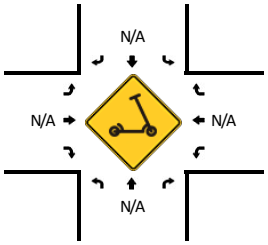












15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Pacific Hwy (Eastbound)				SW Pacific Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	29	0	50	0	0	0	0	0	0	307	76	0	145	196	0	0	803	
7:15 AM	33	0	68	0	0	0	0	0	0	339	121	0	198	199	0	0	958	
7:30 AM	34	0	76	0	0	0	0	0	0	282	146	0	164	214	0	0	916	
7:45 AM	41	0	65	0	0	0	0	0	0	252	178	0	286	193	0	0	1015	3692
8:00 AM	27	0	67	0	0	0	0	0	0	312	148	0	228	171	0	2	955	3844
8:15 AM	37	0	76	0	0	0	0	0	0	282	122	0	223	206	0	0	946	3832
8:30 AM	41	0	79	1	0	0	0	0	0	268	136	0	185	176	0	0	886	3802
8:45 AM	49	0	81	0	0	0	0	0	0	235	98	0	177	176	0	0	816	3603

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	260	0	0	0	0	0	0	1008	712	0	1144	772	0	0	4060
Heavy Trucks	24	0	20		0	0	0		0	88	32		24	44	0		232
Buses																	
Pedestrians		0				8				0				8			16
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:03 PM

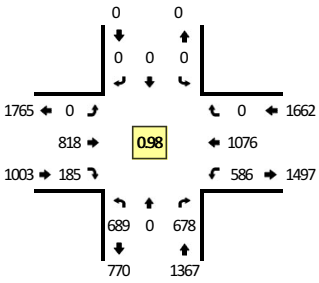
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

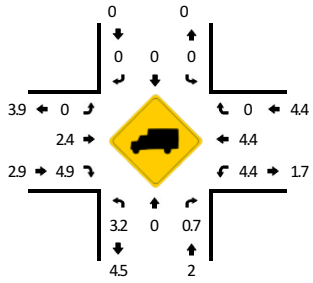
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

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

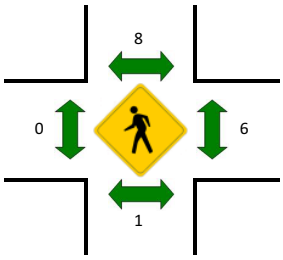
QC JOB #: 17042802
DATE: Tue, May 13 2025

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

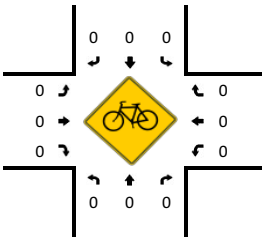


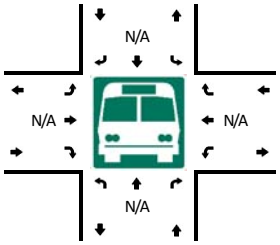


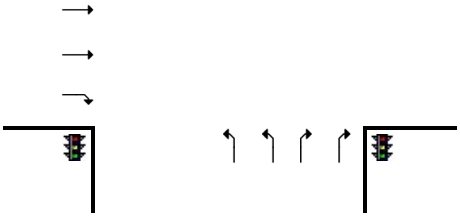


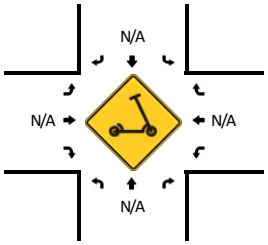












15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Pacific Hwy (Eastbound)				SW Pacific Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	156	0	207	0	0	0	0	0	0	223	73	0	119	259	0	1	1038	
4:15 PM	159	0	158	0	0	0	0	0	0	185	55	0	143	240	0	0	940	
4:30 PM	180	0	169	0	0	0	0	0	0	202	40	0	166	271	0	0	1028	
4:45 PM	155	0	152	0	0	0	0	0	0	203	48	0	143	264	0	0	965	3971
5:00 PM	188	0	190	0	0	0	0	0	0	213	44	0	139	250	0	1	1025	3958
5:15 PM	166	0	167	0	0	0	0	0	0	200	53	0	137	291	0	0	1014	4032
5:30 PM	125	0	158	0	0	0	0	0	0	197	38	0	105	237	0	0	860	3864
5:45 PM	83	0	118	0	0	0	0	0	0	214	35	0	91	231	0	2	774	3673

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	720	0	676	0	0	0	0	0	0	808	160	0	664	1084	0	0	4112
Heavy Trucks	4	0	4		0	0	0		0	16	12		36	72	0		144
Buses																	
Pedestrians		0				16				0				12			28
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:04 PM

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

Type of peak hour being reported: Intersection Peak

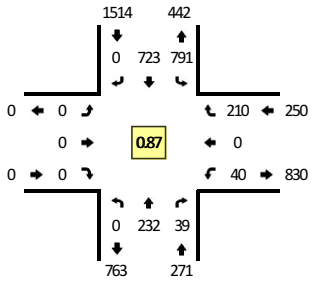
Method for determining peak hour: Total Entering Volume

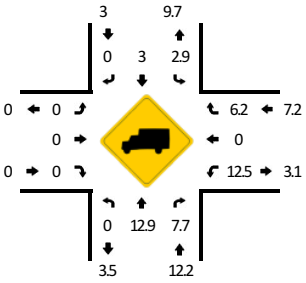
LOCATION: SW 124th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

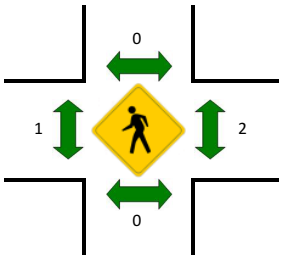
QC JOB #: 17042803
DATE: Tue, May 13 2025

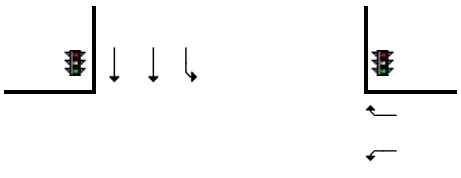
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

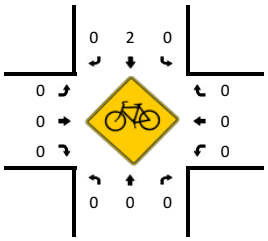
TRUE DATA TO IMPROVE MOBILITY

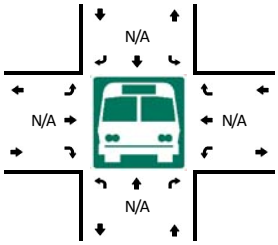


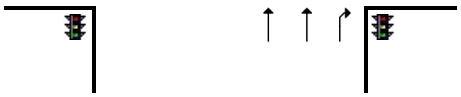


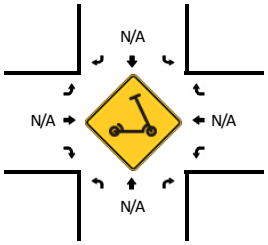












15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	58	3	0	106	114	0	0	0	0	0	0	3	0	31	0	315	
7:15 AM	0	57	6	0	158	160	0	0	0	0	0	0	7	0	40	0	428	
7:30 AM	0	54	8	0	187	127	0	0	0	0	0	0	9	0	47	0	432	
7:45 AM	0	50	8	0	241	219	0	0	0	0	0	0	13	0	57	0	588	1763
8:00 AM	0	52	16	0	215	173	0	0	0	0	0	0	6	0	48	0	510	1958
8:15 AM	0	68	9	0	165	174	0	0	0	0	0	0	10	0	49	0	475	2005
8:30 AM	0	62	6	0	170	157	0	0	0	0	0	0	11	0	56	0	462	2035
8:45 AM	0	70	14	0	132	143	0	0	0	0	0	0	3	0	54	0	416	1863

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	200	32	0	964	876	0	0	0	0	0	0	52	0	228	0	2352
Heavy Trucks	0	16	8		36	16	0		0	0	0		0	0	20		96
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM

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

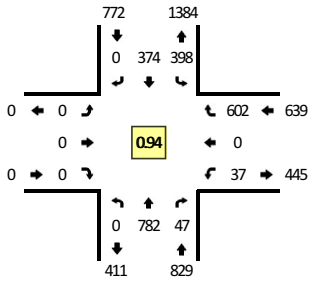
Type of peak hour being reported: Intersection Peak

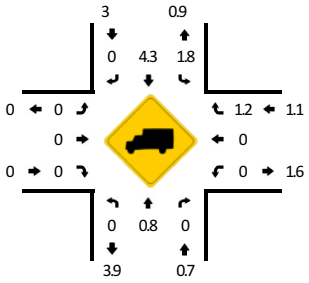
Method for determining peak hour: Total Entering Volume

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

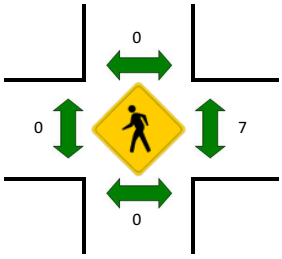
QC JOB #: 17042804
DATE: Tue, May 13 2025

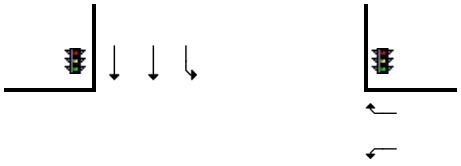
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

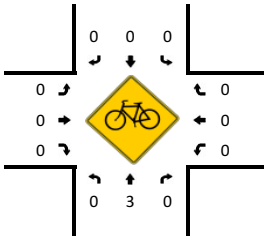


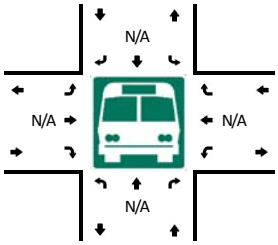


TRUE DATA TO IMPROVE MOBILITY

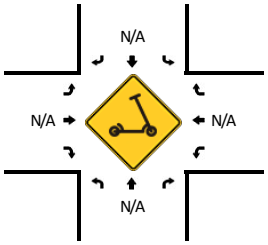












15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	228	14	0	105	89	0	0	0	0	0	0	13	0	141	0	590	
4:15 PM	0	177	4	0	102	96	0	0	0	0	0	0	9	0	133	0	521	
4:30 PM	0	214	13	0	102	108	0	0	0	0	0	0	6	0	155	0	598	
4:45 PM	0	177	9	0	91	94	0	0	0	0	0	0	6	0	142	0	519	2228
5:00 PM	0	202	12	0	89	86	0	0	0	0	0	0	16	0	162	0	567	2205
5:15 PM	0	189	13	0	116	86	0	0	0	0	0	0	9	0	143	0	556	2240
5:30 PM	0	161	4	0	80	62	0	0	0	0	0	0	4	0	116	0	427	2069
5:45 PM	0	110	9	0	79	48	0	0	0	0	0	0	3	0	80	0	329	1879

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	856	52	0	408	432	0	0	0	0	0	0	24	0	620	0	2392
Heavy Trucks	0	4	0		8	32	0		0	0	0		0	0	0		44
Buses																	
Pedestrians		0				0				0				12			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

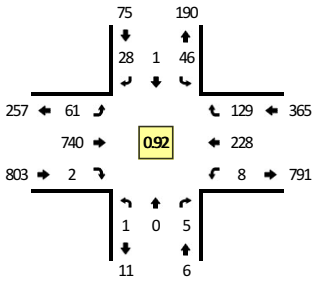
Report generated on 6/2/2025 1:12 PM

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

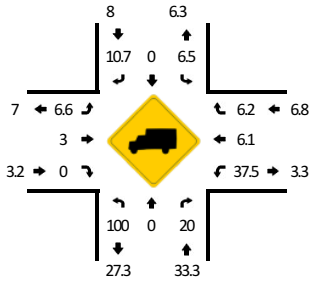
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

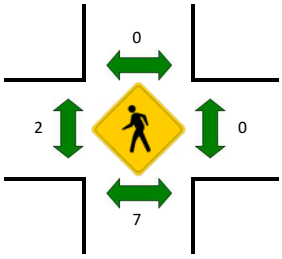
LOCATION: SW 115th Ave -- SW Tualatin Rd | **QC JOB #:** 17042831
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

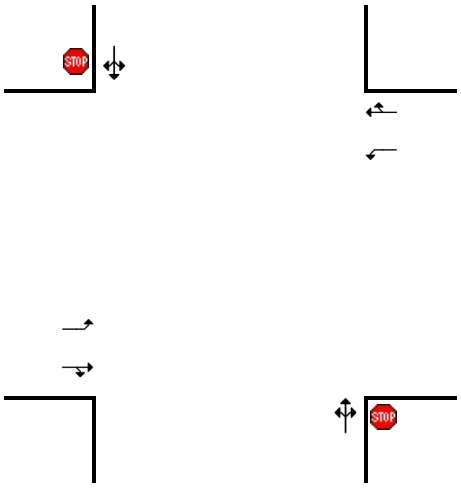
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

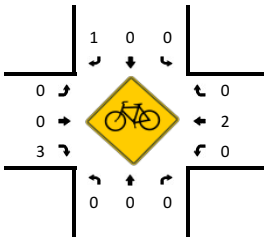


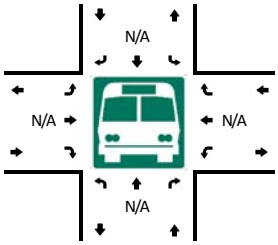


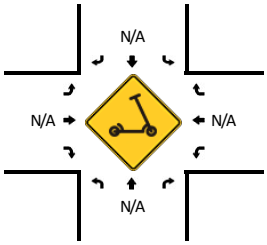












15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	3	0	3	0	6	90	0	0	2	24	7	0	135	
7:15 AM	0	0	0	0	11	0	7	0	10	138	1	0	1	27	14	0	209	
7:30 AM	0	0	1	0	11	0	6	0	8	179	1	0	3	50	24	0	283	
7:45 AM	0	0	0	0	13	1	2	0	10	225	0	0	1	70	19	0	341	968
8:00 AM	0	0	1	0	8	0	6	0	19	190	0	0	3	54	45	0	326	1159
8:15 AM	1	0	3	0	14	0	14	0	24	146	1	0	1	54	41	0	299	1249
8:30 AM	0	1	1	0	10	0	9	0	13	145	0	0	2	64	24	0	269	1235
8:45 AM	0	1	0	0	6	0	1	0	3	138	0	0	0	59	31	0	239	1133

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	52	4	8	0	40	900	0	0	4	280	76	0	1364
Heavy Trucks	0	0	0		0	0	0		8	36	0		0	24	0		68
Buses																	
Pedestrians		12				0				8				0			20
Bicycles	0	0	0		0	0	4		0	0	8		0	4	0		16
Scooters																	

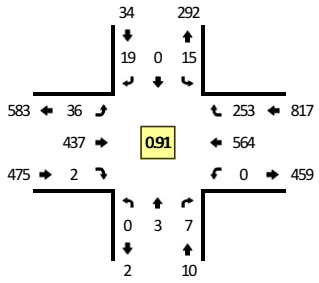
Comments:

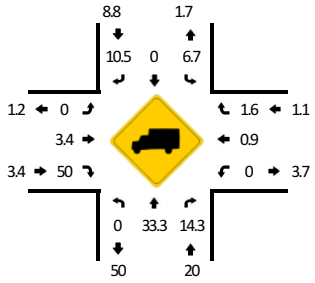
Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

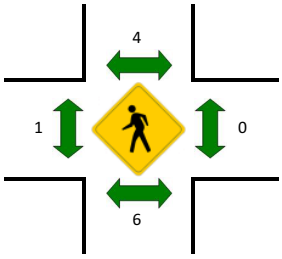
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: SW 115th Ave -- SW Tualatin Rd | **QC JOB #:** 17042832
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

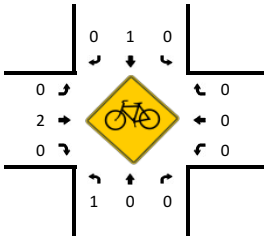
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

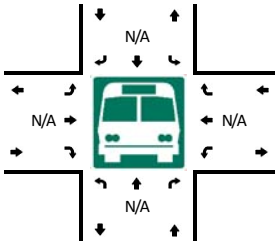




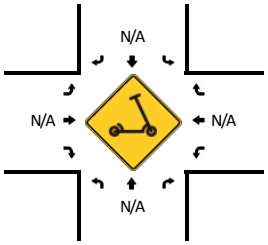












15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	1	1	0	9	0	5	0	17	93	0	0	0	104	54	0	286	
3:15 PM	0	1	0	0	11	0	18	0	6	85	1	0	0	103	43	0	268	
3:30 PM	1	1	1	0	7	0	8	0	6	89	0	0	0	112	57	0	282	
3:45 PM	0	1	2	0	6	0	6	0	9	124	2	0	0	122	60	0	332	1168
4:00 PM	0	1	4	0	2	0	7	0	6	100	0	0	0	130	76	0	326	1208
4:15 PM	0	1	0	0	3	0	3	0	6	105	0	0	0	135	58	0	311	1251
4:30 PM	0	0	1	0	4	0	3	0	15	108	0	0	0	177	59	0	367	1336
4:45 PM	0	2	1	0	7	0	3	0	14	77	0	0	2	144	48	0	298	1302
5:00 PM	0	1	1	0	8	0	5	0	14	103	0	0	0	125	77	0	334	1310
5:15 PM	0	1	1	0	8	0	6	0	9	94	0	0	1	124	74	0	318	1317
5:30 PM	1	0	3	0	5	0	3	0	9	77	2	0	2	99	53	0	254	1204
5:45 PM	0	0	1	0	1	0	3	0	4	68	1	0	0	75	56	0	209	1115

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	4	0	16	0	12	0	60	432	0	0	0	708	236	0	1468
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

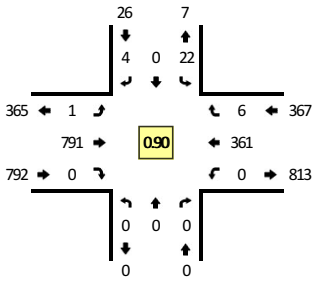
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

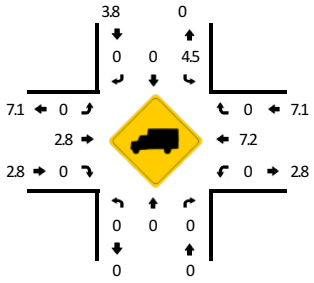
LOCATION: SW 112th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

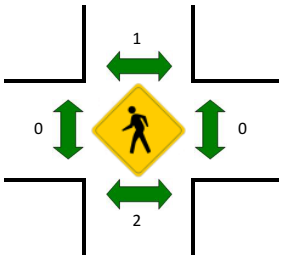
QC JOB #: 17042839
DATE: Tue, May 13 2025

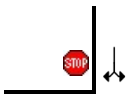
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

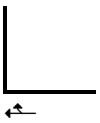


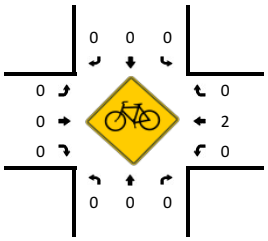


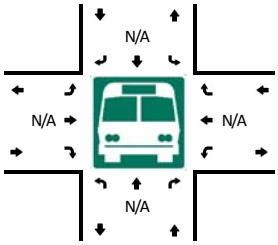


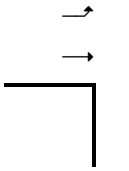




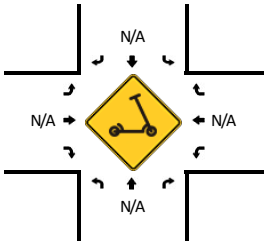












15-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	1	0	0	90	0	0	0	31	2	0	125	
7:15 AM	0	0	0	0	11	0	1	0	3	148	0	0	0	41	1	0	205	
7:30 AM	0	0	0	0	12	0	2	0	0	191	0	0	0	75	1	0	281	
7:45 AM	0	0	0	0	2	0	0	0	1	233	0	0	0	90	2	0	328	939
8:00 AM	0	0	0	0	4	0	2	0	0	201	0	0	0	100	0	0	307	1121
8:15 AM	0	0	0	0	4	0	0	0	0	166	0	0	0	96	3	0	269	1185
8:30 AM	0	0	0	0	7	0	2	0	0	156	0	0	0	85	1	0	251	1155
8:45 AM	0	0	0	0	5	0	2	0	1	140	0	0	0	89	2	0	239	1066

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	4	932	0	0	0	360	8	0	1312
Heavy Trucks	0	0	0		0	0	0		0	28	0		0	24	0		52
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM

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

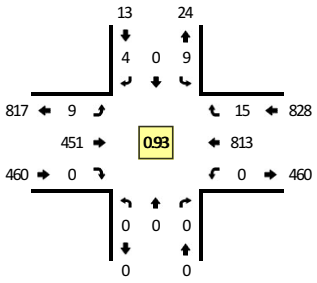
Type of peak hour being reported: Intersection Peak

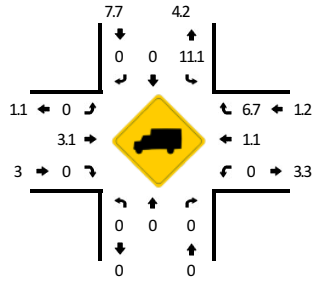
Method for determining peak hour: Total Entering Volume

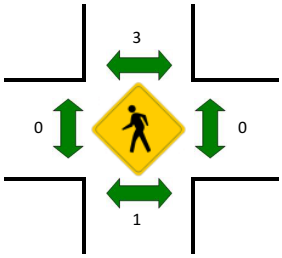
LOCATION: SW 112th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

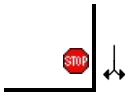
QC JOB #: 17042840
DATE: Tue, May 13 2025

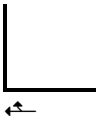
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

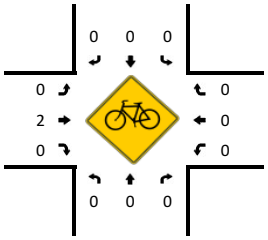


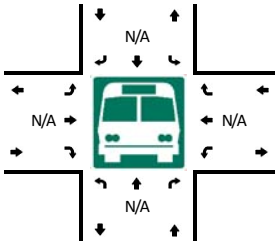


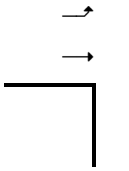




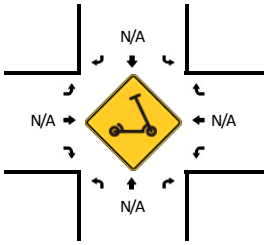












15-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	2	0	1	0	1	100	0	0	0	163	5	0	272	
3:15 PM	0	0	0	0	1	0	0	0	1	97	0	0	0	142	3	0	244	
3:30 PM	0	0	0	0	4	0	1	0	2	95	0	0	0	169	3	0	274	
3:45 PM	0	0	0	0	3	0	0	0	2	132	0	0	0	182	7	0	326	1116
4:00 PM	0	0	0	0	2	0	1	0	3	103	0	0	0	207	1	0	317	1161
4:15 PM	0	0	0	0	3	0	2	0	1	106	0	0	0	190	6	0	308	1225
4:30 PM	0	0	0	0	1	0	1	0	3	110	0	0	0	234	1	0	350	1301
4:45 PM	0	0	0	0	8	0	2	0	3	81	0	0	0	191	9	0	294	1269
5:00 PM	0	0	0	0	2	0	1	0	3	109	0	0	0	200	7	0	322	1274
5:15 PM	0	0	0	0	2	0	0	0	5	97	0	0	0	201	10	0	315	1281
5:30 PM	0	0	0	0	3	0	2	0	3	81	0	0	0	151	9	0	249	1180
5:45 PM	0	0	0	0	0	0	1	0	0	72	0	0	0	127	2	0	202	1088

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	4	0	4	0	12	440	0	0	0	936	4	0	1400
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM

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

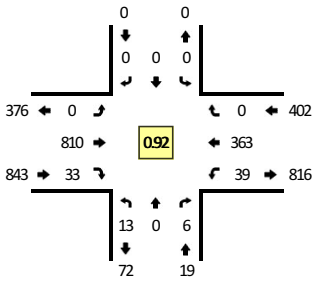
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

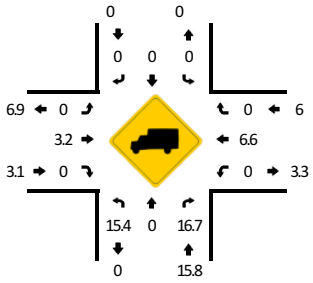
LOCATION: SW 108th Ave -- SW Tualatin Rd
CITY/STATE: Tualatin, OR

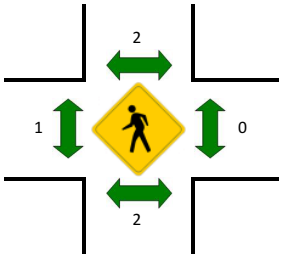
QC JOB #: 17042833
DATE: Tue, May 13 2025

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

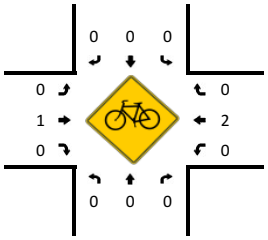


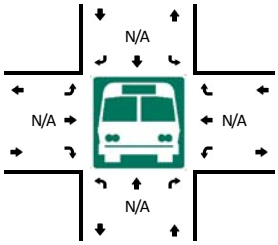




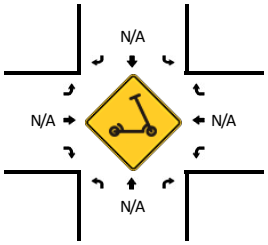












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	91	2	0	3	37	0	0	134	
7:15 AM	1	0	2	0	0	0	0	0	0	151	6	0	8	40	0	0	208	
7:30 AM	2	0	0	0	0	0	0	0	0	221	2	0	4	75	0	0	304	
7:45 AM	1	0	1	0	0	0	0	0	0	231	7	0	8	95	0	0	343	989
8:00 AM	1	0	3	0	0	0	0	0	0	194	11	0	15	103	0	0	327	1182
8:15 AM	9	0	2	0	0	0	0	0	0	164	13	0	12	90	0	0	290	1264
8:30 AM	3	0	4	0	0	0	0	0	0	156	8	0	9	83	0	0	263	1223
8:45 AM	2	0	2	0	0	0	0	0	0	135	12	0	10	85	0	0	246	1126

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	0	0	0	0	0	924	28	0	32	380	0	0	1372
Heavy Trucks	0	0	0		0	0	0		0	36	0		0	24	0		60
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

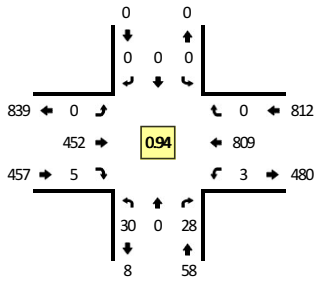
Report generated on 6/2/2025 1:12 PM

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

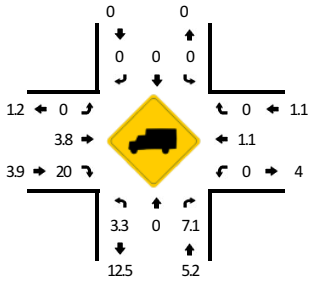
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

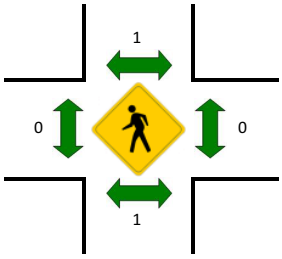
LOCATION: SW 108th Ave -- SW Tualatin Rd | **QC JOB #:** 17042834
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

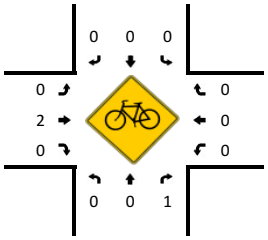


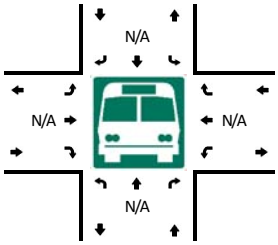




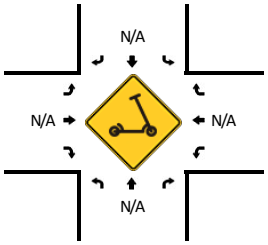












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	9	0	6	0	0	0	0	0	0	100	2	0	1	158	0	0	276	
3:15 PM	2	0	3	0	0	0	0	0	0	100	2	0	2	148	0	0	257	
3:30 PM	7	0	4	0	0	0	0	0	0	99	0	0	0	171	0	0	281	
3:45 PM	5	0	11	0	0	0	0	0	0	129	2	0	0	188	0	0	335	1149
4:00 PM	7	0	6	0	0	0	0	0	0	109	2	0	0	202	0	0	326	1199
4:15 PM	6	0	3	0	0	0	0	0	0	107	1	0	2	194	0	0	313	1255
4:30 PM	12	0	8	0	0	0	0	0	0	107	0	0	1	225	0	0	353	1327
4:45 PM	5	0	4	0	0	0	0	0	0	89	1	0	4	200	0	0	303	1295
5:00 PM	6	0	7	0	0	0	0	0	0	101	3	0	0	209	0	0	326	1295
5:15 PM	5	0	10	0	0	0	0	0	0	100	0	0	1	204	0	0	320	1302
5:30 PM	6	0	6	0	0	0	0	0	0	80	2	0	1	161	0	0	256	1205
5:45 PM	2	0	3	0	0	0	0	0	0	75	0	0	2	132	0	0	214	1116

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	32	0	0	0	0	0	0	428	0	0	4	900	0	0	1412
Heavy Trucks	0	0	4		0	0	0		0	8	0		0	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- North Lam Access

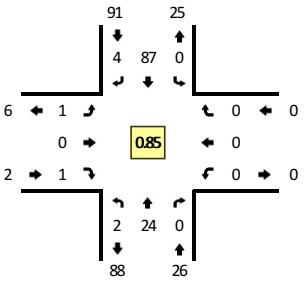
CITY/STATE: Tualatin, OR

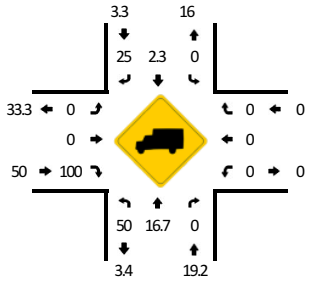
QC JOB #: 17042841

DATE: Tue, May 13 2025

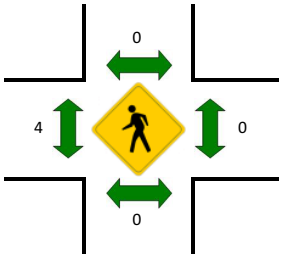
Peak-Hour: 8:00 AM -- 9:00 AM

Peak 15-Min: 8:15 AM -- 8:30 AM

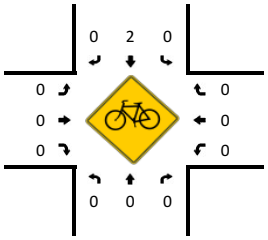


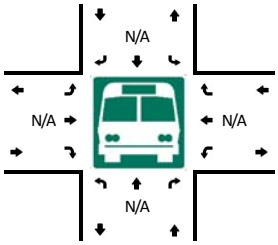


TRUE DATA TO IMPROVE MOBILITY

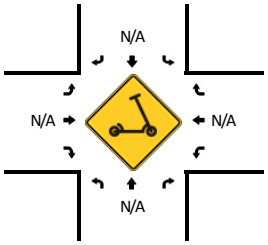












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				North Lam Access (Eastbound)				North Lam Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	1	0	0	0	5	0	0	0	0	2	1	0	0	0	0	11	
7:15 AM	2	2	0	0	0	13	1	0	1	0	1	0	0	0	0	0	20	
7:30 AM	0	1	0	0	0	6	1	0	1	0	2	0	0	0	0	0	11	
7:45 AM	0	2	0	0	0	12	1	0	0	0	0	0	0	0	0	0	15	57
8:00 AM	1	2	0	0	0	28	0	0	1	0	0	0	0	0	0	0	32	78
8:15 AM	0	11	0	0	0	24	0	0	0	0	0	0	0	0	0	0	35	93
8:30 AM	0	7	0	0	0	17	0	0	0	0	0	0	0	0	0	0	24	106
8:45 AM	1	4	0	0	0	18	4	0	0	0	1	0	0	0	0	0	28	119

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	44	0	0	0	96	0	0	0	0	0	0	0	0	0	0	140
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:08 PM

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

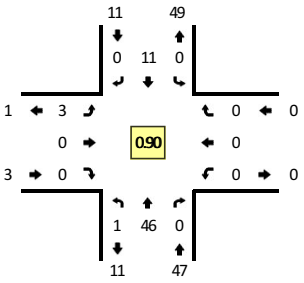
Type of peak hour being reported: User-Defined

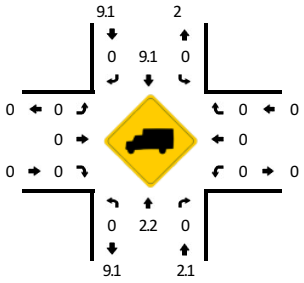
Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- North Lam Access
CITY/STATE: Tualatin, OR

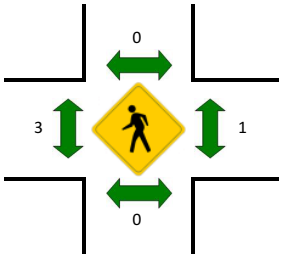
QC JOB #: 17042842
DATE: Tue, May 13 2025

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

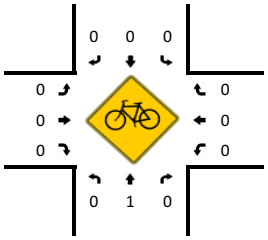


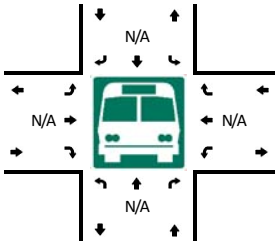


TRUE DATA TO IMPROVE MOBILITY

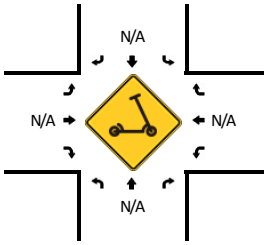












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				North Lam Access (Eastbound)				North Lam Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	11	0	0	0	2	0	0	1	0	1	0	0	0	0	0	15	
4:15 PM	0	9	0	0	0	2	1	0	0	0	0	0	0	0	0	0	12	
4:30 PM	0	19	0	0	0	1	0	0	1	0	1	0	0	0	0	0	22	
4:45 PM	0	10	0	0	0	5	0	0	0	0	0	0	0	0	0	0	15	64
5:00 PM	0	10	0	0	0	3	0	0	2	0	0	0	0	0	0	0	15	64
5:15 PM	1	14	0	0	0	1	0	0	1	0	0	0	0	0	0	0	17	69
5:30 PM	0	12	0	0	0	2	0	0	0	0	0	0	0	0	0	0	14	61
5:45 PM	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0	0	9	55

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	56	0	0	0	4	0	0	4	0	0	0	0	0	0	0	68
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:10 PM

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

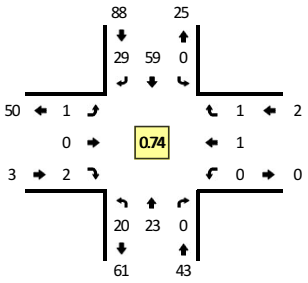
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

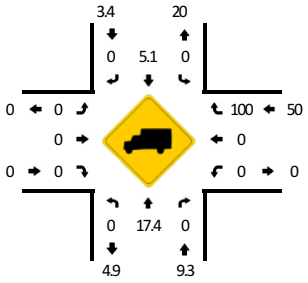
LOCATION: SW 108th Ave -- Central Lam Access/North 18220 Access
CITY/STATE: Tualatin, OR

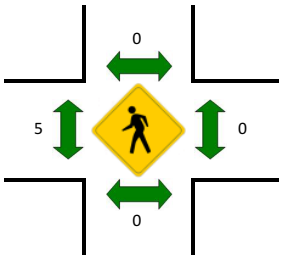
QC JOB #: 17042829
DATE: Tue, May 13 2025

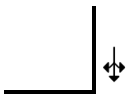
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

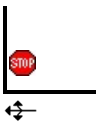


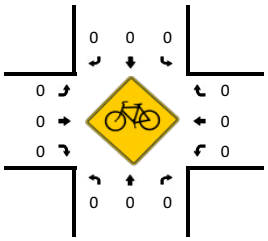
TRUE DATA TO IMPROVE MOBILITY

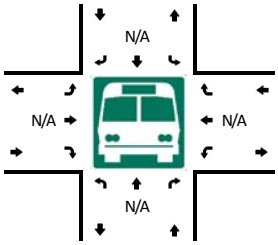


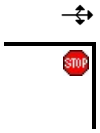


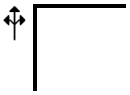


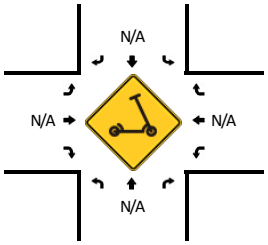












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				Central Lam Access/North 18220 Access (Eastbound)				Central Lam Access/North 18220 Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	2	0	0	3	4	2	0	0	0	1	0	0	0	1	0	16	
7:15 AM	0	4	0	0	1	10	3	0	0	0	0	0	0	0	0	1	19	
7:30 AM	5	1	0	0	0	6	2	0	0	0	0	0	0	0	0	0	14	
7:45 AM	5	2	0	0	0	6	5	0	0	0	0	0	0	0	0	0	18	67
8:00 AM	4	2	0	0	0	18	10	0	1	0	1	0	0	0	0	0	36	87
8:15 AM	9	11	0	0	0	21	4	0	0	0	0	0	0	1	0	0	46	114
8:30 AM	4	6	0	0	0	6	10	0	0	0	1	0	0	0	0	0	27	127
8:45 AM	3	4	0	0	0	14	5	0	0	0	0	0	0	0	1	0	27	136

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	44	0	0	0	84	16	0	0	0	0	0	0	4	0	0	184
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:08 PM

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

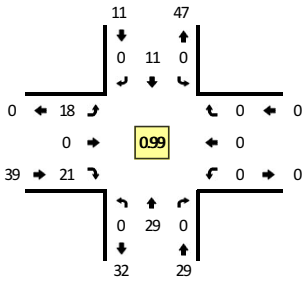
Type of peak hour being reported: User-Defined

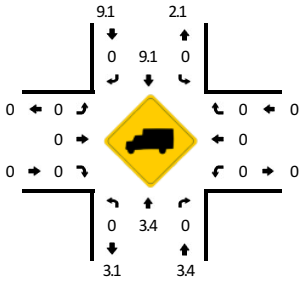
Method for determining peak hour: Total Entering Volume

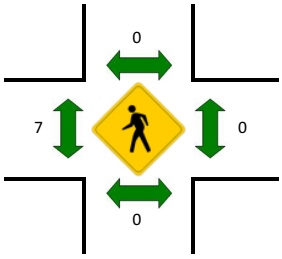
LOCATION: SW 108th Ave -- Central Lam Access/North 18220 Access
CITY/STATE: Tualatin, OR

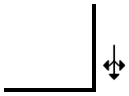
QC JOB #: 17042830
DATE: Tue, May 13 2025

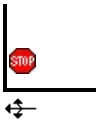
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

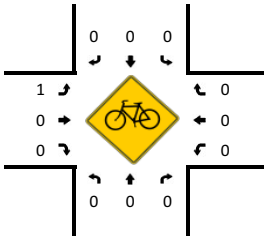


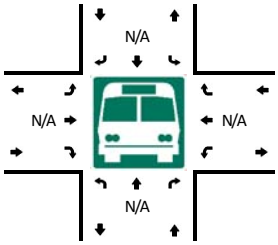


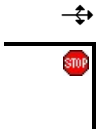


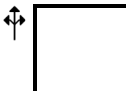


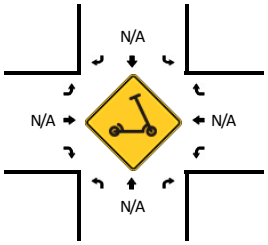












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				Central Lam Access/North 18220 Access (Eastbound)				Central Lam Access/North 18220 Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	8	0	0	0	1	1	0	2	0	1	0	0	0	0	0	14	
4:15 PM	1	7	0	0	0	1	1	0	2	0	2	0	0	0	0	0	14	
4:30 PM	0	12	0	0	0	2	0	0	7	0	2	0	0	0	0	0	23	
4:45 PM	0	7	0	0	0	5	0	0	3	0	5	0	0	0	0	0	20	71
5:00 PM	0	8	0	0	0	3	0	0	2	0	6	0	0	0	0	0	19	76
5:15 PM	0	8	0	0	0	1	0	0	7	0	4	0	0	0	0	0	20	82
5:30 PM	0	6	0	0	0	2	0	0	6	0	6	0	0	0	0	0	20	79
5:45 PM	0	3	0	0	0	3	0	0	3	0	3	0	0	0	0	0	12	71

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	28	0	0	0	20	0	0	12	0	20	0	0	0	0	0	80
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:10 PM

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

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- South Lam Access/Ascentec North Access

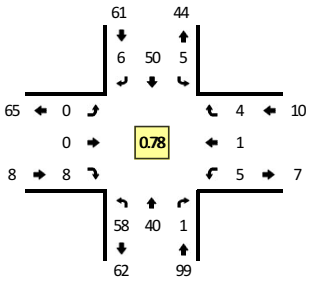
CITY/STATE: Tualatin, OR

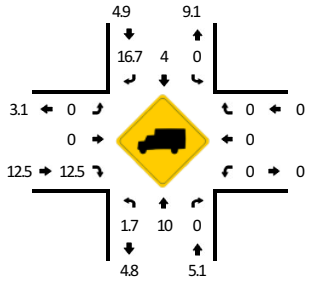
QC JOB #: 17042827

DATE: Tue, May 13 2025

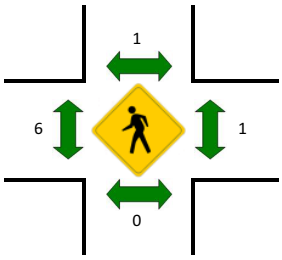
Peak-Hour: 8:00 AM -- 9:00 AM

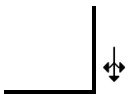
Peak 15-Min: 8:15 AM -- 8:30 AM

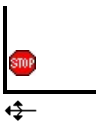


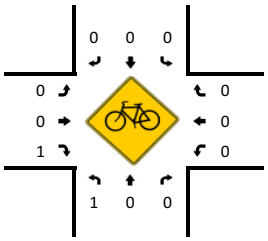


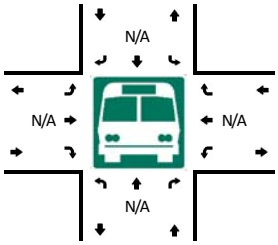
TRUE DATA TO IMPROVE MOBILITY

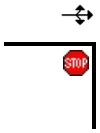


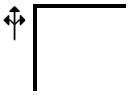


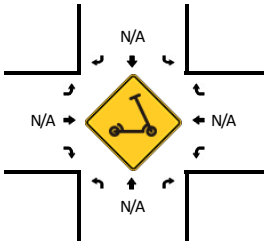












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				South Lam Access/Ascentec North Access (Eastbound)				South Lam Access/Ascentec North Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	5	2	0	0	7	1	0	1	0	0	0	0	0	0	0	17	
7:15 AM	3	3	0	0	1	7	2	0	1	0	2	0	0	0	0	0	19	
7:30 AM	3	6	0	0	2	5	0	0	0	0	0	0	1	0	0	0	17	
7:45 AM	9	7	0	0	0	7	0	0	0	0	0	0	1	0	0	0	24	77
8:00 AM	12	7	1	0	1	16	2	0	0	0	2	0	1	0	0	0	42	102
8:15 AM	12	18	0	0	2	19	0	0	0	0	3	0	0	0	2	1	57	140
8:30 AM	18	9	0	0	1	5	1	0	0	0	2	0	2	0	2	0	40	163
8:45 AM	16	6	0	0	1	10	3	0	0	0	1	0	1	1	0	0	39	178

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	72	0	0	8	76	0	0	0	0	12	0	0	0	8	4	228
Heavy Trucks	0	4	0		0	0	0		0	0	4		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:08 PM

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

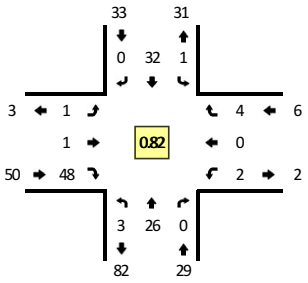
Type of peak hour being reported: User-Defined

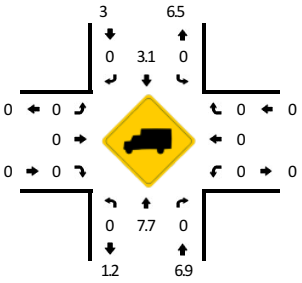
Method for determining peak hour: Total Entering Volume

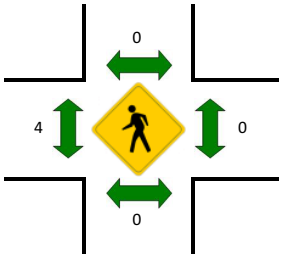
LOCATION: SW 108th Ave -- South Lam Access/Ascentec North Access
CITY/STATE: Tualatin, OR

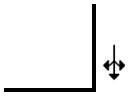
QC JOB #: 17042828
DATE: Tue, May 13 2025

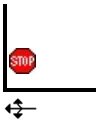
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

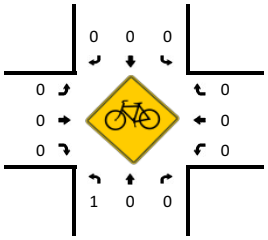


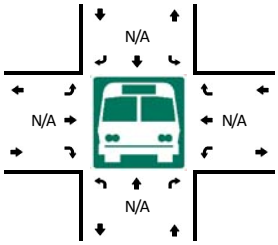


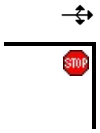


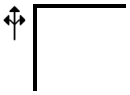


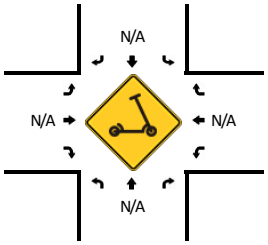












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				South Lam Access/Ascentec North Access (Eastbound)				South Lam Access/Ascentec North Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	9	0	0	0	2	0	0	0	0	8	0	0	0	0	0	21	
4:15 PM	1	6	1	0	0	3	0	0	0	0	6	0	0	0	2	0	19	
4:30 PM	0	11	1	0	0	4	0	0	0	0	2	0	3	0	1	0	22	
4:45 PM	0	5	0	0	0	10	0	0	0	0	5	0	1	0	2	0	23	85
5:00 PM	1	8	0	0	1	8	0	0	0	1	16	0	1	0	0	0	36	100
5:15 PM	1	6	0	0	0	5	0	0	1	0	11	0	0	0	1	0	25	106
5:30 PM	1	7	0	0	0	9	0	0	0	0	16	0	0	0	1	0	34	118
5:45 PM	1	2	0	0	0	8	0	0	1	0	12	0	0	0	0	0	24	119

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	32	0	0	4	32	0	0	0	4	64	0	4	0	0	0	144
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				8				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

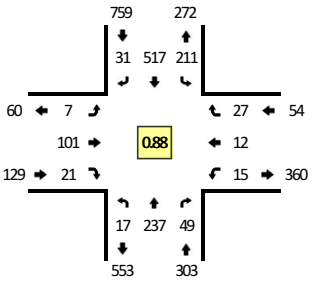
Report generated on 6/2/2025 1:10 PM

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

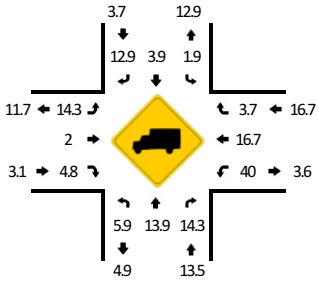
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

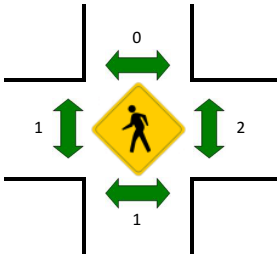
LOCATION: SW 124th Ave -- SW Leveton Dr | **QC JOB #:** 17042805
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

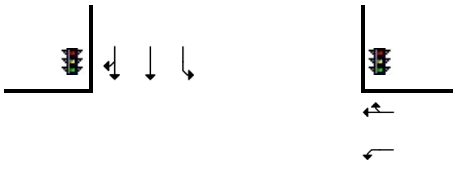
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

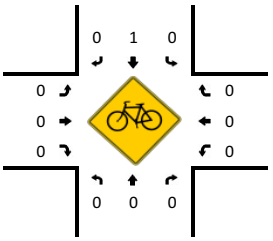


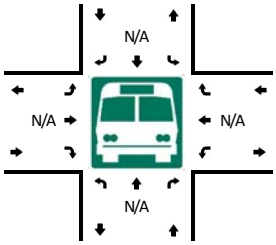
TRUE DATA TO IMPROVE MOBILITY

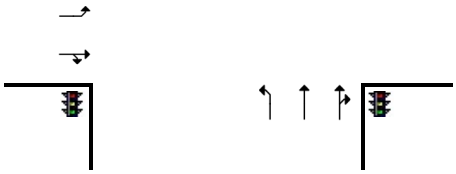


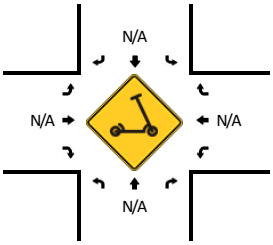












15-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	46	7	0	26	89	4	0	7	13	3	0	0	2	10	0	213	
7:15 AM	3	47	5	0	31	126	9	0	5	17	11	0	3	1	9	0	267	
7:30 AM	8	54	14	0	33	98	6	0	2	18	6	0	1	0	7	0	247	
7:45 AM	5	53	13	0	57	158	11	1	0	41	5	0	1	4	5	0	354	1081
8:00 AM	5	59	9	0	52	124	7	0	2	28	9	0	5	2	9	0	311	1179
8:15 AM	3	69	17	0	60	118	4	0	1	16	2	0	5	2	5	0	302	1214
8:30 AM	4	56	10	0	41	117	9	0	4	16	5	0	4	4	8	0	278	1245
8:45 AM	2	83	10	0	44	100	4	0	0	16	9	0	4	2	5	0	279	1170

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	212	52	0	228	632	44	4	0	164	20	0	4	16	20	0	1416
Heavy Trucks	0	24	4		4	16	0		0	4	0		4	0	4		60
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

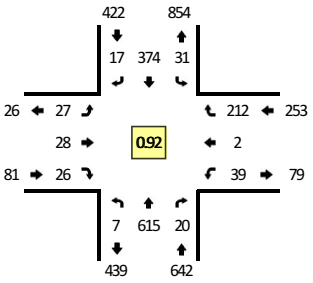
Comments:

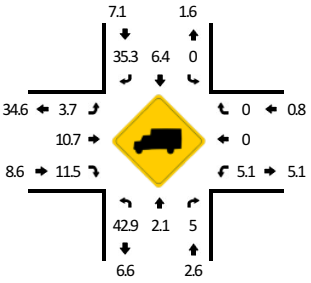
Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: SW 124th Ave -- SW Leveton Dr | **QC JOB #:** 17042806
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

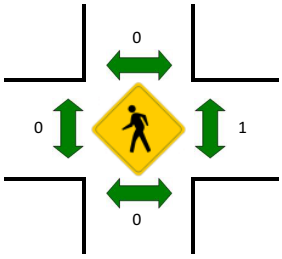
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

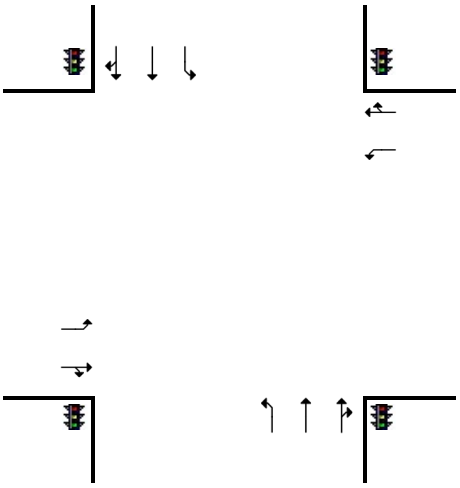


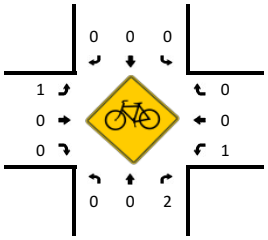


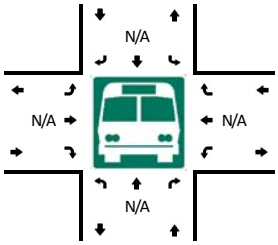


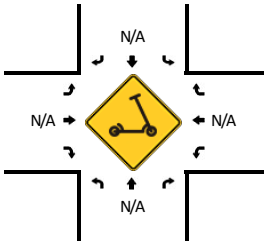
TRUE DATA TO IMPROVE MOBILITY











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	1	191	6	0	4	94	3	0	5	7	4	0	5	0	56	0	376	
4:15 PM	3	129	3	0	6	94	7	0	5	8	10	0	12	0	48	0	325	
4:30 PM	1	162	5	0	8	96	5	0	9	8	7	0	12	2	63	0	378	
4:45 PM	2	133	6	0	13	90	2	0	8	5	5	0	10	0	45	0	319	1398
5:00 PM	3	130	2	0	4	90	1	0	3	5	12	0	15	0	88	0	353	1375
5:15 PM	3	115	2	0	12	85	0	0	4	2	2	0	8	0	74	0	307	1357
5:30 PM	0	97	0	0	5	60	1	0	3	2	5	0	6	0	58	0	237	1216
5:45 PM	0	78	2	0	2	47	2	0	2	2	2	0	5	0	35	0	177	1074

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	648	20	0	32	384	20	0	36	32	28	0	48	8	252	0	1512
Heavy Trucks	4	0	4		0	24	4		0	0	0		4	0	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

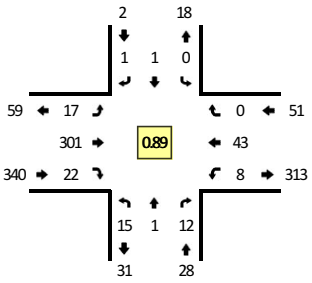
Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

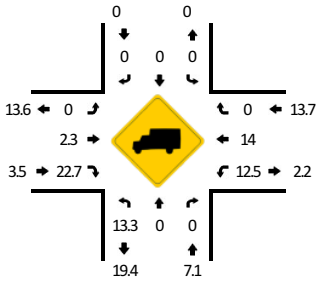
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

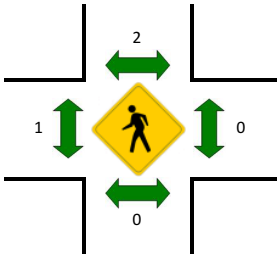
LOCATION: SW 118th Ave -- SW Leveton Dr | **QC JOB #:** 17042807
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

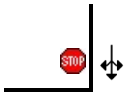
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

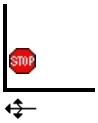


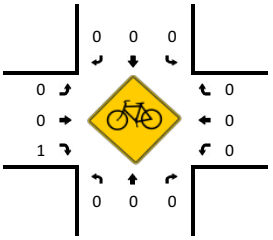


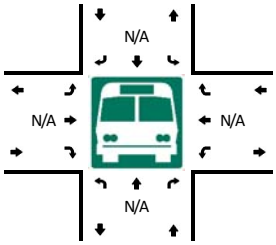


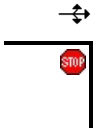


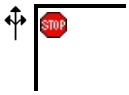


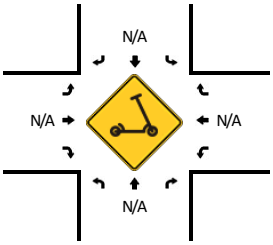












15-Min Count Period Beginning At	SW 118th Ave (Northbound)				SW 118th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	1	1	0	0	0	0	0	5	36	5	0	1	9	0	0	61	
7:15 AM	5	2	1	0	0	0	2	0	7	30	10	0	2	8	0	0	67	
7:30 AM	2	1	5	0	0	1	0	0	2	59	1	0	1	6	0	0	78	
7:45 AM	4	0	5	0	0	0	0	0	6	85	7	0	2	9	0	0	118	324
8:00 AM	4	0	1	0	0	1	1	0	5	77	8	0	1	14	0	0	112	375
8:15 AM	5	1	4	0	0	0	0	0	5	74	4	0	3	8	0	0	104	412
8:30 AM	2	0	2	0	0	0	0	0	1	65	3	0	2	12	0	0	87	421
8:45 AM	3	1	3	0	1	0	0	0	0	68	2	0	2	8	0	0	88	391

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	16	0	20	0	0	0	0	0	24	340	28	0	8	36	0	0	472
Heavy Trucks	4	0	0		0	0	0		0	8	4		4	4	0		24
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

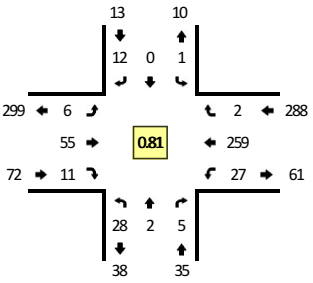
Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

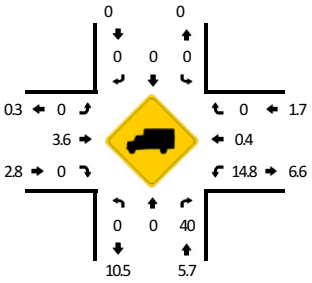
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

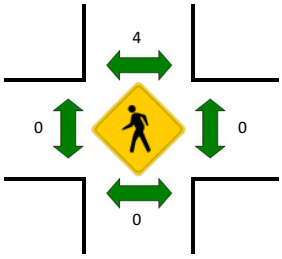
LOCATION: SW 118th Ave -- SW Leveton Dr | **QC JOB #:** 17042808
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

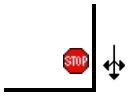
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

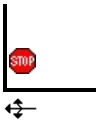


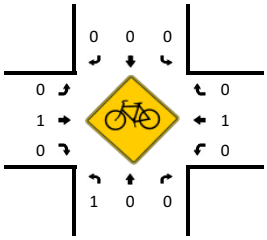


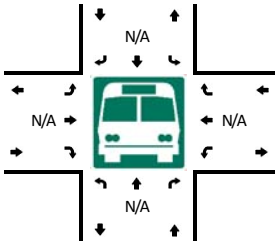


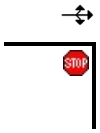


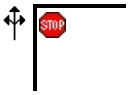


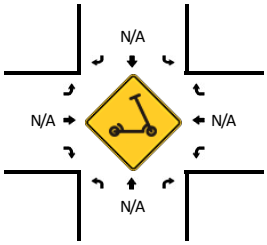












15-Min Count Period Beginning At	SW 118th Ave (Northbound)				SW 118th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	0	2	0	2	1	5	0	0	14	4	0	8	37	0	0	88	
4:15 PM	4	0	2	0	0	1	0	0	0	14	4	0	6	47	0	0	78	
4:30 PM	8	0	1	0	0	0	4	0	1	14	4	0	3	61	1	0	97	
4:45 PM	3	0	1	0	0	0	2	0	0	24	1	0	4	41	1	0	77	340
5:00 PM	6	1	2	0	0	0	5	0	2	10	3	0	9	88	0	0	126	378
5:15 PM	11	1	1	0	1	0	1	0	3	7	3	0	11	69	0	0	108	408
5:30 PM	3	0	0	0	0	0	2	0	2	3	4	0	1	59	0	0	74	385
5:45 PM	2	1	1	0	0	0	1	0	0	5	1	0	1	34	1	0	47	355

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	24	4	8	0	0	0	20	0	8	40	12	0	36	352	0	0	504
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

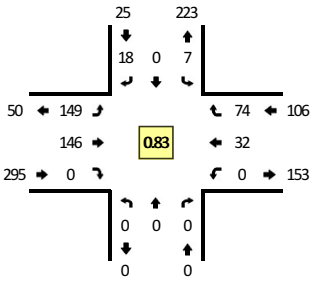
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

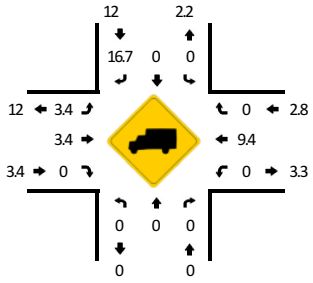
LOCATION: West Lam Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

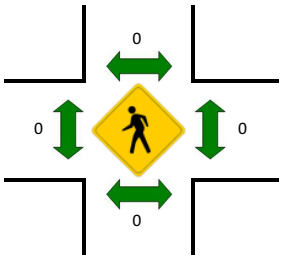
QC JOB #: 17042809
DATE: Tue, May 13 2025

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

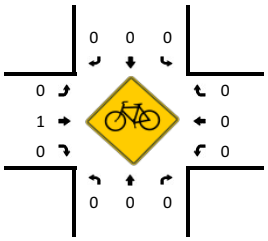


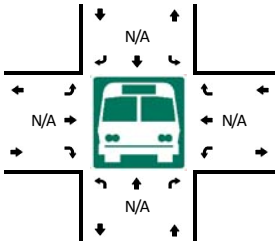




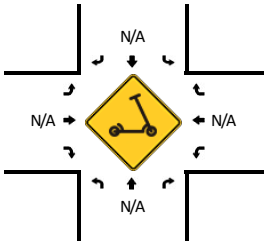












15-Min Count Period Beginning At	West Lam Access (Northbound)				West Lam Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	4	0	14	21	0	0	0	8	9	0	58	
7:15 AM	0	0	0	0	0	0	6	0	15	20	0	0	0	2	9	0	52	
7:30 AM	0	0	0	0	1	0	3	0	33	31	0	0	0	4	8	0	80	
7:45 AM	0	0	0	0	1	0	2	0	34	53	0	0	0	9	22	0	121	311
8:00 AM	0	0	0	0	3	0	4	0	30	45	0	0	0	11	14	0	107	360
8:15 AM	0	0	0	0	2	0	5	0	42	41	0	0	0	7	31	0	128	436
8:30 AM	0	0	0	0	1	0	3	0	39	29	0	0	0	10	18	0	100	456
8:45 AM	0	0	0	0	1	0	6	0	38	31	0	0	0	4	11	0	91	426

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	20	0	168	164	0	0	0	28	124	0	512
Heavy Trucks	0	0	0		0	0	4		4	4	0		0	4	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:08 PM

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

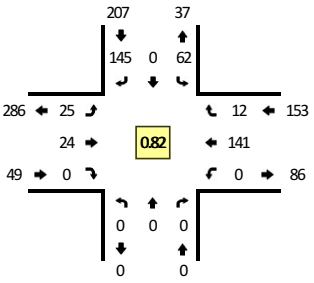
Type of peak hour being reported: User-Defined

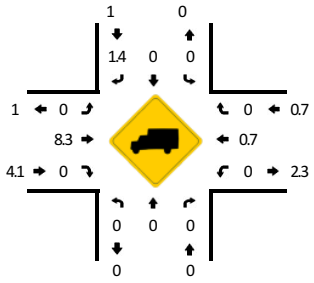
Method for determining peak hour: Total Entering Volume

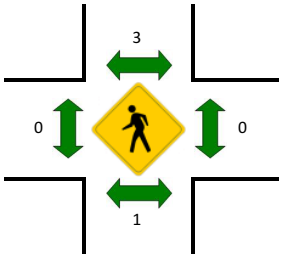
LOCATION: West Lam Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

QC JOB #: 17042810
DATE: Tue, May 13 2025

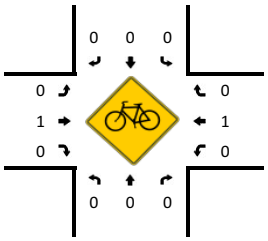
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

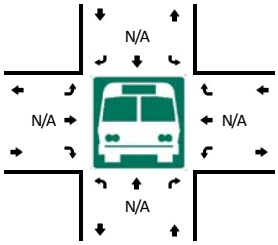




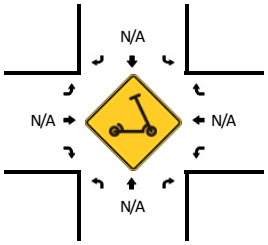












15-Min Count Period Beginning At	West Lam Access (Northbound)				West Lam Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	8	0	27	0	4	14	0	0	0	23	6	0	82	
4:15 PM	0	0	0	0	8	0	26	0	5	10	0	0	0	21	4	0	74	
4:30 PM	0	0	0	0	17	0	33	0	10	6	0	0	0	31	8	0	105	
4:45 PM	0	0	0	0	6	0	25	0	18	7	0	0	0	24	8	0	88	349
5:00 PM	0	0	0	0	14	0	45	0	6	6	0	0	0	53	1	0	125	392
5:15 PM	0	0	0	0	27	0	44	0	1	8	0	0	0	36	2	0	118	436
5:30 PM	0	0	0	0	15	0	31	0	0	3	0	0	0	28	1	0	78	409
5:45 PM	0	0	0	0	14	0	23	0	1	5	0	0	0	10	1	0	54	375

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	56	0	180	0	24	24	0	0	0	212	4	0	500
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	0	0		4
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:10 PM

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

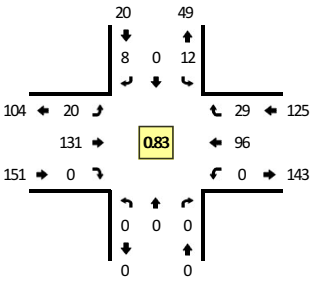
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

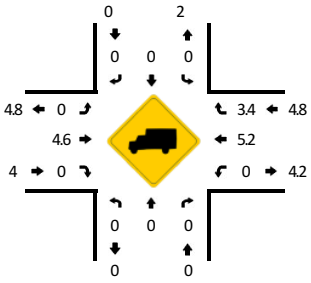
LOCATION: Central Lam Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

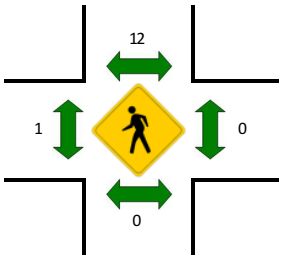
QC JOB #: 17042811
DATE: Tue, May 13 2025

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

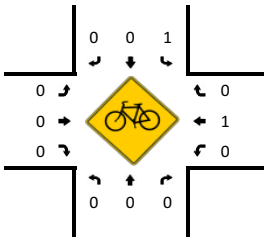


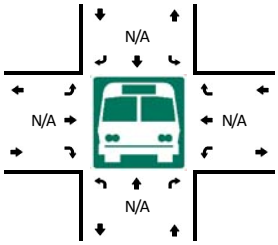




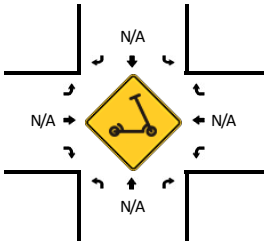












15-Min Count Period Beginning At	Central Lam Access (Northbound)				Central Lam Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	3	0	5	0	7	14	0	0	0	13	5	0	47	
7:15 AM	0	0	0	0	2	0	1	0	2	21	0	0	0	13	3	0	42	
7:30 AM	0	0	0	0	1	0	2	0	5	26	0	0	0	10	5	0	49	
7:45 AM	0	0	0	0	3	0	1	0	8	45	0	0	0	32	7	0	96	234
8:00 AM	0	0	0	0	5	0	4	0	10	36	0	0	0	22	8	0	85	272
8:15 AM	0	0	0	0	3	0	1	0	2	43	0	0	0	37	3	0	89	319
8:30 AM	0	0	0	0	1	0	3	0	3	27	0	0	0	24	10	0	68	338
8:45 AM	0	0	0	0	3	0	0	0	5	25	0	0	0	13	8	0	54	296

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	12	0	4	0	8	172	0	0	0	148	12	0	356
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12
Buses																	
Pedestrians		0				24				0				0			24
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

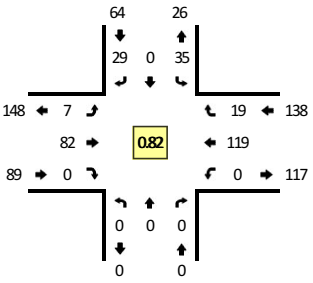
Report generated on 6/2/2025 1:08 PM

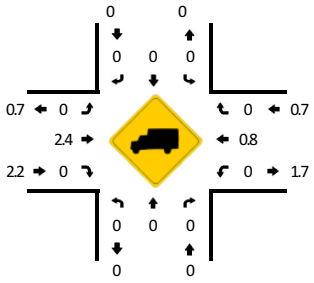
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

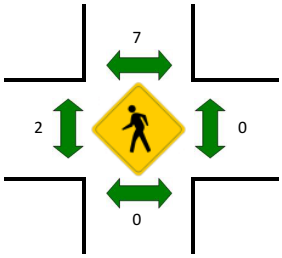
Type of peak hour being reported: User-Defined | Method for determining peak hour: Total Entering Volume

LOCATION: Central Lam Access -- SW Leveton Dr | **QC JOB #:** 17042812
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

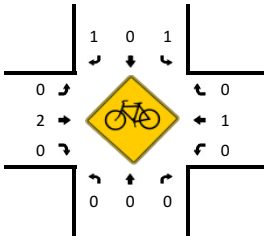
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

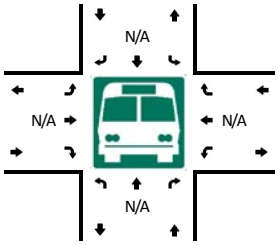




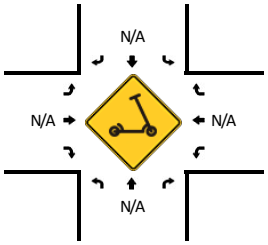












15-Min Count Period Beginning At	Central Lam Access (Northbound)				Central Lam Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	5	0	6	0	1	21	0	0	0	22	6	0	61	
4:15 PM	0	0	0	0	4	0	6	0	2	18	0	0	0	19	4	0	53	
4:30 PM	0	0	0	0	1	0	6	0	0	24	0	0	0	28	6	0	65	
4:45 PM	0	0	0	0	7	0	7	0	2	10	0	0	0	25	6	0	57	236
5:00 PM	0	0	0	0	4	0	9	0	1	23	0	0	0	43	4	0	84	259
5:15 PM	0	0	0	0	12	0	8	0	4	30	0	0	0	29	6	0	89	295
5:30 PM	0	0	0	0	12	0	5	0	0	19	0	0	0	22	3	0	61	291
5:45 PM	0	0	0	0	7	0	3	0	3	18	0	0	0	7	1	0	39	273

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	48	0	32	0	16	120	0	0	0	116	24	0	356
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	0	4		0	4	0		0	0	0		12
Scooters																	

Comments:

Report generated on 6/2/2025 1:10 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

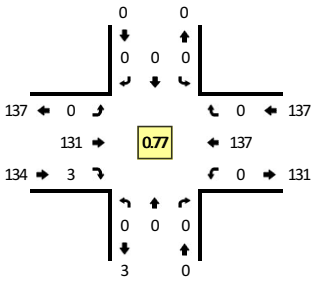
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

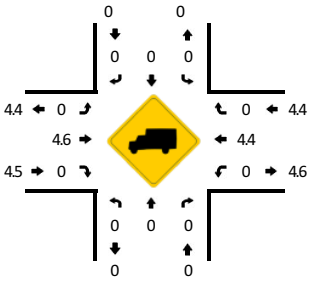
LOCATION: East Lam Access -- SW Leveton Dr
CITY/STATE: Tualatin, OR

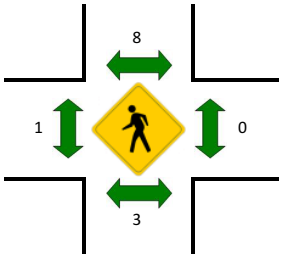
QC JOB #: 17042813
DATE: Tue, May 13 2025

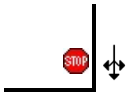
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

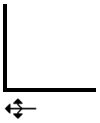


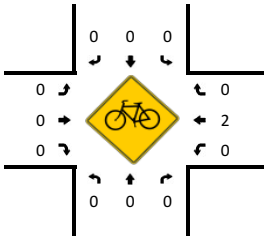


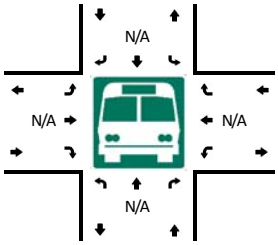


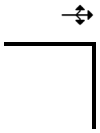


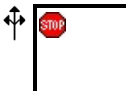


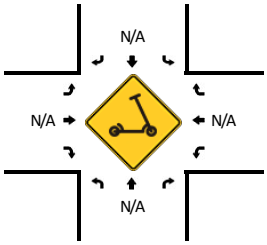












15-Min Count Period Beginning At	East Lam Access (Northbound)				East Lam Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	13	2	0	0	20	0	0	35	
7:15 AM	0	0	0	0	0	0	0	0	0	15	1	0	0	16	0	0	32	
7:30 AM	0	0	0	0	0	0	0	0	0	21	0	0	0	16	0	0	37	
7:45 AM	0	0	0	0	0	0	0	0	0	43	0	0	1	41	0	0	85	189
8:00 AM	0	0	0	0	0	0	0	0	0	34	1	0	0	36	0	0	71	225
8:15 AM	0	0	0	0	0	0	0	0	0	42	1	0	0	45	0	0	88	281
8:30 AM	0	0	0	0	0	0	0	0	0	26	1	0	0	36	0	0	63	307
8:45 AM	0	0	0	0	0	0	0	0	0	29	0	0	0	20	0	0	49	271

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	0	168	4	0	0	180	0	0	352
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12
Buses																	
Pedestrians		4				8				4				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:08 PM

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

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: East Lam Access -- SW Leveton Dr

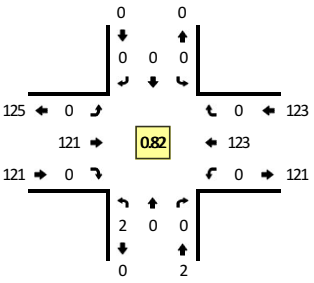
CITY/STATE: Tualatin, OR

QC JOB #: 17042814

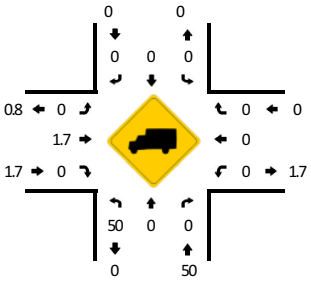
DATE: Tue, May 13 2025

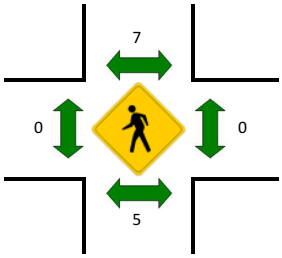
Peak-Hour: 4:45 PM -- 5:45 PM

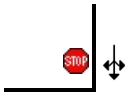
Peak 15-Min: 5:15 PM -- 5:30 PM

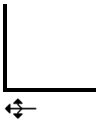


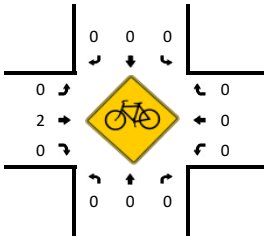


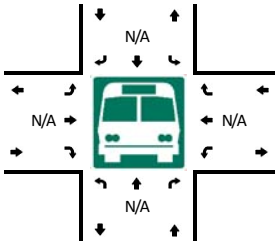


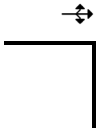


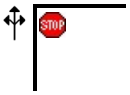


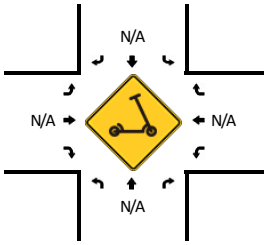












15-Min Count Period Beginning At	East Lam Access (Northbound)				East Lam Access (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	30	0	0	0	26	0	0	56	
4:15 PM	0	0	0	0	0	0	0	0	0	21	0	0	0	21	0	0	42	
4:30 PM	0	0	1	0	0	0	0	0	0	27	1	0	0	33	0	0	62	
4:45 PM	1	0	0	0	0	0	0	0	0	18	0	0	0	29	0	0	48	208
5:00 PM	1	0	0	0	0	0	0	0	0	27	0	0	0	44	0	0	72	224
5:15 PM	0	0	0	0	0	0	0	0	0	45	0	0	0	30	0	0	75	257
5:30 PM	0	0	0	0	0	0	0	0	0	31	0	0	0	20	0	0	51	246
5:45 PM	0	0	0	0	0	0	0	0	0	26	0	0	0	8	0	0	34	232

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	0	180	0	0	0	120	0	0	300
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

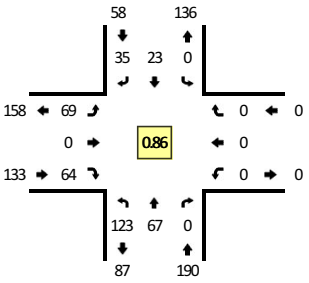
Report generated on 6/2/2025 1:10 PM

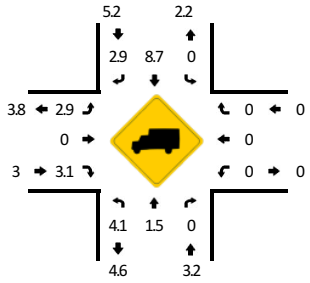
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

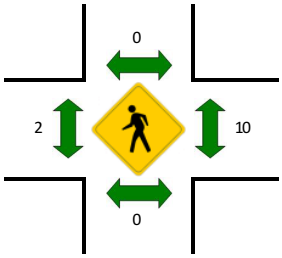
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

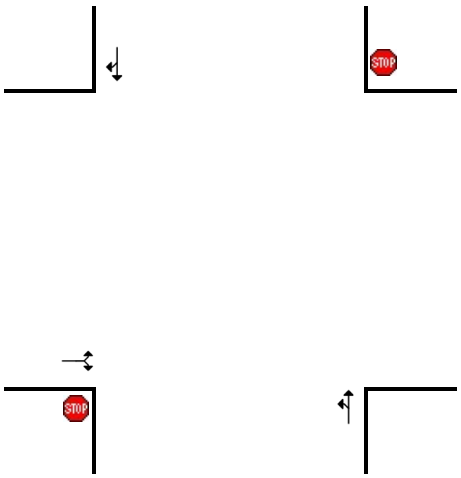
LOCATION: SW 108th Ave -- SW Leveton Dr | **QC JOB #:** 17042815
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

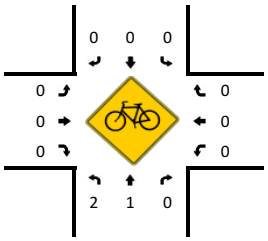
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

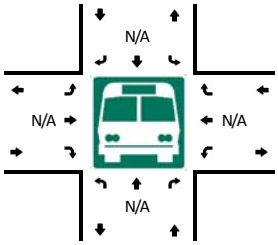


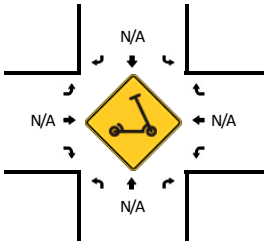












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	17	9	0	0	0	2	5	0	2	0	9	0	0	0	0	0	44	
7:15 AM	13	10	0	0	0	6	2	0	3	0	12	0	0	0	0	0	46	
7:30 AM	13	17	0	0	0	5	3	0	5	0	14	0	0	0	0	0	57	
7:45 AM	38	11	0	0	0	3	5	0	20	0	23	0	0	0	0	0	100	247
8:00 AM	22	17	0	0	0	5	12	0	13	0	15	0	0	0	0	0	84	287
8:15 AM	31	22	0	0	0	8	13	0	19	0	18	0	0	0	0	0	111	352
8:30 AM	32	17	0	0	0	7	5	0	17	0	8	0	0	0	0	0	86	381
8:45 AM	14	16	0	0	0	9	6	0	11	0	15	0	0	0	0	0	71	352

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	124	88	0	0	0	32	52	0	76	0	72	0	0	0	0	0	444
Heavy Trucks	4	4	0		0	0	4		0	0	4		0	0	0		16
Buses																	
Pedestrians		0				0				0				24			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

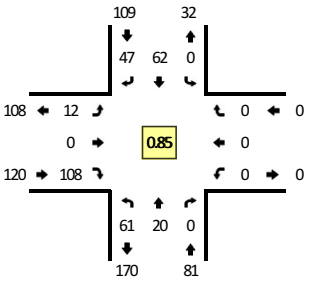
Comments:

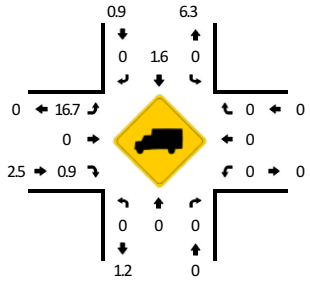
Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

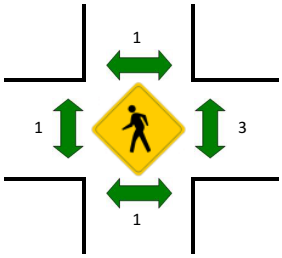
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: SW 108th Ave -- SW Leveton Dr | **QC JOB #:** 17042816
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

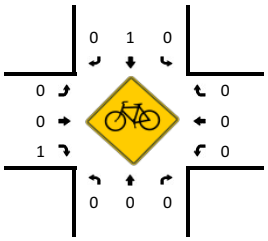
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

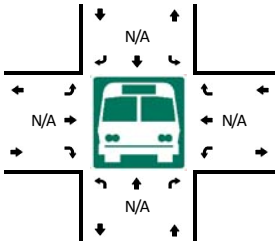




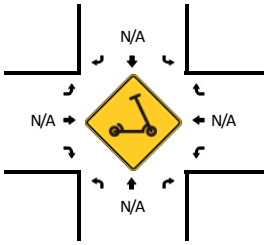












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Leveton Dr (Eastbound)				SW Leveton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	9	0	0	0	20	4	0	8	0	22	0	0	0	0	0	75	
4:15 PM	14	2	0	0	0	10	4	0	3	0	18	0	0	0	0	0	51	
4:30 PM	20	9	0	0	0	16	7	0	5	0	23	0	0	0	0	0	80	
4:45 PM	15	2	0	0	0	13	8	0	2	0	19	0	0	0	0	0	59	265
5:00 PM	15	8	0	0	0	22	19	0	1	0	26	0	0	0	0	0	91	281
5:15 PM	11	1	0	0	0	11	13	0	4	0	40	0	0	0	0	0	80	310
5:30 PM	3	7	0	0	0	20	11	0	1	0	31	0	0	0	0	0	73	303
5:45 PM	2	1	0	0	0	20	6	0	1	0	25	0	0	0	0	0	55	299

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	32	0	0	0	88	76	0	4	0	104	0	0	0	0	0	364
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	4		0	0	0		4
Scooters																	

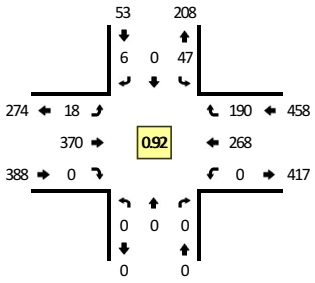
Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

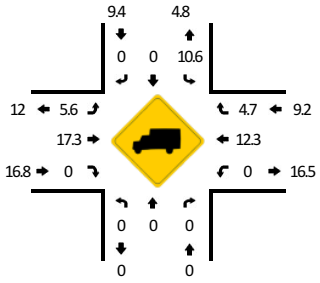
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

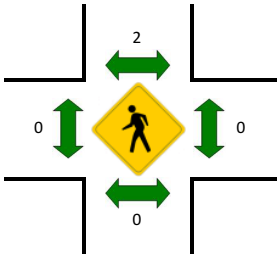
LOCATION: SW 108th Ave -- SW Herman Rd | **QC JOB #:** 17042817
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

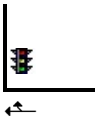


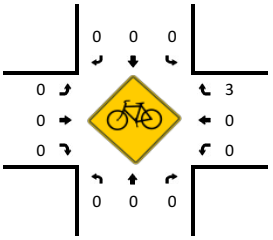
TRUE DATA TO IMPROVE MOBILITY

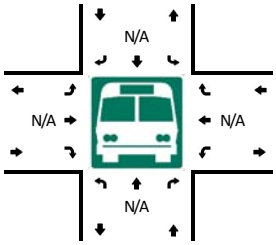


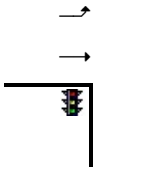




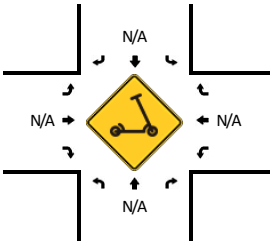












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	6	0	1	0	4	69	0	0	0	59	28	0	167	
7:15 AM	0	0	0	0	11	0	1	0	4	78	0	0	0	68	30	0	192	
7:30 AM	0	0	0	0	10	0	1	0	3	101	0	0	0	78	35	0	228	
7:45 AM	0	0	0	0	15	0	1	0	5	95	0	0	0	74	53	0	243	830
8:00 AM	0	0	0	0	13	0	1	0	8	86	0	0	0	63	43	0	214	877
8:15 AM	0	0	0	0	9	0	3	0	2	88	0	0	0	53	59	0	214	899
8:30 AM	0	0	0	0	10	0	2	0	3	68	0	0	0	53	57	0	193	864
8:45 AM	0	0	0	0	13	0	0	0	3	77	0	0	0	55	39	0	187	808

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	60	0	4	0	20	380	0	0	0	296	212	0	972
Heavy Trucks	0	0	0		4	0	0		0	88	0		0	48	4		144
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

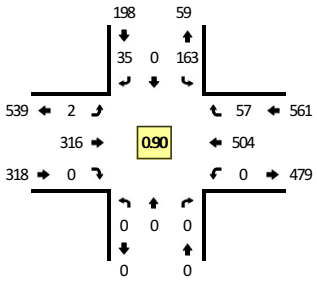
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

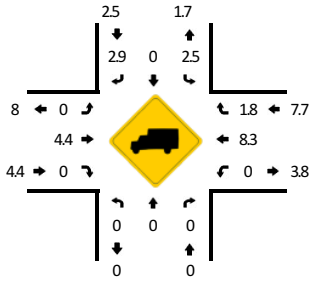
LOCATION: SW 108th Ave -- SW Herman Rd | **QC JOB #:** 17042818

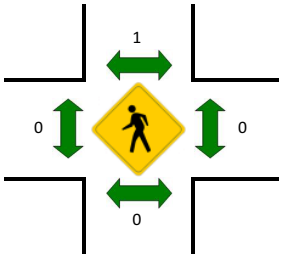
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

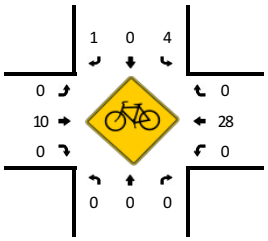
Peak-Hour: 4:00 PM -- 5:00 PM

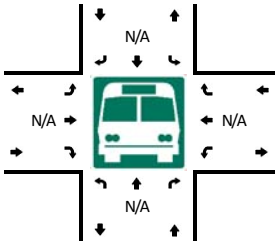
Peak 15-Min: 4:30 PM -- 4:45 PM

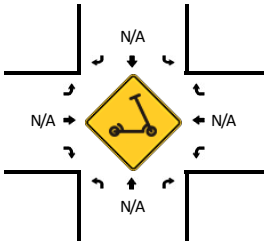












15-Min Count Period Beginning At	SW 108th Ave (Northbound)				SW 108th Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	54	0	7	0	2	94	0	0	0	121	13	0	291	
4:15 PM	0	0	0	0	35	0	6	0	0	79	0	0	0	119	7	0	246	
4:30 PM	0	0	0	0	38	0	9	0	0	75	0	0	0	155	23	0	300	
4:45 PM	0	0	0	0	36	0	13	0	0	68	0	0	0	109	14	0	240	1077
5:00 PM	0	0	0	0	55	0	9	0	2	67	0	0	0	98	11	0	242	1028
5:15 PM	0	0	0	0	63	0	3	0	0	59	0	0	0	102	10	0	237	1019
5:30 PM	0	0	0	0	56	0	7	0	2	48	0	0	0	81	7	0	201	920
5:45 PM	0	0	0	0	46	0	5	0	0	28	0	0	0	51	4	0	134	814

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	36	0	0	300	0	0	0	620	92	0	1200
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	40	4		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	0	0		0	0	0		0	108	0		112
Scooters																	

Comments:

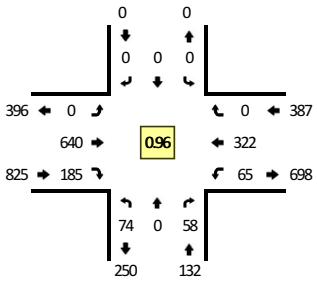
Report generated on 6/2/2025 1:12 PM

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

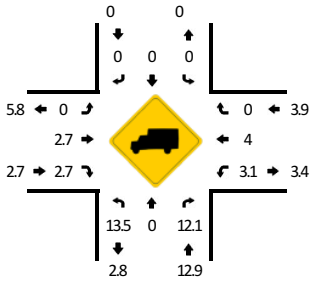
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

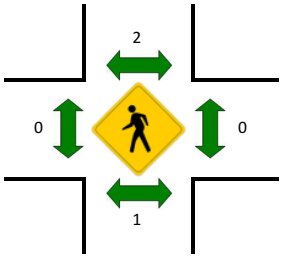
LOCATION: Teton Ave -- SW Tualatin Rd | **QC JOB #:** 17042821
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

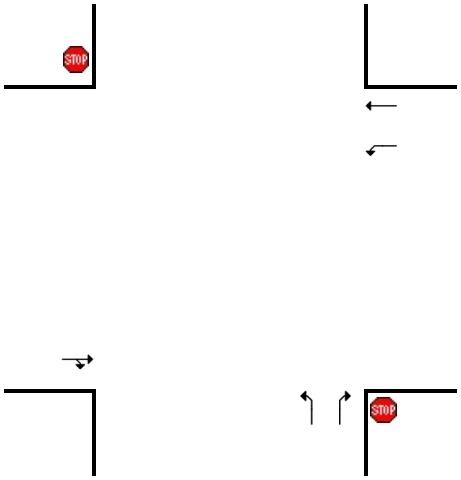
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

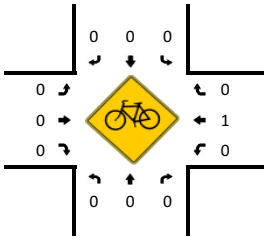


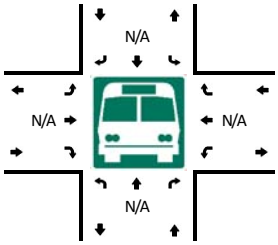
TRUE DATA TO IMPROVE MOBILITY

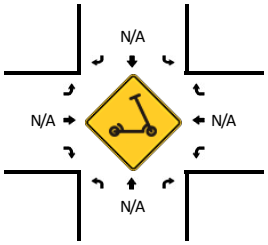












15-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	0	3	0	0	0	0	0	0	79	17	0	3	39	0	0	149	
7:15 AM	5	0	7	0	0	0	0	0	0	116	33	0	5	40	0	0	206	
7:30 AM	14	0	3	0	0	0	0	0	0	175	49	0	4	64	0	0	309	
7:45 AM	17	0	7	0	0	0	0	0	0	174	57	0	8	85	0	0	348	1012
8:00 AM	21	0	19	0	0	0	0	0	0	155	44	0	17	94	0	0	350	1213
8:15 AM	22	0	29	0	0	0	0	0	0	136	35	0	36	79	0	0	337	1344
8:30 AM	15	0	5	0	0	0	0	0	0	124	39	0	18	74	0	0	275	1310
8:45 AM	19	0	6	0	0	0	0	0	0	108	31	0	4	76	0	0	244	1206

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	76	0	0	0	0	0	0	620	176	0	68	376	0	0	1400
Heavy Trucks	0	0	16		0	0	0		0	4	8		4	8	0		40
Buses																	
Pedestrians		4				4				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

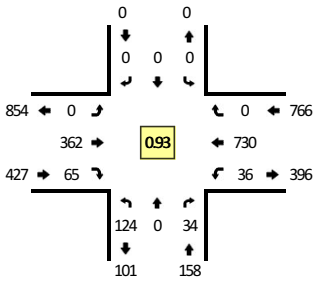
Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

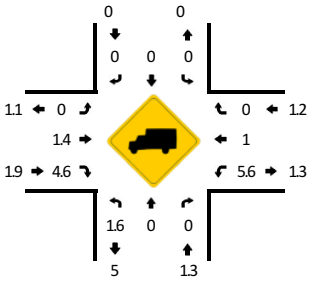
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

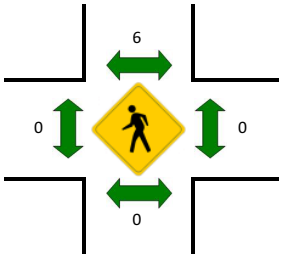
LOCATION: Teton Ave -- SW Tualatin Rd | **QC JOB #:** 17042822
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

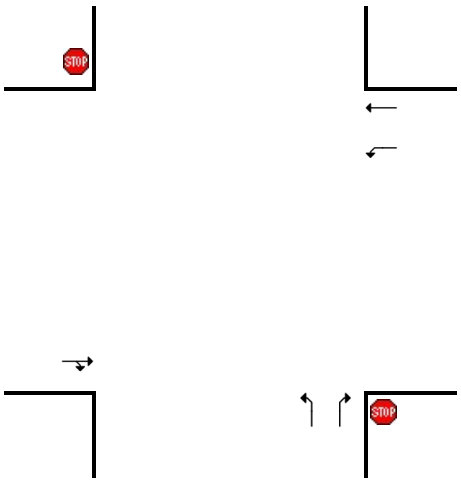
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

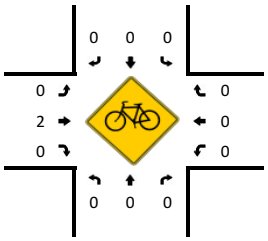


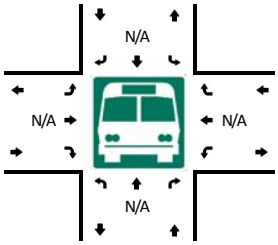
TRUE DATA TO IMPROVE MOBILITY

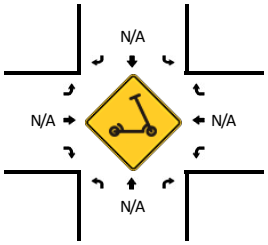












15-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Tualatin Rd (Eastbound)				SW Tualatin Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	41	0	12	0	0	0	0	0	0	93	25	0	7	164	0	0	342	
4:15 PM	31	0	14	0	0	0	0	0	0	91	22	0	12	163	0	0	333	
4:30 PM	43	0	12	0	0	0	0	0	0	92	21	0	8	188	0	0	364	
4:45 PM	23	0	5	0	0	0	0	0	0	81	14	0	10	176	0	0	309	1348
5:00 PM	39	0	8	0	0	0	0	0	0	98	12	0	9	173	0	0	339	1345
5:15 PM	19	0	9	0	0	0	0	0	0	91	18	0	9	193	0	0	339	1351
5:30 PM	37	0	7	0	0	0	0	0	0	74	13	0	5	125	0	0	261	1248
5:45 PM	20	0	5	0	0	0	0	0	0	63	11	0	3	112	0	0	214	1153

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	172	0	48	0	0	0	0	0	0	368	84	0	32	752	0	0	1456
Heavy Trucks	0	0	0		0	0	0		0	8	4		0	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

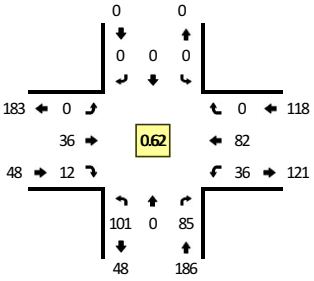
Type of peak hour being reported: Intersection Peak

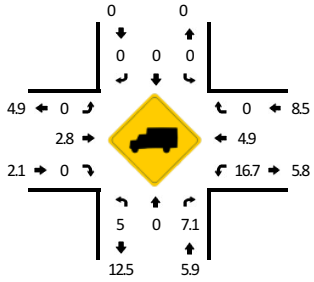
Method for determining peak hour: Total Entering Volume

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

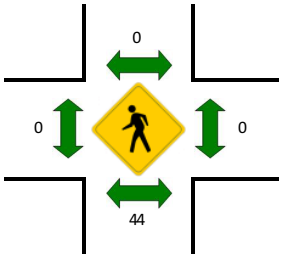
QC JOB #: 17042835
DATE: Tue, May 13 2025

Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

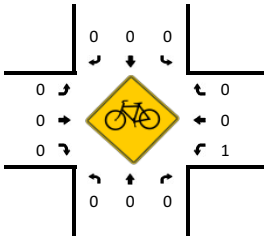


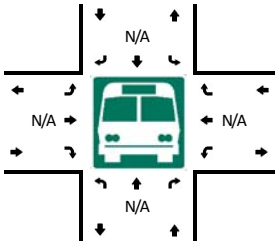


TRUE DATA TO IMPROVE MOBILITY

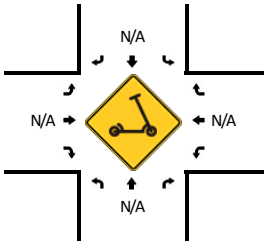












15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	15	0	3	0	0	0	0	0	0	3	2	0	1	11	0	0	35	
7:15 AM	21	0	7	0	0	0	0	0	0	8	8	0	2	8	0	0	54	
7:30 AM	31	0	6	0	0	0	0	0	0	5	2	0	1	10	0	0	55	
7:45 AM	24	0	3	0	0	0	0	0	0	11	3	0	2	9	0	0	52	196
8:00 AM	27	0	30	0	0	0	0	0	0	10	2	0	11	17	0	0	97	258
8:15 AM	27	0	41	0	0	0	0	0	0	12	3	0	16	43	0	0	142	346
8:30 AM	23	0	11	0	0	0	0	0	0	3	4	0	7	13	0	0	61	352
8:45 AM	33	0	3	0	0	0	0	0	0	0	5	0	2	8	0	0	51	351

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	108	0	164	0	0	0	0	0	0	48	12	0	64	172	0	0	568
Heavy Trucks	12	0	12		0	0	0		0	4	0		12	16	0		56
Buses																	
Pedestrians		92				0				0				0			92
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

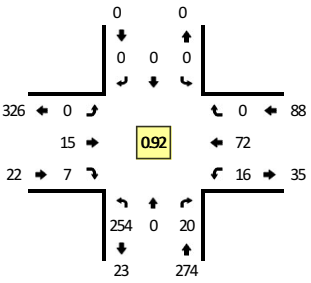
Report generated on 6/2/2025 1:12 PM

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

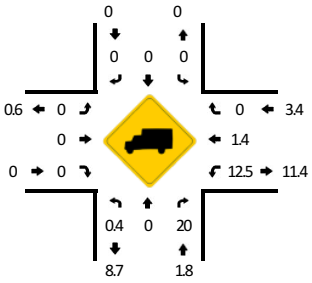
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

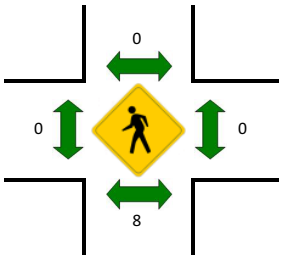
LOCATION: SW 115th Ave -- SW Hazelbrook Rd | **QC JOB #:** 17042836
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

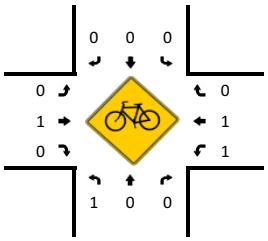


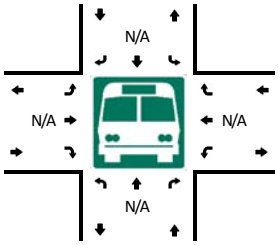




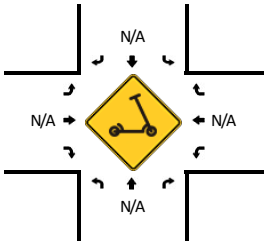












15-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	42	0	17	0	0	0	0	0	0	11	3	0	8	9	0	0	90	
3:15 PM	44	0	3	0	0	0	0	0	0	4	5	0	20	28	0	0	104	
3:30 PM	56	0	3	0	0	0	0	0	0	4	3	0	5	7	0	0	78	
3:45 PM	58	0	5	0	0	0	0	0	0	1	5	0	8	11	0	0	88	360
4:00 PM	71	0	6	0	0	0	0	0	0	6	2	0	4	11	0	0	100	370
4:15 PM	60	0	3	0	0	0	0	0	0	4	0	0	4	21	0	0	92	358
4:30 PM	65	0	6	0	0	0	0	0	0	4	0	0	0	29	0	0	104	384
4:45 PM	52	0	3	0	0	0	0	0	0	4	2	0	2	8	0	0	71	367
5:00 PM	75	0	0	0	0	0	0	0	0	3	3	0	2	9	0	0	92	359
5:15 PM	70	0	3	0	0	0	0	0	0	4	3	0	2	11	0	0	93	360
5:30 PM	61	0	0	0	0	0	0	0	0	1	1	0	1	6	0	0	70	326
5:45 PM	51	0	2	0	0	0	0	0	0	2	3	0	1	4	0	0	63	318

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	260	0	24	0	0	0	0	0	0	16	0	0	0	116	0	0	416
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	4	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

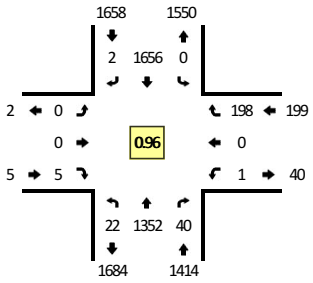
Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

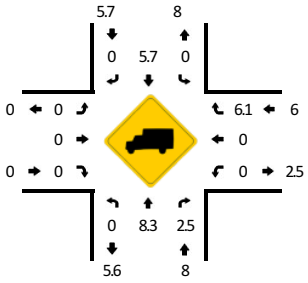
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

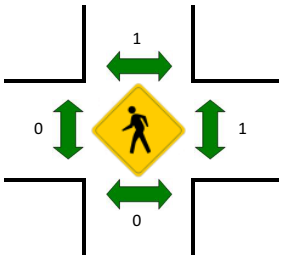
LOCATION: SW Pacific Hwy -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 17042837
DATE: Tue, May 13 2025

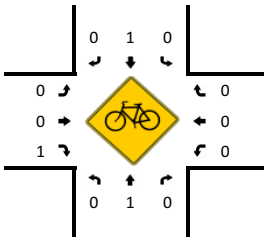
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

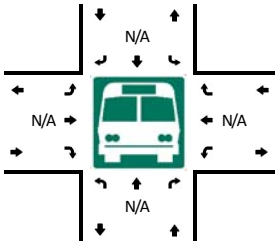




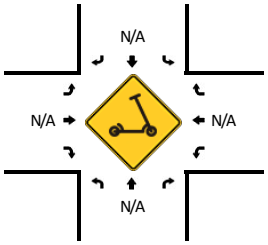












15-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	336	2	5	0	317	0	0	0	0	3	0	0	0	37	0	700	
7:15 AM	0	401	14	1	0	368	0	0	0	0	0	0	0	0	33	0	817	
7:30 AM	0	355	8	2	0	415	1	0	0	0	1	0	0	0	42	0	824	
7:45 AM	0	308	11	7	0	475	1	0	0	0	1	0	0	0	43	0	846	3187
8:00 AM	0	340	9	8	0	346	0	0	0	0	2	0	1	0	48	0	754	3241
8:15 AM	0	349	12	5	0	420	0	0	0	0	1	0	0	0	65	0	852	3276
8:30 AM	0	341	3	5	0	357	0	0	0	0	3	0	0	0	44	0	753	3205
8:45 AM	0	326	2	8	0	378	2	0	0	0	1	0	0	0	44	0	761	3120

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	1396	48	20	0	1680	0	0	0	0	4	0	0	0	260	0	3408
Heavy Trucks	0	140	4		0	140	0		0	0	0		0	0	32		316
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:03 PM

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

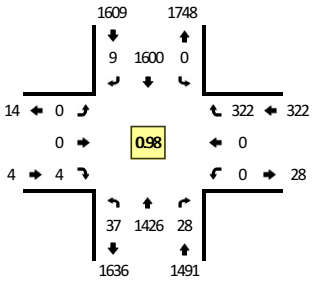
Type of peak hour being reported: User-Defined

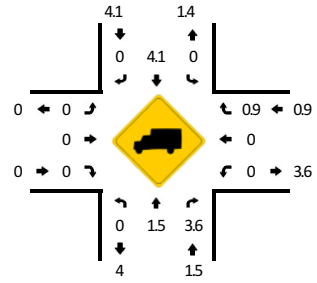
Method for determining peak hour: Total Entering Volume

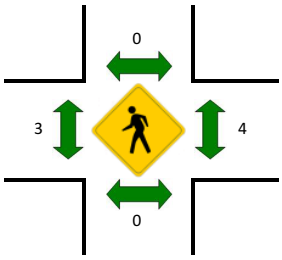
LOCATION: SW Pacific Hwy -- SW Hazelbrook Rd
CITY/STATE: Tualatin, OR

QC JOB #: 17042838
DATE: Tue, May 13 2025

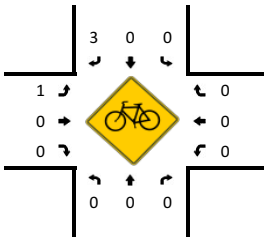
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

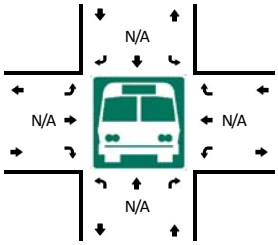




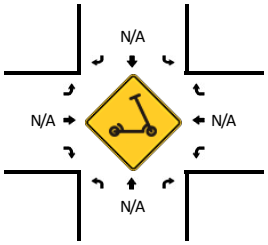












15-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Hazelbrook Rd (Eastbound)				SW Hazelbrook Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	1	374	12	5	0	449	2	0	0	0	1	0	0	0	50	0	894	
3:15 PM	1	336	5	8	0	404	1	0	0	0	1	0	0	0	72	0	828	
3:30 PM	3	358	6	5	0	413	2	0	0	0	1	0	0	0	64	0	852	
3:45 PM	5	367	4	2	0	381	1	0	0	0	2	0	0	0	65	0	827	3401
4:00 PM	0	407	6	11	0	375	0	0	0	0	1	0	0	0	73	0	873	3380
4:15 PM	0	333	4	5	0	407	0	0	0	0	1	0	0	0	97	0	847	3399
4:30 PM	1	361	4	7	0	387	2	0	0	0	0	0	0	0	90	0	852	3399
4:45 PM	2	338	13	6	0	395	3	0	0	0	2	0	0	0	67	0	826	3398
5:00 PM	1	380	5	7	0	402	2	0	0	0	2	0	0	0	78	0	877	3402
5:15 PM	1	347	6	12	0	416	2	0	0	0	0	0	0	0	87	0	871	3426
5:30 PM	2	337	1	15	0	351	1	0	0	0	2	0	0	0	73	0	782	3356
5:45 PM	2	311	6	9	0	295	0	0	0	0	5	0	0	0	53	0	681	3211

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	1520	20	28	0	1608	8	0	0	0	8	0	0	0	312	0	3508
Heavy Trucks	0	12	0		0	36	0		0	0	0		0	0	4		52
Buses																	
Pedestrians		0				0				8				0			8
Bicycles	0	0	0		0	0	12		0	0	0		0	0	0		12
Scooters																	

Comments:

Report generated on 6/2/2025 1:07 PM

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

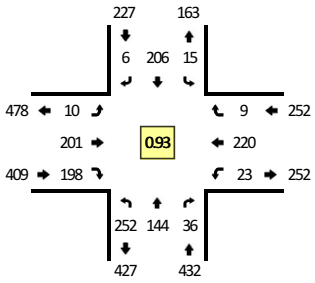
Type of peak hour being reported: Intersection Peak

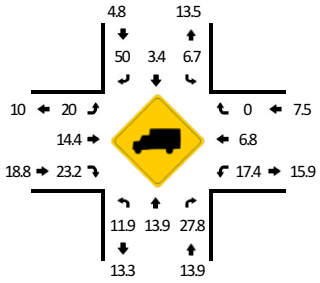
Method for determining peak hour: Total Entering Volume

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

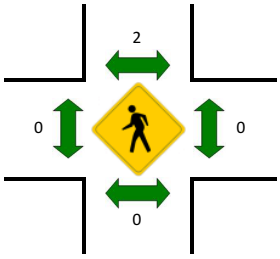
QC JOB #: 17042819
DATE: Tue, May 13 2025

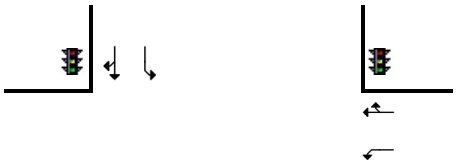
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

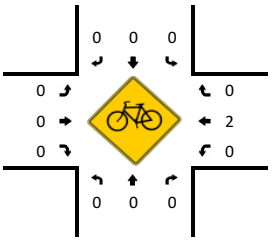


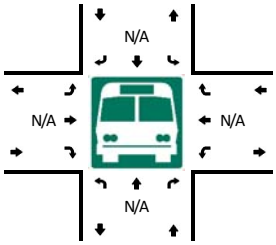


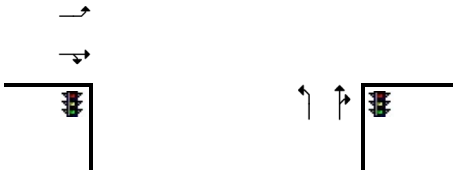
TRUE DATA TO IMPROVE MOBILITY

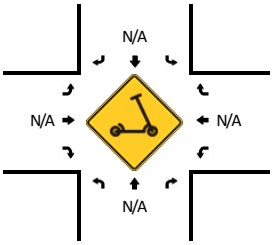












15-Min Count Period Beginning At	Teton Ave (Northbound)				Teton Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	40	13	2	0	1	17	1	0	1	41	31	0	3	41	0	0	191	
7:15 AM	47	10	5	0	2	33	1	0	2	42	49	0	6	55	1	0	253	
7:30 AM	64	18	8	0	5	41	0	0	1	42	56	0	6	53	3	0	297	
7:45 AM	69	28	6	0	2	47	4	0	4	62	52	0	9	66	4	0	353	1094
8:00 AM	54	52	9	0	5	52	1	0	1	50	47	0	4	54	1	0	330	1233
8:15 AM	65	46	13	0	3	66	1	0	4	47	43	0	4	47	1	0	340	1320
8:30 AM	61	20	4	0	2	57	1	0	0	58	31	0	4	51	2	0	291	1314
8:45 AM	45	28	9	0	4	32	3	0	1	46	42	0	3	54	2	0	269	1230

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	276	112	24	0	8	188	16	0	16	248	208	0	36	264	16	0	1412
Heavy Trucks	36	8	8		0	4	4		4	64	56		8	16	0		208
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

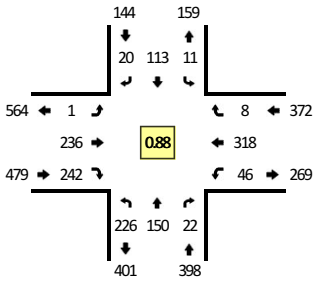
Report generated on 6/2/2025 1:12 PM

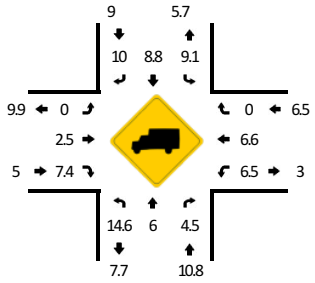
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

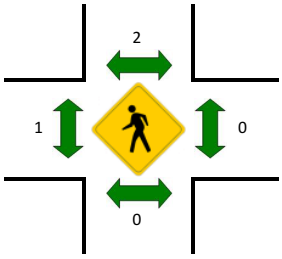
LOCATION: Teton Ave -- SW Herman Rd | **QC JOB #:** 17042820
CITY/STATE: Tualatin, OR | **DATE:** Tue, May 13 2025

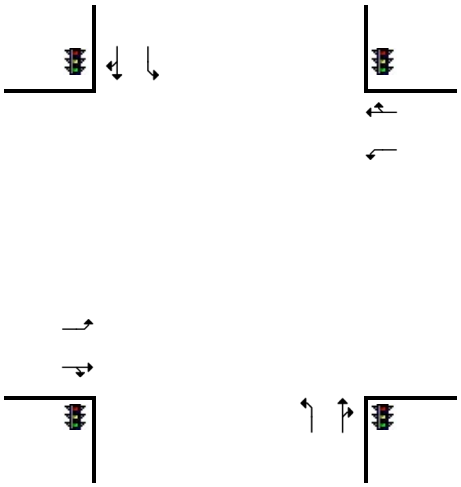
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

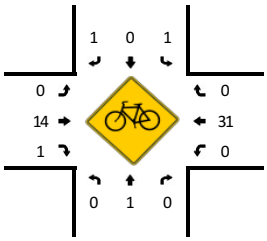


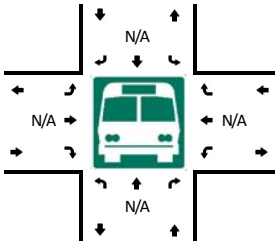


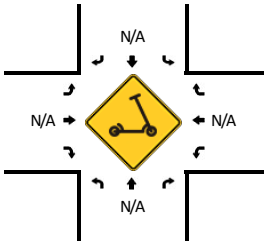
TRUE DATA TO IMPROVE MOBILITY











15-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	48	50	4	0	2	30	5	0	0	79	66	0	5	85	3	0	377	
4:15 PM	53	43	7	0	1	28	5	0	0	63	58	0	8	72	2	0	340	
4:30 PM	73	34	5	0	4	28	9	0	0	45	69	0	30	96	3	0	396	
4:45 PM	52	23	6	0	4	27	1	0	1	49	49	0	3	65	0	0	280	1393
5:00 PM	36	46	8	0	1	23	3	0	0	79	66	0	8	62	3	0	335	1351
5:15 PM	26	25	3	0	3	21	3	0	0	58	63	0	7	80	0	0	289	1300
5:30 PM	39	39	3	0	2	23	0	0	1	47	54	0	4	49	2	0	263	1167
5:45 PM	23	18	4	0	0	16	2	0	0	34	44	0	5	28	4	0	178	1065

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	136	20	0	16	112	36	0	0	180	276	0	120	384	12	0	1584
Heavy Trucks	32	4	0		0	4	0		0	4	24		8	28	0		104
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	4		0	8	0		0	120	0		132
Scooters																	

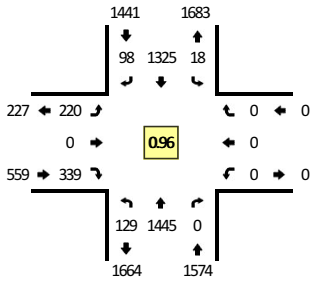
Comments:

Report generated on 6/2/2025 1:12 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

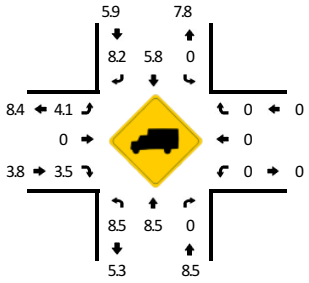
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

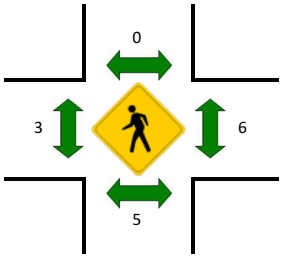
LOCATION: SW Pacific Hwy -- SW Fischer Dr | **QC JOB #:** 17042825
CITY/STATE: Washington County, OR | **DATE:** Tue, May 13 2025

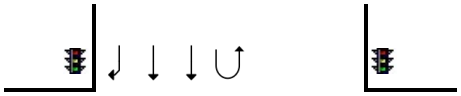
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

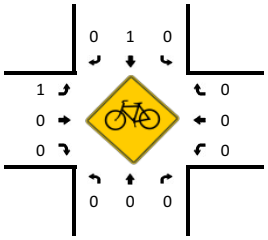


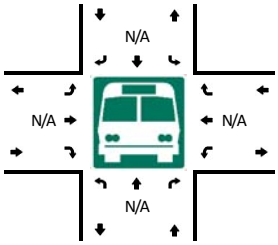
TRUE DATA TO IMPROVE MOBILITY

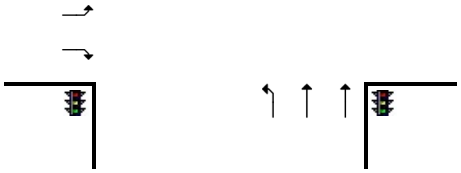


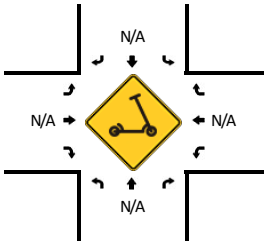












15-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Fischer Dr (Eastbound)				SW Fischer Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	28	336	0	0	0	245	18	4	47	0	58	0	0	0	0	0	736	
7:15 AM	27	441	0	0	0	307	20	1	49	0	63	0	0	0	0	0	908	
7:30 AM	32	346	0	0	0	360	21	6	52	0	62	0	0	0	0	0	879	
7:45 AM	26	338	0	0	0	382	22	1	50	0	108	0	0	0	0	0	927	3450
8:00 AM	33	376	0	0	0	260	31	8	62	0	80	0	0	0	0	0	850	3564
8:15 AM	38	385	0	0	0	323	24	3	56	0	89	0	0	0	0	0	918	3574
8:30 AM	29	366	0	0	0	284	30	5	51	0	84	0	0	0	0	0	849	3544
8:45 AM	35	308	0	0	0	290	30	10	31	0	75	0	0	0	0	0	779	3396

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	104	1352	0	0	0	1528	88	4	200	0	432	0	0	0	0	0	3708
Heavy Trucks	0	112	0		0	60	12		4	0	8		0	0	0		196
Buses																	
Pedestrians		8				0				0				12			20
Bicycles	0	0	0		0	0	0		4	0	0		0	0	0		4
Scooters																	

Comments:

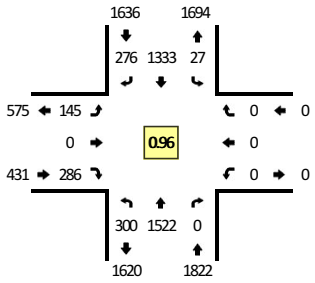
Report generated on 6/2/2025 1:03 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

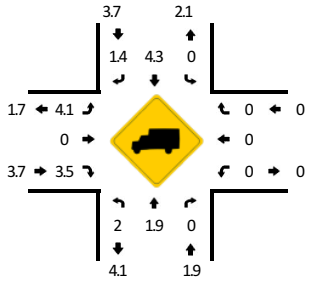
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

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

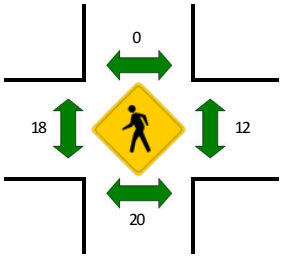
QC JOB #: 17042826
DATE: Tue, May 13 2025

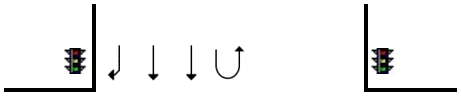
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

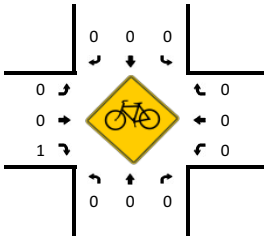


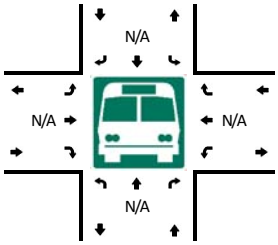


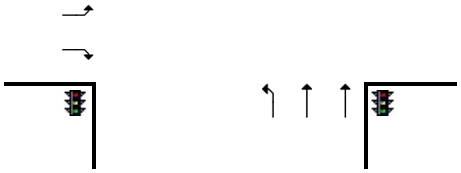
TRUE DATA TO IMPROVE MOBILITY

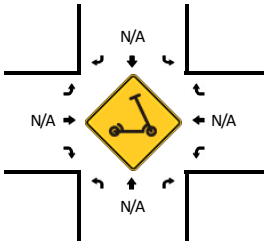












15-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Fischer Dr (Eastbound)				SW Fischer Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	64	357	0	0	0	293	72	11	50	0	75	0	0	0	0	0	922	
4:15 PM	76	369	0	0	0	348	45	10	20	0	67	0	0	0	0	0	935	
4:30 PM	68	401	0	0	0	312	73	5	40	0	75	0	0	0	0	0	974	
4:45 PM	67	346	0	1	0	323	72	6	39	0	62	0	0	0	0	0	916	3747
5:00 PM	75	388	0	0	0	328	64	9	32	0	86	0	0	0	0	0	982	3807
5:15 PM	89	387	0	0	0	370	67	7	34	0	63	0	0	0	0	0	1017	3889
5:30 PM	79	324	0	0	0	303	68	14	41	0	56	0	0	0	0	0	885	3800
5:45 PM	78	290	0	0	0	236	51	13	39	0	43	0	0	0	0	0	750	3634

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	356	1548	0	0	0	1480	268	28	136	0	252	0	0	0	0	0	4068
Heavy Trucks	8	16	0		0	72	8		0	0	12		0	0	0		116
Buses																	
Pedestrians		0				0				0				8			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

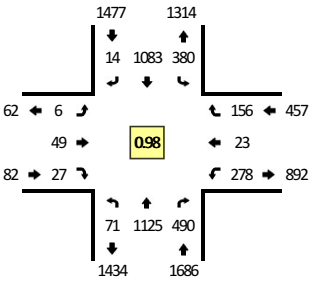
Report generated on 6/2/2025 1:04 PM

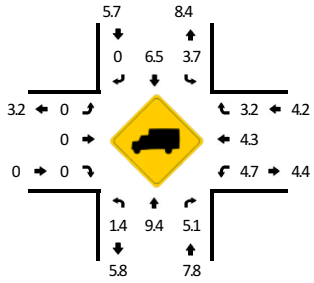
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

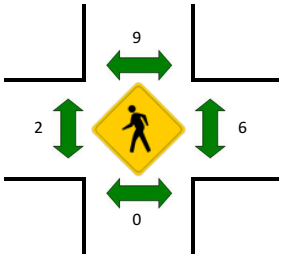
Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

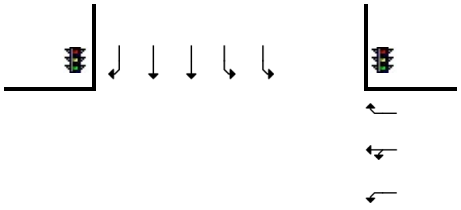
LOCATION: SW Pacific Hwy -- SW 116th Ave | **QC JOB #:** 17042823
CITY/STATE: King City, OR | **DATE:** Tue, May 13 2025

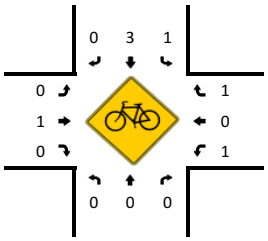
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

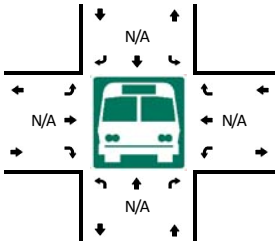


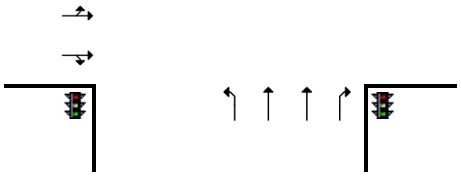


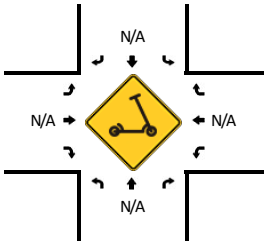












15-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW 116th Ave (Eastbound)				SW 116th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	288	118	5	66	230	4	1	0	8	5	0	46	0	32	0	805	
7:15 AM	6	301	131	7	56	257	0	6	0	9	3	0	65	7	34	0	882	
7:30 AM	6	295	126	8	72	297	3	8	0	9	6	0	75	3	32	0	940	
7:45 AM	4	269	103	14	87	309	3	14	2	14	8	0	66	3	39	0	935	3562
8:00 AM	8	274	139	14	79	224	3	1	2	12	8	0	71	9	43	0	887	3644
8:15 AM	7	287	122	10	115	253	5	4	2	14	5	0	66	8	42	0	940	3702
8:30 AM	14	268	103	8	133	240	2	4	1	18	5	0	65	12	50	0	923	3685
8:45 AM	11	260	96	14	117	220	4	6	0	16	10	0	88	7	49	0	898	3648

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	24	1180	504	32	288	1188	12	32	0	36	24	0	300	12	128	0	3760
Heavy Trucks	0	120	20		8	80	0		0	0	0		12	0	4		244
Buses																	
Pedestrians		0				16				4				12			32
Bicycles	0	0	0		4	4	0		0	0	0		0	0	0		8
Scooters																	

Comments:

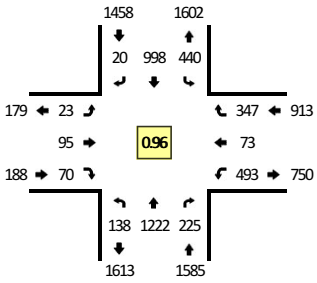
Report generated on 6/2/2025 1:03 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: System-wide Peak | Method for determining peak hour: Total Entering Volume

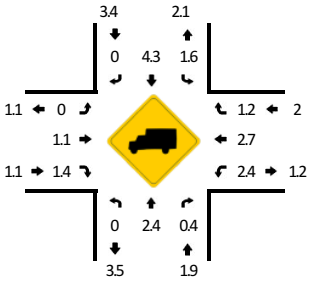
LOCATION: SW Pacific Hwy -- SW 116th Ave
CITY/STATE: King City, OR

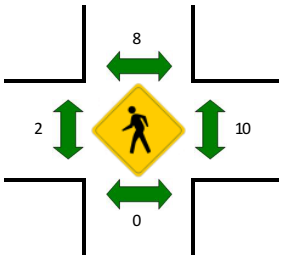
QC JOB #: 17042824
DATE: Tue, May 13 2025

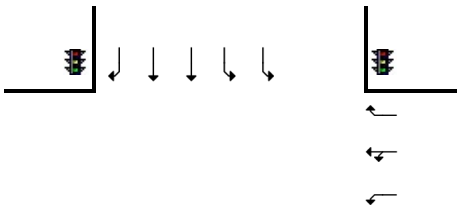
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

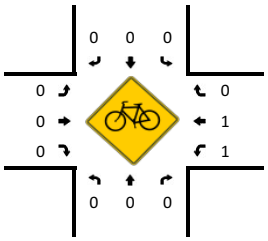


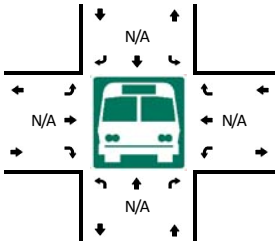


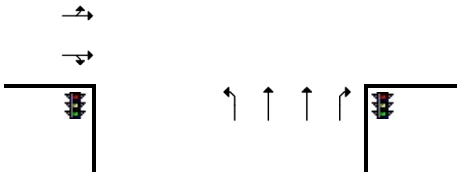


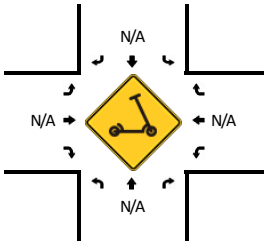












15-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW 116th Ave (Eastbound)				SW 116th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	30	299	49	6	92	247	10	3	4	22	13	0	123	22	89	0	1009	
4:15 PM	28	258	52	11	90	227	6	3	6	30	14	0	138	29	79	0	971	
4:30 PM	23	315	67	17	119	280	11	2	5	22	17	0	117	15	74	0	1084	
4:45 PM	22	275	53	15	109	201	4	5	7	24	13	0	132	23	85	0	968	4032
5:00 PM	28	315	54	9	94	251	1	2	7	24	24	0	108	18	86	0	1021	4044
5:15 PM	13	317	51	11	108	266	4	1	4	25	16	0	136	17	102	0	1071	4144
5:30 PM	22	262	52	8	92	230	6	7	12	16	12	0	132	19	81	0	951	4011
5:45 PM	18	275	71	10	102	195	7	3	5	12	12	0	103	22	80	0	915	3958

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	1260	268	68	476	1120	44	8	20	88	68	0	468	60	296	0	4336
Heavy Trucks	0	40	0		4	64	0		0	4	0		20	4	0		136
Buses																	
Pedestrians		0				16				4				8			28
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2025 1:04 PM

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

APPENDIX E.

SEASONAL ADJUSTMENT DATA

SEASONAL TREND TABLE (Updated: 11/08/2023)																								Seasonal Trend Peak Period Factor
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	
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
										May 13th															

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

*** Grey shading indicates months were 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 (May 13th):	1.03

APPENDIX F.

CRASH DATA

CITY OF TUALATIN, WASHINGTON COUNTY

124TH AVE at PACIFIC HY 99W, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 4 of 13 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	S H V	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES / LOC	PED ERROR	ACT EVENT	CAUSE
06440	Y	N	N	N			12/09/2023	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									01,07,29
NONE							SA		SW 124TH AVE	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW								000	00
N							UNK			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	45	M	OR-Y		047,026	000	01,07,29
N							45 23 21.44	-122 48 20.25	009100100S00															OR<25			
																02	NONE 0	STOP									
																	PRVTE	NE-SW								011	00
																	PSNGR CAR		01	DRVR	NONE	44	M	OR-Y		000	00
																								OR<25			
																02	NONE 0	STOP									
																	PRVTE	NE-SW								011	00
																	PSNGR CAR		02	PSNG	INJC	45	F		000	000	00
																02	NONE 0	STOP									
																	PRVTE	NE-SW								011	00
																	PSNGR CAR		03	PSNG	INJC	10	F		000	000	00
04948	N	N	N	N	N	N	09/26/2019	16	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	TURN-R									08
CITY							TH	0	SW 124TH AVE	E		TRF SIGNAL	N	DRY	SS-O		N/A	SE-NE								000	00
N							6A			09	1		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
N							45 23 20.82	-122 48 19.67																UNK			
																02	NONE 9	STOP									
																	N/A	SE-NE								011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																								UNK			
06351	N	N	N	N			12/02/2019	16	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									29
NONE							MO	0	SW 124TH AVE	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW								000	00
N							5P			09	1		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	49	M	OR-Y	026	000	29
N							45 23 20.82	-122 48 19.67																OR<25			
																02	NONE 0	STOP									
																	PRVTE	SE-NW								011	00
																	PSNGR CAR		01	DRVR	INJC	47	M	OR-Y	000	000	00
																								OR<25			
00515	Y	N	N	N			02/14/2021	16	SW PACIFIC HY 99W	INTER	3-LEG	N	N	SNOW	S-1STOP	01	NONE	STRGHT									01,07
NONE							SU	0	SW 124TH AVE	SE		TRF SIGNAL	N	SNO	REAR		PRVTE	SE-NW								000	00
N							9A			09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y	026	000	01,07
N							45 23 20.84	-122 48 19.67																UNK			
																02	NONE	STOP									
																	PRVTE	SE-NW								012	00
																	PSNGR CAR		01	DRVR	INJC	66	F	OR-Y	000	000	00
																								OR<25			

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CITY OF TUALATIN, WASHINGTON COUNTY

124TH AVE at PACIFIC HY 99W, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

5 - 8 of 13 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N V	S I H	C L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01866	N	N	N	N	N	N	N	04/26/2022	16	SW PACIFIC HY 99W	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT										07
CITY			TU		0				SW 124TH AVE	SE		TRF SIGNAL	N	WET	REAR			N/A	SE-NW									000		00
N			11A							06	1		N	DAY	PDO			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 23 20.82		-122 48 19.67														UNK										
																	02	NONE 9	STOP										
																		N/A	SE-NW								011		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																			UNK										
05197	N	N	N	N				10/10/2019	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									013	29
NONE			TH						SW 124TH AVE	SW		TRF SIGNAL	N	DRY	REAR			PRVTE	SW-NE								000		00
N			5P							06	1		N	DAY	INJ			PSNGR CAR		01	DRVR	INJC	43	F	OR-Y		026	000		29
N			45 23 20.82		-122 48 19.67				009100200S00										OR<25										
																	02	NONE 0	STOP										
																		PRVTE	SW-NE								011	013	00
																		PSNGR CAR		01	DRVR	NONE	51	M	OTH-Y		000	000		00
																			N-RES										
																	03	NONE 0	STOP										
																		PRVTE	SW-NE								022		00
																		PSNGR CAR		01	DRVR	NONE	26	F	OR-Y		000	000		00
																			OR<25										
02288	N	N	N	N				05/08/2019	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
NONE			WE						SW 124TH AVE	SW		TRF SIGNAL	N	DRY	REAR			N/A	SW-NE								000		00
N			5P							06	1		N	DAY	PDO			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 23 20.82		-122 48 19.67				009100200S00										UNK										
																	02	NONE 9	STOP										
																		N/A	SW-NE								011		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																			UNK										
03031	Y	N	N	N	N	N		08/17/2020	14	SW PACIFIC HY 99W	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 9	TURN-L									058	01
CITY			MO						SW 124TH AVE	SW		TRF SIGNAL	N	DRY	FIX			N/A	SE-SW								000		00
N			4P							05	0		N	DAY	PDO			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 23 21.43		-122 48 20.24				009100100S00										UNK										
00854	N	Y	N	N				03/12/2021	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE	STRGHT										29,07
CITY			FR						SW 124TH AVE	SW		TRF SIGNAL	N	DRY	REAR			PRVTE	SW-NE								000		00
N			10P							06	1		N	DLIT	INJ			PSNGR CAR		01	DRVR	NONE	33	F	OR-Y		000,026	000		29,07
N			45 23 20.83		-122 48 19.67				009100200S00										OR<25										
																	02	NONE	STOP										
																		PRVTE	SW-NE								012		00
																		PSNGR CAR		01	DRVR	INJC	36	M	OTH-Y		000	000		00
																			N-RES										

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CITY OF TUALATIN, WASHINGTON COUNTY

124TH AVE at PACIFIC HY 99W, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

9 - 13 of 13 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N S	S H V	W O R L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE PRVTE PSNGR CAR	STOP SW-NE	02	PSNG	INJC	26	F			000	012 000		00 00
05702	N	N	N	N	N	N	12/17/2021	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLD	S-OTHER	01	NONE 9	TURN-L											08
CITY			FR						SW 124TH AVE	SW		TRF SIGNAL	N	WET	TURN		N/A	SE-SW									000		00
N N			5A 45 23 20.82				-122 48 19.67		009100200S00	05	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
																02	NONE 9 N/A PSNGR CAR	TURN-L SE-SW	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		00 00
03539	N	N	N	N	N	N	08/30/2021	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											07
CITY			MO						SW 124TH AVE	SW		TRF SIGNAL	N	DRY	REAR		N/A	SW-NE									000		00
N N			6P 45 23 20.58				-122 48 20.24		009100200S00	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
																02	NONE 9 N/A PSNGR CAR	STOP SW-NE	01	DRVR	NONE	00	Unk	UNK UNK		000	011 000		00 00
04025	N	N	N	N	N	N	09/06/2022	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY			TU						SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NW									019		00
N N			8A 45 23 21.44				-122 48 20.25		009100100S00	02	1		Y	DAY	INJ		PSNGR CAR		01	DRVR	NONE	68	F	OR-Y OR<25		000	000		00
																02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-SE	01	DRVR	INJC	40	M	OR-Y OR<25		003	000 000		00 04
91096	N	N	N	N			04/14/2022	14	SW PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	S-OTHER	01	NONE 9	TURN-L											05,08
NO RPT			TH						SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		N/A	SE-SW									000		00
N N			9A 45 23 20.82				-122 48 19.67		009100200S00	03	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
																02	NONE 9 N/A PSNGR CAR	TURN-L SE-SW	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		00 00

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

1 - 4 of 33 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	C N R K	O W	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TYPE / TRLR QTY / OWNER	MOVE / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00635	N	N	N	N	N	N	N	02/24/2021	WASHINGTON	1	14		INTER	CROSS	N	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	0		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															OR<25					
																			02	NONE	STOP								012	013	00
																				PRVTE	NE-SW										
																				PSNGR CAR		01	DRVR	INJC	83	F	OR-Y		000	000		00
																											OR<25					
																			03	NONE	STOP										
																				PRVTE	NE-SW								022		00
																				PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00
																											UNK					
03418	N	N	N	N				07/03/2019	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	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	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 24 16.38	-122 47 49.12			009100100S00															UNK					
																			02	NONE 9	STOP										
																				N/A	NE-SW								012		00
																				PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																											UNK					
05377	N	N	N	N				12/06/2021	WASHINGTON	1	14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT									013	29
CITY								MO	TIGARD	MN 0		SW DURHAM RD	NE		TRF SIGNAL	N	WET	REAR		UNKN	NE-SW							000		00
N								3P	PORTLAND UA	11.46		SW PACIFIC HY 99W	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		026	000		29
N								45 24 16.37	-122 47 49.13			009100100S00															UNK					
																			02	NONE 0	STOP										
																				PRVTE	NE-SW								011	013	00
																				PSNGR CAR		01	DRVR	INJC	49	M	OR-Y		000	000		00
																											OR>25					
																			03	NONE 0	STOP										
																				UNKN	NE-SW								011		00
																				PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																											UNK					
04966	N	N	N	N				10/24/2022	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											13
NONE								MO	TIGARD	MN 0		SW DURHAM RD	NE		TRF SIGNAL	N	DRY	SS-O		UNKN	NE-SW							022		00
N								4P	PORTLAND UA	11.46		SW PACIFIC HY 99W	06	0		N	DAY	INJ		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		045	000		13
N								45 24 16.38	-122 47 49.12			009100100S00															UNK					
																			02	NONE 0	STRGHT										
																				PRVTE	NE-SW								000		00
																				PSNGR CAR		01	DRVR	INJC	27	M	OR-Y		000	000		00
																											OR<25					
																			03	NONE 0	STOP										
																				PRVTE	NE-SW								011		00
																				PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		000	000		00
																											OR<25					

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

5 - 9 of 33 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	S H L	W R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05744	N	N	N	N	N	N	11/07/2023	WASHINGTON	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										001	07,29
CITY			TU				TIGARD		MN 0	SW PACIFIC HY 99W	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW								006		00
N			8A				PORTLAND UA		11.46	SW 116TH AVE	06	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJA	35		OR-Y		043,026	000	001	07,29
N			45 24 16.38				-122 47 49.12			009100100S00															OR<25					
																	02	NONE 0	STOP											
																		PRVTE	NE-SW								011		00
																		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		000	000		00
																									OR<25					
01817	N	N	N	N			04/14/2023	WASHINGTON	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE			FR				TIGARD		MN 0	SW PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		N/A	NE-SW								000		00
N			UNK				PORTLAND UA		11.46	SW 116TH AVE	06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 24 16.38				-122 47 49.12			009100100S00															UNK					
																	02	NONE 9	STOP											
																		N/A	NE-SW								011		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
02454	N	N	N	N			05/18/2023	WASHINGTON	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE			TH				TIGARD		MN 0	SW PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		N/A	NE-SW								000		00
N			12P				PORTLAND UA		11.46	SW 116TH AVE	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 24 16.38				-122 47 49.12			009100100S00															UNK					
																	02	NONE 9	STOP											
																		N/A	NE-SW								012		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
02737	N	N	N	N			06/02/2023	WASHINGTON	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											27,29
NONE			FR				TIGARD		MN 0	SW PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		N/A	NE-SW								000		00
N			1P				PORTLAND UA		11.46	SW 116TH AVE	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 24 16.38				-122 47 49.12			009100100S00															UNK					
04165	N	N	N	N	N	N	08/21/2023	WASHINGTON	1 14		INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 9	STRGHT											07,13
CITY			MO				TIGARD		MN 0	SW PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		N/A	NE-SW								000		00
N			4A				PORTLAND UA		11.46	SW 116TH AVE	06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 24 16.38				-122 47 49.12			009100100S00															UNK					
																	02	NONE 9	STRGHT											
																		N/A	NE-SW								006		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
01119	N	N	N	N			03/11/2021	WASHINGTON	1 14		INTER	CROSS	N	N	CLR	S-1TURN	01	NONE 9	TURN-R											08,14
NONE			TH				TIGARD		MN 0	SW PACIFIC HY 99W	CN		R-GRN-SIG	N	DRY	TURN		N/A	NE-NW								000		00
N			8A				PORTLAND UA		11.46	SW 116TH AVE	03	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 24 16.39				-122 47 49.12			009100100S00															UNK					

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

10 - 14 of 33 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G	M J I N	S C H V	W O R L	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																	02	NONE 9	TURN-R										
																		N/A	NE-NW									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
06279	N	N	N	N			12/04/2023	WASHINGTON	1 14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	U-TURN										08
NONE							MO	TIGARD	MN 0	SW PACIFIC HY 99W	CN		TRF SIGNAL	N	WET	TURN		N/A	SW-SW									000		00
N							6P	PORTLAND UA	11.46	SW 116TH AVE	03	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 16.38	-122 47 49.12		009100100S00															UNK					
																	02	NONE 9	TURN-R										
																		N/A	NW-SW									016		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
06946	N	N	N	N	N	N	12/29/2019	WASHINGTON	1 14		STRGHT		N	N	RAIN	S-STRGHT	01	NONE 9	STRGHT										13
CITY							SU		MN 0		UN	(DIVMD)	UNKNOWN	N	WET	SS-O		N/A	N -S									000		00
N							5A	PORTLAND UA	11.49		03			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 14.92	-122 47 49.93		009100100S00		(04)													UNK					
																	02	NONE 9	STRGHT										
																		N/A	N -S									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
02017	N	N	N	N	N	N	05/27/2020	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	PED	01	NONE 0	TURN-L										02
CITY							WE	TIGARD	MN 0	SW DURHAM RD	NE		TRF SIGNAL	N	DRY	PED		PRVTE	NW-NE									000		00
N							6A	PORTLAND UA	11.46	SW PACIFIC HY 99W	05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y		029	026		02
N							45 24 16.02	-122 47 47.92		009100200S00															OR<25					
																			-											
																			STRGHT		01	PED	INJB	36	M		I XWLK	000	035		00
																			SE NW											
05590	N	N	N	N	N	N	11/01/2023	WASHINGTON	2 14		INTER	CROSS	N	N	RAIN	PED	01	NONE 0	TURN-L										107	02
CITY							WE	TIGARD	MN 0	SW DURHAM RD	NE		L-GRN-SIG	N	WET	PED		PRVTE	NW-NE									000		00
N							2P	PORTLAND UA	11.46	SW PACIFIC HY 99W	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	41	F	NONE		029	000		02
N							45 24 16.02	-122 47 47.92		009100200S00															OR<25					
																			-											
																			STRGHT		01	CONV	INJB	58	M		I XWLK	000	000		00
																			SE NW											
06457	N	N	N	N			12/08/2023	WASHINGTON	2 14		INTER	CROSS	N	N	CLD	BIKE	01	NONE 0	TURN-R										27,02,15
CITY							FR	TIGARD	MN 0	SW DURHAM RD	SE		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NE									015		00
N							10P	PORTLAND UA	11.46	SW PACIFIC HY 99W	06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		027	038		27,02
N							45 24 16.02	-122 47 47.92		009100200S00															OR<25					

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

15 - 19 of 33 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	W C O K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC / TYP	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																				- STRGHT NE SW	01	BIKE	INJB	49	M		UNK	046	047		15
05771	N	N	N	N			11/10/2023	WASHINGTON	2	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR	TIGARD	MN 0		SW DURHAM RD	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE-NW								000		00
N							8A	PORTLAND UA	11.46		SW PACIFIC HY 99W	06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		026	000		29
N							45 24 16.02	-122 47 47.92			009100200S00															OR<25					
																		02	NONE 0	STOP										
																			PRVTE	SE-NW								012		00
																			PSNGR CAR		01	DRVR	INJC	33	M	OR-Y		000	000		00
																										OR<25				
02933	N	N	N	N			08/14/2020	WASHINGTON	2	14		INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 9	STRGHT										13
NONE							FR	TIGARD	MN 0		SW DURHAM RD	SW		UNKNOWN	N	DRY	SS-O		N/A	SW-NE								000		00
N							12P	PORTLAND UA	11.46		SW PACIFIC HY 99W	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 16.04	-122 47 47.92			009100200S00															UNK					
																		02	NONE 9	STRGHT										
																			N/A	SW-NE								000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK				
01980	N	N	N	N			04/24/2023	WASHINGTON	2	14		INTER	CROSS	N	N	CLR	S-1TURN	01	NONE 9	STRGHT										29
NONE							MO	TIGARD	MN 0		SW DURHAM RD	SW		TRF SIGNAL	N	DRY	REAR		N/A	SW-NE								000		00
N							9A	PORTLAND UA	11.46		SW PACIFIC HY 99W	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 16.02	-122 47 47.92			009100200S00															UNK					
																		02	NONE 9	U-TURN										
																			N/A	SW-SW								000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK				
02317	N	N	N	N			05/11/2023	WASHINGTON	2	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									013	29
NONE							TH	TIGARD	MN 0		SW DURHAM RD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE								000		00
N							5P	PORTLAND UA	11.46		SW PACIFIC HY 99W	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y		026	000		29
N							45 24 16.02	-122 47 47.92			009100200S00															OR<25					
																		02	NONE 0	STOP										
																			PRVTE	SW-NE								011	013	00
																			PSNGR CAR		01	DRVR	INJB	39	M	OR-Y		000	000		00
																										OR<25				
																		03	NONE 0	STOP										
																			PRVTE	SW-NE								022		00
																			PSNGR CAR		01	DRVR	NONE	43	M	OR-Y		000	000		00
																										OR<25				

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SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L	M J U G	S V N H	W L R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02345	N	N	N	N	N	06/29/2020	WASHINGTON	2	14		INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-L										04
CITY						MO	TIGARD	MN 0		SW DURHAM RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-SW								000		00
N						9P	PORTLAND UA	11.46		SW PACIFIC HY 99W	02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	28	M	OR-Y		097	000		00
N						45 24 16.02	-122 47 47.92			009100200S00															OR<25					
																	02	NONE 0	STRGHT									000		00
																		PRVTE	SW-NE											
																		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		097	000		00
																									OR<25					
																	02	NONE 0	STRGHT									000		00
																		PRVTE	SW-NE											
																		PSNGR CAR		02	PSNG	INJC	15	M			000	000		00
03133	N	N	N	N	N	08/03/2021	WASHINGTON	2	14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY						TU	TIGARD	MN 0		SW DURHAM RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NE								000		00
N						9A	PORTLAND UA	11.46		SW PACIFIC HY 99W	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	42	M	SUSP		020	000		04
N						45 24 16.04	-122 47 47.93			009100200S00															OR>25					
																	02	NONE 0	TURN-L									000		00
																		PRVTE	SE-SW											
																		PSNGR CAR		01	DRVR	INJC	42	M	OR-Y		000	000		00
																									OR<25					
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		TRF SIGNAL	N	DRY	TURN		N/A	SE-SW								000		00
N						3P	PORTLAND UA	11.46		SW 116TH AVE	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N						45 24 16.02	-122 47 47.92			009100200S00															UNK					
																	02	NONE 9	TURN-R									000		00
																		N/A	NW-SW											
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
01165	Y	N	N	N		03/13/2022	WASHINGTON	2	14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE	STRGHT										040,053,100	01,04
CITY						SU	TIGARD	MN 0		SW DURHAM RD	CN		L-GRN-SIG	N	WET	TURN		PRVTE	SW-NE								000	040,053,100	00
N						4A	PORTLAND UA	11.46		SW PACIFIC HY 99W	04	0		N	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															OR<25					
																	02	NONE	TURN-L											
																		PRVTE	NE-SE								000		00
																		PSNGR CAR		01	DRVR	INJB	20	F	OR-Y		000	000		00
																									OR<25					
																	02	NONE	TURN-L											
																		PRVTE	NE-SE								000		00
																		PSNGR CAR		02	PSNG	INJA	20	F			000	000		00

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

24 - 28 of 33 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A C	M J U S	S I N V	W C H L	O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04861	N	N	N	N			09/27/2023	WASHINGTON	2	14		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29,10
NONE							WE		MN 0			UN	(DIVMD)	UNKNOWN	N	DRY	REAR		PRVTE	S -N									000		00
N							12P	PORTLAND UA	11.48			00			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	54	M	OR-Y		026	000		29
N							45 24 15.05	-122 47 48.48			009100200S00		(04)													OR>25					
																		02	NONE 0	STOP										
																			PRVTE	S -N									011		00
																			PSNGR CAR		01	DRVR	INJC	63	F	OR-Y		000	000		00
																										OR<25					
05669	N	N	N	N			10/30/2019	WASHINGTON	2	14		STRGHT		N	N	CLR	S-STRGHT	01	NONE 9	STRGHT										13
NO RPT							WE		MN 0			UN	(DIVMD)	UNKNOWN	N	DRY	SS-O		N/A	S -N									000		00
N							3P	PORTLAND UA	11.48			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 15.04	-122 47 48.46			009100200S00		(04)													UNK					
																		02	NONE 9	STRGHT										
																			N/A	S -N									000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
03354	N	N	N	N			08/18/2021	WASHINGTON	2	14		STRGHT		N	N	CLR	S-STRGHT	01	NONE 9	STRGHT										27,29
NONE							WE		MN 0			UN	(DIVMD)	UNKNOWN	N	DRY	REAR		N/A	S -N									000		00
N							2P	PORTLAND UA	11.48			04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 15.06	-122 47 48.47			009100200S00		(04)													UNK					
																		02	NONE 9	STRGHT										
																			N/A	S -N									000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
02733	N	N	N	N			06/01/2023	WASHINGTON	2	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										27,29
NO RPT							TH		MN 0			UN	(DIVMD)	TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
N							2P	PORTLAND UA	11.48			04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	36	F	OR-Y		014,026	038		27,29
N							45 24 15.05	-122 47 48.48			009100200S00		(02)													OR<25					
																		02	NONE 0	STOP										
																			PRVTE	S -N									011		00
																			PSNGR CAR		01	DRVR	INJC	82	M	OTH-Y		000	000		00
																										N-RES					
																		02	NONE 0	STOP										
																			PRVTE	S -N									011		00
																			PSNGR CAR		02	PSNG	INJB	73	F			000	000		00
01367	Y	N	N	N			03/28/2022	WASHINGTON	2	14		STRGHT		Y	N	RAIN	S-1STOP	01	NONE 9	STRGHT										01,29
NONE							MO		MN 0			SW	(DIVMD)	TRF SIGNAL	N	WET	REAR		N/A	SW-NE									000		00
N							3P	PORTLAND UA	11.48			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 15.05	-122 47 48.48			009100200S00		(02)													UNK					
																		02	NONE 9	STOP										
																			N/A	SW-NE									011		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
03158	N	N	N	N			08/05/2021	WASHINGTON	2	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
NO RPT							TH		MN 0			SW	(DIVMD)	TRF SIGNAL	N	DRY	REAR		N/A	SW-NE									000		00
N							12P	PORTLAND UA	11.48			04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 15.1	-122 47 48.5			009100200S00		(02)													UNK					

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.45 to 11.49 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

29 - 33 of 33 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	D R A L C	M J U G S	S N I V	W H C L	O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																		02	NONE 9	STOP										
																			N/A	SW-NE									011		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
06407	N	N	N	N			12/05/2019	WASHINGTON	2	14		STRGHT		N	N	CLR	S-STRGHT	01	NONE 9	STRGHT										13
NO RPT							TH		MN 0			UN	(DIVMD)	UNKNOWN	N	DRY	SS-O		N/A	S -N								000		00
N							4P	PORTLAND UA	11.49			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 14.56	-122 47 48.76			009100200S00		(04)													UNK					
																		02	NONE 9	STRGHT										
																			N/A	S -N									000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
00245	N	N	N	N	N	N	01/13/2023	WASHINGTON	2	14		STRGHT		N	N	RAIN	S-STRGHT	01	NONE 9	STRGHT										13
CITY							FR		MN 0			UN	(DIVMD)	UNKNOWN	N	WET	SS-O		N/A	S -N								000		00
N							4P	PORTLAND UA	11.49			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 14.56	-122 47 48.76			009100200S00		(04)													UNK					
																		02	NONE 9	STRGHT										
																			N/A	S -N									000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
04193	N	N	N	N			07/24/2023	WASHINGTON	2	14		STRGHT		N	N	CLR	S-STRGHT	01	NONE 9	STRGHT										13
NONE							MO		MN 0			UN	(DIVMD)	UNKNOWN	N	DRY	SS-O		N/A	S -N								000		00
N							5P	PORTLAND UA	11.49			03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 24 14.56	-122 47 48.76			009100200S00		(05)													UNK					
																		02	NONE 9	STRGHT										
																			N/A	S -N									000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
02096	N	N	N	N			05/11/2022	WASHINGTON	2	14		STRGHT		Y	N	CLR	S-1STOP	01	NONE	STRGHT										29
COUNTY							WE		MN 0			UN	(DIVMD)	TRF SIGNAL	N	DRY	REAR		UNKN	S -N								000		00
N							4P	PORTLAND UA	11.49			04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK		026	000		29
N							45 24 14.56	-122 47 48.76			009100200S00		(02)													UNK					
																		02	NONE	STOP										
																			PRVTE	S -N									011		00
																			PSNGR CAR		01	DRVR	INJB	34	F	OR-Y		000	000		00
																										OR<25					
																		02	NONE	STOP										
																			PRVTE	S -N									011		00
																			PSNGR CAR		02	PSNG	INJB	12	F			000	000		00
																		02	NONE	STOP										
																			PRVTE	S -N									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.

091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.91 to 11.93 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

1 - 6 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	C O R K	W	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01876	N	N	N	N				05/20/2021	WASHINGTON	1 14		STRGHT		Y	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE								TH		MN 0		UN	(DIVMD)	R-GRN-SIG	N	DRY	REAR		PRVTE	N -S									000	00
N								4P	PORTLAND UA	11.91		03			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	39	F	OR-Y		026	000		29,07
N								45 23 53.26	-122 47 55.79		009100100S00		(04)							OR<25										
																		02	NONE 0	STOP										
																			PRVTE	N -S									011	00
																			PSNGR CAR		01	DRVR	INJC	53	F	OR-Y		000	000		00
																				OR<25										
04923	Y	N	N	N	N	N		09/29/2023	WASHINGTON	1 14		STRGHT		Y	N	CLD	S-STRGHT	01	NONE 0	STRGHT										01,29
COUNTY								FR		MN 0		N	(DIVMD)	TRF SIGNAL	N	WET	REAR		PRVTE	N -S									000	00
N								5A	PORTLAND UA	11.91		06			N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		047,042	000		01,29
N								45 23 53.25	-122 47 55.79		009100100S00		(02)							OR<25										
																		02	NONE 0	STRGHT										
																			PRVTE	N -S									000	00
																			PSNGR CAR		01	DRVR	INJB	25	F	OR-Y		000	000		00
																				OR<25										
																		02	NONE 0	STRGHT										
																			PRVTE	N -S									000	00
																			PSNGR CAR		02	PSNG	INJB	25	F			000	000		00
04851	N	N	N	N				09/20/2019	WASHINGTON	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NO RPT								FR		MN 0		N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000	00
N								2P	PORTLAND UA	11.92		06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y		026	000		29
N								45 23 52.73	-122 47 55.84		009100100S00									OR<25										
																		02	NONE 0	STOP										
																			PRVTE	N -S									011	00
																			PSNGR CAR		01	DRVR	INJC	29	F	OR-Y		000	000		00
																				OR<25										
06706	N	N	N	N				12/21/2023	WASHINGTON	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
NONE								TH		MN 0		N		TRF SIGNAL	N	DRY	REAR		N/A	N -S									000	00
N								11A	PORTLAND UA	11.92		06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 23 52.73	-122 47 55.84		009100100S00									UNK										
																		02	NONE 9	STOP										
																			N/A	N -S									011	00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																				UNK										
00352	N	N	N	N				01/20/2019	WASHINGTON	1 14		INTER	3-LEG	N	N	UNK	PED	01	NONE 0	TURN-R										02
COUNTY								SU		MN 0		S		TRF SIGNAL	N	WET	PED		PRVTE	W -S									000	00
N								6A	PORTLAND UA	11.92		05	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	31	M	OR-Y		000	000		00
N								45 23 52.73	-122 47 55.84		009100100S00									OR>25										
																				-										
																				STRGHT		01	PED	INJB	23	M		I XWLK	028	035		02
																				W E										
04005	N	N	N	N				09/04/2022	WASHINGTON	1 14		INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE	TURN-L										092,079	26,40,08
NONE								SU		MN 0		S		TRF SIGNAL	N	DRY	FIX		PRVTE	E -S									000	092,079	00
N								9P	PORTLAND UA	11.92		05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	60	M	OR-Y		080,081	027		26,40,08
N								45 23 52.73	-122 47 55.84		009100100S00									OR>25										

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.91 to 11.93 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

7 - 12 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G	M J I N	S C H	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC / TYP	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02462	N	N	N	N			05/15/2019	WASHINGTON	1	14		INTER	CROSS	N	N	CLD	PED	01	NONE 0	TURN-L											04
COUNTY							WE		MN 0			S		TRF SIGNAL	N	WET	PED		PRVTE	S -W									000		00
N							12P	PORTLAND UA	11.92			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	75	F	OR-Y		000	000		00
N							45 23 52.73	-122 47 55.84			009100100S00															OR<25					
																				-										
																				STRGHT	01	CONV	INJC	77	M		I XWLK	020	035		04
																				E W										
05923	N	N	N	N			11/12/2019	WASHINGTON	1	14		INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											27,29
NONE							TU		MN 0			S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
N							11A	PORTLAND UA	11.92			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	63	M	OR-Y		016,026	038		27,29
N							45 23 52.73	-122 47 55.84			009100100S00															OR>25					
																		02	NONE 0	STOP											
																			PRVTE	S -N									011		00
																			PSNGR CAR		01	DRVR	INJC	49	M	OR-Y		000	000		00
																										OR<25					
03096	N	N	N	N			08/04/2021	WASHINGTON	1	14		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE							WE		MN 0			S		TRF SIGNAL	N	DRY	REAR		N/A	S -N									000		00
N							6P	PORTLAND UA	11.92			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 23 52.73	-122 47 55.84			009100100S00															UNK					
																		02	NONE 9	STOP											
																			N/A	S -N									011		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																										UNK					
00550	N	Y	N	N	N	N	02/04/2022	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT											07,29
COUNTY							FR		MN 0			S		L-GRN-SIG	N	DRY	REAR		PRVTE	S -N									000		00
N							7P	PORTLAND UA	11.92			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	36	M	NONE		043,026	000		07,29
N							45 23 52.75	-122 47 55.84			009100100S00															OR<25					
																		02	NONE	STOP											
																			PRVTE	S -N									012		00
																			PSNGR CAR		01	DRVR	INJC	28	M	OR-Y		000	000		00
																										OR<25					
																		02	NONE	STOP											
																			PRVTE	S -N									012		00
																			PSNGR CAR		02	PSNG	INJC	29	F			000	000		00
01777	N	N	N	N	N	N	05/03/2020	WASHINGTON	1	14		INTER	3-LEG	N	Y	RAIN	FIX OBJ	01	NONE 9	TURN-R										100		27,08
COUNTY							SU		MN 0			W		TRF SIGNAL	N	WET	FIX		N/A	N -W									000		00
N							8A	PORTLAND UA	11.92			05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 23 52.74	-122 47 55.84			009100100S00															UNK					
00942	N	N	N	N			02/23/2023	WASHINGTON	1	14		INTER	3-LEG	N	N	SNOW	ANGL-STP	01	NONE 0	TURN-R										124		08
NONE							TH		MN 0			W		TRF SIGNAL	N	ICE	TURN		PRVTE	N -W									000	124	00
N							8A	PORTLAND UA	11.92			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	M	OR-Y		007	000		08
N							45 23 52.73	-122 47 55.84			009100100S00															OR<25					
																		02	NONE 0	STOP											
																			PRVTE	W -E									011		00
																			PSNGR CAR		01	DRVR	INJC	52	M	OR-Y		000	000		00
																										OR<25					

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091: PACIFIC HIGHWAY WEST **Highway 091 MAINLINE, MP 11.91 to 11.93 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance**

13 - 17 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P / E D	A	L G / C S	D M R / U N / G V	J / I / H / L	S / C / K	W / O / R	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC / TYP / PNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A GE	S EX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
06740	Y	N	N	N				12/23/2023	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE 0	TURN-R										080	08,05,01
NO RPT								SA		MN 0			W		TRF SIGNAL	N	DRY	TURN		PRVTE	N -W									000		00
N								2P	PORTLAND UA	11.92			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		001,080,047	000		08,05,01
N								45 23 52.73	-122 47 55.84			009100100S00															UNK					
																			02	NONE 0	STOP										012		00
																				PRVTE	W -E											
																				PSNGR CAR		01	DRVR	INJB	29	F	OR-Y		000	000		00
																											OR<25					
																			03	NONE 0	STOP										012	080	00
																				PRVTE	W -E											
																				PSNGR CAR		01	DRVR	NONE	46	F	OR-Y		000	000		00
																											OR<25					
03527	N	N	N	N	N	N		08/07/2022	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT												04,27
COUNTY								SU		MN 0			CN		TRF SIGNAL	N	DRY	TURN		N/A	N -S									000		00
N								9P	PORTLAND UA	11.92			01	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 23 52.73	-122 47 55.84			009100100S00															UNK					
																			02	NONE 9	TURN-L												
																				N/A	S -W										000		00
																				PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																											UNK					
04734	N	N	N	N				08/22/2023	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT												04
NONE								TU		MN 0			CN		L-GRN-SIG	N	DRY	TURN		PRVTE	N -S									000		00
N								UNK	PORTLAND UA	11.92			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	38	F	OR-Y		020,097	000		04
N								45 23 52.73	-122 47 55.84			009100100S00															OR<25					
																			02	NONE 0	TURN-L												
																				PRVTE	S -W										000		00
																				PSNGR CAR		01	DRVR	NONE	69	M	OR-Y		020,097	000		04
																											OR<25					
02689	N	N	N	N				05/29/2019	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT												04
COUNTY								WE		MN 0			CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000		00
N								11P	PORTLAND UA	11.92			02	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	45	M	OR-Y		020	000		04
N								45 23 52.73	-122 47 55.84			009100100S00															OR<25					
																			02	NONE 0	U-TURN												
																				PRVTE	N -N										000		00
																				PSNGR CAR		01	DRVR	INJC	26	M	OR-Y		000	000		00
																											OR<25					
02954	N	N	N	N	N	N		07/03/2022	WASHINGTON	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT												02
COUNTY								SU		MN 0			CN		TRF SIGNAL	N	DRY	TURN		N/A	E -W									000		00
N								7P	PORTLAND UA	11.92			02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 23 52.73	-122 47 55.84			009100100S00															UNK					
																			02	NONE 9	TURN-L												
																				N/A	W -N										000		00
																				PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																											UNK					
01353	N	N	N	N				03/17/2019	WASHINGTON	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT												02
NONE								SU		MN 0			CN		TRF SIGNAL	N	DRY	TURN		N/A	N -S									000		00
N								12P	PORTLAND UA	11.92			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 23 52.73	-122 47 55.84			009100100S00															UNK					

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.91 to 11.93 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

18 - 22 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G	S N I V	C H L	W O R K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG TYP / MILEPNT	FC	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																		02	NONE 9 N/A PSNGR CAR	TURN-R W -S	01	DRVR	NONE	00	Unk	UNK UNK		000	000		00 00
04228 COUNTY N N	N	N	N	N			09/17/2022 SA 12P 45 23 52.73	WASHINGTON PORTLAND UA -122 47 55.84	1 14 MN 0 11.92		 009100100S00	INTER CN 03	CROSS 0	N TRF SIGNAL	N N N	CLR DRY DAY	ANGL-OTH TURN INJ	01	NONE PRVTE PSNGR CAR	TURN-R W -S	01	DRVR	NONE	19	M	OR-Y OR<25		020	000 038		04,02,27 00 04,02,27
																		02	NONE PRVTE MTRCYCLE	STRGHT N -S	01	DRVR	INJA	47	M	OTH-Y N-RES		000	000 000		00 00
03891 COUNTY N N	N	N	N	N	N	N	10/01/2020 TH 8A 45 23 52.71	WASHINGTON PORTLAND UA -122 47 54.8	2 14 MN 0 11.92		 SW FISCHER RD SW PACIFIC HY 99W 009100200S00	INTER S 06	CROSS 0	N UNKNOWN	N N N	CLD DRY DAY	S-STRGHT REAR PDO	01	NONE 9 N/A PSNGR CAR	STRGHT S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		27,29 00 00
																		02	NONE 9 N/A PSNGR CAR	STRGHT S -N	01	DRVR	NONE	00	Unk	UNK UNK		006	000		00 00
06106 NONE N N	N	N	N	N			11/25/2023 SA 2P 45 23 53.07	WASHINGTON PORTLAND UA -122 47 54.78	2 14 MN 0 11.92		 009100200S00	INTER S 06	CROSS 0	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	INJC	47	F	OR-Y OR<25		014,026	000 026		40,10,29 00 40,10,29
																		01	NONE PRVTE PSNGR CAR	STRGHT S -N	02	PSNG	INJC	38	F			000	000 000		00 00
																		02	NONE 0 PRVTE PSNGR CAR	STOP S -N	01	DRVR	NONE	41	M	OR-Y OR>25		000	011 000		00 00
05263 COUNTY N N	Y	N	N	N			10/16/2023 MO 6A 45 23 53.07	WASHINGTON PORTLAND UA -122 47 54.78	2 14 MN 0 11.92		 009100200S00	INTER CN 02	CROSS 0	N TRF SIGNAL	N N N	RAIN WET DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	22	M	OR-Y OR<25		047,026	000 000		01,07,29 00 01,07,29
																		02	NONE 0 RENTL PSNGR CAR	STOP S -N	01	DRVR	INJC	21	F	OR-Y OR<25		000	011 000		00 00
05097 COUNTY N N	N	N	N	N	N	N	11/20/2021 SA 11A 45 23 52.75	WASHINGTON PORTLAND UA -122 47 54.8	2 14 MN 0 11.93		 009100200S00	INTER CN 04	CROSS 0	N TRF SIGNAL	N N N	CLR DRY DAY	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	INJB	22	M	OR-Y OR<25		000	000 000		02,04 00 00
																		02	NONE 0 PRVTE PSNGR CAR	TURN-L W -N	01	DRVR	INJC	23	F	OR-Y OR<25		028,020	000 000		00 02,04

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091: PACIFIC HIGHWAY WEST

Highway 091 MAINLINE, MP 11.91 to 11.93 01/01/2019 to 12/31/2023, Both Add and Non-Add mileage, ALL Crashes Severity, ALL Crashes Circumstance

23 - 23 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P / E / D	A / L / C	D R / U / G / S	M J / I / N / V	S / C / H / L	W / O / R / K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A / G / E	S / E / X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
																	02	NONE 0	TURN-L										
																		PRVTE	W -N								000		00
																		PSNGR CAR		02	PSNG	INJC	23	M			000	000		00

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

CITY OF TUALATIN, WASHINGTON COUNTY

108TH AVE at HERMAN RD, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED 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										29
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																UNK				
																02	NONE 9	STOP										
																	N/A	NE-SW									011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

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CITY OF TUALATIN, WASHINGTON COUNTY

TETON AVE at HERMAN RD, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 5 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G	S N H V	W O R L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03890	N	N	N N	N N	N	08/01/2019	17	SW HERMAN RD	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 1	TURN-L										05
CITY			TH				0	SW TETON AVE	N		L-GRN-SIG	N	DRY	TURN		PRVTE	N -NE									000		00
N			12P						06	2		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	51	M	OR-Y		080	000		05
N			45 23 5.35				-122 47 1.5																OR<25					
															02	NONE 0	STOP											
																PRVTE	N -S									011		00
																PSNGR CAR		01	DRVR	INJC	60	F	OR-Y		000	000		00
																							OR<25					
00751	Y	N	N N			02/16/2022	17	SW HERMAN RD	INTER	CROSS	N	N	FOG	S-1STOP	01	NONE	STRGHT										124,015	01,07
NONE			WE				0	SW TETON AVE	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									001	124	00
N			6A						06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		026	000		01,07
N			45 23 5.37				-122 47 1.51																OR<25					
															02	NONE	STOP											
																PRVTE	S -N									011		00
																PSNGR CAR		01	DRVR	INJC	43	M	OR-Y		000	000		00
																							OR>25					
01792	N	N	N N	N N	N	04/11/2023	17	SW HERMAN RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											27
CITY			TU				0	SW TETON AVE	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
N			7A						06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	46	F	OR-Y		016,026	038		27
N			45 23 5.35				-122 47 1.5																OR<25					
															02	NONE 0	STOP											
																PRVTE	S -N									011		00
																PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		000	000		00
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	S -N									011		00
																PSNGR CAR		02	PSNG	INJC	39	F			000	000		00
03558	Y	Y	N N	N N	N	09/01/2021	17	SW HERMAN RD	INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 9	TURN-R										043	01,08
CITY			WE				0	SW TETON AVE	W		UNKNOWN	N	DRY	FIX		N/A	SW-S									000		00
N			8P						09	2		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 23 5.35				-122 47 1.5																UNK					
05774	N	N	N N	N N	N	11/04/2019	17	SW HERMAN RD	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT											27,04
CITY			MO				0	SW TETON AVE	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	N -S									000		00
N			11A						03	2		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	33	M	OR-Y		000	000		00
N			45 23 5.35				-122 47 1.5																OR<25					
															02	NONE 0	STRGHT											
																RENTL	SW-NE									000		00
																PSNGR CAR		01	DRVR	INJC	33	F	OR-Y		016,020	038		27,04
																							OR>25					

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CITY OF TUALATIN, WASHINGTON COUNTY

TETON AVE at HERMAN RD, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

6 - 6 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
00417	N	N	N	N			02/06/2021	17	SW HERMAN RD	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 9	STRGHT										02
CITY							SA	0	SW TETON AVE	CN		L-GRN-SIG	N	WET	TURN		N/A	N -S									000	00
N							1P			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 5.39	-122 47 1.52																UNK				
																02	NONE 9	TURN-L										
																	N/A	S -SW									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

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CITY OF TUALATIN, WASHINGTON COUNTY

HAZELBROOK RD at PACIFIC HY 99W, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 4 of 4 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	I H L	C O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
04361	N	N	N	N	N	N	N	06/13/2019	14	SW HAZELBROOK RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	TURN-R									07
CITY			TH							SW PACIFIC HY 99W	E		STOP SIGN	N	DRY	REAR		N/A	E -N								000	00
N			7A								09	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N			45 23 33.16					-122 47 59.48		009100200S00															UNK				
																	02	NONE 9	STOP										
																		N/A	E -N								011	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																									UNK				
04015	N	N	N	N				09/05/2022	18	SW HAZELBROOK RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE	STRGHT									07
CITY			MO						0	SW PACIFIC HY 99W	E		STOP SIGN	N	DRY	REAR		PRVTE	E -W								000	00
N			3P								06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	M	NONE		043	000	07
N			45 23 33.45					-122 47 59.22																	OR>25				
																	02	NONE	STOP										
																		PRVTE	E -W								011	00
																		PSNGR CAR		01	DRVR	INJB	49	F	OR-Y		000	000	00
																									OR<25				
04025	N	N	N	N	N	N	N	11/03/2020	14	SW HAZELBROOK RD	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	TURN-R									08
CITY			TU							SW PACIFIC HY 99W	CN		STOP SIGN	N	WET	TURN		PRVTE	E -N								000	00
N			8P								02	0		N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	23	F	OR-Y		007	000	08
N			45 23 33.16					-122 47 59.48		009100200S00															OR<25				
																	02	NONE 0	STRGHT										
																		PRVTE	S -N								000	00
																		PSNGR CAR		01	DRVR	INJC	24	F	OR-Y		000	000	00
																									OR<25				
05919	N	N	N	N	N	N	N	12/13/2022	14	SW HAZELBROOK RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT									02
CITY			TU							SW PACIFIC HY 99W	CN		STOP SIGN	N	DRY	TURN		N/A	W -E								000	00
N			5A								02	1		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N			45 23 33.62					-122 47 59.07		009100200S00															UNK				
																	02	NONE 9	TURN-R										
																		N/A	S -E								015	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																									UNK				

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CITY OF TUALATIN, WASHINGTON COUNTY

LEVETON DR at 124TH AVE, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 5 of 8 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N S	S H V	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES / LOC	PED / ERROR	ACT EVENT	CAUSE
05935	N	N	N	N			11/12/2019	16	SW LEVETON DR	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT								29
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																UNK			
																02	NONE 9	STOP								
																	N/A	N -S							011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																								UNK			
04719	N	N	N	N			12/22/2020	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT								29
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																UNK			
																02	NONE 9	STOP								
																	N/A	N -S							011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																								UNK			
06451	N	N	N	N			11/21/2023	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	O-OTHER	01	NONE 9	TURN-L								08
NONE							TU	0	124TH AVE	N		TRF SIGNAL	N	DRY	TURN		N/A	W -N							000	00
N							4P			05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
N							45 23 5.63	-122 48 14.95																UNK			
																02	NONE 9	TURN-R								
																	N/A	E -N							000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00
																								UNK			
04159	Y	N	N	N	N	N	08/16/2019	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	OVERTURN	01	NONE 0	TURN-L								01
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																N-RES			
05424	N	N	N	N			10/04/2019	16	SW LEVETON DR	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT								04
NO RPT							FR	0	124TH AVE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	W -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																OR<25			
																02	NONE 0	TURN-L								
																	PRVTE	S -W							000	00
																	PSNGR CAR		01	DRVR	INJC	63	F	OR-Y	000	000	00
																								OR<25			

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SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT EVENT	CAUSE
01884	N	N	N	N			04/15/2019	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L										02
NO RPT							MO	0	124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		N/A	N -E									000	00
N							2P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 5.63	-122 48 14.95																UNK				
																02	NONE 9	STRGHT										
																	N/A	S -N									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
01646	N	N	N	N			04/14/2022	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-L										08
CITY							TH	0	124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		N/A	E -S									000	00
N							9A			04	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 5.63	-122 48 14.95																UNK				
																02	NONE 9	TURN-R										
																	N/A	S -E									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
03841	N	N	N	N	N	N	08/03/2023	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	STRGHT										32,04,02
CITY							TH	0	124TH AVE	CN		L-GRN-SIG	N	DRY	TURN		PRVTE	N -S									000	00
N							2P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	41	F	OR-Y	000	000	00
N							45 23 5.63	-122 48 14.95																OR<25				
																01	NONE	STRGHT										
																	PRVTE	N -S									000	00
																	PSNGR CAR		02	PSNG	INJA	55	M		000	000	00
																01	NONE	STRGHT										
																	PRVTE	N -S									000	00
																	PSNGR CAR		03	PSNG	INJB	13	F		000	000	00
																02	NONE	TURN-L										
																	PRVTE	S -W									000	00
																	PSNGR CAR		01	DRVR	INJC	21	F	OR-Y	052	000	32,04,02
																								OR<25				

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

CITY OF TUALATIN, WASHINGTON COUNTY

LEVETON DR and Intersectional Crashes at LEVETON DR, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 5 of 13 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	W C O K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / TYPE / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01547	N	N	N	N			03/28/2023	17	SW LEVETON DR	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE	TURN-R										03,02
CITY							TU	0	SW 108TH AVE	CN		STOP SIGN	N	WET	TURN		PRVTE	W -S									015	00
N							3P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	53	F	OR-Y		021,028	000		03,02
N							45 23 9.64	-122 47 15.67																	OR<25					
																02	NONE	STRGHT											
																	PRVTE	N -S									000		00
																	PSNGR CAR		01	DRVR	INJC	56	M	OR-Y		000	000		00
																								OR<25					
05415	N	N	N	N	N	N	11/15/2022	17	SW LEVETON DR	ALLEY		N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT											02
CITY							TU	995	SW 108TH AVE	W	(NONE)	UNKNOWN	N	DRY	TURN		N/A	E -W									000		00
N							5P			07			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 23 9.71	-122 47 29.92			(02)														UNK					
																02	NONE 9	TURN-L											
																	N/A	W -N									019		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
04242	N	N	N	N	N	N	09/18/2022	17	SW LEVETON DR	ALLEY		N	Y	CLR	BIKE	01	NONE	TURN-R											02
CITY							SU	1013	SW 108TH AVE	W	(NONE)	UNKNOWN	N	DRY	ANGL		PRVTE	N -W									018		00
Y							11A			07			Y	DAY	INJ		PSNGR CAR		01	DRVR	NONE	33	F	OR-Y		027	000		02
N							45 23 9.72	-122 47 30.44			(02)														OR>25					
																		- STRGHT		01	BIKE	INJA	72	F		SIDEWK	000	000		00
																		E W											
05211	N	N	N	N			10/12/2023	17	SW LEVETON DR	ALLEY		N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
NONE							TH	252	SW 118TH AVE	W	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	S -W									018		00
N							5P			07			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y		028	000		02
N							45 23 5.47	-122 48 .99			(02)														OR>25					
																02	NONE 0	TURN-L											
																	PRVTE	E -S									019		00
																	PSNGR CAR		01	DRVR	INJC	27	M	OR-Y		000	000		00
																								OR>25					
01340	N	N	N	N	N	N	03/16/2019	17	SW LEVETON DR	STRGHT		N	Y	CLR	FIX OBJ	01	NONE 9	STRGHT										059,003	10
CITY							SA	240	SW 118TH AVE	W	(NONE)	UNKNOWN	N	DRY	FIX		N/A	W -E									000		00
Y							5P			08			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 23 5.51	-122 48 .59			(02)														UNK					

Leveton & 108th

Center Access

Center Access

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CITY OF TUALATIN, WASHINGTON COUNTY

LEVETON DR and Intersectional Crashes at LEVETON DR, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

6 - 10 of 13 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G S V	I N H L	C S O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
05935	N	N	N N				11/12/2019	16	SW LEVETON DR	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT										29
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																UNK				
																02	NONE 9	STOP										
																	N/A	N -S									011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
04719	N	N	N N				12/22/2020	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
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																UNK				
																02	NONE 9	STOP										
																	N/A	N -S									011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
06451	N	N	N N				11/21/2023	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	O-OTHER	01	NONE 9	TURN-L										08
NONE							TU	0	124TH AVE	N		TRF SIGNAL	N	DRY	TURN		N/A	W -N									000	00
N							4P			05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 5.63	-122 48 14.95																UNK				
																02	NONE 9	TURN-R										
																	N/A	E -N									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
04159	Y	N	N N	N	N	N	08/16/2019	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	OVERTURN	01	NONE 0	TURN-L										01
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																N-RES				
05424	N	N	N N				10/04/2019	16	SW LEVETON DR	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										04
NO RPT							FR	0	124TH AVE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	W -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																OR<25				
																02	NONE 0	TURN-L										
																	PRVTE	S -W									000	00
																	PSNGR CAR		01	DRVR	INJC	63	F	OR-Y		000	000	00
																								OR<25				

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CITY OF TUALATIN, WASHINGTON COUNTY

LEVETON DR and Intersectional Crashes at LEVETON DR, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

11 - 13 of 13 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	W C O K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01884	N	N	N	N			04/15/2019	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L										02
NO RPT							MO	0	124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		N/A	N -E									000	00
N							2P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 5.63	-122 48 14.95																UNK				
																02	NONE 9	STRGHT										
																	N/A	S -N									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
01646	N	N	N	N			04/14/2022	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-L										08
CITY							TH	0	124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		N/A	E -S									000	00
N							9A			04	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 5.63	-122 48 14.95																UNK				
																02	NONE 9	TURN-R										
																	N/A	S -E									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
03841	N	N	N	N	N	N	08/03/2023	16	SW LEVETON DR	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	STRGHT										32,04,02
CITY							TH	0	124TH AVE	CN		L-GRN-SIG	N	DRY	TURN		PRVTE	N -S									000	00
N							2P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	41	F	OR-Y	000	000	000	00
N							45 23 5.63	-122 48 14.95																OR<25				
																01	NONE	STRGHT										
																	PRVTE	N -S									000	00
																	PSNGR CAR		02	PSNG	INJA	55	M		000	000	000	00
																01	NONE	STRGHT										
																	PRVTE	N -S									000	00
																	PSNGR CAR		03	PSNG	INJB	13	F		000	000	000	00
																02	NONE	TURN-L										
																	PRVTE	S -W									000	00
																	PSNGR CAR		01	DRVR	INJC	21	F	OR-Y	052	000	000	32,04,02
																								OR<25				

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CITY OF TUALATIN, WASHINGTON COUNTY

TUALATIN RD at 108TH AVE, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 5 of 5 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
00057	Y	N	N N				01/04/2023	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE	STRGHT										01
NONE							WE	0	SW 108TH AVE	S		STOP SIGN	N	DRY	REAR		PRVTE	S -N									000	00
N							5P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	52	M	OR-Y		047,026	000	01
N							45 23 23.11	-122 47 15.82																OR<25				
																02	NONE	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	INJC	65	M	OR-Y		000	000	00
																								OR<25				
01097	N	N	N N	N	N	N	02/25/2020	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
CITY							TU	0	SW 108TH AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	W -E									000	00
N							11P			04	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	55	M	OR-Y		000	000	00
N							45 23 23.11	-122 47 15.82																OR<25				
																02	NONE 0	TURN-L										
																	PRVTE	S -W									015	00
																	PSNGR CAR		01	DRVR	INJC	22	M	OR-Y		028	000	02
																								OR<25				
05023	N	N	N N	N	N	N	11/17/2021	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	S-1TURN	01	NONE 0	STRGHT										08
CITY							WE	0	SW 108TH AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE	W -E									000	00
N							10A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	16	M	OR-Y		000	000	00
N							45 23 23.11	-122 47 15.82																OR<25				
																02	NONE 0	U-TURN										
																	PRVTE	W -W									000	00
																	PSNGR CAR		01	DRVR	NONE	92	M	OR-Y		008	000	08
																								OR<25				
04259	N	N	N N				08/15/2022	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										02
NONE							MO	0	SW 108TH AVE	CN		STOP SIGN	N	DRY	TURN		N/A	W -E									000	00
N							8A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 23.11	-122 47 15.82																UNK				
																02	NONE 9	TURN-L										
																	N/A	S -W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
01471	Y	N	N N	N	N	N	03/24/2023	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	STRGHT										03,02,30
CITY							FR	0	SW 108TH AVE	CN		STOP SIGN	N	WET	TURN		PRVTE	W -E									000	00
N							4P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	31	M	OR-Y		050	000	30
N							45 23 23.11	-122 47 15.82																OR<25				
																02	NONE	TURN-L										
																	PRVTE	S -W									015	00
																	PSNGR CAR		01	DRVR	INJB	73	M	OR-Y		021,028	000	03,02
																								OR<25				

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

CITY OF TUALATIN, WASHINGTON COUNTY

TUALATIN RD at 115TH AVE, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
06703	N	N	N	N	N	N	12/22/2023	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 9	TURN-L										03
CITY			FR				0	SW 115TH AVE	CN		STOP SIGN	N	WET	TURN			N/A	N -E									000	00
N			4P						01	0		N	DUSK	PDO			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N			45 23 23.12				-122 47 43.4																	UNK				
																02	NONE 9	STRGHT										
																	N/A	E -W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

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CITY OF TUALATIN, WASHINGTON COUNTY

TUALATIN RD at 124TH AVE, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 5 of 16 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G	S N I V	W H L	O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
01730	N	N	N	N			02/01/2019	16	SW TUALATIN RD	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR	0	SW 124TH AVE	E		TRF SIGNAL	N	WET	REAR		PRVTE	E -W									000	00
N							UNK			06	0		N	UNK	INJ		PSNGR CAR		01	DRVR	INJC	34	M	OR-Y		026	000	29
N							45 23 16.36	-122 48 15.23																OR<25				
																02	NONE 0	STOP										
																	UNKN	E -W									011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
02835	N	N	N	N			08/07/2020	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							FR	0	SW 124TH AVE	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000	00
N							3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		026	000	29
N							45 23 16.36	-122 48 15.23																OR<25				
																02	NONE 0	STOP										
																	PRVTE	E -W									012	00
																	PSNGR CAR		01	DRVR	INJC	53	M	OR-Y		000	000	00
																								OR<25				
04115	N	N	N	N			08/13/2019	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	PED	01	NONE 0	TURN-R										02
NONE							TU	0	SW 124TH AVE	CN		TRF SIGNAL	N	DRY	PED		PRVTE	E -N									000	00
N							6A			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	M	OTH-Y		029	000	02
N							45 23 16.36	-122 48 15.23																N-RES				
																		- STRGHT		01	PED	INJC	28	M		I XWLK	000	035	00
																		N S										
01501	N	N	N	N	N	N	03/26/2019	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L										02
CITY							TU	0	SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		N/A	N -E									000	00
N							3P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 16.36	-122 48 15.23																UNK				
																02	NONE 9	STRGHT										
																	N/A	S -N									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
02476	N	N	N	N	N	N	06/25/2021	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	STRGHT										04,08,27
CITY							FR	0	SW 124TH AVE	CN		L-GRN-SIG	N	DRY	TURN		PRVTE	S -N									000	00
N							8A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	M	OR-Y		000	000	00
N							45 23 16.39	-122 48 15.25																OR<25				
																02	NONE	TURN-L										
																	PRVTE	N -E									000	00
																	PSNGR CAR		01	DRVR	INJC	75	F	OR-Y		004,028	000	04,07,27
																								OR<25				

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CITY OF TUALATIN, WASHINGTON COUNTY

TUALATIN RD at 124TH AVE, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

6 - 9 of 16 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
02512	N	N	N	N			06/27/2021	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	STRGHT											02
NO RPT							SU	0	SW 124TH AVE	CN		L-GRN-SIG	N	DRY	TURN		PRVTE	S -N									000	00
N							11A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000	00
N							45 23 16.38	-122 48 15.24																OR<25				
																02	NONE	TURN-L										
																	PRVTE	N -E									000	00
																	PSNGR CAR		01	DRVR	INJB	34	F	OR-Y		004,028	000	02
																								OR<25				
03913	N	N	N	N	N	N	09/20/2021	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY							MO	0	SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -N									000	00
N							5P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	22	M	OR-Y		000	000	00
N							45 23 16.36	-122 48 15.23																OR<25				
																02	NONE 0	TURN-L										
																	PRVTE	N -E									000	00
																	PSNGR CAR		01	DRVR	INJC	19	M	OR-Y		028,004	000	02
																								OR<25				
92512	N	N	N	N			06/27/2021	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT											08,02
CITY							SU	0	SW 124TH AVE	CN		L-GRN-SIG	N	DRY	TURN		N/A	S -N									000	00
N							11A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 23 16.39	-122 48 15.24																UNK				
																02	NONE 9	TURN-L										
																	N/A	N -E									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
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	STRGHT											02
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 15.23																OR<25				
																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	02
																								OR<25				
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											02,04
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 15.23																OR<25				

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SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N S	I H V	S C L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																	02	NONE 0	TURN-L										
																		PRVTE	N -E									000		00
																		PSNGR CAR		01	DRVR	NONE	29	M	SUSP		028,004,020	000		02,04
																									OR<25					
																	02	NONE 0	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		02,04
N			45 23 16.36					-122 48 15.23																	OR<25					
																	02	NONE 0	STRGHT										
																		PRVTE	S -N									000	013	00
																		PSNGR CAR		01	DRVR	INJB	49	M	OR-Y		000	000		00
																									OR<25					
																	02	NONE 0	STRGHT										
																		PRVTE	S -N									000	013	00
																		PSNGR CAR		02	PSNG	INJB	29	F			000	000		00
																	03	NONE 0	STOP										
																		PRVTE	E -W									011		00
																		PSNGR CAR		01	DRVR	INJB	31	M	OR-Y		000	000		00
																									OR<25					
00497	N	N	N	N	N	N	02/01/2022	16	SW TUALATIN RD	INTER	3-LEG	N	N	RAIN	O-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					-122 48 15.23																	UNK					
																	02	NONE 9	TURN-L										
																		N/A	N -E									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
05431	N	N	N	N	N	N	11/16/2022	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	O-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					-122 48 15.23																	OR<25					
																	02	NONE 0	TURN-L										
																		PRVTE	N -E									000		00
																		PSNGR CAR		01	DRVR	INJC	22	M	OR-Y		028,004,020	000		02,04
																									OR<25					

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CITY OF TUALATIN, WASHINGTON COUNTY

TUALATIN RD at 124TH AVE, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

14 - 16 of 16 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J N V	S I H L	C O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	AGE	SEX	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01759	N	N	N	N				04/11/2023	16	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-R										04
NONE								TU	0	SW 124TH AVE	CN		TRF SIGNAL	N	DRY	TURN		N/A	E -N									000		00
N								6A			02	0		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 23 16.36	-122 48 15.23																UNK					
																	02	NONE 9	STRGHT											
																		N/A	S -N									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
04866	N	N	N	N	N	N	N	09/26/2023	18	SW TUALATIN RD	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											04,02,08
CITY								TU	0	SW 124TH AVE	CN		L-GRN-SIG	N	WET	TURN		PRVTE	S -N									000		00
N								9A			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	70	M	OR-Y		000	000		00
N								45 23 16.36	-122 48 15.23																OR<25					
																	02	NONE 0	TURN-L											
																		PRVTE	N -E									000		00
																		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		020,028,004	000		04,02,08
																									OR<25					
01043	N	N	N	N	N	N	N	02/27/2023	16	SW TUALATIN RD	INTER	3-LEG	N	N	SNOW	O-1 L-TURN	01	NONE 0	STRGHT											02,04,22
CITY								MO	0	SW 124TH AVE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	S -N									000		22
N								4P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	41	M	OR-Y		028,020	000		02,04
N								45 23 16.36	-122 48 15.23																OR<25					
																	02	NONE 0	TURN-L											
																		PRVTE	N -E									000		00
																		PSNGR CAR		01	DRVR	NONE	37	M	OR-Y		000	000		00
																									OR>25					

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CITY OF TUALATIN, WASHINGTON COUNTY

TUALATIN RD at TETON AVE, City of Tualatin, Washington County, ALL Crashes Severity, ALL Crashes Circumstance, 01/01/2019 to 12/31/2023

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR / OWNER / TYPE	QTY	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
05073	N	N	N N N	N	N	N	10/05/2019	17	SW TUALATIN RD	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE	0	TURN-L										091	27,16,32
CITY			SA	0	SW TETON AVE	S		STOP SIGN	N	DRY	FIX		PRVTE		E -S												000	091	00
N			3A			05	0		N	DARK	INJ		PSNGR CAR			01	DRVR	INJC	30	M	OR-Y		016,081,052	038		27,16,32
N			45 23 23.07	-122 47 1.88																		OR>25						
00851	N	N	N N N	N	N	N	02/19/2019	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE	9	TURN-L											02
CITY			TU	0	SW TETON AVE	CN		STOP SIGN	N	DRY	TURN		N/A		S -W												015		00
N			4P			04	0		N	DUSK	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 23 23.07	-122 47 1.88																		UNK						
																02	NONE	9	STRGHT										
																	N/A		W -E								000		00
																	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
03228	N	N	N N N	N	N	N	06/28/2023	17	SW TUALATIN RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	0	STRGHT											03,02,08
CITY			WE	0	SW TETON AVE	CN		STOP SIGN	N	DRY	TURN		PRVTE		W -E												000		00
N			1P			03	0		N	DAY	INJ		PSNGR CAR			01	DRVR	INJB	16	F	OR-Y		000	000		00
N			45 23 23.07	-122 47 1.88																		OR<25						
																02	NONE	0	TURN-L										
																	PRVTE		S -W								015		00
																	PSNGR CAR			01	DRVR	NONE	18	F	OR-Y		021,028,004	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.

APPENDIX G.

IN-PROCESS DATA

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

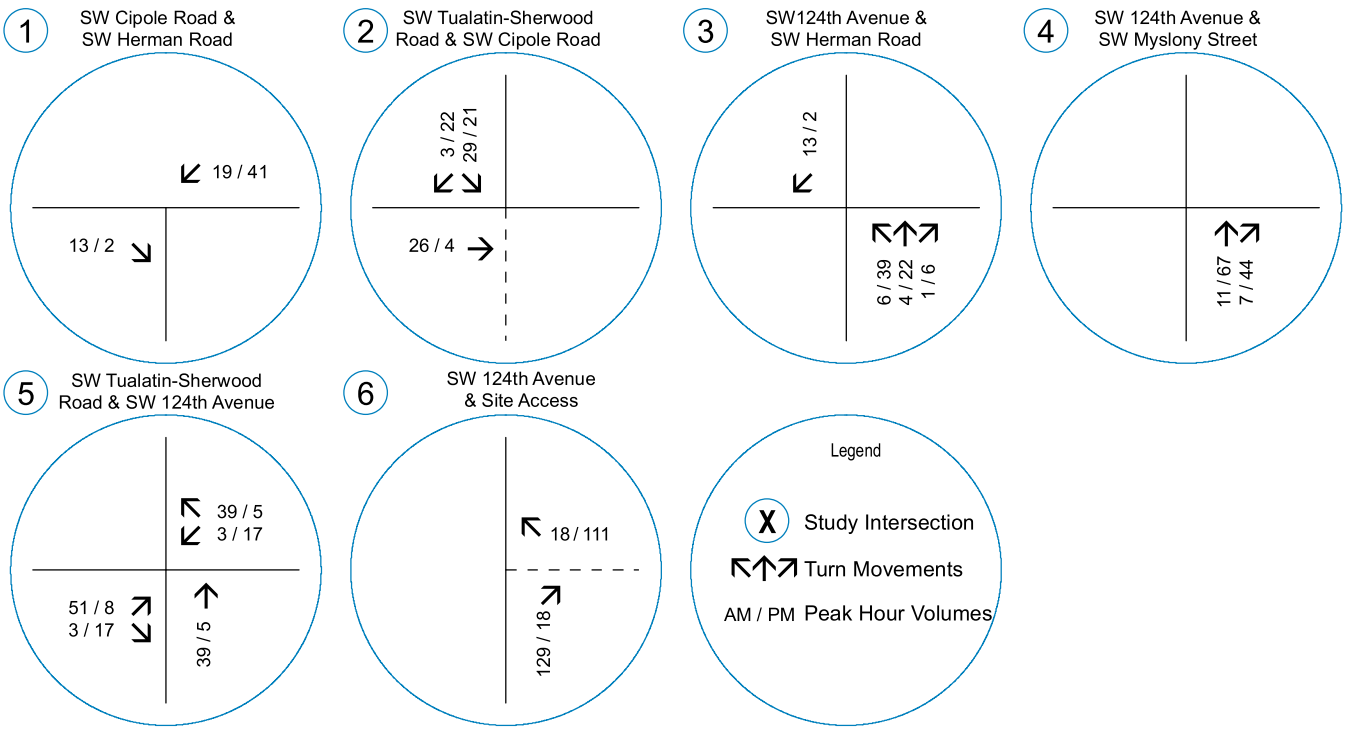
To address the right-in/right-out access on SW 124th Avenue, some of the traffic will not be able to travel along the most direct route to the site. Inbound traffic from the north will need to travel southward to SW Tualatin-Sherwood Road by another route and then turn northward on SW 124th Avenue. Outbound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

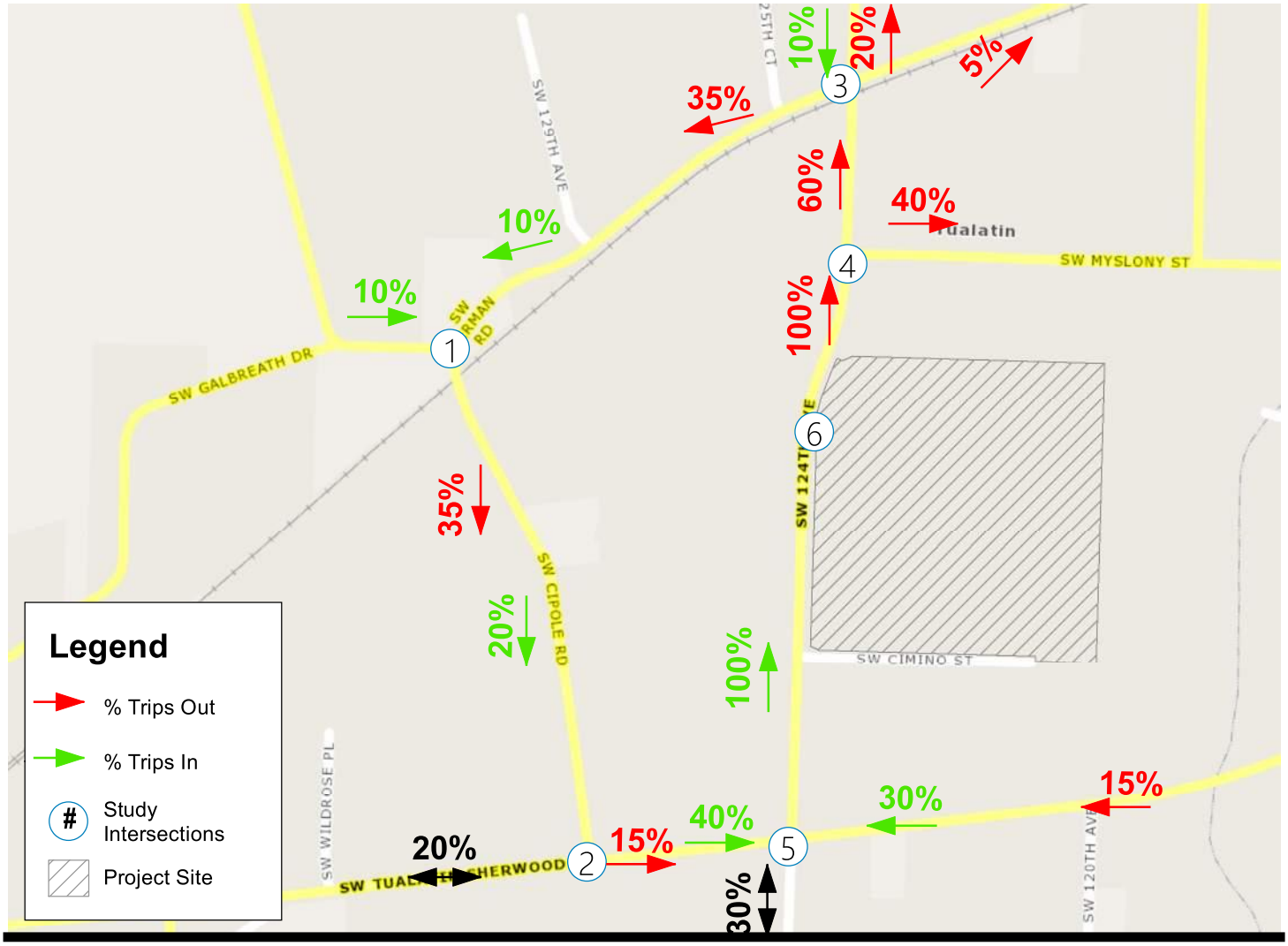
[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2022.

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.





Traffic Volumes Trip Distribution & Assignment

NOT TO SCALE

Figure 3
124th Business Park TIA
7/25/2022

MACKENZIE.



TRANSPORTATION IMPACT ANALYSIS

To
City of Tualatin

For
Lam Research

Dated
August 12, 2022

Project Number
2220087.00

MACKENZIE
Since 1960

RiverEast Center | 1515 SE Water Avenue, Suite 100, Portland, OR 97214
PO Box 14310, Portland, OR 97293 | T 503.224.9560 | www.mcknze.com

IV. SITE DEVELOPMENT

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

Trip Generation

The proposed 120,000 SF office building will provide space for office staff generally working between 8 AM and 5 PM. Up to 600 employees will be added to the campus with the new office building. Most new office staff are anticipated to work from the office in the future. Trip generation estimates were developed with the use of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual,* 11th Edition. The City requires the reasonable worst case for trip generation be analyzed. Therefore, trip rates for ITE's "General Office Building" (LUC 710) using building area were utilized in this study.

Table 4 presents the trip generation estimates for the proposed office building.

TABLE 4 – TRIP GENERATION

ITE Code	ITE Land Use	Size	Trip Type	AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
710	General Office Building	120.0 KSF	Total	172	24	196	33	160	193	1,360

Trip Distribution and Assignment

Trip distribution for the proposed office building was estimated by reviewing the existing distribution from recent and existing counts at the site driveways in conjunction with review of previous trip distribution assumptions for the Lam Research campus. The following trip distribution was assumed:

- 15% to/from the south on Highway 99W
- 25% to/from the north on Highway 99W
- 5% to/from the east on SW Tualatin Road
- 15% to/from the south on SW 124th Avenue
- 5% to/from the south on SW 118th Avenue
- 35% to/from the east on SW Herman Road

Figure 10 presents the trip distribution and traffic assignment for the AM and PM peak hours.

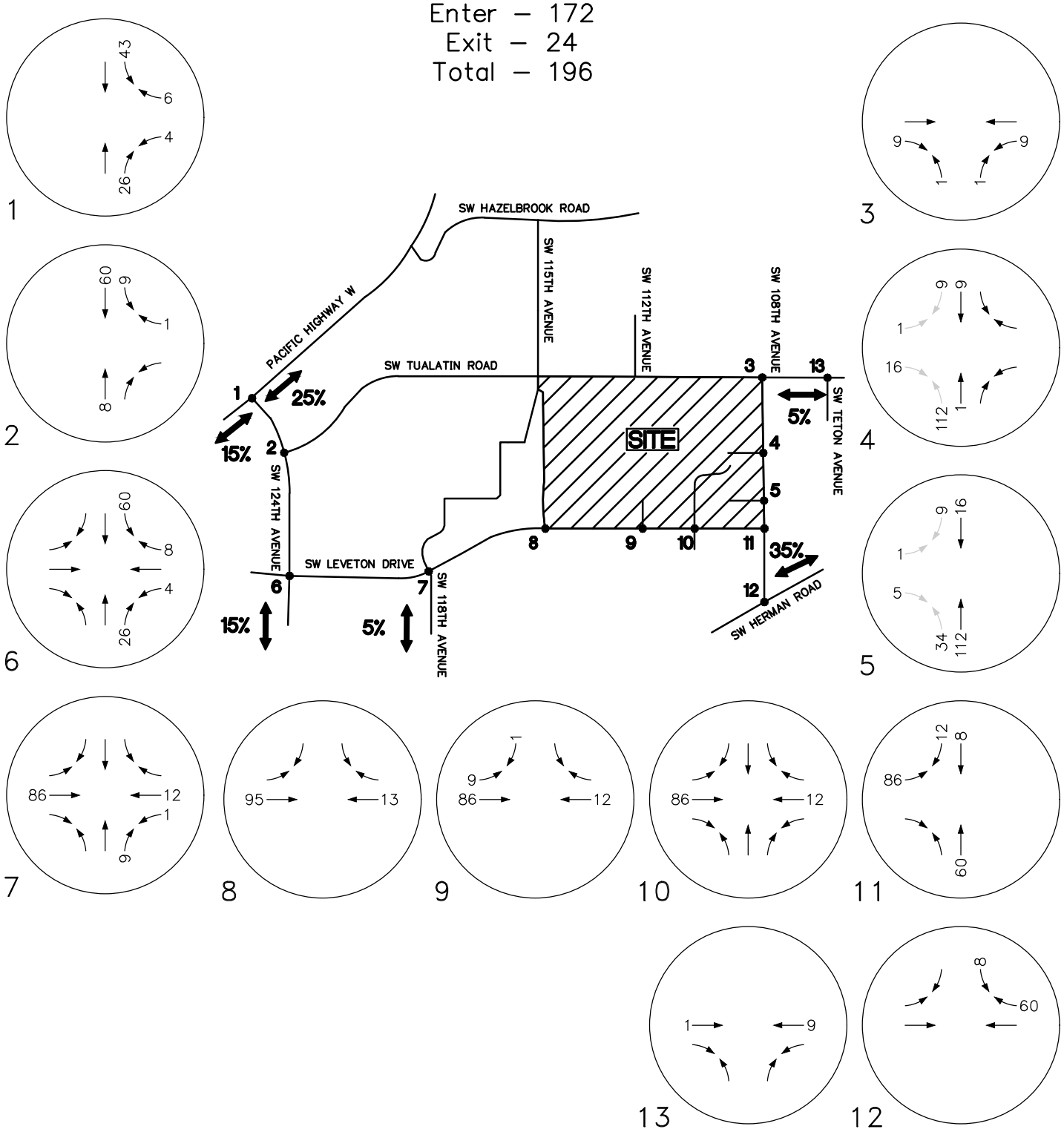
East Access Reroutes

With the proposed building, other site changes including additional parking along SW 108th Avenue, two (2) new driveways on SW 108th Avenue, and limiting the East Access on SW Leveton Drive to trucks are proposed. With the closure of the East Access to passenger vehicle traffic, existing site trips that currently utilize this driveway are anticipated to reroute to the proposed driveways on SW 108th Avenue to access the expanded parking area. Figure 11 presents the East Access trip reroutes for the AM and PM peak hours.

NOT TO SCALE

AM PEAK HOUR

Enter – 172
Exit – 24
Total – 196



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MACKENZIE

DATE: 08.10.22
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222008700

PRIMARY TRIP DISTRIBUTION + TRAFFIC ASSIGNMENT - AM PEAK HOUR

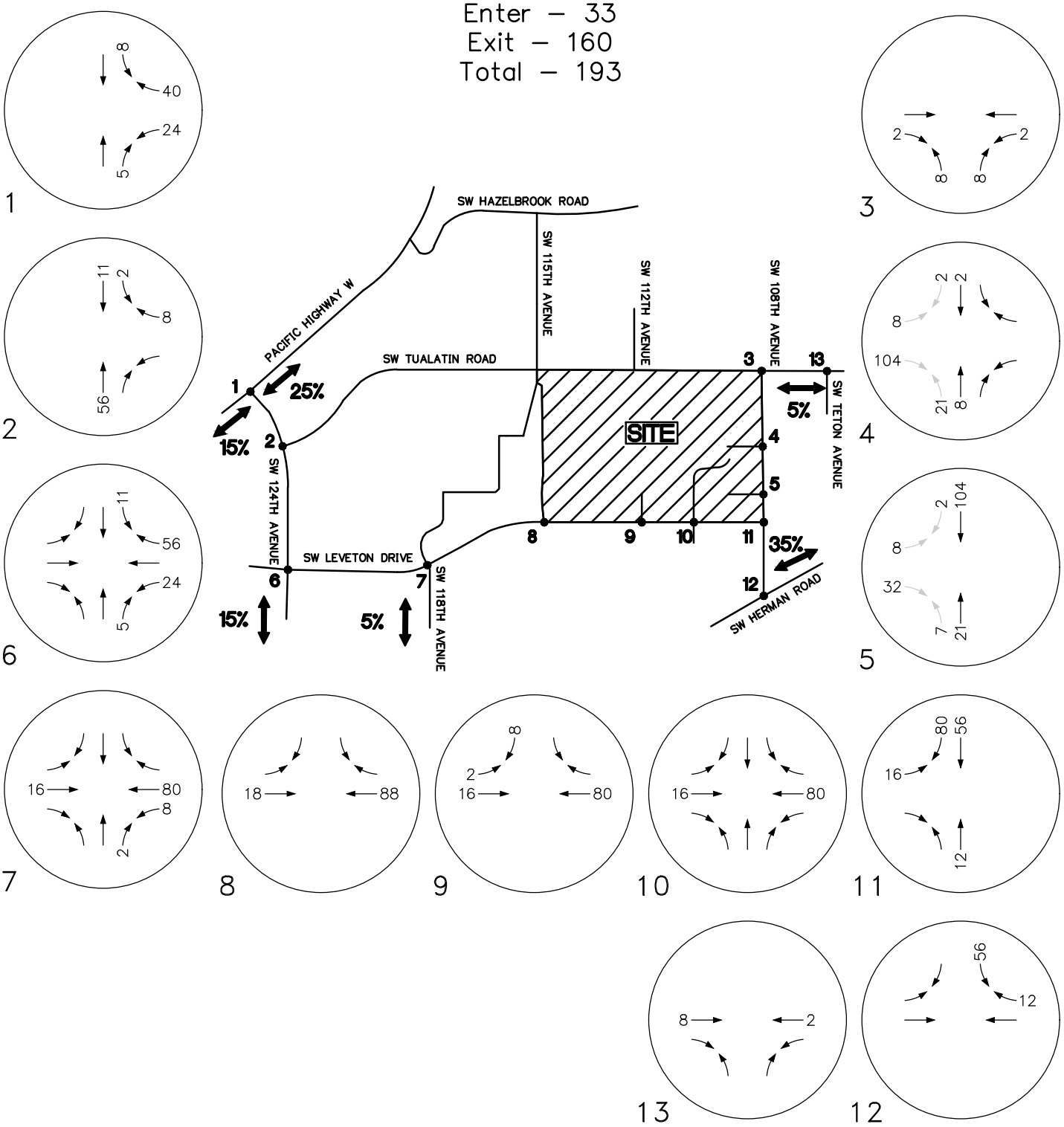
LAM RESEARCH NEW OFFICE BUILDING
TUALATIN, OREGON

FIGURE
11A

NOT TO SCALE

PM PEAK HOUR

Enter – 33
Exit – 160
Total – 193



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MACKENZIE

DATE: 08.10.22
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222008700

PRIMARY TRIP DISTRIBUTION + TRAFFIC ASSIGNMENT - PM PEAK HOUR

LAM RESEARCH NEW OFFICE BUILDING
TUALATIN, OREGON

FIGURE
11B

lancaster mobley

1130 SW Morrison St., Suite 318
Portland, OR 97205
503.248.0313
lancastermobley.com

Memorandum

To: Mike McCarthy, Tony Doran, City of Tualatin

Copy: Chris Walker, CIDA

From: Ken Kim, PE

Date: December 16, 2024

Subject: KAI USA Warehouse Expansion
Trip Generation and Distribution Memorandum



Introduction

This memorandum provides trip generation and distribution for the proposed KAI USA Warehouse Expansion located at 18600 SW Teton Avenue in Tualatin, Oregon. The results are compared with City standards to demonstrate that no further analysis is necessary.

Project Location and Description

The project site is located on Tax Lot 2S123B0-00701 in Tualatin, Oregon. A vicinity map is shown in Figure 1 with the subject site highlighted in yellow.



Figure 1: Project Location (image from Google Earth)

The site is currently developed with a KAI USA Warehouse building. The project proposes the construction of an 18,430-square foot (SF) addition to the existing building. As shown in Figure 1, access to the site is provided via three existing roadway connections (yellow arrows) along SW Teton Avenue and SW Herman Road. A site plan is attached to this memo.

Trip Generation

The proposed development will include the construction of an 18,430-SF addition to the KAI USA Warehouse building. To estimate the number of trips that will be generated by the proposed use, rates from the *Trip Generation Manual*[1] were used. Data from Land Use Code (LUC) 150, *Warehousing* was used to estimate trip generation of the existing use.

The trip generation calculations show that the proposed project is projected to generate an additional 3 morning peak hour trips, 3 evening peak hour trips, and 32 average weekday trips. The trip generation estimates are summarized in Table 1. Detailed trip generation calculations are included as an attachment to this memorandum.

Table 1: Trip Generation Summary

Land Use Assumption (ITE Code)	Intensity	Morning Peak Hour			Evening Peak Hour			Weekday Trips
		In	Out	Total	In	Out	Total	
Warehousing (150) – Truck	18,430 SF	0	0	0	1	0	1	12
Warehousing (150) – Total	18,430 SF	2	1	3	1	2	3	32

Trip Distribution

A preliminary directional distribution of site trips was estimated based on locations of likely trip origins and destinations, and locations of major transportation facilities in the site vicinity.

The following trip distribution was estimated and applied to the proposed development:

- Approximately 35% of site trips will travel to/from the east along SW Herman Road.
- Approximately 30% of site trips will travel to/from the north along SW Teton Avenue
- Approximately 20% of site trips will travel to/from the west along SW Herman Road.
- Approximately 15% of site trips will travel to/from the south along SW Teton Avenue.

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

Comparison to Agency TIA Standards

Tualatin Traffic Study Requirements outlines two levels of traffic analysis that may be required based on the development type and size.

A Trip Generation and Distribution Description is required for any development that, in the judgement of City staff, would generate 100 or more new daily trips. Developments anticipated to generate this level of traffic, and thus require a Trip Generation and Distribution Description, include:

a. 10 or more single-family homes
b. 15 or more multi-family units
c. Industrial buildings 15,000 SF or larger
d. Office buildings 8,000 SF or larger
e. Any use with customers or public coming to the site (such as retail, restaurant, school, medical office, recreation, etc.)

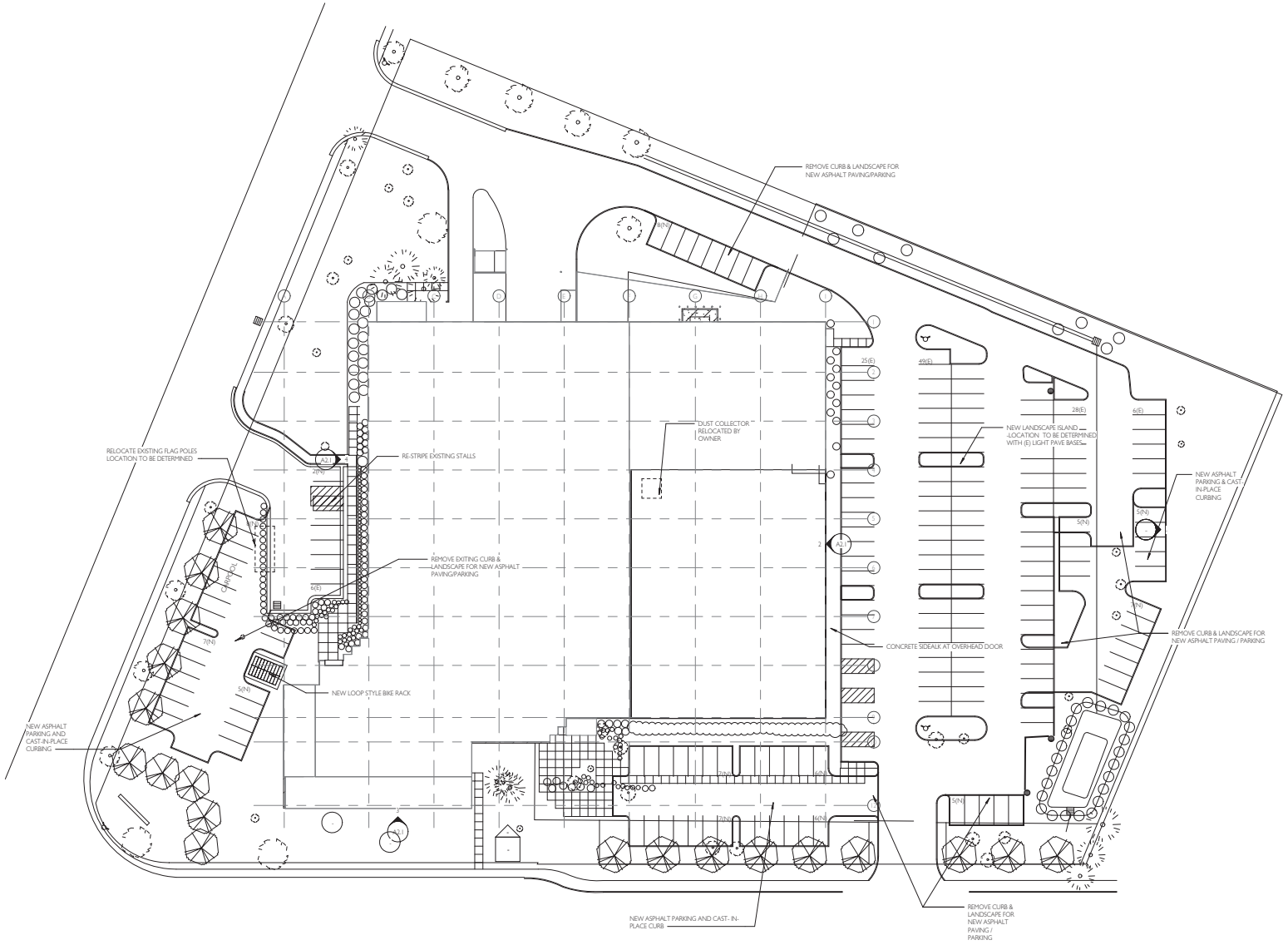
A full Transportation Impact Analysis is required for cases (in staff's judgement) that would be anticipated to generate more than 500 vehicle trip ends per day and/or more than 60 vehicle trip ends in the morning or evening peak hour and/or more than 100 vehicle trip ends during the peak hour of development traffic. Developments anticipated to generate this amount of traffic (and thus require a Transportation Impact Analysis) include:

a. 50 or more single-family residences
b. 80 or more multi-family residences
c. 75,000 SF or more of industrial space
d. 40,000 SF or more of office space
e. 10,000 SF or more of retail space
f. Any restaurant, convenience market, or gas station
g. Any development with a drive-through

Although the size of development will be above the 15,000-SF threshold of industrial building size for a trip generation and distribution requirement, the trip generation for the proposed expansion will fall below any of these trip generation thresholds. However, this memorandum provides the trip generation and trip distribution; therefore, no further traffic study is required beyond the provided analysis in this memo.

Conclusions

Based on the trip generation calculations, the project site with the expansion of the KAI USA Warehouse is projected to generate an additional of 3 morning peak hour trips, 3 evening peak hour trips, and 32 average weekday trips. These estimates fall below the Trip Generation and Distribution threshold of 100 ADT and TIA threshold of 60 morning, evening peak hour trips, and 32 ADT; therefore, no further traffic study is required.



NORTH

1 A0.1 **ARCHITECTURAL SITE PLAN**

1" = 30'-0"

SITE PLAN NOTES

EDIT AS REQUIRED-- SAVE TO YOUR PROJECT LIBRARY

1. RADIUS AT PARKING AREA TO BE 3'-0" UNLESS NOTED OTHERWISE.
2. EXISTING CONDITIONS SHOWN ARE BASED ON SURVEY DONE BY --- AND DATED ---.
3. CONTRACTOR TO CONFIRM EXISTING CONDITION SHOWN ON IMPLIED PRIOR TO START OF CONSTRUCTION AND NOTIFY A/E OF ANY DISCREPANCIES.

KEYNOTES

PRELIMINARY PLAN ONLY- NOT FOR CONSTRUCTION

ISSUE DATE

1 GC ROM PRICING 9/13/22

CIDA
ARCHITECTURE
ENGINEERING
PLANNING
INTERIORS
LANDSCAPE
15895 SW 72ND AVE SUITE 200
PORTLAND, OREGON 97224
TEL: 503.226.1285
FAX: 503.226.1670
WWW.CIDAINC.COM

ADDITIONS FOR:

KIA - USA

PROJECT ADDRESS - TUALATIN, OREGON

SITE PLAN

A0.1

220127.01

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9/13/2022 4:06:09 PM

TRIP GENERATION CALCULATIONS

Source: Trip Generation Manual, 11th Edition

Land Use:	Warehousing
Land Use Code:	150
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	1000 SF GFA
Trip Type:	Vehicle
Formula Type:	Rate
Variable Quantity:	18.43

AM PEAK HOUR

Trip Rate: 0.17

	Enter	Exit	Total
Directional Split	77%	23%	
Trip Ends	2	1	3

PM PEAK HOUR

Trip Rate: 0.18

	Enter	Exit	Total
Directional Split	28%	72%	
Trip Ends	1	2	3

WEEKDAY

Trip Rate: 1.71

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	16	16	32

SATURDAY

Trip Rate: 0.15

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	1	1	2

TRIP GENERATION CALCULATIONS

Source: Trip Generation Manual, 11th Edition

Land Use:	Warehousing
Land Use Code:	150
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	1000 SF GFA
Trip Type:	Truck
Formula Type:	Rate
Variable Quantity:	18.43

AM PEAK HOUR

Trip Rate: 0.02

	Enter	Exit	Total
Directional Split	52%	48%	
Trip Ends	0	0	0

PM PEAK HOUR

Trip Rate: 0.03

	Enter	Exit	Total
Directional Split	52%	48%	
Trip Ends	1	0	1

WEEKDAY

Trip Rate: 0.6

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	6	6	12

SATURDAY

Trip Rate: 0

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	NA	NA	NA

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

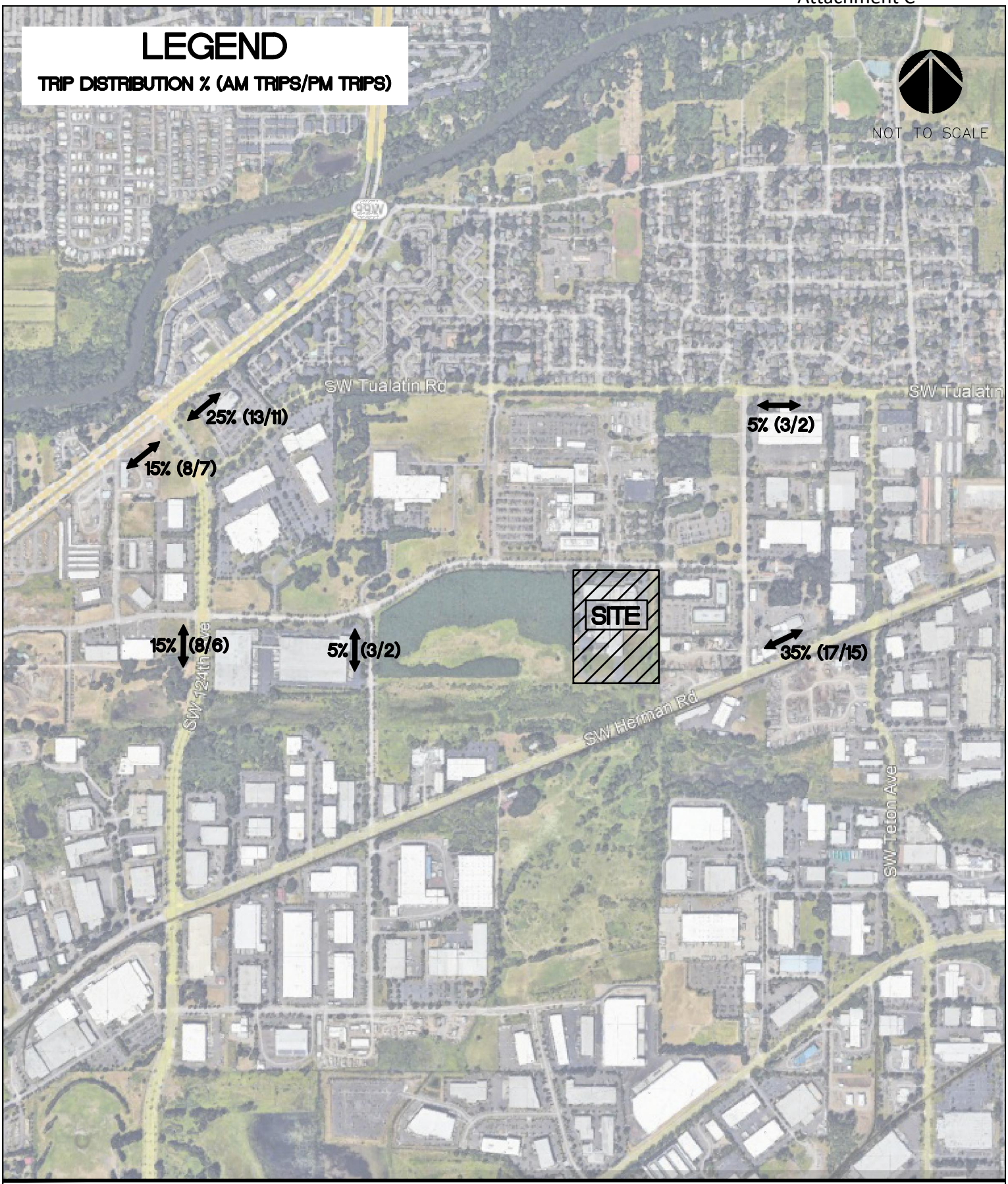
Sidewalks are provided along the site's SW Leveton Drive frontage. Sidewalks continue along SW 108th Avenue which provides a pedestrian connection to the nearby Hazelbrook neighborhood located north of SW Tualatin Road, and to SW Herman Road which has a Tualatin Ride Connection Blue Line Shuttle stop 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



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DATE: 9.14.2023
DRAWN BY: LCB
CHECKED BY: JTJ
JOB NO: 221014800

TRIP DISTRIBUTION + ASSIGNMENT

FUJIMI FACILITY EXPANSION
TUALATIN, OR

FIGURE 1

APPENDIX H.

SIGNAL INFORMATION

14329

ENGLISH

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

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

9+79

PACIFIC HIGHWAY WEST
(OR 99W)

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

POLE NO. 4
STA. 10+05, 18'RT

EX. POLE NO. 3

POLE NO. 5
STA. 9+20, 24'RT

EX. POLE NO. 2

9+00

POLE NO. 8
STA. 8+72, 23'RT

POLE NO. 9
STA. 8+59, 12'RT

EX. POLE NO. 1

POLE NO. 1
STA. 8+41, 98'LT

POLE NO. 6
STA. 8+55, 93'RT

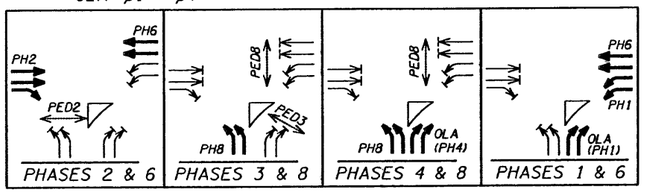
POLE NO. 7
STA. 8+31, 59'RT

SW 124TH AVE.

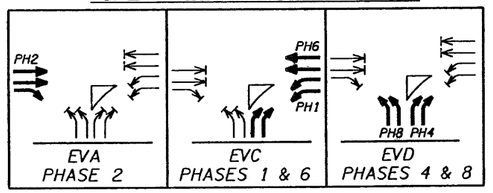
SCALE 0 10 20 40 FEET

NORMAL PHASE ROTATION
(STATE SUPPLIED W41KS SOFTWARE)

OLA= Ø1 + Ø4



FIRE PREEMPTION OPERATION



Thomas Sahlin
Traffic Engineering Operation Section Approval

ODOT TEOS DWG NO. 14329

REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
EXPIRES 12/31/06
8/2/06

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

TS&L PLANS

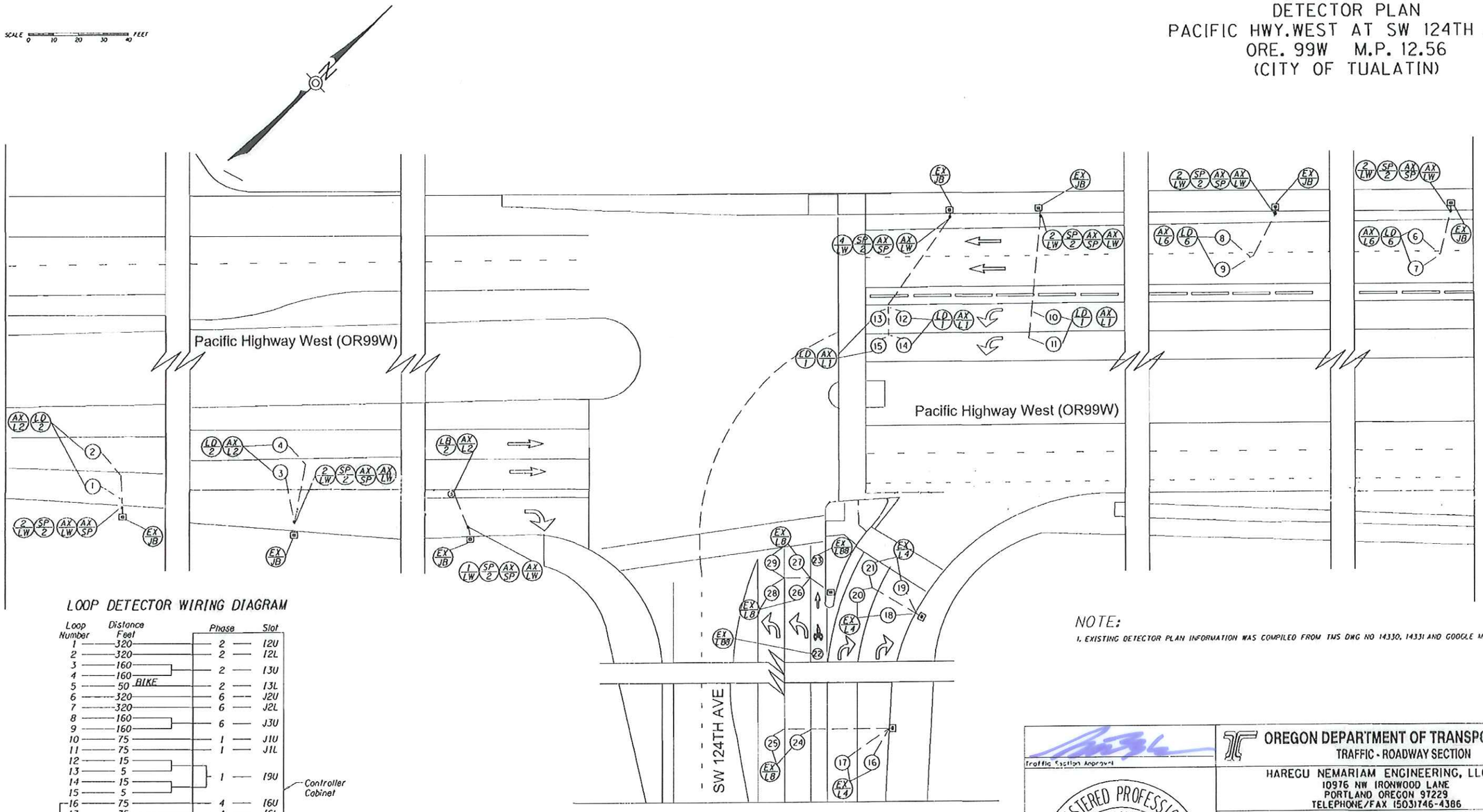
H:\proj\file\6562\dgn\6562ts-1.dgn 8/2/2006 8:15:02 AM

VIEW 1

16698

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	BIKE	2	13L	
5	50		6	J2U	
6	320		6	J2L	
7	320		6	J3U	
8	160		1	J1U	
9	160		1	J1L	
10	75		1	19U	Controller Cabinet
11	75				
12	15				
13	5				
14	15				
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	No-Work
23	5				
24	75		8	J6U	
25	75		8	J6L	
26	15		8	J8U	
27	5				
28	15		8	J7U	
29	5				

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

Traffic Section Approval

REGISTERED PROFESSIONAL ENGINEER
67133
Haregu Nemariam
OREGON
May 10, 2005
HAREGU NEMARIAM
Expires Dec. 31, 2012

OREGON DEPARTMENT OF TRANSPORTATION
TRAFFIC - ROADWAY SECTION

HAREGU NEMARIAM ENGINEERING, LLC.
10976 NW IRONWOOD LANE
PORTLAND OREGON 97229
TELEPHONE/FAX (503)746-4386

OR99W: TUALATIN RIVER BR-SUNSET BLVD. SEC.
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

DESIGNED BY: TN
REVIEWED BY: HN
DRAWN BY: TN
FC: 91 MP: 12.56

DETECTOR PLAN

ISSUE No. ____ T.R.S. DWG. NO. 16698

C:\user\Haregu\Contract 29885 Projects\TA2 Loop Replacement\SW 124th_St_08-08-2012

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

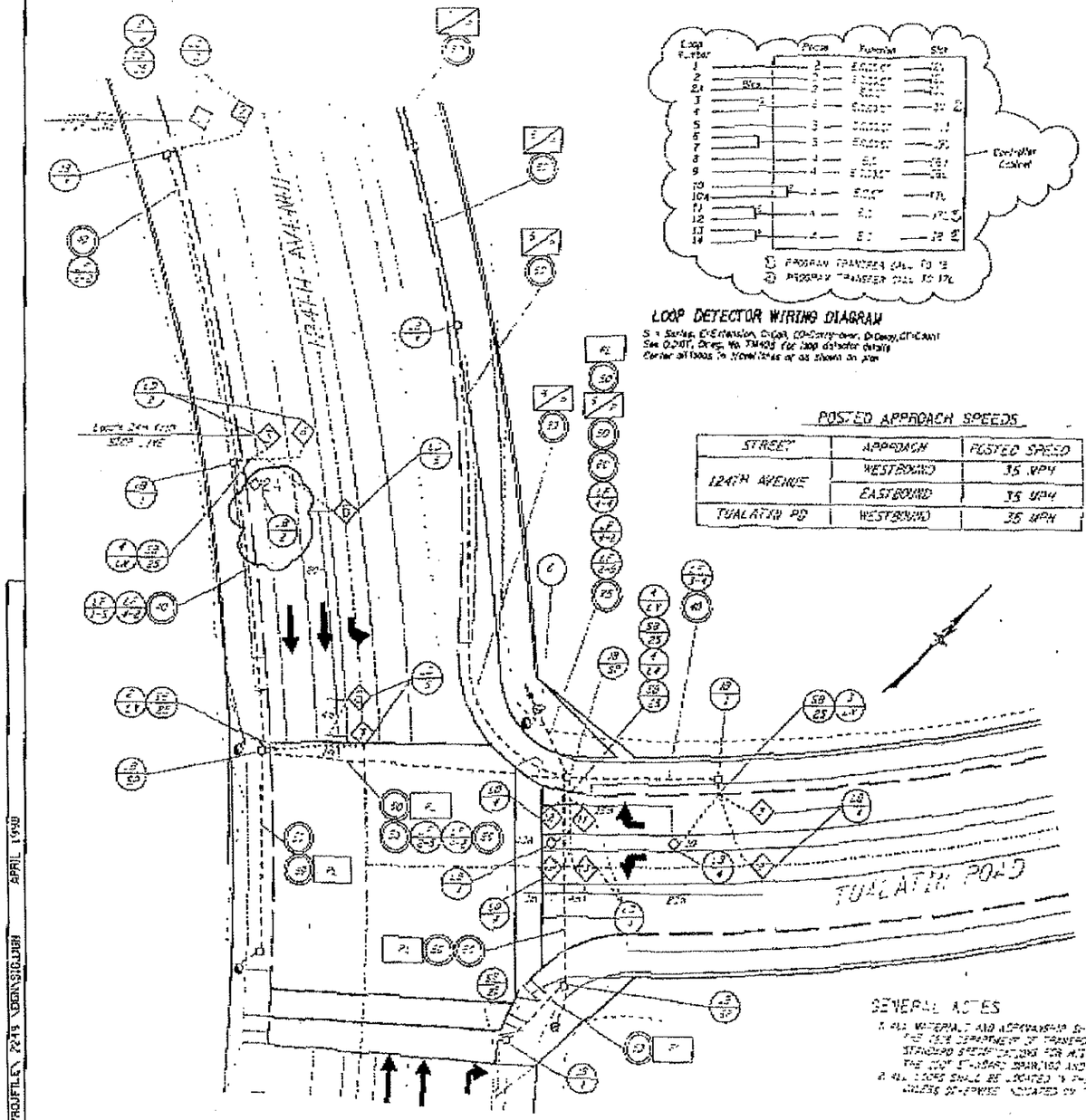
Table: Global Phase Recalls

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	0	0	21	Coord Free - Max 1
2	5	45	22	Coord Free - Max 2
3	8	0	21	Coord Free - Max 1
4	15	0	22	Coord Free - Max 2
5	18	0	21	Coord Free - Max 1

124TH AT TUALATIN RD
DETECTOR & INTERCONNECT PLAN



LOOP DETECTOR WIRING DIAGRAM

S = Series, E=Extension, D=Diff, C=Carry-over, D-Delay, CH=Chan
See D.D.&T. Dwg. No. TM-909 for loop detector details
Center all loops in travel lanes or as shown on plan

POSTED APPROACH SPEEDS

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

LEGEND

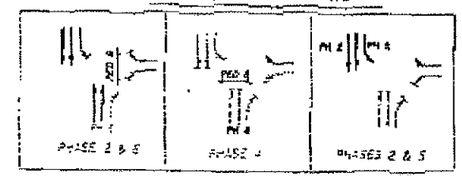
- C — CONTROLLER (See Signal Plan)
- JB — Junction box (See Signal Plan)
- 2#14 on 1#8 on 1-2IC on 1#10 on 1#14 Grounded — Install #10 on 1 2IC on 1 3IS on 1#14 Grounded Around concrete Junction box
- 6 — Install 6 feet of diamond vehicle detector loop
- 6P — Install 6 feet (PAT) of diamond bicycle detector loop
- 2S — Install (2) 2 pole Terminal Facility Socket
- 2#14 — Install (2) pair of loop wires
- C — Install (1) one electrical conduit
- 2C — Electrical conduit (See Signal Plan)
- 2#14 — Install (2) twisted pair interconnect cable
- PE — Install only pull line if no wire is to be placed

ABBREVIATIONS

3 = TYPE SHOWN	6 = #6 SIZE SHOWN
P4 = 4-PAIR SHOWN	S = SIZE SHOWN
4 = NUMBER OF CABLES SHOWN	R = STANDARD FOUNDATION
E = ELEVATED FOUNDATION	CH = CHANNEL SHOWN
H = HORNS SHOWN	L = LENGTH SHOWN
# = NUMBER SHOWN	PW = PEDESTRIAN WIDTH

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

NORMAL PHASE ROTATION



GENERAL NOTES

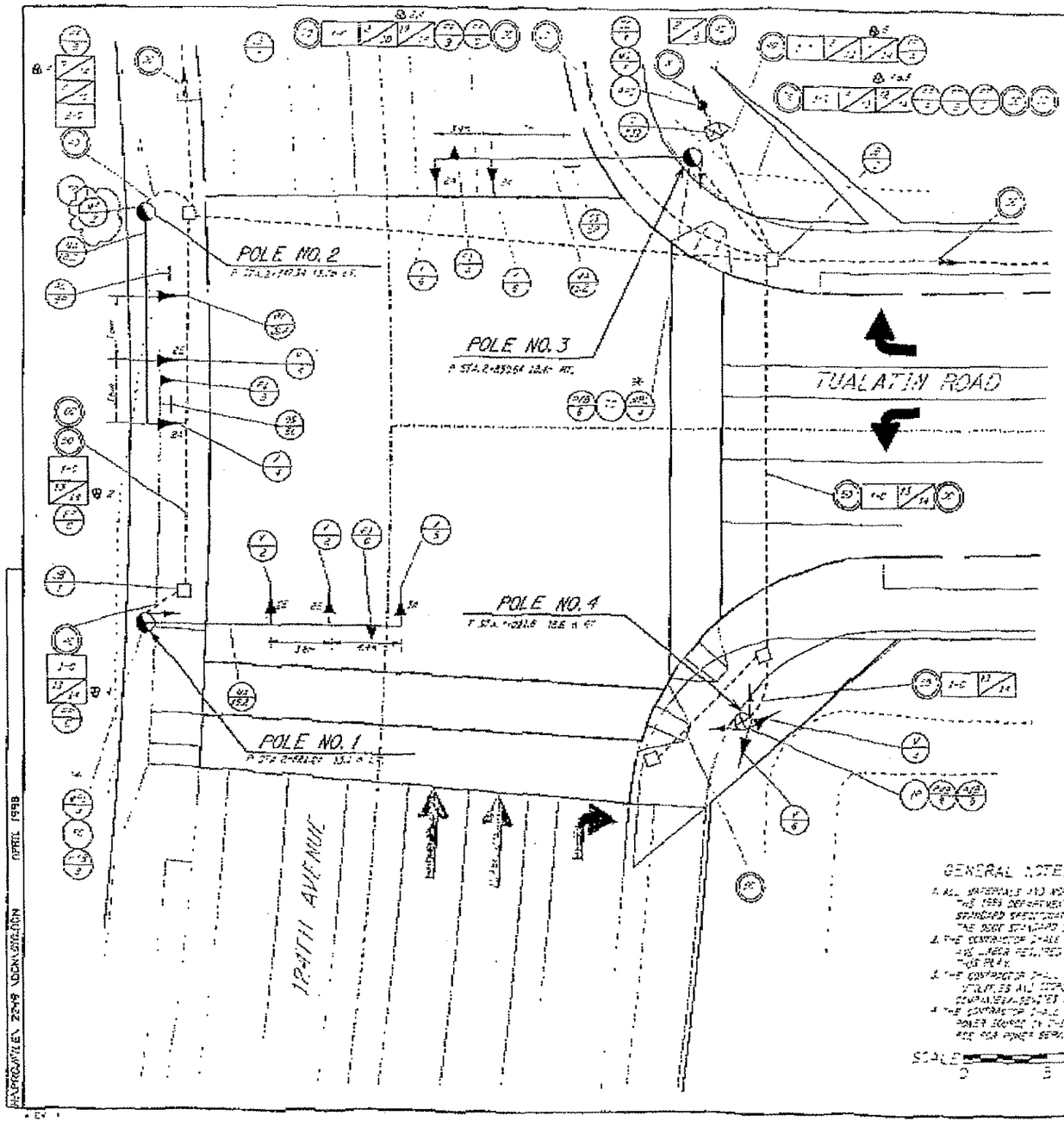
1. ALL MATERIALS AND WORKMANSHIP SHALL BE GOVERNED BY THE OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE ODOT STANDARD DRAWINGS AND SPECIAL PROVISIONS.
2. ALL LOOPS SHALL BE LOCATED IN THE CENTER OF THE LANE UNLESS OTHERWISE INDICATED ON THE DETECTOR PLAN

TRAFFIC SIGNAL INSTALLATION
124TH AVENUE & TUALATIN-SHERWOOD RD
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		TS 5

N:\PROJFILE\ 2245 \DGN\SIG1.DGN APRIL 1998

01/25/00 15:37 P.003/006



LEGEND

- Install mast arm assembly in pedestal as shown with 4 feet arm, 4 meter mast (Cantilever as shown)
- Install type 9 standard traffic signal mast arm pole
- Install 1 way traffic signal mast arm
- Install pedestrian push pedestal with tangible type
- Install conduit (GALVD) or rigid fibre bituminous conduit
- Install weather power service post
- Install phase (PH) vehicle signal with LED's
  R = 300mm R 305mm Y 305mm G
  S = 305mm R STA 305mm Y STA 305mm G STA
- Install phase (PH) pedestrian signal with LED retrofit kit
- Install phase (PH) pedestrian signal with LED retrofit with pushbutton and pushbutton decal
- Install functional address
- Install vehicle detector loop
- Install 100 watt meter base
- Install 440 mm x 265 mm x 305 mm (min. dimension) precast concrete junction box
- Install 560 mm x 305 mm x 356 mm (min. dimension) precast concrete junction box
- Install (4) No. 8 type THWN (Signal system common)
- Install (4) No. 12 type THWN wires
- Include 3 spare wires for phase (PH)
- Install (5) 4mm electrical conduit
- Controller cabinet (See Controller Plan)
- Interconnect conduit (See Controller Plan)
- Install standard (GALVD) pre-emption detector (radio unit)
- Install standard unit wire as required by power company
- Install standard illuminated 250 mm x 900 mm right arrow "ONLY" sign
- Install standard illuminated 750 mm x 900 mm right arrow "ONLY" sign
- Install vehicle signal pedestal with transformer base

SEE LIGHTING PLAN FOR ANY ILLUMINATION INSTALLATION DETAILS

ABBREVIATIONS

T = TYPE SHOWN	S = ANC SIZE SHOWN
PH = PHASE SHOWN	S = SIZE SHOWN
J = WIDTH OF CABLE SHOWN	A = SERVICED FLUORIZER
E = ELEVATION NUMBER	CH = CHANGE SHOWN
H = HEIGHT SHOWN	L = LENGTH SHOWN
N = NUMBER SHOWN	PM = POLE MOUNTED

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL BE CONFORM TO THE 1996 DEPARTMENT OF TRANSPORTATION OREGON STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION AND THE SIGNAL STANDARD DRAWINGS AND SPECIAL PROVISIONS.
2. THE CONTRACTOR SHALL CLEAR ALL EXISTING MATERIALS AND LABOR REQUIRED FOR THE FINAL OPERATIONS SHOWN ON THIS PLAN.
3. THE CONTRACTOR SHALL NOTIFY THE CITY 24 HR PRIOR TO STARTING WORK UNLESS ALL WORK IS COMPLETED WITHIN THE CITY'S NORMAL WORKING HOURS.
4. THE CONTRACTOR SHALL CONTACT PGE TO INSTALL THE POWER SERVICE IN THE FIELD AND COORDINATE A TIME WITH PGE FOR POWER SERVICE "TURN ON".

SCALE 0 5 10 20 METERS

124TH AT TUALATIN RD
SIGNAL PLAN

KEEP

KITTELSON & ASSOCIATES, INC.
610 SW ALDER, SUITE 700
PORTLAND, OREGON 97205
(503) 228-5230

POLE ENTRANCE CHART

POLE NUMBER	1	2	3	4
LUMINAIRE ARM	90	—	—	—
MAST ARM	3	3	7	—
PEDESTRIAN SIGNAL PLAN SHEET	1	—	3	33
PEDESTRIAN PSE DETAIL	38	—	35	41,5L
PEDESTAL CABINET	2	1	3	—

REVISED AS CONSTRUCTED
28-June-1999 CONTRACT 12044

TRAFFIC SIGNAL INSTALLATION
124th AT 124TH AVENUE & TUALATIN RD RELIGHT
PACIFIC HIGHWAY WEST
WASHINGTON COUNTY

FEDERAL HIGHWAY ADMINISTRATION		PROJECT NUMBER	SHEET NO.
REGION 10	OREGON DIVISION		TS 4

APPROVED 2000 WORKSTATION APRIL 1998

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

Q-Free MAXTIME Database Print Out

338 - 124th Avenue (PRE/PRI) & Tualatin Road

Agency Washington County

Database Description 332_WashCo_FYA-NotPed

Basic Timing Parameters - Phase Plan 1

Timings

Phases	1	2	3	4	5	6	7	8
Enable		X		X	X	X		X
Walk Time	0	0	0	0	0	10	0	9
Clear Time	0	0	0	0	0	15	0	23
Stdy Don't Walk	0	0	0	0	0	0	0	0
Min Green	5	10	5	5	10	10	5	0
Min Green 2	0	0	0	0	0	0	0	0
Min B4 FO	0	0	0	0	0	0	0	0
Passage	1.5	4.5	1.5	4.0	4.0	4.5	1.5	2.0
Passage 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	50	15	15	40	50	15	30
Max 2	15	50	15	15	40	50	15	30
Max 3	0	0	0	0	0	0	0	0
Conditional Max	0	0	0	0	0	0	0	0
Yel Change	3.5	4.5	3.5	4.0	4.0	4.5	3.5	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Add Red Clear	0	0	0	0	0	0	0	0
Red Revert	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Added Initial	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0
Max Initial	0	10	0	0	10	10	0	0
Time B4 Reduce	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0
Delayed Walk	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0
Alt Ped Clr	0	0	0	0	0	0	0	0
Ped Service Limit	0	0	0	0	0	0	0	0
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear Ext Pass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear Ext Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Jump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv Warning Ext	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pri Walk	0	0	0	0	0	0	0	0
Call Phases								
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

Options

Phases	1	2	3	4	5	6	7	8
Enable		X		X	X	X		X
Auto Flash Ent.		X				X		
Auto Flash Exit		X				X		
Non Actuated I								
Non Actuated II								
Non Lock Mem	X	X	X	X	X	X	X	X
Min Veh Recall		X				X		
Max Veh Recall								
Ped Recall								
Soft Veh Recall								
Dual Entry		X		X		X		X
Sim Gap Dis	X		X		X		X	
Guaranteed Pass								
Act Rest Walk								
Cond Service								
Add Initial								
Ped Clr During Yel								
Ped Clr During Red								
Cond Reservice								
Yel Min Override								
No Startup Call								
Adv. Warn Flasher								
No Ped Str Up Call								
Ped Clr OVTG								
Flash Exit Call								
Flash Exit Ped Call								
MinGreen2								
MaxGreen2								
MaxGreen3								
Ped2								
Ped Clear Pre Clear								
Ped NA+ Mode								
Red Rest								
Serve Evy Oth Even								
Serve Evy Oth Odd								
Coord Ped Yield								
Ped Recycle								
Coutdown								
Simult Start								
Simult Ped Term								

Phase Parameters - Plan 1 (Extended Phases)

Timings

Phases	9	10	11	12	13	14	15	16
Enable								
Walk Time	0	0	0	0	0	0	0	0
Clear Time	0	0	0	0	0	0	0	0
Stdy Don't Walk	0	0	0	0	0	0	0	0
Min Green	5	1	1	1	1	1	1	1
Min Green 2	0	0	0	0	0	0	0	0
Min B4 FO	0	0	0	0	0	0	0	0
Passage	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passage 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	0	0	0	0	0	0	0
Max 2	15	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0
Conditional Max	0	0	0	0	0	0	0	0
Yel Change	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0
Red Revert	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0	0	0	0	0	0	0	0
Time B4 Reduce	0	0	0	0	0	0	0	0
Cars B4 Reduce	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dyn Max Limit	0	0	0	0	0	0	0	0
Dyn Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0
Delayed Walk	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0
Alt Ped Clr	0	0	0	0	0	0	0	0
Ped Service Limit	0	0	0	0	0	0	0	0
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear Ext Pass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear Ext Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Jump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv Warning Ext	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pri Walk	0	0	0	0	0	0	0	0
Call Phases								
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

Options

Phases	9	10	11	12	13	14	15	16
Enable								
Auto Flash Ent.								
Auto Flash Exit								
Non Actuated I								
Non Actuated II								
Non Lock Mem								
Min Veh Recall								
Max Veh Recall								
Ped Recall								
Soft Veh Recall								
Dual Entry								
Sim Gap Dis								
Guaranteed Pass								
Act Rest Walk								
Cond Service								
Add Initial								
Ped Clr During Yel								
Ped Clr During Red								
Cond Reservice								
Yel Min Override								
No Startup Call								
Adv. Warn Flasher								
No Ped Str Up Call								
Ped Clr OVTG								
Flash Exit Call								
Flash Exit Ped Call								
MinGreen2								
MaxGreen2								
MaxGreen3								
Ped2								
Ped Clear Pre Clear								
Ped NA+ Mode								
Red Rest								
Serve Evy Oth Even								
Serve Evy Oth Odd								
Coord Ped Yield								
Ped Recycle								
Coutdown								
Simult Start								
Simult Ped Term								

IP Settings

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

Default Free Parameters

Seq	Phs Pln	Det Pln	Ped Pln	Ovlp Pln	Pri 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	
P	No Srv P
1	
2	
3	
4	
5	
6	
7	
8	

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

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

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

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

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

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

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

Backup Prevent

Sequence 1

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

Sequence 2

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

Sequence 3

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

Sequence 4

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

Global Phase Recalls

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Min		X				X														
Max																				
Ped																				
Act Walk Rest																				

Global Veh Det Diagnostics

Global No Activity	0
Global Max Presence	0
Global Erractic 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 Erractic 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 Recal	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

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
6	2	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	None	0	I5U
8	4	0	0		0			8.0	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	None	0	I6L
10	4	0	0		0			8.0	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	None	0	I7L
12	4	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	None	0	I9U
14	3	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	None	0	J1U
16	6	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	None	0	J2L
18	6	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	None	0	J3L
20	6	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	None	0	J5U
22	8	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	None	0	J6L
24	8	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	None	0	J7L
26	8	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	None	0	J9U
28	7	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	None	0	
30	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	None	0	
32	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	None	0	
34	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	None	0	
36	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	None	0	
38	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	None	0	
40	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	None	0	
42	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	None	0	
44	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	None	0	
46	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	None	0	
48	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 Count	Fail Time	Fail Recall	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	

56	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
57	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
58	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
59	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
60	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
61	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
62	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
63	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
64	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
65	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
66	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
67	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
68	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
69	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
70	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
71	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			
72	0	0	0		0			0.0	0.0	0	0.0	0	0	0	0	None	0			

Vehicle Detection Options Plan 1

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Volume Detector																				
Occupancy																				
Yellow Lock Call																				
Red Lock Call																				
Extend	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Added Initial																				
Queue																				
Call	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				
Disable Det Diag																				
Passage 2																				
Red Clear Ext																				
Ovl Add Int Delay																				
Ovl Gap Delay																				
Wait Car Count																				
Dly During Green																				

Vehicle Detection Options (Continued) Plan 1

Detector	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Volume Detector																				
Occupancy																				
Yellow Lock Call																				
Red Lock Call																				
Extend	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Added Initial																				
Queue																				
Call	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Terminate																				
Min Green 2																				
Protected Perm																				

Disable Dly Lead																			
Disable TS2 Diag																			
Disable Det Diag																			
Passage 2																			
Red Clear Ext																			
Ovl Add Int Delay																			
Ovl Gap Delay																			
Wait Car Count																			
Dly During Green																			

Detector	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Volume Detector	X	X	X	X	X	X	X	X												
Occupancy	X	X	X	X	X	X	X	X												
Yellow Lock Call																				
Red Lock Call																				
Extend									X	X	X	X	X	X	X	X				
Added Initial																				
Queue																				
Call																				
Terminate																				
Min Green 2																				
Protected Perm																				
Disable Dly Lead																				
Disable TS2 Diag																				
Disable Det Diag																				
Passage 2																				
Red Clear Ext																				
Ovl Add Int Delay																				
Ovl Gap Delay																				
Wait Car Count																				
Dly During Green																				

Vehicle Detection Options (Continued) Plan 1

Detector	61	62	63	64	65	66	67	68	69	70	71	72
Volume Detector												
Occupancy												
Yellow Lock Call												
Red Lock Call												
Extend												
Added Initial												
Queue												
Call												
Terminate												
Min Green 2												
Protected Perm												
Disable Dly Lead												
Disable TS2 Diag												

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

Speed Detectors

Det	Enable	Type	Units	Min Log	Max Log	Car Length	Det Length	Trail Det	Trap 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 Ovlp	Cancel Phs	Add Call Phs	Add Call Ovlp	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 Ovlps	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

	Enabled	Disabled	Disabled	Disabled	Disabled	Enabled	Enabled	Disabled	Disabled	Enabled	Disabled	Disabled	Disabled
Trail Green	0	0	0	0	0	0	0	0	0	0	0	0	
Add Trail Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Trail Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Trail Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Walk	0	0	0	0	0	0	0	0	0	0	0	0	
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	
Delay	3.0	0.0	3.0	0.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	
Flash	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
Inhibit Neg Phs													
Neg Ovlps													
TrG Omit Phs													
Negitive Peds	2				6		8		4				
Neg Ped Ovlps													
Grn Sup Phs													
N Ped Phs Calls													
Call Phases													
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	
Min Green	0	0	0	0	0	0	0	0	5	0	0	0	
Max Green Ext	0	0	0	0	0	0	0	0	0	0	0	0	
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LRT P2G Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
FYA Ped Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Add Init Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Gap Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Max Delay	0	0	0	0	0	0	0	0	0	0	0	0	
Flash Inactive	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
Flash Alt	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
Grn Flash Freq	0	0	0	0	0	0	0	0	0	0	0	0	
Ylw Flash Freq	0	0	0	0	0	0	0	0	0	0	0	0	
Walk Rest	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	

Overlap Settings Plan 1

	1	2	3	4	5	6	7	8	9	10	11	12
Startup Call												
Recall												
No Veh Reserv												
No Hold Trail Exit												
Ped Recycle		X				X						
No Yellow Protect												
No Bridging												
LRT Prepare Go												
Call for Service												
Trail Grn Bridge												
FYA Prot. Red Cl												
Phs Intvl Override												
Queue Jump												
No FYA Ped Wlk												
Term After Call												
FYA Ped No Prt Rtn												
Neg Ped Allow												
All Include Start												

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
Coordination Mode	Auto Permissive
Correction Mode	Shortway (Auto)

Maximum Mode	Per Pattern
Force Mode	Fixed
Transition Cover Ped	Pattern

Max Cyc Limit %	20
Min Cyc Limit %	20
Max Dwell	0

Patterns

		Offset					Ref	Coord	Force	Max	Trans	Min	Phs	Det	Ped	Ovlp	Pri	
Patt.	Cycle	1	2	3	Split	Seq	Col	Mode	Mode	Mode	Ped	Perm	Pln	Pln	Pln	Pln	Pln	Description
1	0	0	0	0	1	1	Grn	Auto	Fixed	Max1	None	Phs Only	1	1	1	1	1	Stgandard 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

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				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				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				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				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				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				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				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				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				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				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 Weekday Day Plan

Month of Year

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

Days of Week

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

Days of Month

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 2 Enable On Day Plan 2 Description Weekend Day Plan

Month of Year

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

Days of Week

S	M	T	W	T	F	S
X						X

Days of Month

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 3 Enable On Day Plan 3 Description

Month of Year

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

Days of Week

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

Days of Month

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 4 Enable On Day Plan 4 Description

Month of Year

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

Days of Week

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

Days of Month

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 5 Enable On Day Plan 5 Description

Month of Year

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

Days of Week

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

Days of Month

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	

Schedules (continued)

Schedule 6 Enable On Day Plan 6 Description

Month of Year

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

Days of Week

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

Days of Month

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 7 Enable On Day Plan 7 Description

Month of Year

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

Days of Week

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

Days of Month

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 8 Enable On Day Plan 8 Description

Month of Year

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

Days of Week

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

Days of Month

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 9 Enable On Day Plan 9 Description

Month of Year

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

Days of Week

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

Days of Month

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 10 Enable On Day Plan 10 Description

Month of Year

Days of Week

Days of Month

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 0 Description

Month of Year

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

Days of Week

S	M	T	W	T	F	S

Days of Month

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 0 Description

Month of Year

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

Days of Week

S	M	T	W	T	F	S

Days of Month

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 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 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 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 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 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 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 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 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 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 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 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 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		8	0	0		8	0	0		8	0	0	
9	0	0		9	0	0		9	0	0		9	0	0	
10	0	0		10	0	0		10	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	

4	None	

4	None	

Action 5

Cmd	Command	Indexes
1	None	
2	None	
3	None	
4	None	

Action 6

Cmd	Command	Indexes
1	None	
2	None	
3	None	
4	None	

Action 7

Cmd	Command	Indexes
1	None	
2	None	
3	None	
4	None	

Action 8

Cmd	Command	Indexes
1	None	
2	None	
3	None	
4	None	

Master Sections By TOD

Action	1	2	3	4	5	6	7	8	9	10
Master Section 1										
Master Section 2										
Master Section 3										
Master Section 4										
Master Section 5										
Master Section 6										
Master Section 7										
Master Section 8										
Master Section 9										
Master Section 10										
Master Section 11										
Master Section 12										
Master Section 13										
Master Section 14										
Master Section 15										
Master Section 16										

Queue Responsive By TOD

Action	1	2	3	4	5	6	7	8	9	10
Queue Resp Plan 1										
Queue Resp Plan 2										
Queue Resp Plan 3										
Queue Resp Plan 4										
Queue Resp Plan 5										
Queue Resp Plan 6										
Queue Resp Plan 7										
Queue Resp Plan 8										
Queue Resp Plan 9										
Queue Resp Plan 10										
Queue Resp Plan 11										
Queue Resp Plan 12										
Queue Resp Plan 13										
Queue Resp Plan 14										
Queue Resp Plan 15										
Queue Resp Plan 16										

Preemption Parameters

Preempt	1	2	3	4	5	6	7	8
Enabled	Disabled	Disabled	Enabled	Enabled	Enabled	Enabled	Disabled	Disabled
Type	Rail Road	Rail Road	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh	Emerg Veh
Description			Phases 2 & 5	Phase 4	Phases 6	Phase 8		
Gate Description								
Hold Delay Phases								
Entry Override Phs								
Track Phases								
Track Peds								
Track Overlaps								
Track 2 Phases								
Track 2 Peds								
Track 2 Overlaps								
Dwell Phase			2,5	4	6	8		
Dwell Ped								
Dwell Overlaps			2,5		5,6			
Cycling Phases								
Cycling Peds								

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 Overide Flash								
NotOverideNextPre	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	
ITS Cabinet on Port C13S	No	Disable TS2 Startup Call	
33X Input Leading Edge Filter	5	Disable TS2 Fault Flash	
33X Input Trailing Edge Filter	5	Disable TS2 Cabinet Alarms	
		Disable ATC Cabinet Alarms	

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

1	Not Active	On	Off	Off	Dont Walk
2	Dly Walk	On	Off	Off	Dont Walk
3	Walk	Off	Off	On	Walk
4	Walk Dwell	Off	Off	On	Walk
5	Flsh DWalk	Flash	On	Off	Ped Clear
6	DWalk	On	Off	Off	Dont Walk

1	
2	
3	
4	
5	

6	
7	
8	
9	
10	

Manual Control Phase Groups

Grp 1		Grp 2		Grp 3		Grp 4		Grp 5		Grp 6		Grp 7		Grp 8	
Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph	Ring	Ph
1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0
3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0
4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0
5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0
6	0	6	0	6	0	6	0	6	0	6	0	6	0	6	0
7	0	7	0	7	0	7	0	7	0	7	0	7	0	7	0
8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0
9	0	9	0	9	0	9	0	9	0	9	0	9	0	9	0
10	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0
11	0	11	0	11	0	11	0	11	0	11	0	11	0	11	0
12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0
13	0	13	0	13	0	13	0	13	0	13	0	13	0	13	0
14	0	14	0	14	0	14	0	14	0	14	0	14	0	14	0
15	0	15	0	15	0	15	0	15	0	15	0	15	0	15	0
16	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0

Prioritor Settings

Enabled	Lock Out Time	PRS Time to Live
Yes	0	300

Prioritor	Enabled	Priority	Priority Phs	Skipped Phs	Skip Peds	Dly Time	Arrv Time	Mx Presence	Flush/Veh	Max Flush
1	On	1	2,6	4,5,8	8	0	0	30	0.0	0
2	On	0				0	0	0	0.0	0
3	On	0				0	0	0	0.0	0
4	On	0				0	0	0	0.0	0
5	On	0				0	0	0	0.0	0
6	On	0				0	0	0	0.0	0
7	On	0				0	0	0	0.0	0
8	On	0				0	0	0	0.0	0

Prioritor	Res. Lockout	Free Pri Min	Free Pri Max	Description
1	0	Min Green	Max Green	
2	0	Min Green	Max Green	
3	0	Min Green	Max Green	
4	0	Min Green	Max Green	
5	0	Min Green	Max Green	
6	0	Min Green	Max Green	
7	0	Min Green	Max Green	
8	0	Min Green	Max Green	

Prioritor	1	2	3	4	5	6	7	8
Lock After First Serve								
Pres. Only Check-in	X							
Extend Walk Rest								
Use Phase History								

PRS Reservice Times

Class	1	2	3	4	5	6	7	8	9	10
Time	0	0	0	0	0	0	0	0	0	0

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	

SIGNAL PLAN
124TH AVENUE AT LEVETON DRIVE
WORK CHANGE DIRECTIVE NO. 1

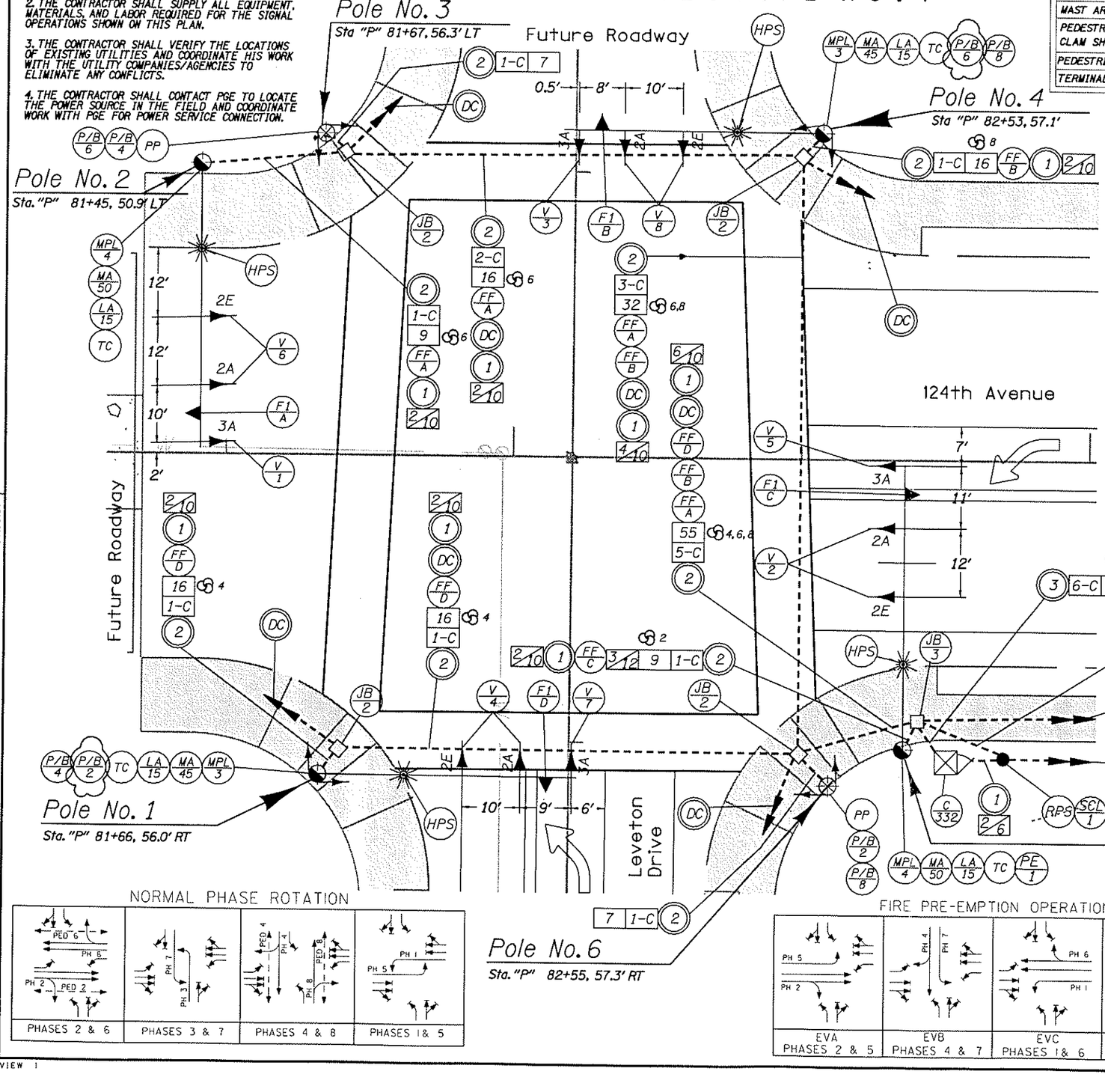
GENERAL NOTES:

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.

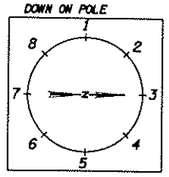
4. THE CONTRACTOR SHALL CONTACT PGE TO LOCATE THE POWER SOURCE IN THE FIELD AND COORDINATE WORK WITH PGE FOR POWER SERVICE CONNECTION.



POLE ENTRANCE CHART

POLE NUMBER	1	2	3	4	5	6
LUMINARE 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	-

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

NORMAL PHASE ROTATION

FIRE PRE-EMPTION OPERATION

CH2MHILL
L E G E N D

- (C/332) Install model 170 controller in model 332 cabinet with riser frame, orient front(louvered) door as shown
- (MPL/T) Install type (T) standard traffic signal mast arm pole with luminaire pole extension (40 ft. mounting ht.)
- (MA/L) Install (L) feet traffic signal mast arm
- (LA/L) Install (L) feet luminaire arm
- (PP) Install pedestrian signal pedestal
- (RPS) Install remote power service post
- (HPS) Install 400 watt high pressure sodium luminaire, type M-N-IV, 120, 208, 240, 277 multi-volt mag-regulator ballast
- (PE/1) Install photoelectric cell on pole (20' – 35' above pole base)
- (TC) Install terminal cabinet
- (SCL/1) Install service cabinet, 120 volt, for both signal and illumination circuits
- (MS/1) Install 120 volt meter base
- (V/Ph) Install phase (Ph) vehicle signal with LED's
  2 = 12" R, 12" Y, 12" G
  3 = 12" RLTA, 12" YLTA, 12" GLTA
- (Ph) Includes 3 spare wires for phase (Ph) as per table
- (P/B Ph) Install phase (Ph) pedestrian signal with LED's, pushbutton and instruction decal
- (JB/2) Install 22" x 12" x 12" (min. dimension) precast concrete junction box
- (JB/2A) Install 22" x 12" x 12" (min. dimension) precast concrete junction box with concrete apron
- (JB/3) Install 30" x 17" x 12" (min. dimension) precast concrete junction box with concrete apron
- (S) Install (S) inch electrical conduit
- (DC) Detector conduit (See Detector Plan)
- (IC) Interconnect conduit (See Interconnect Plan)
- (W) Install conduit and wire as required by power company
- (N-C) Install (N) No. 8 type THWN (Signal system common)
- (N) Install (N) No. 14 type THWN wires
- (N/G) Install (N) No. (G) type THWN wires
- (FF/Ch) Install channel (Ch) fire pre-emption detector feeder cable
- (EN/Ch) Install channel(Ch), (N) barrel fire pre-emption detector unit

0 10 20 30 40 50
FEET

Revised June 30, 1999

SIGNAL PLANS & DETAILS

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. 17,847

Jennifer Ringert - Designed
Gary D. Gray - Drafter
Belying Wang - Checked

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

TUALATIN DEVELOPMENT COMMISSION

SHEET NO. 15

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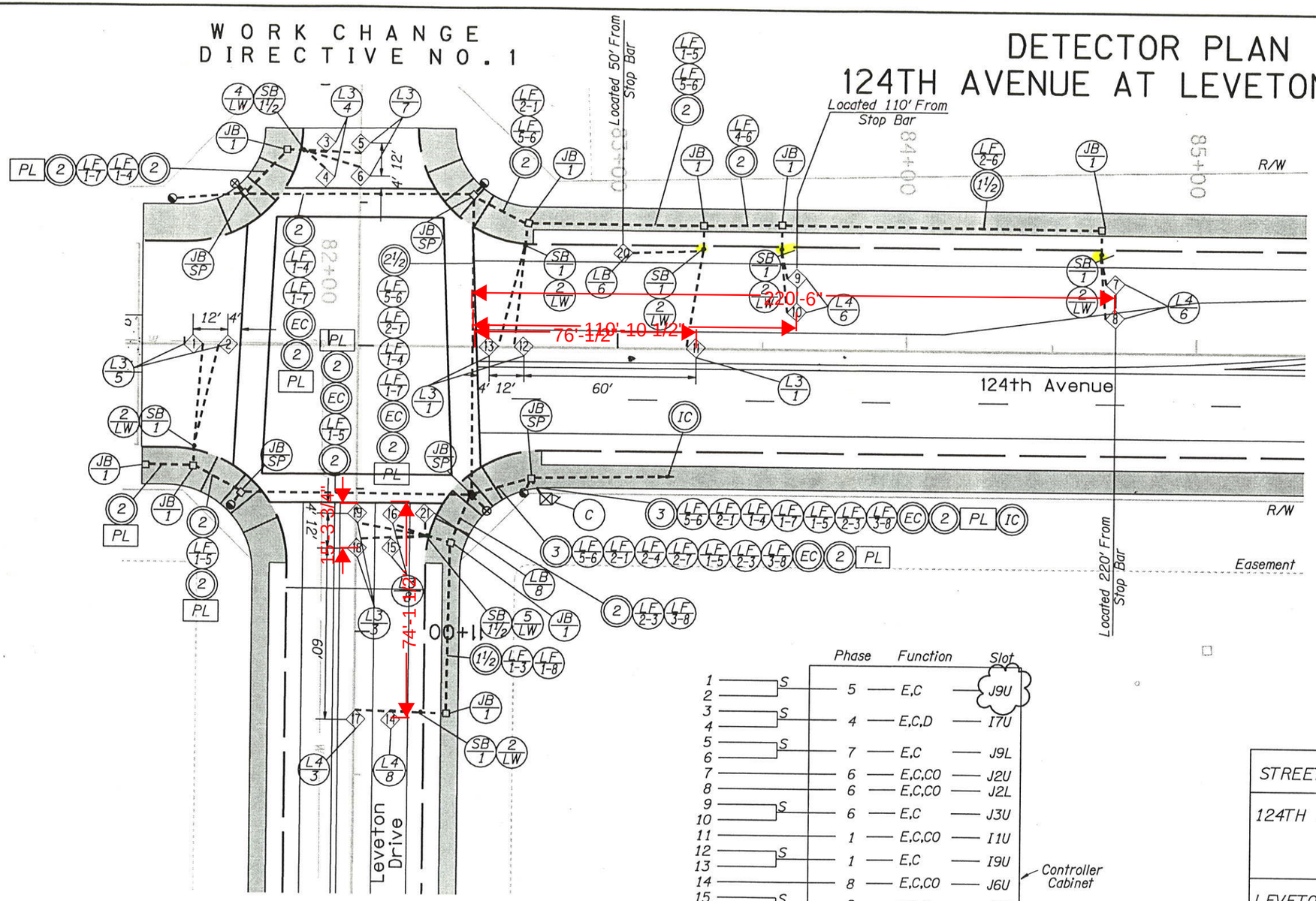
VIEW 1

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) 2½FT. 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" x4" x4" 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)
PL	Install poly pull line (1 kn min-strength)

ABBREVIATIONS:
PH= Phase Shown
S = Size Shown
X = Number Of Cables Shown
N = Number Shown

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

Controller Cabinet

* PROGRAM TRANSFER CALL TO J8U

POSTED APPROACH SPEEDS

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

N

0 20 40 60 80 100
FEET

Revised June 30, 1999

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.

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

STATE is using cold mix, epoxy boxes.

TRAFFIC ENGINEER	S.W. 124TH AVENUE / S.W. LEVETON DRIVE DETECTOR PLAN S.W. 124TH AVE. AND W. LEVETON DRIVE WASHINGTON COUNTY
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 Beiying Wang P.T.E. No. 17,047	TUALATIN DEVELOPMENT COMMISSION
	SHEET NO. 15A

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VIEW 1

CH2MHILL

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.
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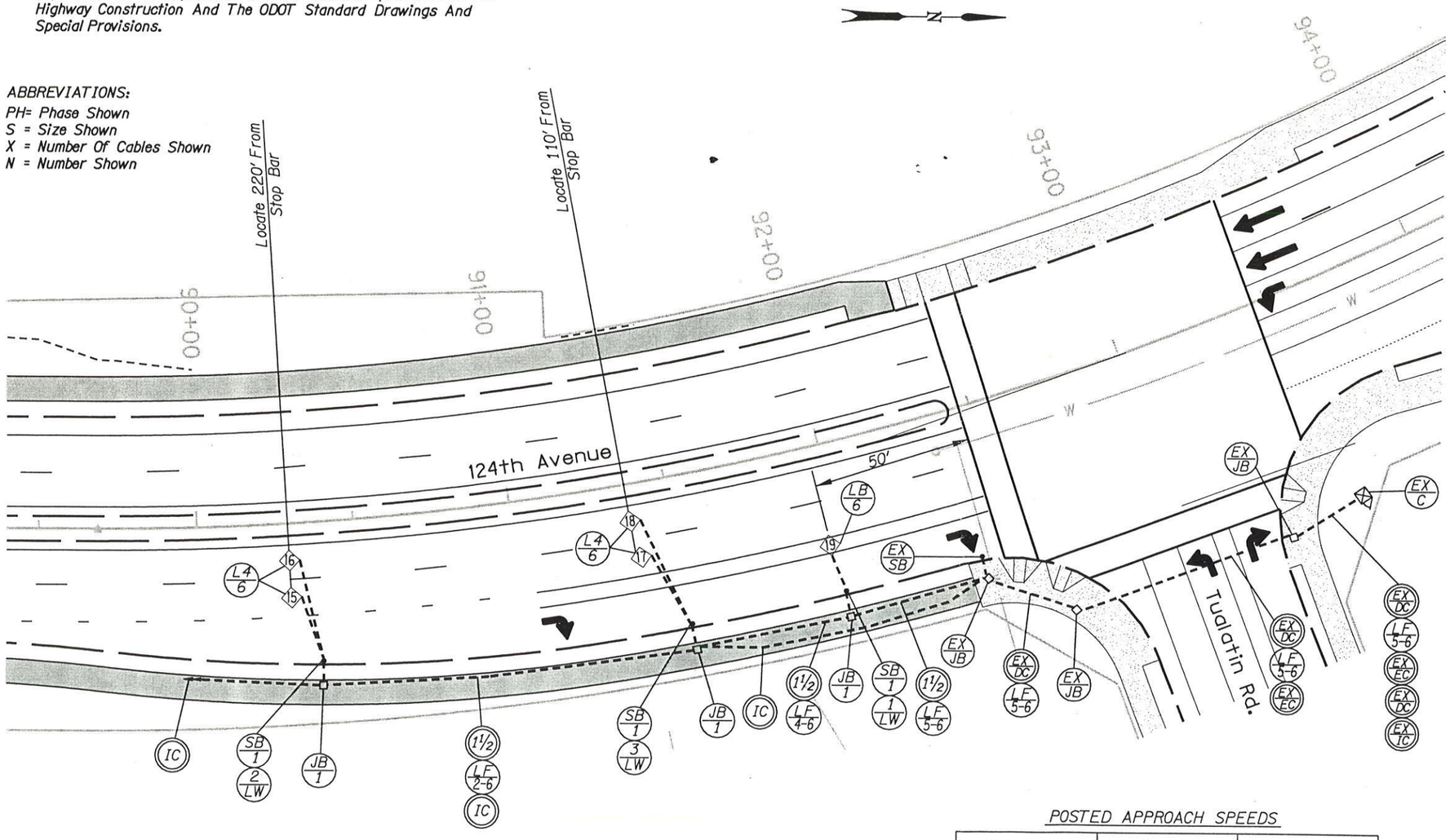
X = Number Of Cables Shown
N = Number Shown



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" x4" x4" 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)	6	E,C	J3U
18	6	E	J3L
19			

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 Expory Boxes ?

POSTED APPROACH SPEEDS

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

0 20 40 60 80 100
FEET

TRAFFIC ENGINEER
OREGON PROFESSIONAL PTE 17047 Benjamin Wang Jan. 18 1994 TRAFFIC ENGINEER
Benjamin Wang 4/30/99
Exp. 6/30/00

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

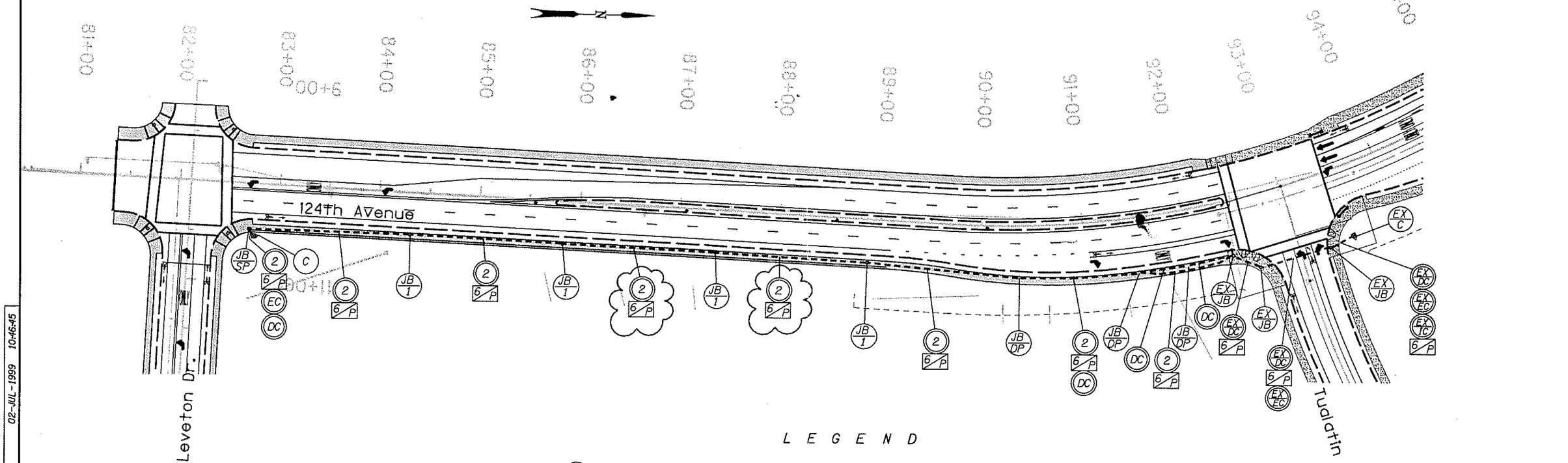
TUALATIN DEVELOPMENT COMMISSION

SHEET NO. 15B

rluke 30-APR-1999 16:54:58
NDM:145903:45903sg3.dlv
VIEW 1

CH2MHILL

INTERCONNECT PLAN
124TH AVENUE AT LEVETON DRIVE
WORK CHANGE DIRECTIVE NO. 1



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

L E G E N D

- (C) Controller (See Signal Plan)
- (S) Install (S) inch electrical conduit
- (DC) Detector conduit (See Detector Plan)
- (EC) Electrical conduit (See Signal Plan)
- (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)
- (JB/DP) Junction box (See Detector Plan)
- (EX/JB) Retain and protect existing junction box
- (EX/EC) Retain and protect existing electrical conduit
- (EX/DC) Retain and protect existing detector conduit
- (EX/TC) Retain and protect existing interconnect conduit
- (N/G) Install (N) No. (G) type THWN wires
- (EX/C) Retain and protect existing controller and cabinet

0' 50' 100' 150'

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 Beiying Wang P.T.E. No. 17,047

S.W. 124TH AVENUE / S.W. LEVETON DRIVE
SYSTEM INTERCONNECT PLAN
124th AVE. @ LEVETON DR.
WASHINGTON COUNTY

TUALATIN DEVELOPMENT COMMISSION

SHEET NO. 15C

skatko 02-JUL-1999 10:46:45 NDW:145903; 45903sg4.dw

VIEW 1

337.801

11/6/13 Timing Changes

W4IKS Table 1 Page 0
Date: Wednesday, February 06, 2013 Time: 07:36 AM
Intersection #139 124th @ Leviton

(0+KEY)

FUNCTIONS	KEY	12345678
Veh Recall	0	_2___6__
Ped Recall	1	_____
Red Lock	2	_____
Yellow Lock	3	_____
Permit	4	12345678
Ped Phases	5	_2_4_6_8
Lead Phases	6	1_3_5_7_
Double Entry	7	___4___8
Sequential Timing	8	_____
Startup Green	9	_2___6__
Overlap A	A	12_____
Overlap B	B	_____
Overlap C	C	____56__
Overlap D	D	_____
Exclusive	E	_____
Simultaneous Gap	F	_2___6__

(PHASE+KEY)

FUNCTIONS	KEY	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8
Max I	0	25	25	10	30	20	40	15	30
Max II	1	25	25	10	30	20	40	15	30
Walk	2	0	7	0	8 X	0	7	0	8 X
Flash DW	3	0	~~17~~ 14	0	~~20~~ 23	0	~~16~~ 14	0	23
Max Initial	4	0	0	0	0	5	0	0	0
Min Green	5	8	~~12~~ 10	7	6	5	~~12~~ 10	4	6
TBR	6	0	0	0	0	0	0	0	0
TTR	7	0	0	0	0	0	0	0	0
Observe Gap	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passage	9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Min Gap	A	1.0	3.0	1.0	1.0	1.0	3.0	1.0	1.0
Added Actuation	B	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Yellow	C	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clear	D	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Revert	E	5.0	5.0	5.0	5.0	0.0	5.0	5.0	5.0
Walk II	F	0	0	0	0	0	0	0	0

W4IKS Table 1 Page 1
Date: Wednesday, February 06, 2013 Time: 07:36 AM
Intersection #139 124th @ Leviton

(D+C+0+KEY)

FUNCTIONS	KEY	12345678
Veh Recall	0	_____
Ped Recall	1	_____
Red Lock	2	_____
Yellow Lock	3	_____
Permit	4	_____
Ped Phases	5	_____
Lead Phases	6	_____
Double Entry	7	_____
Sequential Timing	8	_____
Startup Green	9	_____
Overlap A	A	_____
Overlap B	B	_____
Overlap C	C	_____
Overlap D	D	_____
Exclusive	E	_____
Simultaneous Gap	F	_____

(D+C+PHASE+KEY)

FUNCTIONS	KEY	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8
Max I	0	0	0	0	0	0	0	0	0
Max II	1	0	0	0	0	0	0	0	0
Walk	2	0	0	0	0	0	0	0	0
Flash DW	3	0	0	0	0	0	0	0	0
Max Initial	4	0	0	0	0	0	0	0	0
Min Green	5	0	0	0	0	0	0	0	0
TBR	6	0	0	0	0	0	0	0	0
TTR	7	0	0	0	0	0	0	0	0
Observe Gap	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passage	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Actuation	B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk II	F	0	0	0	0	0	0	0	0

W4IKS Table 1 Page 2
Date: Wednesday, February 06, 2013 Time: 07:36 AM
Intersection #139 124th @ Leviton

(D+D+0+KEY)

FUNCTIONS	KEY	12345678
Veh Recall	0	_____
Ped Recall	1	_____
Red Lock	2	_____
Yellow Lock	3	_____
Permit	4	_____
Ped Phases	5	_____
Lead Phases	6	_____
Double Entry	7	_____
Sequential Timing	8	_____
Startup Green	9	_____
Overlap A	A	_____
Overlap B	B	_____
Overlap C	C	_____
Overlap D	D	_____
Exclusive	E	_____
Simultaneous Gap	F	_____

(D+D+PHASE+KEY)

FUNCTIONS	KEY	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8
Max I	0	0	0	0	0	0	0	0	0
Max II	1	0	0	0	0	0	0	0	0
Walk	2	0	0	0	0	0	0	0	0
Flash DW	3	0	0	0	0	0	0	0	0
Max Initial	4	0	0	0	0	0	0	0	0
Min Green	5	0	0	0	0	0	0	0	0
TBR	6	0	0	0	0	0	0	0	0
TTR	7	0	0	0	0	0	0	0	0
Observe Gap	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passage	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Actuation	B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk II	F	0	0	0	0	0	0	0	0

ENGLISH

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

LEGEND

CONTROLLERS

EX C — Retain and protect existing 332 cabinet

POLES

EX MP — Retain and protect existing traffic signal mast arm pole

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

EX MA — Retain and protect existing traffic signal mast arm

EX LA — Retain and protect existing luminaire arm

RR PP — Remove and relocate existing pedestrian signal pedestal with frangible base

RI PP — Remove and relocate existing pedestrian signal pedestal with frangible base

SIGNALS

EX VPh — Retain and protect existing phase (Ph=phase) vehicle signal

EX P/B — Retain and protect existing pedestrian signal, pushbutton and instructions

V Ph — Install phase (Ph=phase) vehicle signal

RR VPh — Remove and relocate existing phase (Ph=phase) vehicle signal

RR P/B — Remove and relocate existing pedestrian signal, pushbutton and instructions

RI VPh — Reinstall existing phase (Ph=phase) vehicle signal

RI P/B — Reinstall existing pedestrian signal, pushbutton and instructions

SIGNS

EX AL — Retain and protect existing aluminum sign

EX SNS — Retain and protect existing street name sign

LEGEND CONTINUED

CABINETS

EX RPS — Retain and protect existing remote power source

EX SC — Retain and protect existing service cabinet

EX MS — Retain and protect existing meter base

EX TC — Retain and protect existing terminal cabinet

JUNCTION BOXES

EX JB — Retain and protect existing junction box

RX JB — Remove existing junction box

JB 2 — Install 22"x12"x12" (min. dimension) precast concrete junction box

JB 3A — Install 30"x17"x12" (min. dimension) precast concrete junction box with concrete apron

VIDEO DETECTION

VDZ PH — Video detection zone for phase (PH).

EX VDC — Retain and protect existing video detection camera

WIRES

EX W — Retain and protect existing wiring

RX W — Remove existing wiring

RI W — Reinstall existing wiring

#-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

LEGEND CONTINUED

CONDUITS

EX EC — Retain and protect existing electrical conduit

AX EC — Abandon existing electrical conduit

S — Install (S=size) inch electrical conduit

IC — Interconnect conduit (See Interconnect Plan)

CJ — Splice new electrical conduit to existing electrical conduit

FIRE PREEMPTION

EX FD — Retain and protect existing fire preemption detector

MISCELLANEOUS

EX HPS — Retain and protect existing high pressure sodium luminaire

EX PE — Retain and protect existing photoelectric control

CW — 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

6L = 

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 5) wire to Output File terminal 120.
6. Re-establish telephone connection with local company after completion of utility pole relocation.

REGISTERED PROFESSIONAL ENGINEER
19283PE
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 108TH AVE
LEGEND SHEET

SHEET NO. TS-11

$DATE$ $FILE$ $TIME$ $FILEABBREV$ $USER$

ENGLISH

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

59+00

60+00

61+00

SW 108TH AVE

HR.

SW HERMAN ROAD

P&W RR

POLE #C3
"HR" 60+14
47' LT

EX. POLE #C2

EX. POLE #C1

EX. POLE #C4

0 10 20 30
Scale In Feet

N

REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
EXPIRES 12/31/08
8/27/08

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 108TH AVE SIGNAL PLAN

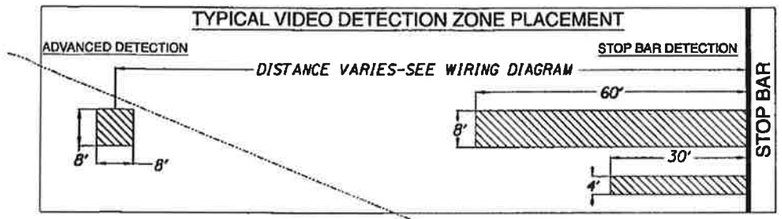
SHEET NO. TS-12

$DATE$ $FILE$ $TIME$ $FILEABBREV$ $USER$

ENGLISH

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

TYPICAL VIDEO DETECTION ZONE PLACEMENT



VIDEO DETECTION WIRING DIAGRAM

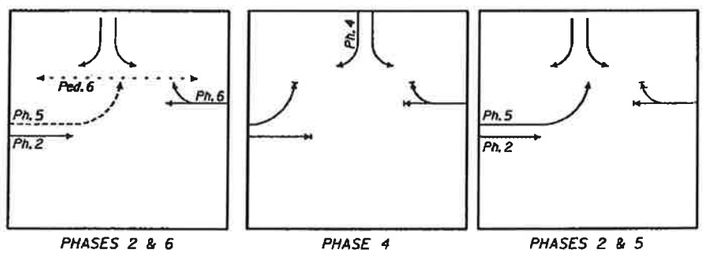
CAMERA	DETECTION ZONE	DISTANCE (FEET)
1	1	320
2	2	160
2	3	
2	4	
3	5	
3	6	
4	7	320
5	8	160
5	9	

PHASE	SLOT
2	I2U
2	I2L
2	I3U
5	J1
4	I6U
4	I6L
6	J2U
6	J2L
6	J3U

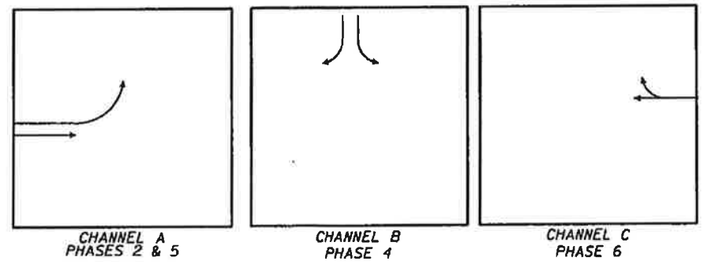
DETECTION ZONE

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.



NORMAL PHASE ROTATION



FIRE PREEMPTION DIAGRAM

REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
5/27/08
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 108TH AVE DETECTOR PLAN

SHEET NO. TS-13

$DATE$ $FILE$ $TIME$ $FILEABBREV$ $USER$

W4IKS Table 1 Page 0
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(0+KEY)

FUNCTIONS	KEY	12345678
Veh Recall	0	_2___6__
Ped Recall	1	________
Red Lock	2	________
Yellow Lock	3	________
Permit	4	_2_456__
Ped Phases	5	_____6__
Lead Phases	6	_2_4_6__
Double Entry	7	_2___6__
Sequential Timing	8	________
Startup Green	9	_2___6__
Overlap A	A	________
Overlap B	B	________
Overlap C	C	____56__
Overlap D	D	________
Exclusive	E	________
Simultaneous Gap	F	_2___6__

(PHASE+KEY)

FUNCTIONS	KEY	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8
Max I	0	0	45	0	30	10	45	0	0
Max II	1	0	45	0	30	10	45	0	0
Walk	2	0	0	0	0	0	7	0	0
Flash DW	3	0	0	0	0	0	12	0	0
Max Initial	4	0	0	0	0	0	0	0	0
Min Green	5	0	5	0	5	5	10	0	0
TBR	6	0	10	0	5	5	10	0	0
TTR	7	0	15	0	10	5	15	0	0
Observe Gap	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passage	9	0.0	3.1	0.0	2.6	2.0	3.1	0.0	0.0
Min Gap	A	0.0	1.1	0.0	1.0	1.1	1.1	0.0	0.0
Added Actuation	B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	C	0.0	4.0	0.0	4.0	4.0	4.0	0.0	0.0
Red Clear	D	0.0	1.4	0.0	2.5	1.4	1.4	0.0	0.0
Red Revert	E	0.0	5.0	0.0	5.0	5.0	5.0	0.0	0.0
Walk II	F	0	0	0	0	0	0	0	0

W4IKS Table 1 Page 1
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+C+0+KEY)

FUNCTIONS	KEY	12345678
Veh Recall	0	________
Ped Recall	1	________
Red Lock	2	________
Yellow Lock	3	________
Permit	4	________
Ped Phases	5	________
Lead Phases	6	________
Double Entry	7	________
Sequential Timing	8	________
Startup Green	9	________
Overlap A	A	________
Overlap B	B	________
Overlap C	C	________
Overlap D	D	________
Exclusive	E	________
Simultaneous Gap	F	________

(D+C+PHASE+KEY)

FUNCTIONS	KEY	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8
Max I	0	0	0	0	0	0	0	0	0
Max II	1	0	0	0	0	0	0	0	0
Walk	2	0	0	0	0	0	0	0	0
Flash DW	3	0	0	0	0	0	0	0	0
Max Initial	4	0	0	0	0	0	0	0	0
Min Green	5	0	0	0	0	0	0	0	0
TBR	6	0	0	0	0	0	0	0	0
TTR	7	0	0	0	0	0	0	0	0
Observe Gap	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passage	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Actuation	B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk II	F	0	0	0	0	0	0	0	0

W4IKS Table 1 Page 2
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+D+0+KEY)

FUNCTIONS	KEY	12345678
Veh Recall	0	________
Ped Recall	1	________
Red Lock	2	________
Yellow Lock	3	________
Permit	4	________
Ped Phases	5	________
Lead Phases	6	________
Double Entry	7	________
Sequential Timing	8	________
Startup Green	9	________
Overlap A	A	________
Overlap B	B	________
Overlap C	C	________
Overlap D	D	________
Exclusive	E	________
Simultaneous Gap	F	________

(D+D+PHASE+KEY)

FUNCTIONS	KEY	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8
Max I	0	0	0	0	0	0	0	0	0
Max II	1	0	0	0	0	0	0	0	0
Walk	2	0	0	0	0	0	0	0	0
Flash DW	3	0	0	0	0	0	0	0	0
Max Initial	4	0	0	0	0	0	0	0	0
Min Green	5	0	0	0	0	0	0	0	0
TBR	6	0	0	0	0	0	0	0	0
TTR	7	0	0	0	0	0	0	0	0
Observe Gap	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Passage	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Actuation	B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk II	F	0	0	0	0	0	0	0	0

W4IKS Table 2 Page 0
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(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	

W4IKS Table 2 Page 1
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(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	

W4IKS Table 2 Page 2
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(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	2 5
EVB Phases	B	4 7
EVC Phases	C	1 6
EVD Phases	D	3 8
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			
COLUMN NUM		2		3		4		5	
FUNCTIONS	KEY	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	C0-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	C0-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
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(B+D+KEY1+KEY2)

	KEY1	7	8	9	A	B	C	D	E	F
FUNCTION	KEY2	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
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 8
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(B+A+KEY)

FUNCTIONS	KEY	VALUE
Bus P1 T1	0	0
Bus P1 T2	1	0
Bus P1 T3	2	0
Bus P2 T1	3	0
Bus P2 T2	4	0
Bus P2 T3	5	0
Bus P3 T1	6	0
Bus P3 T2	7	0
Bus P3 T3	8	0
Perm 2 P1	9	0
Perm 2 P2	A	0
Perm 2 P3	B	0
Flash Yellow	C	
Flash Circuit	D	
TOD/DOW Max	E	
OLB Switchpack	F	

(B+B+KEY)

FUNCTIONS	KEY	VALUE
Bus P4 T1	0	0
Bus P4 T2	1	0
Bus P4 T3	2	0
Bus P5 T1	3	0
Bus P5 T2	4	0
Bus P5 T3	5	0
Bus P6 T1	6	0
Bus P6 T2	7	0
Bus P6 T3	8	0
Perm 2 P4	9	0
Perm 2 P5	A	0
Perm 2 P6	B	0
OL Flash Yellow	C	
OL Flash Clear	D	
TOD/DOW Ped	E	
OLC Switchpack	F	

(B+C+KEY)

FUNCTIONS	KEY	VALUE
Bus P7 T1	0	0
Bus P7 T2	1	0
Bus P7 T3	2	0
Bus P8 T1	3	0
Bus P8 T2	4	0
Bus P8 T3	5	0
Bus P9 T1	6	0
Bus P9 T2	7	0
Bus P9 T3	8	0
Perm 2 P7	9	0
Perm 2 P8	A	0
Perm 2 P9	B	0
Coord Max	C	
TOD Red Rest	D	
OLA Switchpack	E	
OLD Switchpack	F	

W4IKS Table 9 Page 0
Date: Wednesday, July 25, 2012 Time: 09:52 AM
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

W4IKS Table 9 Page 1
Date: Wednesday, July 25, 2012 Time: 09:52 AM
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

W4IKS Table 10 Page 0
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(A+0+KEY)

FUNCTION	KEY	CODE
04 D/W	0	0
04 Walk	1	0
04 Red	2	0
04 Yellow	3	0
04 Green	4	0
03 Red	5	0
03 Yellow	6	0
03 Green	7	0
02 D/W	8	0
02 Walk	9	0
02 Red	A	0
02 Yellow	B	0
02 Green	C	0
01 Red	D	0
01 Yellow	E	0
01 Green	F	0

(A+1+KEY)

FUNCTION	KEY	CODE
08 D/W	0	0
08 Walk	1	0
08 Red	2	0
08 Yellow	3	0
08 Green	4	0
07 Red	5	0
07 Yellow	6	0
07 Green	7	0
06 D/W	8	0
06 Walk	9	0
06 Red	A	0
06 Yellow	B	0
06 Green	C	0
05 Red	D	99
05 Yellow	E	99
05 Green	F	99

(A+2+KEY)

FUNCTION	KEY	CODE
02 Ped Y	0	0
06 Ped Y	1	99
04 Ped Y	2	0
08 Ped Y	3	0
03 Ped Y	4	0
01 Ped Y	5	0
Flash	6	0
Watchdog	7	0
03 D/W	8	0
03 Walk	9	0
OLD Red	A	0
OLD Yellow	B	0
OLD Green	C	0
OLC Red	D	0
OLC Yellow	E	0
OLC Green	F	0

(A+3+KEY)

FUNCTION	KEY	CODE
01 D/W	0	0
01 Walk	1	0
OLB Red	2	0
OLB Yellow	3	0
OLB Green	4	0
OLA Red	5	0
OLA Yellow	6	0
OLA Green	7	0
	8	0
SD	9	0
LTT	A	0
High Byte IDC		0

W4IKS Table 10 Page 1
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+A+0+KEY)

FUNCTION	KEY	CODE
04 D/W	0	0
04 Walk	1	0
04 Red	2	0
04 Yellow	3	0
04 Green	4	0
03 Red	5	0
03 Yellow	6	0
03 Green	7	0
02 D/W	8	0
02 Walk	9	0
02 Red	A	0
02 Yellow	B	0
02 Green	C	0
01 Red	D	0
01 Yellow	E	0
01 Green	F	0

(D+A+1+KEY)

FUNCTION	KEY	CODE
08 D/W	0	0
08 Walk	1	0
08 Red	2	0
08 Yellow	3	0
08 Green	4	0
07 Red	5	0
07 Yellow	6	0
07 Green	7	0
06 D/W	8	0
06 Walk	9	0
06 Red	A	0
06 Yellow	B	0
06 Green	C	0
05 Red	D	0
05 Yellow	E	0
05 Green	F	0

(D+A+2+KEY)

FUNCTION	KEY	CODE
02 Ped Y	0	0
06 Ped Y	1	0
04 Ped Y	2	0
08 Ped Y	3	0
03 Ped Y	4	0
01 Ped Y	5	0
Flash	6	0
Watchdog	7	0
03 D/W	8	0
03 Walk	9	0
OLD Red	A	0
OLD Yellow	B	0
OLD Green	C	0
OLC Red	D	0
OLC Yellow	E	0
OLC Green	F	0

(D+A+3+KEY)

FUNCTION	KEY	CODE
01 D/W	0	0
01 Walk	1	0
OLB Red	2	0
OLB Yellow	3	0
OLB Green	4	0
OLA Red	5	0
OLA Yellow	6	0
OLA Green	7	0
	8	0
SD	9	0
LTT	A	0

W4IKS Table 10 Page 2
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+A+7+KEY)

FUNCTION	KEY	CODE
04 D/W	0	0
04 Walk	1	0
04 Red	2	0
04 Yellow	3	0
04 Green	4	0
03 Red	5	0
03 Yellow	6	0
03 Green	7	0
02 D/W	8	0
02 Walk	9	0
02 Red	A	0
02 Yellow	B	0
02 Green	C	0
01 Red	D	0
01 Yellow	E	0
01 Green	F	0

(D+A+8+KEY)

FUNCTION	KEY	CODE
08 D/W	0	0
08 Walk	1	0
08 Red	2	0
08 Yellow	3	0
08 Green	4	0
07 Red	5	0
07 Yellow	6	0
07 Green	7	0
06 D/W	8	0
06 Walk	9	0
06 Red	A	0
06 Yellow	B	0
06 Green	C	0
05 Red	D	0
05 Yellow	E	0
05 Green	F	0

(D+A+9+KEY)

FUNCTION	KEY	CODE
02 Ped Y	0	0
06 Ped Y	1	0
04 Ped Y	2	0
08 Ped Y	3	0
03 Ped Y	4	0
01 Ped Y	5	0
Flash	6	0
Watchdog	7	0
03 D/W	8	0
03 Walk	9	0
OLD Red	A	0
OLD Yellow	B	0
OLD Green	C	0
OLC Red	D	0
OLC Yellow	E	0
OLC Green	F	0

(D+A+A+KEY)

FUNCTION	KEY	CODE
01 D/W	0	0
01 Walk	1	0
OLB Red	2	0
OLB Yellow	3	0
OLB Green	4	0
OLA Red	5	0
OLA Yellow	6	0
OLA Green	7	0
	8	0
SD	9	0
LTT	A	0

W4IKS Table 11 Page 0
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+B+0+KEY)

FUNCTIONS	KEY	VALUE
05 D/W	0	0
05 Walk	1	0
OLL Red	2	0
OLL Yellow	3	0
OLL Green	4	0
OLK Red	5	0
OLK Yellow	6	0
OLK Green	7	0
07 D/W	8	0
07 Walk	9	0
OLJ Red	A	0
OLJ Yellow	B	0
OLJ Green	C	0
OLH Red	D	0
OLH Yellow	E	0
OLH Green	F	0

(D+B+1+KEY)

FUNCTIONS	KEY	VALUE
OLE Green	0	0
OLF Green	1	0
OLE Yellow	2	0
OLF Yellow	3	0
Adv Warning	4	0
RR Fl Yellow	5	0
Det Reset	6	0
RR On	7	0
EVA On	8	0
EVB On	9	0
EVC On	A	0
EVD On	B	0
Ring 1 Bit B	C	0
Ring 1 Bit C	D	0
Ring 2 Bit B	E	0
Ring 2 Bit C	F	0

(D+B+2+KEY)

FUNCTIONS	KEY	VALUE
Cycle 2	0	0
Cycle 3	1	0
Offset 1	2	0
Offset 2	3	0
Offset 3	4	0
------	5	0
Free	6	0
Flash	7	0
Coord Plan 1 2 3	8	0
Coord Plan 4 5 6	9	0
Coord Plan 7 8 9	A	0
Coord Plan 10 11 12	B	0
Coord Plan 13 14 15	C	0
Coord Plan 16 17 18	D	0
Future	E	0
Future	F	0

W4IKS Table 11 Page 1
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+B+4+KEY)

FUNCTIONS	KEY	VALUE
05 D/W	0	0
05 Walk	1	0
OLL Red	2	0
OLL Yellow	3	0
OLL Green	4	0
OLK Red	5	0
OLK Yellow	6	0
OLK Green	7	0
07 D/W	8	0
07 Walk	9	0
OLJ Red	A	0
OLJ Yellow	B	0
OLJ Green	C	0
OLH Red	D	0
OLH Yellow	E	0
OLH Green	F	0

(D+B+5+KEY)

FUNCTIONS	KEY	VALUE
OLE Green	0	0
OLF Green	1	0
OLE Yellow	2	0
OLF Yellow	3	0
Adv Warning	4	0
RR Fl Yellow	5	0
Det Reset	6	0
RR On	7	0
EVA On	8	0
EVB On	9	0
EVC On	A	0
EVD On	B	0
Ring 1 Bit B	C	0
Ring 1 Bit C	D	0
Ring 2 Bit B	E	0
Ring 2 Bit C	F	0

(D+B+6+KEY)

FUNCTIONS	KEY	VALUE
Cycle 2	0	0
Cycle 3	1	0
Offset 1	2	0
Offset 2	3	0
Offset 3	4	0
------	5	0
Free	6	0
Flash	7	0
Coord Plan 1 2 3	8	0
Coord Plan 4 5 6	9	0
Coord Plan 7 8 9	A	0
Coord Plan 10 11 12	B	0
Coord Plan 13 14 15	C	0
Coord Plan 16 17 18	D	0
Future	E	0
Future	F	0

W4IKS Table 11 Page 2
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+B+8+KEY)

FUNCTIONS	KEY	VALUE
05 D/W	0	0
05 Walk	1	0
OLL Red	2	0
OLL Yellow	3	0
OLL Green	4	0
OLK Red	5	0
OLK Yellow	6	0
OLK Green	7	0
07 D/W	8	0
07 Walk	9	0
OLJ Red	A	0
OLJ Yellow	B	0
OLJ Green	C	0
OLH Red	D	0
OLH Yellow	E	0
OLH Green	F	0

(D+B+9+KEY)

FUNCTIONS	KEY	VALUE
OLE Green	0	0
OLF Green	1	0
OLE Yellow	2	0
OLF Yellow	3	0
Adv Warning	4	0
RR Fl Yellow	5	0
Det Reset	6	0
RR On	7	0
EVA On	8	0
EVB On	9	0
EVC On	A	0
EVD On	B	0
Ring 1 Bit B	C	0
Ring 1 Bit C	D	0
Ring 2 Bit B	E	0
Ring 2 Bit C	F	0

(D+B+A+KEY)

FUNCTIONS	KEY	VALUE
Cycle 2	0	0
Cycle 3	1	0
Offset 1	2	0
Offset 2	3	0
Offset 3	4	0
------	5	0
Free	6	0
Flash	7	0
Coord Plan 1 2 3	8	0
Coord Plan 4 5 6	9	0
Coord Plan 7 8 9	A	0
Coord Plan 10 11 12	B	0
Coord Plan 13 14 15	C	0
Coord Plan 16 17 18	D	0
Future	E	0
Future	F	0

W4IKS Table 12
Date: Wednesday, July 25, 2012 Time: 09:52 AM
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
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(D+9+0+KEY)

FUNCTION	KEY	VALUE
Overlap H	0	_____
Overlap J	1	_____
Overlap K	2	_____
Overlap L	3	_____
OLH Switchpack	4	_____
OLJ Switchpack	5	_____
OLK Switchpack	6	_____
OLL Switchpack	7	_____
Reserved	8	_____
Reserved	9	_____
All Red Before EV	A	_____

(D+9+3+KEY)

FUNCTION	KEY	VALUE
OLH Green	0	0.0
OLH Yellow	1	0.0
OLH Red	2	0.0
OLJ Green	3	0.0
OLJ Yellow	4	0.0
OLJ Red	5	0.0
OLK Green	6	0.0
OLK Yellow	7	0.0
OLK Red	8	0.0
OLL Green	9	0.0
OLL Yellow	A	0.0
OLL Red	B	0.0

(E+F+KEY)

FUNCTION	KEY	VALUE
RR Max II	0	0
Ped Perm Pl 1	1	0
Ped Perm Pl 2	2	0
Ped Perm Pl 3	3	0
Ped Perm Pl 4	4	0
Ped Perm Pl 5	5	0
Ped Perm Pl 6	6	0
Ped Perm Pl 7	7	0
Ped Perm Pl 8	8	0
Ped Perm Pl 9	9	0
# of Lng Pwrouts	A	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
Date: Wednesday, July 25, 2012 Time: 09:52 AM
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
Date: Wednesday, July 25, 2012 Time: 09:52 AM
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

W4IKS Table 15
Date: Wednesday, July 25, 2012 Time: 09:52 AM
Intersection #125 HERMAN RD @ 108TH

(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

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ENGLISH

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

LEGEND

CONTROLLERS

(C / 332) 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

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)

(VDZ / 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 / 1) 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-III, 120/240 dual voltage ballast

SIGNAL MOUNTING OPTIONS
B = Adjustable bracket assembly w/rain cap(s) (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

CONSTRUCTION NOTE:

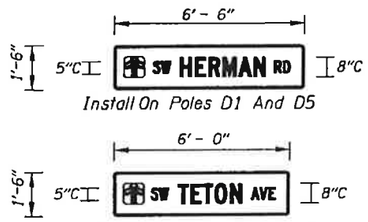
(1) Terminate phase 1 flashing yellow indication to phase 2 pedestrian yellow switchpack output. Terminate Conflict Monitor channel 9 (pin 13) wire to Output File terminal 114.

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.

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.

6L =



REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
8/27/98
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
LEGEND SHEET

SHEET NO. TS-15

DATE *FILE* *TIME* *FILEABBREV* *USER*

ENGLISH

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

69+00

SW TETON AVENUE

SW HERMAN ROAD

P&W RR

POLE #D3 "HR" 69+91 35.0' LT

POLE #D4 "HR" 70+22 48.5' LT

POLE #D5 "HR" 70+75 36.5' LT

POLE #D6 "HR" 70+65 38.0' RT

POLE #D7 "HR" 70+55 41.0' RT

POLE #D2 "HR" 69+88 31.5' RT

POLE #D1 "HR" 39+58 72.3' RT

RAILROAD TO INSTALL RIGID CONDUITS FOR SIGNAL BENEATH TRACKS. CONNECT TO CONDUITS 15' EITHER SIDE OF CENTERLINE OF TRACKS.

RR CONTROLLER

ESMT

R/W

Scale In Feet 0 10 20 30

N

Revised	DATE	APPROVED	REVISION
1	11/21	CWR	Revised by Addendum #1

REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
11/21/08
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

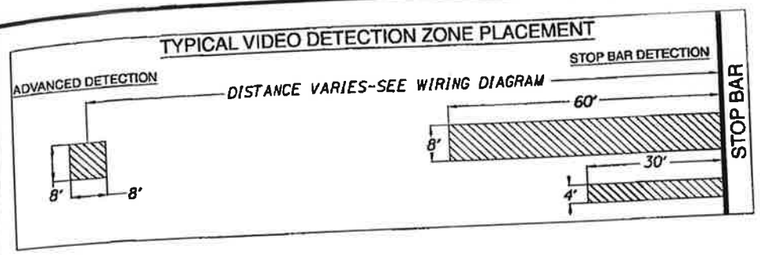
SW HERMAN RD/SW TETON AVE SIGNAL PLAN

SHEET NO. TS-16

ENGLISH

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

TYPICAL VIDEO DETECTION ZONE PLACEMENT



VIDEO DETECTION WIRING DIAGRAM

CAMERA	DETECTION ZONE	DISTANCE (FEET)
1	1	320
2	2	160
2	3	
2	4	
3	5	220
3	6	110
3	7	
3	8	
4	9	320
5	10	180
5	11	
5	12	
6	13	220
6	14	110
6	15	
6	16	

PHASE	SLOT
2	I2U
2	I2L
2	I3U
5	J1
4	I6U
4	I6L
4	I7U
7	J5
8	J2U
8	J2L
1	J3U
1	J1
8	J6U
8	J6L
3	J7U
3	I5

N DETECTION ZONE

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.

'HR' 68+00

'HR' 69+00

'HR' 70+00

SW TETON AVENUE

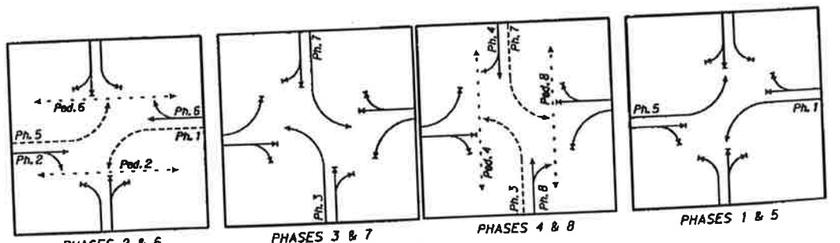
END Sta. 'HR' 70+87.50

SW HERMAN ROAD

P&W RR

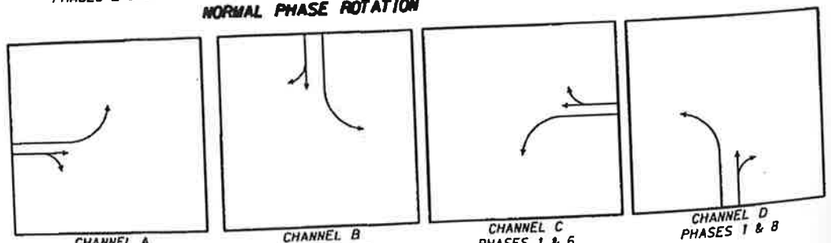
320

160



PHASES 2 & 6 | PHASES 3 & 7 | PHASES 4 & 8 | PHASES 1 & 5

NORMAL PHASE ROTATION



CHANNEL A PHASES 2 & 5 | CHANNEL B PHASES 4 & 7 | CHANNEL C PHASES 1 & 6 | CHANNEL D PHASES 1 & 8

FIRE PREEMPTION DIAGRAM

0 20 40 60
Scale in Feet

REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
EXPIRES 12/31/08
6/27/08

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

DATE *FILE* *TIME* *FILEABBREV* *USER*

ENGLISH

RETURN TO NORMAL PHASE ROTATION AFTER PREEMPTION

SIGNAL INDICATION ACTIVE WHEN PED INHIBIT IS INITIATED

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

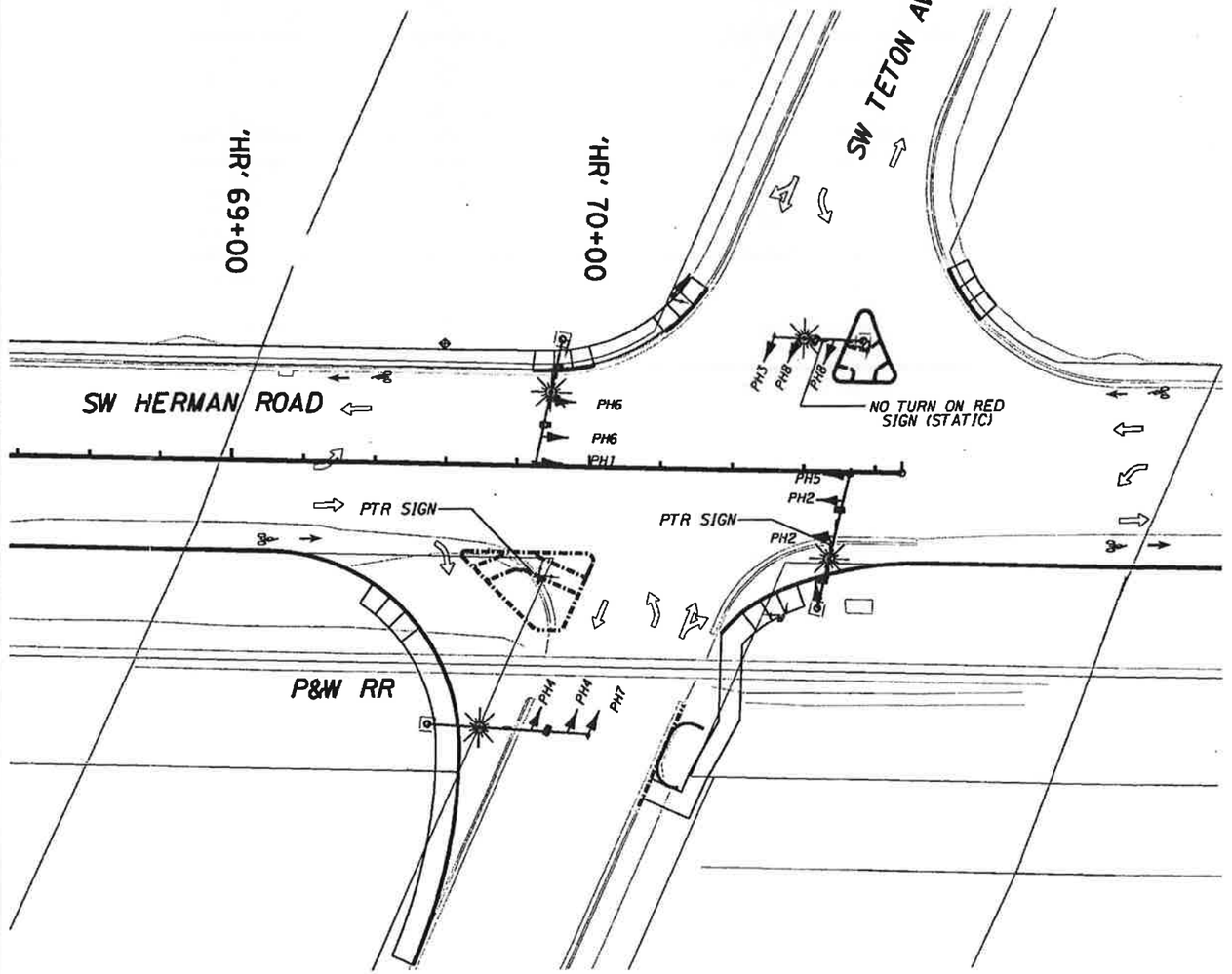
Ph. No.									
2	G	Y	R	R	R	R	R	R	R
6	G	Y	R	R	R	R	R	R	R
3	R	R	G	Y	FY	Y	R	R	
7	R	R	G	Y	FY	Y	R	R	
4	R	R	R	R	G	Y	R	R	
8	R	R	R	R	G	Y	R	R	
1	FY	Y	R	R	R	R	G	Y	
5	FY	Y	R	R	R	R	G	Y	
Ped. 2+6	FDW	DW	DW	DW	DW	DW	DW	DW	DW
Ped. 4+8	DW	DW	DW	DW	FDW	DW	DW	DW	
PTR	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

SERVE ALL NON-CONFLICTING PHASES (PHASES 2,5,6,&7), ALL FLASHING YELLOW ARROWS INHIBITED

2	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
6	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
3	R	G	Y	G	G	Y	Y	R	G	Y	R	G	Y	R	G	Y	R	G	Y	R	G	Y	R	G	Y
7	R	R	R	Y	R	R	Y	R	R	Y	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R
4	R	R	R	R	R	R	R	R	R	R	R	R	G	G	Y	R	R	R	R	R	R	R	R	R	R
8	R	G	Y	R	G	Y	R	R	G	Y	R	G	Y	R	G	Y	R	G	Y	R	G	Y	R	G	Y
1	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
5	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Ped. 2+6	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
Ped. 4+8	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
PTR	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

8 PHASE

RAILROAD PREEMPTION MATRIX



P.C.O.I. Time Required: 14 Seconds

0 20 40 60
Scale In Feet

N

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
EXPIRES 12/31/08
8/27/08

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

ENGLISH

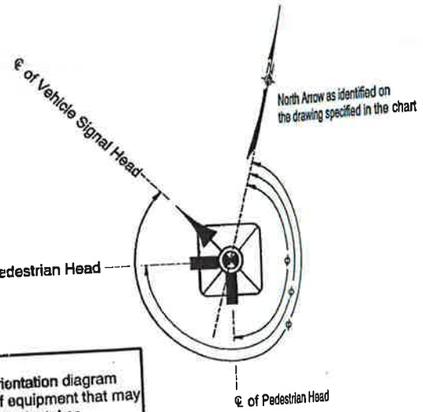
KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING

POLE ENTRANCE CHART

EQUIPMENT ON POLE					EQUIPMENT ON MAST ARM (Length in Feet and Equipment Type)									LUMINAIRES					
																		FIXTURE	
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			35	0.5 / V6L	0.5 / F	8.0 / V2	11.0 / C	18.0 / V2	25.0 / ST	27.5 / C	———	15	0	35	HPS	M-C-III	200
270	180			180		———	———	———	———	———	———	———	———						
180			0		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
195 & 285	180				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
-	180		345			———	———	———	———	———	———	———	———						
90 & 345																			

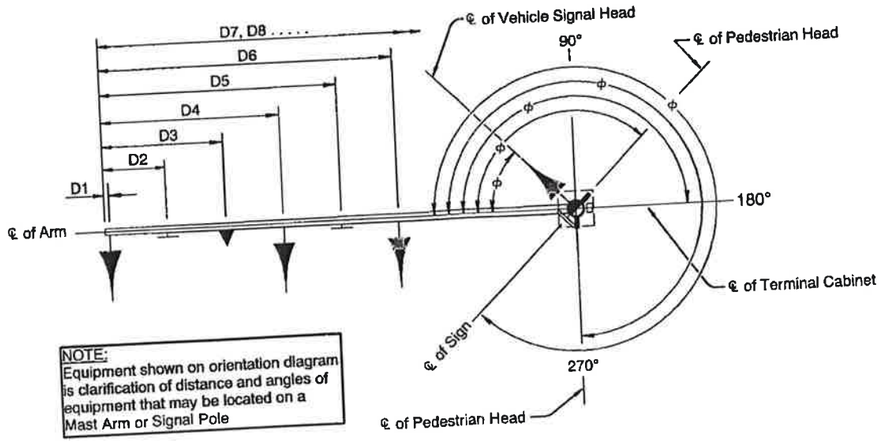
djustable Bracket Mount Tenon Not Required (See Std. Dwg. TM462)
Adjustable Bracket Mount Tenon Not Required (See Std. Dwg. TM462)
m w/Adjustable Bracket Mount Tenon Not Required (See Std Dwg TM465)
minum w/Stainless Steel Bands

. Dwg. TM465)
I.S. Dwg. 00000)
Sign (see Std. Dwg. TM465)



NOTE:
Equipment shown on the orientation diagram is a clarification of angles of equipment that may be located on a Pedestrian Pedestal or Vehicle Pedestal

PEDESTRIAN PEDESTAL / VEHICLE PEDESTAL ORIENTATION DIAGRAM



NOTE:
Equipment shown on orientation diagram is clarification of distance and angles of equipment that may be located on a Mast Arm or Signal Pole

MAST ARM POLE ORIENTATION DIAGRAM

REGISTERED PROFESSIONAL ENGINEER
19283PE
OREGON
JULY 17, 1997
CHARLES W RADOSTA
6/27/08
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 SIGNAL PLAN DETAILS

SHEET NO. TS-19

$TIME$ $FILEABBREV$ $USER$

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**	
	3	*4*	*3*	*4*	*3*	*4*	*3*	*4*	*3*	*4*	*3*	*4*	same as phase
Internal Logic Output	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 = normal, 1 = dark, 2 = flash WIG

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									
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X		X	X	X		X	X	X = on
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)

	Mode	CS Max Time
Phase 1	0	0
Phase 3	0	0
Phase 5	0	0
Phase 7	0	0

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.

5 Section Head Logic (next/2/2/9/4)

X Omits Y		Anti-Trap			Yellow Blanking LT	
		Trap Protected Phase		Next Phase	Phase	
X : Y						
6 : 1	0	1		< (5)	1	
8 : 3	0	3		< (7)	3	
2 : 5	0	5		< (1)	5	
4 : 7	0	7		< (3)	7	
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	0 - 255 sec
Passage	2.0	3.2	2.0	3.2	2.0	3.2	2.0	3.2	0.0 - 25.5 sec
Yellow	3.0	4.5	3.0	4.0	3.0	4.5	3.0	4.0	0.0 - 25.5 sec
Red Clearance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0 - 25.5 sec or 0 - 255 sec
Max 1	20	40	20	40	20	40	20	40	0 - 255 sec
Max 2	20	40	20	40	20	40	20	40	0 - 255 sec
Walk	0	5	0	5	0	5	0	5	0 - 255 sec
Ped Clear	0	8	0	9	0	7	0	12	0 - 255 sec
Seconds Per Actuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Time Before Reduction	0	0	0	0	0	0	0	0	0 - 255 sec
Time to Reduce	0	0	0	0	0	0	0	0	0 - 255 sec
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Max Variable Initial	0	0	0	0	0	0	0	0	0 - 255 sec
Auto Max Adjust	0.0	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
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	0	0	0	0	0	0	0	0	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	1	2	3	4	5	6	7	8	
Inhibit Simultaneous Gap Out	X		X		X		X		X = On
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	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec.

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*	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*	*0*	
	Switch Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Delay Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
	Stretch/Disconnect Time	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
	Delay/ Disconnect Mode	*0*	*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*	*0*	
	Switch Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Delay Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
	Stretch/Disconnect Time	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
	Delay/ Disconnect Mode	*0*	*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*	*0*	
	Switch Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Delay Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
	Stretch/Disconnect Time	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
	Delay/ Disconnect Mode	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 13

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**	
Phase Recalled	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 = none, 1 - 8 = phase 1 - 8

System Detectors (next/2/2/4/4)

System Detectors -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Local Detector	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 = none, 1 - 32 = phase 1 - 32

Overlaps / FYLTA (next/2/2/8)

Vehicle Overlaps		Phase or Movement	Phases 1	2	3	4	5	6	7	8	Extension Green	Clearance 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

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

Not Ped - Ped Overlaps (next/2/2/8/5)

Ped Overlaps ->		A	B	C	D	E	F	G	H
Overlaps	A								
	B								
	C								
	D								

X = Nor Ped Ped Overlap

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	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	
	B									0	0	
	C									0	0	
	D									0	0	
	E									0	0	
	F									0	0	
	G									0	0	
	H									0	0	

Phase, Ped Recall: X = on

Walk, Ped Clear: 0 - 255 seconds

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)

		1	2	3	4	5	6	7	8	
	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.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
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.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
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.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
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.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
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.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
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 - 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.

	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 - 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.

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=dwell, 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	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	0 - 255 sec
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	0	
Free Delta Max	Set A	0	0	0	0	0	0	0	0	
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	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	0 - 32	Entry Local Detector	0	0	0 - 32

Master Local				Master Local			
Master Mid - System Critical Detectors	0	0	0 - 16	Master Mid - System Critical Detectors	0	0	0 - 16

Force Off Percents

Inbound	1	3	4	5	7	8	Outbound	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

Week Program (next/2/4/2)

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	1	1	1	1	1	2
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1

0 = none, 1 - 15 = day plan

Exception Days (next/2/4/6)

	DOW	WOM	DOM	MOY	Day Prog.
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					
32					
33					
34					
35					
	0-10	0 - 5	0-31	0-12	0 - 15

Year Program (next/2/4/3)

From Date	To Date	Week Program
01/01/2013	12/31/2013	1

New Years Day - Date - January 1st

Martin Luther King Day - DOW WOM - 3rd Monday of January

President's Day - DOW WOM - 3rd Monday February

Memorial Day - DOW WOM - Last Monday May

Fourth of July - Date - July 4th

Labor Day - DOW WOM - 1st Monday September

Columbus Day - DOW WOM - 2nd Monday October

Veteran's Day - Date - November 11th

Thanksgiving - DOW WOM - 4th Thursday November

Christmas - Date - December 25th

Time Clock References (next/2/4/5)

Synch reference Mode	0	0 = timed, 1 = by event
Synch Reference Time	00:00	00:00 - 23:59
Daylight Savings Enable	X	X = on
Reset Time	00:00	00:00 - 23:59

Exception day headings - DOW = Day of Week, WOM = Week of Month, DOM = Day of Month, MOY = Month of Year

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 / Off / TOD	**75 - Max Plan 3**	**MP3**	*TOD*	On / Off / TOD
26 - Vehicle Call Phase 2	**VC2**	*TOD*		**76 - Max Plan 4**	**MP4**	*TOD*	
27 - Vehicle Call Phase 3	**VC3**	*TOD*		**77 - Max Plan 5**	**MP5**	*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 / Off / TOD	**175 - Dynamic Phase Length Enable C**	**DPC**	*TOD*	On / Off / TOD
126 - Not Used	**N/U**	*TOD*		**176 - Dynamic Phase Length Enable D**	**DPD**	*TOD*	
127 - Enable MOE Log to Call Phone 1	**MT1**	*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)

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			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

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 Resetable 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

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
Entry (Transition) Parameters	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	0 - 255 sec
	Delay Ped Omit	0	0	0	0	0	0	0	0	
	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	0 - 20
	Exit Coord Plan Time	0	0	0	0	0	0	0	0	0 - 60 min
	Exit to Max Plan	0	0	0	0	0	0	0	0	0 - 8
	Exit Free Time	0	0	0	0	0	0	0	0	0 - 60 min
	Override Time	0	0	0	0	0	0	0	0	
	Fail Time	0	0	0	0	0	0	0	0	
	Exit Mode Time	0	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 - 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 - 100% of currently used ped clearance			
Queue Delay Recovery		*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*
	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*

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

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*	
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**	*Herman and Teton*
Subnet Mask	*0.0.0.0*		
IP (ethernet) Port	*0*		
Central Port	*0*		
System Mode	*0*		
System Port	*1*	**Alternate System Port**	*0*

System ID	*0*	**AB3418e Physical Address**	*0*		**IP Address**	*0.0.0.0*	
Local ID	*0*	**AB3418e Group Address**	*0*		**Gateway Address**	*0.0.0.0*	

Baud Rates		**Flow Control**	**Port Use**
Port 1 (Slot A2 Upper)	*0*	*1*	*Suggested Use - FSK*
Port 2 (Slot A2 Lower)	*0*	*1*	*Suggested Use - Not Used*
Port 3 (Slot A1 Upper)	*0*	*0*	*Suggested Use - Modem to Central*
Port 4 (Slot A1 Lower or C50S)	*2*	*N\U*	*Suggested Use - RS232 to Laptop*
0 = 1200, 1 = 2400, 2 = 9600, 3 = 19200 baud		0 = off, 1 = on	

Reports

Volume Log Period	*15*	0-255 min. or below	**MOE Log Period**	*15*	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	*0*		**Soft Flash**	*1*	
Alarm 2	*0*		**Manual Control Enable (MCE)**	*4*	
Alarm 3	*0*		**Emergency or Railroad Preempt**	*1*	
Alarm 4	*0*		**Not Used**	*0*	
Alarm 5	*0*	0 = none	**Cycle Failure**	*2*	0 = none
Not Used	*0*	1 = schedule A	**Coordination Failure**	*2*	1 = schedule A
Not Used	*0*	2 = schedule B	**Keyboard use / Data Changed**	*3*	2 = schedule B
Not Used	*0*	3 = schedule C	**Coord Running / Free**	*2*	3 = schedule C
Power On / Off	*1*	4 = schedule R	**Cabinet Door**	*3*	4 = schedule R
Checksum Failure	*4*		**Extended Ped Pushbutton**	*0*	
Video / Detector Failure	*4*		**Monitor Status**	*4*	
Master to Local Comm Lost	*0*				

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*
Current Coord Plan	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Alternate TP Force Off Plan	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

0 = none
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*
	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*

0 - 255 sec
0 would time the normal function time

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**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
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42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			

Internal Logic cont.			
Step	**Inst.**	**Description**	**Comment**
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
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96			
97			
98			
99			
100			
101			
102			
103			
104			
105			
106			
107			
108			
109			
110			

Internal Logic cont.			
Step	**Inst.**	**Description**	**Comment**
111			
112			
113			
114			
115			
116			
117			
118			
119			
120			
121			
122			
123			
124			
125			
126			
127			
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151			
152			
153			
154			
155			
156			
157			
158			
159			
160			
161			
162			
163			
164			
165			

Internal Logic cont.			
Step	**Inst.**	**Description**	**Comment**
166			
167			
168			
169			
170			
171			
172			
173			
174			
175			
176			
177			
178			
179			
180			
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204			
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206			
207			
208			
209			
210			
211			
212			
213			
214			
215			
216			
217			
218			
219			
220			

Internal Logic cont.			
Step	**Inst.**	**Description**	**Comment**
221			
222			
223			
224			
225			
226			
227			
228			
229			
230			
231			
232			
233			
234			
235			
236			
237			
238			
239			
240			
241			
242			
243			
244			
245			
246			
247			
248			
249			
250			
251			
252			
253			
254			
255			
256			

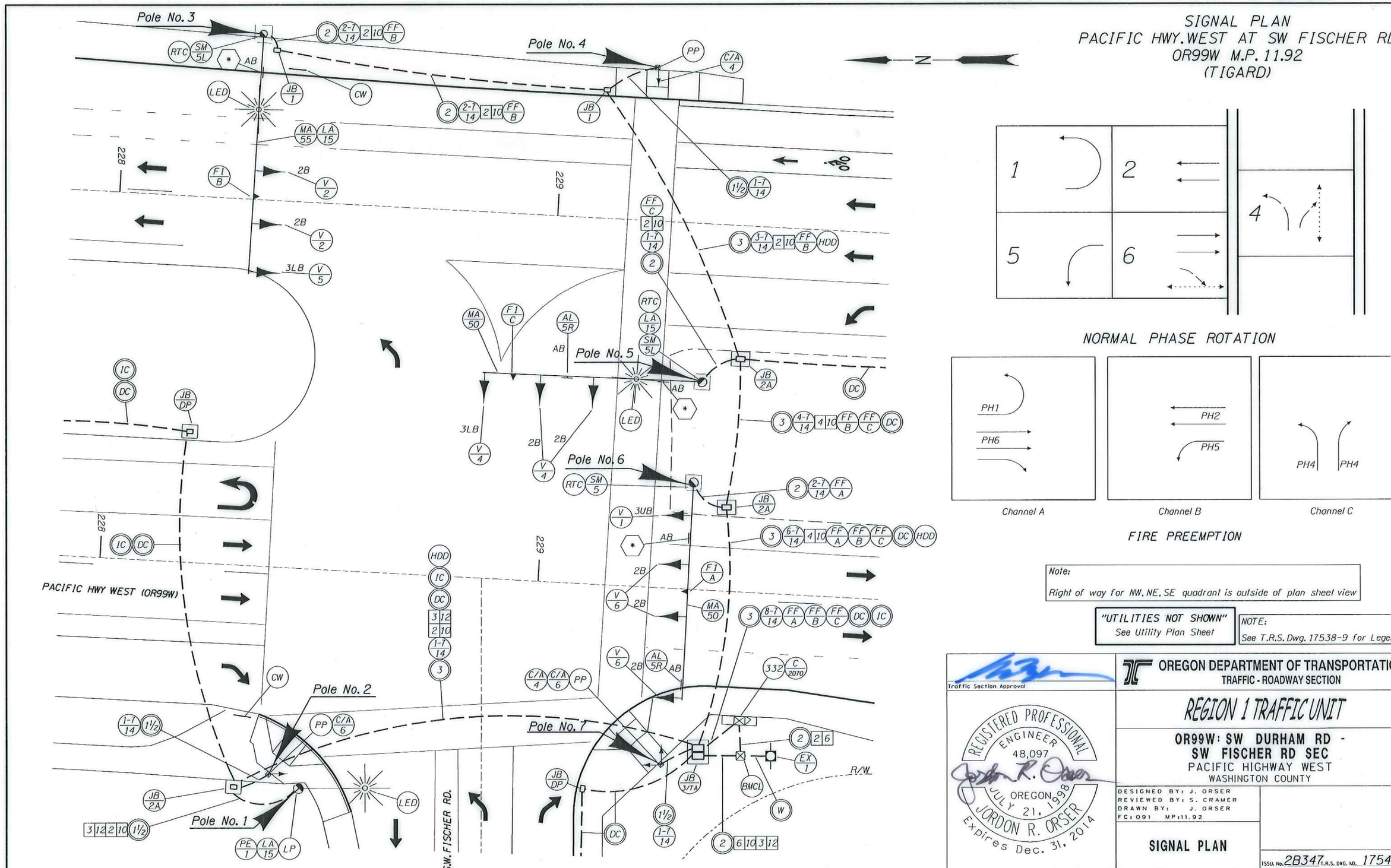
FYLTA - Continued (next/2/2/8/6)						
	Phase Pairs -->	**1 - 2**	**3 - 4**	**5 - 6**	**7 - 8**	
Gap-Dependent FYLTA (next/2/2/8/6-A)	**Detector Input**	*0*	*0*	*0*	*0*	0 = disable, 1 - 64 detectors
	Min Delay	*0.0*	*0.0*	*0.0*	*0.0*	0 - 255 sec
	Detector Gap	*255*	*255*	*255*	*255*	0 - 25.5 sec
	Max 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

Channel A | Channel B | Channel C

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

REGISTERED PROFESSIONAL ENGINEER 48,097 OREGON JULY 21, 1998 JORDON R. ORSER 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
FC: 091 MP: 11.92

SIGNAL PLAN

ISSU. No. 2B347 T.R.S. DWG. NO. 17540

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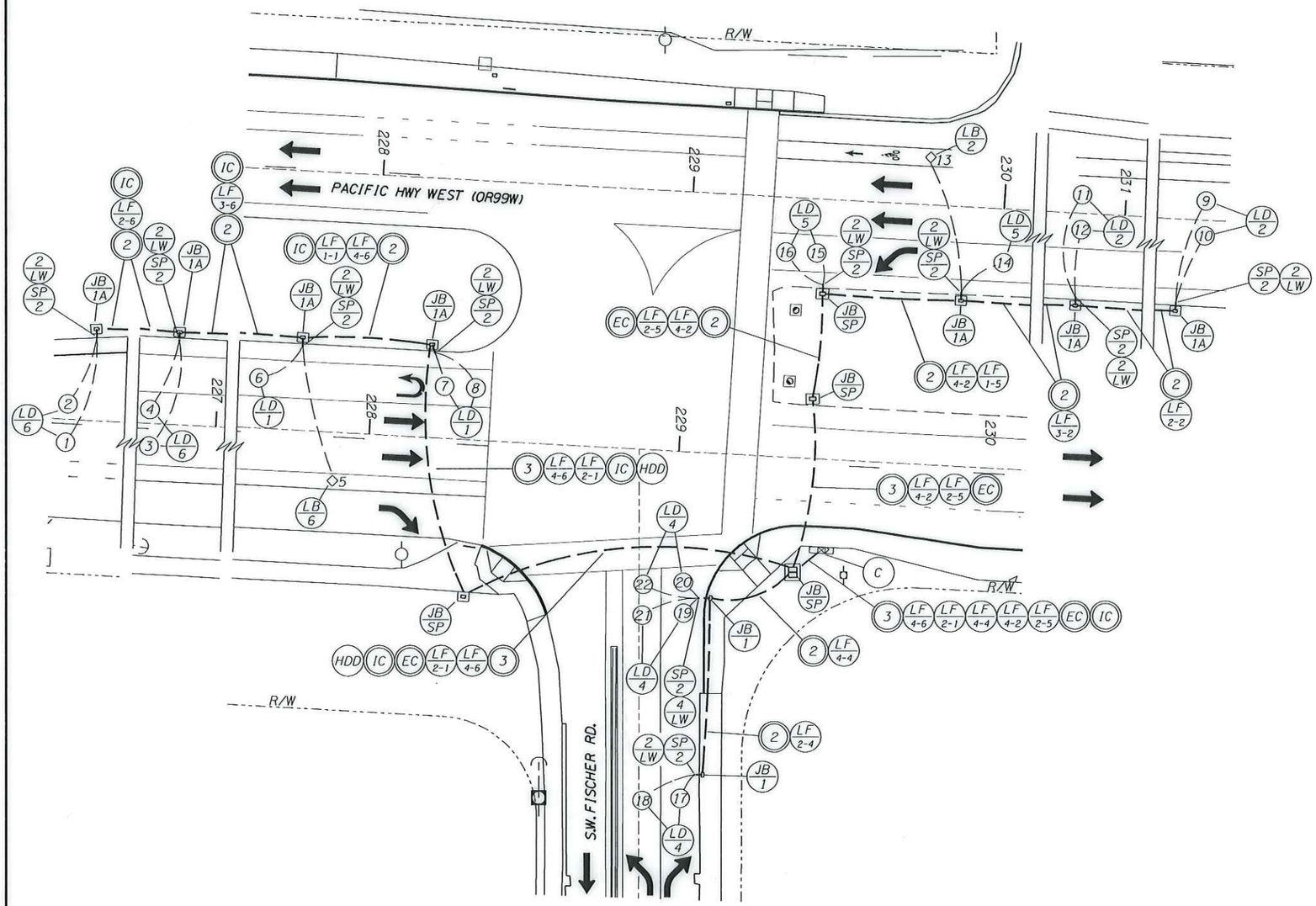
Rotation: 0° Scale: 1"=100'

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			
5 BIKE	50	6	J3L	22
6	75	1	I1	1
7	15	1	I9U	2
8	5			
9	320	2	I2U	9
10	320	2	I2L	10
11	160	2	I3U	11
12	160			
13 BIKE	50	2	I3L	12
14	75	5	J1	5
15	15	5	J9U	6
16	5			
17	75	4	I6U	14
18	75	4	I6L	15
19	15	4	I7U	16
20	5			
21	15	4	I7L	17
22	5			

Controller Cabinet

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

REGISTERED PROFESSIONAL ENGINEER
48,097
OREGON
JULY 21, 1998
JORDON R. ORSER
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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

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Rotation: 0° Scale: 1"=100'

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 I	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	1	5	Green	Full Permissiv	Phase
2	120	1	0	0	2	1	Green	Full Permissiv	Phase
3	140	81	0	0	3	1	Green	Full Permissiv	Phase
4	120	85	0	0	4	1	Green	Full Permissiv	Phase

Max Mode	Trans Ped Mo	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 P	Force Off Mo	Mode	Pri Min
1	20	0	0	0	0	0	Fixed	None	0
2	90	0	0	TRUE	TRUE	0	Fixed	None	0
4	30	0	0	0	0	0	Fixed	None	0
5	20	0	0	0	0	0	Fixed	None	0
6	90	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	Fixed	None	0
2	100	0	0	TRUE	TRUE	0	Fixed	None	0
4	20	0	0	0	0	0	Fixed	None	0
5	35	0	0	0	0	0	Fixed	None	0
6	85	0	0	TRUE	0	0	Fixed	None	0

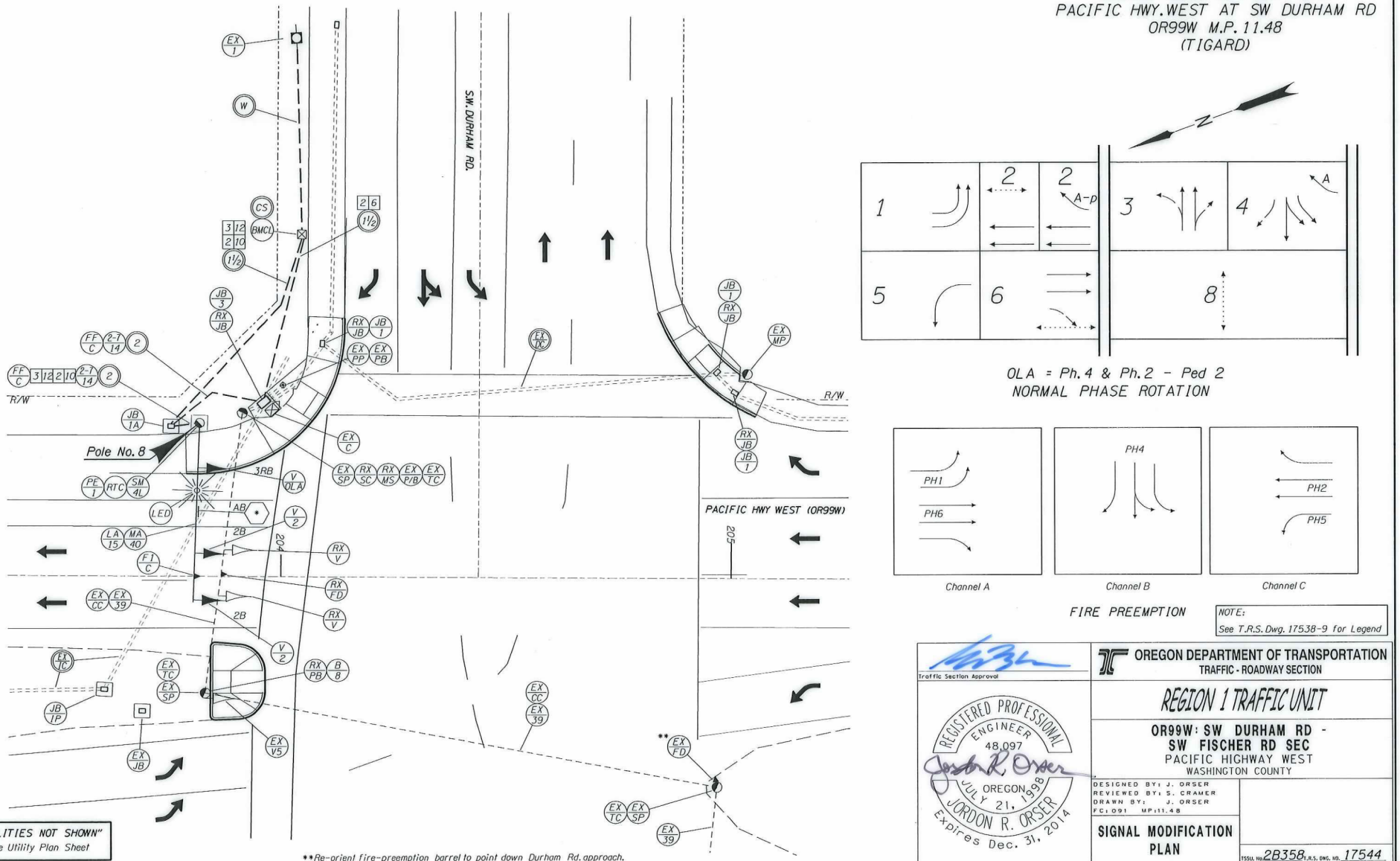
Pri Max	Pri Force Off Mode
0	Float
0	Float
0	Float
0	Float
0	Float

Table: 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

Channel A | Channel B | Channel C

FIRE PREEMPTION

NOTE:
See T.R.S. Dwg. 17538-9 for Legend

Traffic Section Approval

REGISTERED PROFESSIONAL ENGINEER
48,097
OREGON
JULY 21, 1998
JORDON R. ORSER
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
FC: 091 MP: 11.48

SIGNAL MODIFICATION PLAN

ISSU. No. 2B358 T.R.S. DWG. NO. 17544

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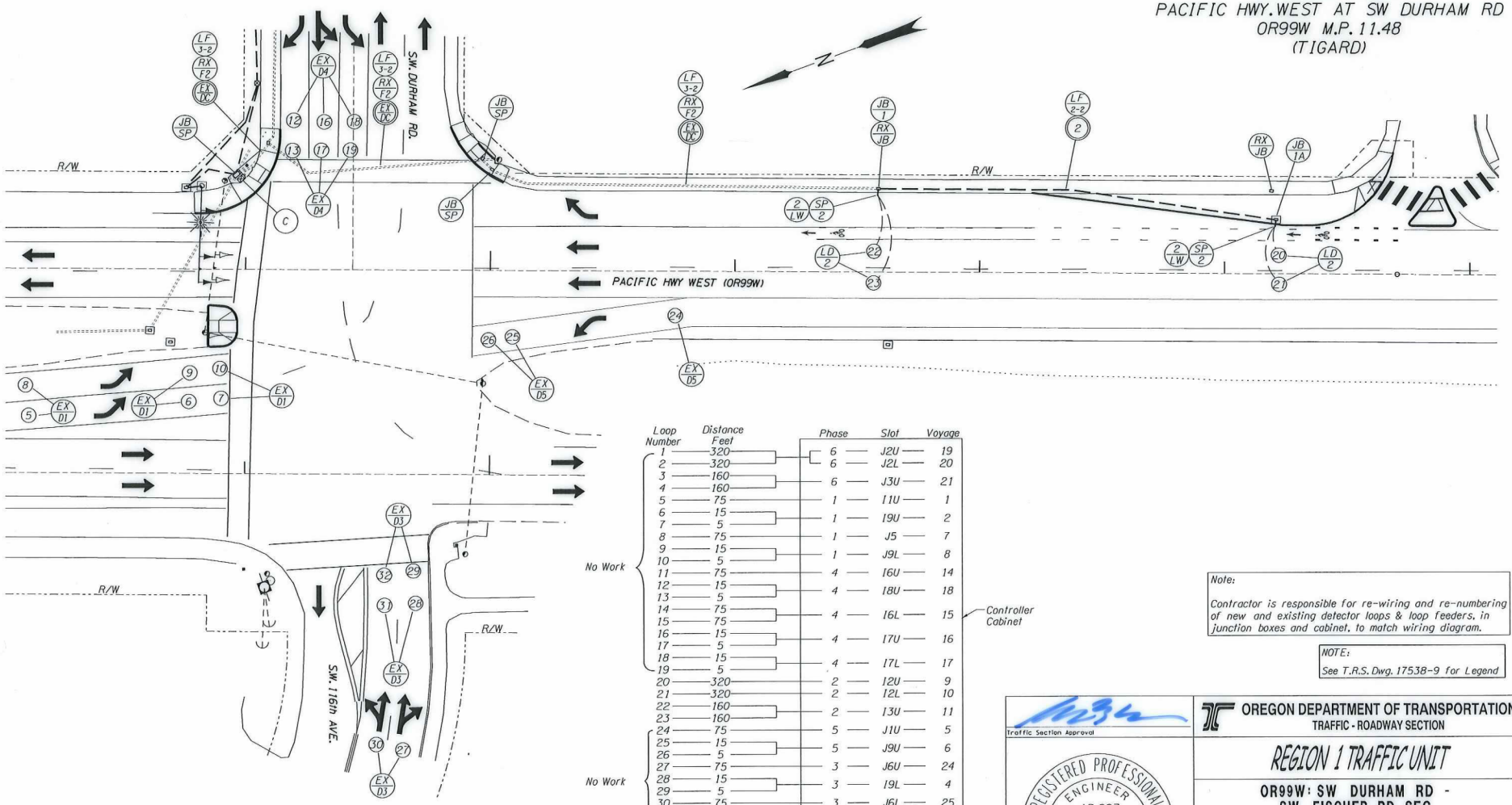
Rotation: 0° Scale: 1"=100'

17545

DETECTOR PLAN
PACIFIC HWY. WEST AT SW DURHAM RD
OR99W M.P. 11.48
(TIGARD)



Loop Number	Distance Feet	Phase	Slot	Voyage	
1	320	6	J2U	19	No Work
2	320	6	J2L	20	
3	160	6	J3U	21	
4	160				
5	75	1	I1U	1	
6	15	1	I9U	2	
7	5				
8	75	1	J5	7	
9	15	1	J9L	8	
10	5				
11	75	4	I6U	14	
12	15	4	I8U	18	
13	5				
14	75	4	I6L	15	Controller Cabinet
15	75				
16	15	4	I7U	16	
17	5				
18	15	4	I7L	17	
19	5				
20	320	2	I2U	9	
21	320	2	I2L	10	
22	160	2	I3U	11	
23	160				
24	75	5	J1U	5	No Work
25	15	5	J9U	6	
26	5				
27	75	3	J6U	24	
28	15	3	I9L	4	
29	5				
30	75	3	J6L	25	
31	15	3	I5U	3	
32	5				

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

Traffic Section Approval

REGISTERED PROFESSIONAL ENGINEER
48,097
OREGON
JULY 21, 1998
JORDON R. ORSER
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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

TSSU No. 28358 T.R.S. DWG. NO. 17545

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Rotation: 0° Scale: 1"=100'

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	1	2	Green	Full Permissive	Phase
2	120	83	0	0	2	2	Green	Full Permissive	Phase
3	140	49	0	0	3	1	Green	Full Permissive	Phase
4	120	117	0	0	4	2	Green	Full Permissive	Phase

Max Mode	Trans Ped Mo	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	Fixed	None	0
2	68	0	0	TRUE	0	0	Fixed	None	0
3	19	0	0	0	0	0	Fixed	None	0
4	25	0	0	0	0	0	Fixed	None	0
5	16	0	0	0	0	0	Fixed	None	0
6	80	0	0	TRUE	TRUE	0	Fixed	None	0
8	44	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	Fixed	None	0
2	51	0	0	TRUE	0	0	Fixed	None	0
3	24	0	0	0	0	0	Fixed	None	0
4	26	0	0	0	0	0	Fixed	None	0
5	21	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	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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1162	594	903	808	139	284
Future Volume (vph)	1162	594	903	808	139	284
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)	3374	1553	3400	3343	3127	2515
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3374	1553	3400	3343	3127	2515
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1236	632	961	860	148	302
RTOR Reduction (vph)	0	265	0	0	0	0
Lane Group Flow (vph)	1236	367	961	860	148	302
Confl. Peds. (#/hr)						4
Heavy Vehicles (%)	7%	4%	3%	8%	12%	13%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	1 4
Permitted Phases		2				
Actuated Green, G (s)	39.4	39.4	28.7	73.7	17.6	46.1
Effective Green, g (s)	41.4	41.4	30.3	75.7	19.6	41.1
Actuated g/C Ratio	0.40	0.40	0.29	0.73	0.19	0.40
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)	1352	622	997	2449	593	1000
v/s Ratio Prot	c0.37		c0.28	0.26	c0.05	0.12
v/s Ratio Perm		0.24				
v/c Ratio	0.91	0.59	0.96	0.35	0.25	0.30
Uniform Delay, d1	29.3	24.3	36.0	5.0	35.6	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.3	2.5	20.1	0.4	0.1	0.1
Delay (s)	39.6	26.8	56.1	5.4	35.7	21.4
Level of Service	D	C	E	A	D	C
Approach Delay (s/veh)	35.3			32.1	26.1	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	75.9%	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.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	210	232	39	791	723
Future Volume (vph)	40	210	232	39	791	723
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)	1597	1524	3195	1459	1750	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.48	1.00
Satd. Flow (perm)	1597	1524	3195	1459	883	3505
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	46	241	267	45	909	831
RTOR Reduction (vph)	0	47	0	38	0	0
Lane Group Flow (vph)	46	194	267	7	909	831
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	13%	6%	13%	8%	3%	3%
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)	12.3	77.0	14.4	14.4	74.1	79.1
Effective Green, g (s)	13.3	82.0	15.4	15.4	76.1	80.1
Actuated g/C Ratio	0.13	0.80	0.15	0.15	0.75	0.79
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)	208	1226	482	220	1175	2755
v/s Ratio Prot		0.13	0.08		c0.46	0.24
v/s Ratio Perm	c0.03			0.00	c0.12	
v/c Ratio	0.22	0.16	0.55	0.03	0.77	0.30
Uniform Delay, d1	39.7	2.2	40.1	36.9	9.5	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	2.0	0.1	3.4	0.3
Delay (s)	40.4	2.3	42.1	37.0	12.9	3.3
Level of Service	D	A	D	D	B	A
Approach Delay (s/veh)	8.4		41.4			8.3
Approach LOS	A		D			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	101.9	Sum of lost time (s)	12.5
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.

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	740	2	8	228	129	1	0	5	46	1	28
Future Vol, veh/h	61	740	2	8	228	129	1	0	5	46	1	28
Conflicting Peds, #/hr	0	0	7	7	0	0	2	0	0	0	0	2
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, %	7	3	2	38	6	6	100	2	20	7	2	11
Mvmt Flow	66	804	2	9	248	140	1	0	5	50	1	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	388	0	0	814	0	0	1213	1350	812	1272	1281	320
Stage 1	-	-	-	-	-	-	945	945	-	335	335	-
Stage 2	-	-	-	-	-	-	268	405	-	937	946	-
Critical Hdwy	4.17	-	-	4.48	-	-	8.1	6.52	6.4	7.17	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.17	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.17	5.52	-
Follow-up Hdwy	2.263	-	-	2.542	-	-	4.4	4.018	3.48	3.563	4.018	3.399
Pot Cap-1 Maneuver	1144	-	-	676	-	-	102	150	352	141	165	700
Stage 1	-	-	-	-	-	-	214	340	-	668	642	-
Stage 2	-	-	-	-	-	-	566	598	-	311	340	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1144	-	-	672	-	-	90	139	350	129	153	699
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	139	-	129	153	-
Stage 1	-	-	-	-	-	-	200	319	-	660	634	-
Stage 2	-	-	-	-	-	-	532	590	-	289	318	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.63	0.23	20.48	38.63
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	90	350	1144	-	-	672	-	-	186
HCM Lane V/C Ratio	0.012	0.016	0.058	-	-	0.013	-	-	0.438
HCM Control Delay (s/veh)	45.6	15.4	8.3	-	-	10.4	-	-	38.6
HCM Lane LOS	E	C	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0	0	0.2	-	-	0	-	-	2

3: JAE Access/SW 115th Avenue & SW Tualatin Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0
Total Delay (hr)	0.1	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	1.0
Total Del/Veh (s)	5.3	3.0	1.1	6.3	1.5	1.0	14.9	6.8	14.1	19.1	6.9	3.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Stop Del/Veh (s)	1.5	0.0	0.0	3.7	0.0	0.0	13.9	5.3	12.0	15.4	4.9	0.7

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	791	361	6	22	4
Future Vol, veh/h	1	791	361	6	22	4
Conflicting Peds, #/hr	1	0	0	1	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	90	90	90	90	90	90
Heavy Vehicles, %	2	3	7	2	5	2
Mvmt Flow	1	879	401	7	24	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	409	0	-	0	1287	405
Stage 1	-	-	-	-	405	-
Stage 2	-	-	-	-	881	-
Critical Hdwy	4.12	-	-	-	6.45	6.22
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.318
Pot Cap-1 Maneuver	1150	-	-	-	179	645
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	400	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1149	-	-	-	178	645
Mov Cap-2 Maneuver	-	-	-	-	302	-
Stage 1	-	-	-	-	665	-
Stage 2	-	-	-	-	400	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.01	0	17.01
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1149	-	-	-	329
HCM Lane V/C Ratio	0.001	-	-	-	0.088
HCM Control Delay (s/veh)	8.1	-	-	-	17
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	810	33	39	363	13	6
Future Vol, veh/h	810	33	39	363	13	6
Conflicting Peds, #/hr	0	2	2	0	1	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	7	15	17
Mvmt Flow	880	36	42	395	14	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	918	0	1381	900
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	480	-
Critical Hdwy	-	-	4.12	-	6.55	6.37
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.218	-	3.635	3.453
Pot Cap-1 Maneuver	-	-	743	-	149	316
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	596	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	742	-	140	316
Mov Cap-2 Maneuver	-	-	-	-	266	-
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	561	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.98	18.89
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	280	-	-	742	-
HCM Lane V/C Ratio	0.074	-	-	0.057	-
HCM Control Delay (s/veh)	18.9	-	-	10.1	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	2	24	87	4
Future Vol, veh/h	1	1	2	24	87	4
Conflicting Peds, #/hr	0	0	4	0	0	4
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	85	85	85	85	85	85
Heavy Vehicles, %	2	100	50	17	2	25
Mvmt Flow	1	1	2	28	102	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	142	109	111	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	7.2	4.6	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	4.2	2.65	-	-	-
Pot Cap-1 Maneuver	851	734	1228	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	990	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	843	732	1223	-	-	-
Mov Cap-2 Maneuver	843	-	-	-	-	-
Stage 1	911	-	-	-	-	-
Stage 2	986	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.61	0.61	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	138	-	783	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s/veh)	7.9	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	20	23	59	29
Future Vol, veh/h	1	2	20	23	59	29
Conflicting Peds, #/hr	0	0	5	0	0	5
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	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	17	5	2
Mvmt Flow	1	3	27	31	80	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	189	104	124	0	-	0
Stage 1	104	-	-	-	-	-
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	800	950	1463	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	777	946	1456	-	-	-
Mov Cap-2 Maneuver	777	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.1	3.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	837	-	882	-	-
HCM Lane V/C Ratio	0.019	-	0.005	-	-
HCM Control Delay (s/veh)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

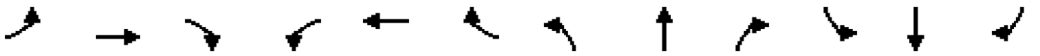
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	58	40	50	6
Future Vol, veh/h	0	8	58	40	50	6
Conflicting Peds, #/hr	1	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	13	2	10	4	17
Mvmt Flow	0	10	74	51	64	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	275	74	78	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Critical Hdwy	6.42	6.33	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.417	2.218	-	-	-
Pot Cap-1 Maneuver	715	958	1521	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	833	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	671	952	1512	-	-	-
Mov Cap-2 Maneuver	671	-	-	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.82	4.44	0
HCM LOS	A		

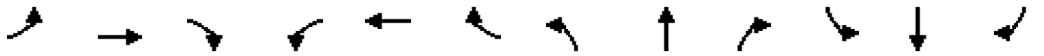
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1065	-	952	-	-
HCM Lane V/C Ratio	0.049	-	0.011	-	-
HCM Control Delay (s/veh)	7.5	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	101	21	15	12	27	17	237	49	211	517	31
Future Volume (vph)	7	101	21	15	12	27	17	237	49	211	517	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		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	0.97		1.00	0.90		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)	1583	1801		1289	1577		1702	3073		1768	3421	
Flt Permitted	0.95	1.00		0.95	1.00		0.39	1.00		0.55	1.00	
Satd. Flow (perm)	1583	1801		1289	1577		703	3073		1020	3421	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	8	115	24	17	14	31	19	269	56	240	588	35
RTOR Reduction (vph)	0	7	0	0	26	0	0	13	0	0	3	0
Lane Group Flow (vph)	8	132	0	17	19	0	19	312	0	240	621	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	14%	2%	5%	40%	17%	4%	6%	14%	14%	2%	4%	13%
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)	0.7	8.8		0.9	9.0		31.1	19.3		31.1	30.4	
Effective Green, g (s)	1.7	9.8		1.9	10.0		33.1	20.3		31.1	30.4	
Actuated g/C Ratio	0.03	0.16		0.03	0.16		0.54	0.33		0.51	0.50	
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)	44	290		40	259		410	1026		666	1710	
v/s Ratio Prot	0.01	c0.07		c0.01	0.01		0.00	0.10		c0.07	c0.18	
v/s Ratio Perm							0.02			0.11		
v/c Ratio	0.18	0.46		0.43	0.07		0.05	0.30		0.36	0.36	
Uniform Delay, d1	28.9	23.1		28.9	21.5		6.4	15.0		8.4	9.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	1.1		7.1	0.1		0.0	0.2		0.3	0.1	
Delay (s)	30.9	24.2		36.0	21.6		6.5	15.2		8.7	9.4	
Level of Service	C	C		D	C		A	B		A	A	
Approach Delay (s/veh)		24.6			25.6			14.7			9.2	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	101	21	15	12	27	17	237	49	211	517	31
Future Volume (veh/h)	7	101	21	15	12	27	17	237	49	211	517	31
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	1693	1870	1826	1307	1648	1841	1811	1693	1693	1870	1841	1707
Adj Flow Rate, veh/h	8	115	24	17	14	31	19	269	56	240	588	35
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
Percent Heavy Veh, %	14	2	5	40	17	4	6	14	14	2	4	13
Cap, veh/h	59	240	50	65	80	176	435	653	134	602	1234	73
Arrive On Green	0.04	0.16	0.14	0.05	0.17	0.15	0.05	0.25	0.22	0.17	0.37	0.37
Sat Flow, veh/h	1612	1500	313	1245	456	1009	1725	2656	544	1781	3354	199
Grp Volume(v), veh/h	8	0	139	17	0	45	19	161	164	240	306	317
Grp Sat Flow(s),veh/h/ln	1612	0	1813	1245	0	1464	1725	1608	1592	1781	1749	1804
Q Serve(g_s), s	0.2	0.0	3.2	0.6	0.0	1.2	0.3	3.8	3.9	4.3	6.1	6.1
Cycle Q Clear(g_c), s	0.2	0.0	3.2	0.6	0.0	1.2	0.3	3.8	3.9	4.3	6.1	6.1
Prop In Lane	1.00		0.17	1.00		0.69	1.00		0.34	1.00		0.11
Lane Grp Cap(c), veh/h	59	0	289	65	0	256	435	395	391	602	644	664
V/C Ratio(X)	0.13	0.00	0.48	0.26	0.00	0.18	0.04	0.41	0.42	0.40	0.48	0.48
Avail Cap(c_a), veh/h	569	0	1240	302	0	1001	1156	1099	1088	1285	1543	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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	17.4	20.7	0.0	16.2	7.7	14.3	14.5	9.9	11.0	11.0
Incr Delay (d2), s/veh	1.0	0.0	1.2	2.1	0.0	0.3	0.0	0.7	0.7	0.4	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	0.1	0.0	1.2	0.2	0.0	0.4	0.1	1.1	1.2	1.2	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.2	0.0	18.7	22.8	0.0	16.6	7.8	15.0	15.2	10.4	11.5	11.5
LnGrp LOS	C		B	C		B	A	B	B	B	B	B
Approach Vol, veh/h		147			62			344			863	
Approach Delay, s/veh		18.8			18.3			14.7			11.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	15.1	6.3	11.2	6.1	21.7	5.7	11.9
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	6.3	5.9	2.6	5.2	2.3	8.1	2.2	3.2
Green Ext Time (p_c), s	1.0	1.5	0.0	1.3	0.0	3.1	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	13.2
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

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	17	301	22	8	43	0	15	1	12	0	1	1
Future Vol, veh/h	17	301	22	8	43	0	15	1	12	0	1	1
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
Heavy Vehicles, %	2	2	23	13	14	2	13	2	2	2	2	2
Mvmt Flow	19	338	25	9	48	0	17	1	13	0	1	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10	8	8.2	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	5%	16%	0%
Vol Thru, %	4%	89%	84%	50%
Vol Right, %	43%	6%	0%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	340	51	2
LT Vol	15	17	8	0
Through Vol	1	301	43	1
RT Vol	12	22	0	1
Lane Flow Rate	31	382	57	2
Geometry Grp	1	1	1	1
Degree of Util (X)	0.043	0.425	0.073	0.003
Departure Headway (Hd)	4.928	4.007	4.602	4.629
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	731	894	782	777
Service Time	2.929	2.057	2.606	2.633
HCM Lane V/C Ratio	0.042	0.427	0.073	0.003
HCM Control Delay, s/veh	8.2	10	8	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	2.1	0.2	0

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	149	145	32	74	7	18
Future Vol, veh/h	149	145	32	74	7	18
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	9	2	2	17
Mvmt Flow	180	175	39	89	8	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	128	0	-	0	617	83
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	4.13	-	-	-	6.42	6.37
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.453
Pot Cap-1 Maneuver	1452	-	-	-	454	936
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	588	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1452	-	-	-	391	936
Mov Cap-2 Maneuver	-	-	-	-	391	-
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	SB
HCM Control Delay, s/v	3.97	0	10.47
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	912	-	-	-	391	936
HCM Lane V/C Ratio	0.124	-	-	-	0.022	0.023
HCM Control Delay (s/veh)	7.8	0	-	-	14.4	8.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	152	106	0	0	0
Future Vol, veh/h	0	152	106	0	0	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	82	82	82	82	82	82
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	0	185	129	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	129	0	-	0	315	129
Stage 1	-	-	-	-	129	-
Stage 2	-	-	-	-	185	-
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	1456	-	-	-	678	921
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1456	-	-	-	678	921
Mov Cap-2 Maneuver	-	-	-	-	678	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1456	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	131	96	29	12	8
Future Vol, veh/h	20	131	96	29	12	8
Conflicting Peds, #/hr	12	0	0	12	0	1
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	83	83	83	83	83	83
Heavy Vehicles, %	2	5	5	4	2	2
Mvmt Flow	24	158	116	35	14	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	163	0	-	0	351	146
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	206	-
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	1416	-	-	-	646	901
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1400	-	-	-	620	890
Mov Cap-2 Maneuver	-	-	-	-	620	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	819	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.01	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	238	-	-	-	620	890
HCM Lane V/C Ratio	0.017	-	-	-	0.023	0.011
HCM Control Delay (s/veh)	7.6	0	-	-	10.9	9.1
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	131	3	0	137	0	0	0	0	0	0	0
Future Vol, veh/h	0	131	3	0	137	0	0	0	0	0	0	0
Conflicting Peds, #/hr	8	0	3	3	0	8	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	5	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	0	170	4	0	178	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	186	0	0	177	0	0	354	361	175	356	363	187
Stage 1	-	-	-	-	-	-	175	175	-	186	186	-
Stage 2	-	-	-	-	-	-	179	186	-	170	177	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1389	-	-	1399	-	-	601	566	868	599	565	855
Stage 1	-	-	-	-	-	-	827	754	-	816	746	-
Stage 2	-	-	-	-	-	-	823	746	-	832	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1378	-	-	1395	-	-	599	560	866	595	559	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	560	-	595	559	-
Stage 1	-	-	-	-	-	-	824	752	-	810	740	-
Stage 2	-	-	-	-	-	-	822	740	-	832	751	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1378	-	-	1395	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

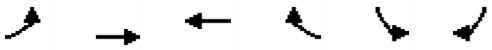
Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	69	64	123	67	23	35
Future Vol, veh/h	69	64	123	67	23	35
Conflicting Peds, #/hr	0	0	2	0	0	2
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	86	86	86	86	86	86
Heavy Vehicles, %	3	2	4	2	9	3
Mvmt Flow	80	74	143	78	27	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	413	49	69	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.43	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	593	1019	1519	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	533	1018	1516	-	-	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.7	4.93	0
HCM LOS	B		

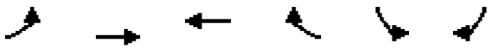
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1165	-	691	-	-
HCM Lane V/C Ratio	0.094	-	0.224	-	-
HCM Control Delay (s/veh)	7.6	0	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	370	268	190	47	6
Future Volume (vph)	18	370	268	190	47	6
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	0.94		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1702	1624	1629		1626	1583
Flt Permitted	0.41	1.00	1.00		0.95	1.00
Satd. Flow (perm)	738	1624	1629		1626	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	402	291	207	51	7
RTOR Reduction (vph)	0	0	20	0	0	6
Lane Group Flow (vph)	20	402	478	0	51	1
Confl. Peds. (#/hr)	2			2		
Heavy Vehicles (%)	6%	17%	12%	5%	11%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	26.6	32.0	25.9		4.1	4.1
Effective Green, g (s)	29.4	33.4	27.3		6.6	6.6
Actuated g/C Ratio	0.61	0.70	0.57		0.14	0.14
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)	494	1130	926		223	217
v/s Ratio Prot	0.00	c0.25	c0.29		c0.03	
v/s Ratio Perm	0.02					0.00
v/c Ratio	0.04	0.36	0.52		0.23	0.00
Uniform Delay, d1	5.4	3.0	6.3		18.4	17.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	0.5		0.4	0.0
Delay (s)	5.4	3.2	6.8		18.8	17.9
Level of Service	A	A	A		B	B
Approach Delay (s/veh)		3.3	6.8		18.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	370	268	190	47	6
Future Volume (veh/h)	18	370	268	190	47	6
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	1811	1648	1722	1826	1737	1870
Adj Flow Rate, veh/h	20	402	291	207	51	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	17	12	5	11	2
Cap, veh/h	578	1177	535	380	184	177
Arrive On Green	0.06	0.71	0.57	0.54	0.11	0.11
Sat Flow, veh/h	1725	1648	935	665	1654	1585
Grp Volume(v), veh/h	20	402	0	498	51	7
Grp Sat Flow(s),veh/h/ln	1725	1648	0	1601	1654	1585
Q Serve(g_s), s	0.0	4.2	0.0	9.0	1.3	0.2
Cycle Q Clear(g_c), s	0.0	4.2	0.0	9.0	1.3	0.2
Prop In Lane	1.00			0.42	1.00	1.00
Lane Grp Cap(c), veh/h	578	1177	0	915	184	177
V/C Ratio(X)	0.03	0.34	0.00	0.54	0.28	0.04
Avail Cap(c_a), veh/h	912	1669	0	2285	1173	1124
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	7.6	2.5	0.0	6.3	18.7	18.2
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.5	0.6	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	0.3	0.0	1.9	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	7.6	2.7	0.0	6.9	19.3	18.2
LnGrp LOS	A	A		A	B	B
Approach Vol, veh/h		422	498		58	
Approach Delay, s/veh		2.9	6.9		19.2	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.7		9.1	6.5	30.2
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		6.2		3.3	2.0	11.0
Green Ext Time (p_c), s		9.2		0.1	0.0	13.8

Intersection Summary		
HCM 7th Control Delay, s/veh	5.9	
HCM 7th LOS	A	

Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	640	185	65	322	74	58
Future Vol, veh/h	640	185	65	322	74	58
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	96	96	96	96	96	96
Heavy Vehicles, %	3	3	4	3	14	12
Mvmt Flow	667	193	68	335	77	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	860	0	1235	764
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	471	-
Critical Hdwy	-	-	4.14	-	6.54	6.32
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	-	-	2.236	-	3.626	3.408
Pot Cap-1 Maneuver	-	-	773	-	184	388
Stage 1	-	-	-	-	439	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	772	-	168	388
Mov Cap-2 Maneuver	-	-	-	-	168	-
Stage 1	-	-	-	-	439	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.7	31.41
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	168	388	-	-	772	-
HCM Lane V/C Ratio	0.459	0.156	-	-	0.088	-
HCM Control Delay (s/veh)	43.5	16	-	-	10.1	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2.1	0.5	-	-	0.3	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	640	185	65	322	74	58
Future Volume (Veh/h)	640	185	65	322	74	58
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)	667	193	68	335	77	60
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			861		1236	765
vC1, stage 1 conf vol					765	
vC2, stage 2 conf vol					471	
vCu, unblocked vol			861		1236	765
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)					5.5	
tF (s)			2.2		3.6	3.4
p0 queue free %			91		79	85
cM capacity (veh/h)			772		368	387

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	860	68	335	77	60
Volume Left	0	68	0	77	0
Volume Right	193	0	0	0	60
cSH	1700	772	1700	368	387
Volume to Capacity	0.51	0.09	0.20	0.21	0.15
Queue Length 95th (ft)	0	7	0	19	14
Control Delay (s/veh)	0.0	10.1	0.0	17.3	16.0
Lane LOS		B		C	C
Approach Delay (s/veh)	0.0	1.7		16.7	
Approach LOS				C	

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

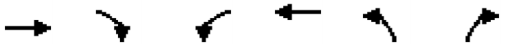
Intersection	
Int Delay, s/veh	8.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	36	12	36	82	101	85
Future Vol, veh/h	36	12	36	82	101	85
Conflicting Peds, #/hr	0	44	44	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	62	62	62	62	62	62
Heavy Vehicles, %	3	2	17	5	5	7
Mvmt Flow	58	19	58	132	163	137

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	121	0	360	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	248	-
Critical Hdwy	-	-	4.27	-	6.45	6.27
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.353	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	1378	-	633	928
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1320	-	577	889
Mov Cap-2 Maneuver	-	-	-	-	577	-
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	749	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.4	14.23
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	688	-	-	549	-
HCM Lane V/C Ratio	0.436	-	-	0.044	-
HCM Control Delay (s/veh)	14.2	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0.1	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	36	12	36	82	101	85
Future Volume (Veh/h)	36	12	36	82	101	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	58	19	58	132	163	137
Pedestrians					44	
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			121		360	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			121		360	112
tC, single (s)			4.3		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.4
p0 queue free %			96		72	85
cM capacity (veh/h)			1321		580	889

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	77	190	300
Volume Left	0	58	163
Volume Right	19	0	137
cSH	1700	1321	690
Volume to Capacity	0.05	0.04	0.44
Queue Length 95th (ft)	0	3	55
Control Delay (s/veh)	0.0	2.7	14.2
Lane LOS		A	B
Approach Delay (s/veh)	0.0	2.7	14.2
Approach LOS			B

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	198	1393	40	0	1706
Future Vol, veh/h	0	198	1393	40	0	1706
Conflicting Peds, #/hr	0	1	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	96	96	96	96	96	96
Heavy Vehicles, %	2	6	8	3	2	6
Mvmt Flow	0	206	1451	42	0	1777

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	727	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.02	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.36	-	-	-	-
Pot Cap-1 Maneuver	0	358	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	357	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	27.94	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	357	-
HCM Lane V/C Ratio	-	0.577	-
HCM Control Delay (s/veh)	-	27.9	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	3.5	-

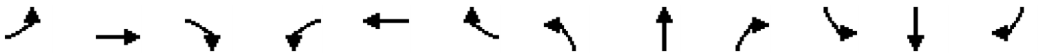


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	198	1393	40	0	1706
Future Volume (Veh/h)	0	198	1393	40	0	1706
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	206	1451	42	0	1777
Pedestrians	1					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			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2341	728			1452	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2341	728			1452	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	53			100	
cM capacity (veh/h)	30	438			462	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	206	726	726	42	889	889
Volume Left	0	0	0	0	0	0
Volume Right	206	0	0	42	0	0
cSH	438	1700	1700	1700	1700	1700
Volume to Capacity	0.47	0.43	0.43	0.02	0.52	0.52
Queue Length 95th (ft)	61	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	1.2		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

* User Entered Value



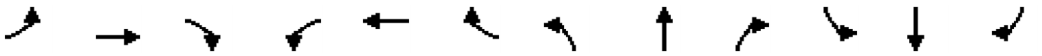
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	201	198	23	220	9	252	144	36	15	206	6
Future Volume (vph)	10	201	198	23	220	9	252	144	36	15	206	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	0.93		1.00	0.99		1.00	0.97		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)	1500	1484		1543	1766		1612	1577		1687	1799	
Flt Permitted	0.57	1.00		0.28	1.00		0.41	1.00		0.64	1.00	
Satd. Flow (perm)	904	1484		459	1766		700	1577		1129	1799	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	11	216	213	25	237	10	271	155	39	16	222	6
RTOR Reduction (vph)	0	20	0	0	1	0	0	0	0	0	1	0
Lane Group Flow (vph)	11	409	0	25	246	0	271	194	0	16	227	0
Confl. Peds. (#/hr)	2					2						
Heavy Vehicles (%)	20%	14%	23%	17%	7%	2%	12%	14%	28%	7%	4%	50%
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)	32.5	31.7		36.7	33.8		40.3	34.5		24.2	22.4	
Effective Green, g (s)	32.5	32.2		36.7	34.3		40.3	35.0		24.2	22.9	
Actuated g/C Ratio	0.36	0.36		0.41	0.38		0.45	0.39		0.27	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)	332	531		222	673		454	613		315	458	
v/s Ratio Prot	0.00	c0.28		c0.00	0.14		c0.09	0.12		0.00	0.13	
v/s Ratio Perm	0.01			0.04			c0.17			0.01		
v/c Ratio	0.03	0.77		0.11	0.37		0.60	0.32		0.05	0.50	
Uniform Delay, d1	18.5	25.6		17.3	20.0		17.0	19.1		24.2	28.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	6.9		0.1	0.4		1.4	0.3		0.0	0.9	
Delay (s)	18.5	32.5		17.4	20.3		18.4	19.4		24.3	29.5	
Level of Service	B	C		B	C		B	B		C	C	
Approach Delay (s/veh)		32.1			20.1			18.9			29.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.5%	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

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	201	198	23	220	9	252	144	36	15	206	6
Future Volume (veh/h)	10	201	198	23	220	9	252	144	36	15	206	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		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	1604	1693	1559	1648	1796	1870	1722	1693	1485	1796	1841	1159
Adj Flow Rate, veh/h	11	216	213	25	237	10	271	155	39	16	222	6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	20	14	23	17	7	2	12	14	28	7	4	50
Cap, veh/h	418	308	303	275	697	29	407	401	101	314	295	8
Arrive On Green	0.01	0.39	0.39	0.03	0.41	0.40	0.16	0.31	0.30	0.02	0.17	0.16
Sat Flow, veh/h	1527	781	770	1570	1711	72	1640	1305	328	1711	1784	48
Grp Volume(v), veh/h	11	0	429	25	0	247	271	0	194	16	0	228
Grp Sat Flow(s),veh/h/ln	1527	0	1552	1570	0	1783	1640	0	1633	1711	0	1832
Q Serve(g_s), s	0.3	0.0	16.5	0.7	0.0	6.8	9.2	0.0	6.7	0.6	0.0	8.5
Cycle Q Clear(g_c), s	0.3	0.0	16.5	0.7	0.0	6.8	9.2	0.0	6.7	0.6	0.0	8.5
Prop In Lane	1.00		0.50	1.00		0.04	1.00		0.20	1.00		0.03
Lane Grp Cap(c), veh/h	418	0	611	275	0	726	407	0	502	314	0	302
V/C Ratio(X)	0.03	0.00	0.70	0.09	0.00	0.34	0.67	0.00	0.39	0.05	0.00	0.75
Avail Cap(c_a), veh/h	826	0	1188	672	0	1340	604	0	1319	762	0	1428
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	13.1	0.0	18.2	14.4	0.0	14.5	19.2	0.0	19.4	24.3	0.0	28.3
Incr Delay (d2), s/veh	0.0	0.0	1.6	0.1	0.0	0.3	0.7	0.0	0.5	0.0	0.0	4.1
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	5.3	0.2	0.0	2.5	3.2	0.0	2.4	0.2	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	0.0	19.8	14.5	0.0	14.8	19.9	0.0	20.0	24.4	0.0	32.5
LnGrp LOS	B		B	B		B	B		B	C		C
Approach Vol, veh/h		440			272			465			244	
Approach Delay, s/veh		19.6			14.8			19.9			31.9	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	33.0	15.5	16.8	5.0	34.0	5.4	26.9
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	2.7	18.5	11.2	10.5	2.3	8.8	2.6	8.7
Green Ext Time (p_c), s	0.0	9.0	0.3	0.8	0.0	5.4	0.0	2.8

Intersection Summary	
HCM 7th Control Delay, s/veh	20.9
HCM 7th LOS	C



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	220	339	129	1488	18	1365	98
Future Volume (vph)	220	339	129	1488	18	1365	98
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	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	1528	1656	3312	1770	3406	1452
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1736	1528	1656	3312	1770	3406	1452
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	229	353	134	1550	19	1422	102
RTOR Reduction (vph)	0	171	0	0	0	0	31
Lane Group Flow (vph)	229	182	134	1550	19	1422	71
Confl. Peds. (#/hr)		5	3				3
Heavy Vehicles (%)	4%	4%	9%	9%	2%	6%	8%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	21.7	21.7	16.3	98.4	4.4	85.5	85.5
Effective Green, g (s)	22.7	22.7	17.8	100.4	4.9	87.5	87.5
Actuated g/C Ratio	0.16	0.16	0.13	0.72	0.04	0.63	0.63
Clearance Time (s)	5.0	5.0	5.5	6.0	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5	2.3	4.5	4.5
Lane Grp Cap (vph)	281	247	210	2375	61	2128	907
v/s Ratio Prot	c0.13		0.08	c0.47	0.01	c0.42	
v/s Ratio Perm		0.12					0.05
v/c Ratio	0.81	0.74	0.64	0.65	0.31	0.67	0.08
Uniform Delay, d1	56.6	55.8	58.0	10.5	65.9	16.9	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.13	1.25	0.90
Incremental Delay, d2	16.0	10.3	5.1	1.4	1.4	1.4	0.1
Delay (s)	72.7	66.1	63.2	11.9	76.1	22.6	9.4
Level of Service	E	E	E	B	E	C	A
Approach Delay (s/veh)	68.7			16.0		22.4	
Approach LOS	E			B		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	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

07/15/2025



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	220	339	129	1488	18	1365	98
Future Volume (veh/h)	220	339	129	1488	18	1365	98
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	1841	1841	1767	1767		1811	1781
Adj Flow Rate, veh/h	229	176	134	1550		1422	102
Peak Hour Factor	0.96	0.96	0.96	0.96		0.96	0.96
Percent Heavy Veh, %	4	4	9	9		6	8
Cap, veh/h	271	241	238	2645		2114	925
Arrive On Green	0.15	0.15	0.14	0.79		1.00	1.00
Sat Flow, veh/h	1753	1560	1682	3445		3532	1506
Grp Volume(v), veh/h	229	176	134	1550		1422	102
Grp Sat Flow(s),veh/h/ln	1753	1560	1682	1678		1721	1506
Q Serve(g_s), s	17.8	15.0	10.4	25.5		0.0	0.0
Cycle Q Clear(g_c), s	17.8	15.0	10.4	25.5		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	271	241	238	2645		2114	925
V/C Ratio(X)	0.84	0.73	0.56	0.59		0.67	0.11
Avail Cap(c_a), veh/h	326	290	238	2645		2114	925
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		0.77	0.77
Uniform Delay (d), s/veh	57.5	56.4	56.0	5.8		0.0	0.0
Incr Delay (d2), s/veh	14.9	6.5	2.3	1.0		1.3	0.2
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	13.1	4.5	7.1		0.4	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	72.4	62.9	58.3	6.8		1.3	0.2
LnGrp LOS	E	E	E	A		A	A
Approach Vol, veh/h	405			1684		1524	
Approach Delay, s/veh	68.2			10.9		1.3	
Approach LOS	E			B		A	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		114.3		25.7	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		27.5		19.8	12.4	2.0	
Green Ext Time (p_c), s		50.8		0.9	0.1	64.8	

Intersection Summary	
HCM 7th Control Delay, s/veh	13.3
HCM 7th LOS	B

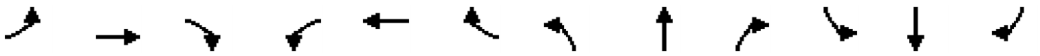
Notes

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.

HCM Signalized Intersection Capacity Analysis
22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	49	27	278	23	156	71	1159	490	380	1115	14
Future Volume (vph)	6	49	27	278	23	156	71	1159	490	380	1115	14
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
Frpb, ped/bikes		1.00		1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.97
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)		3350		1633	1651	1515	1770	3312	1513	3367	3374	1542
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)		3350		1633	1651	1515	1770	3312	1513	3367	3374	1542
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	6	50	28	284	23	159	72	1183	500	388	1138	14
RTOR Reduction (vph)	0	26	0	0	0	140	0	0	94	0	0	6
Lane Group Flow (vph)	0	58	0	153	154	19	72	1183	406	388	1138	8
Confl. Peds. (#/hr)	9					9	2		6	6		2
Heavy Vehicles (%)	2%	2%	2%	5%	4%	3%	2%	9%	5%	4%	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		17.1	17.1	17.1	8.0	64.5	81.6	23.7	80.5	80.5
Effective Green, g (s)		12.0		17.1	17.1	17.1	8.0	64.5	81.6	23.7	80.5	80.5
Actuated g/C Ratio		0.09		0.12	0.12	0.12	0.06	0.46	0.58	0.17	0.57	0.57
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		199	201	185	101	1525	946	569	1940	886
v/s Ratio Prot		c0.02		c0.09	0.09		0.04	c0.36	0.05	c0.12	0.34	
v/s Ratio Perm						0.01			0.22			0.01
v/c Ratio		0.20		0.77	0.77	0.10	0.71	0.78	0.43	0.68	0.59	0.01
Uniform Delay, d1		59.6		59.5	59.5	54.6	64.9	31.7	16.2	54.6	19.1	12.7
Progression Factor		1.00		1.00	1.00	1.00	0.90	0.92	0.54	1.00	1.00	1.00
Incremental Delay, d2		0.2		15.3	14.9	0.1	14.9	3.0	0.1	2.9	1.3	0.0
Delay (s)		59.8		74.8	74.5	54.8	73.2	32.1	8.9	57.5	20.4	12.7
Level of Service		E		E	E	D	E	C	A	E	C	B
Approach Delay (s/veh)		59.8			67.9			27.2			29.7	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	71.8%	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.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	843	185	586	1108	689	678
Future Volume (vph)	843	185	586	1108	689	678
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	0.99	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	1518	3367	3471	3400	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1518	3367	3471	3400	2787
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	860	189	598	1131	703	692
RTOR Reduction (vph)	0	114	0	0	0	0
Lane Group Flow (vph)	860	75	598	1131	703	692
Confl. Peds. (#/hr)		1	1			6
Heavy Vehicles (%)	2%	5%	4%	4%	3%	2%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	1 4
Permitted Phases		2				
Actuated Green, G (s)	44.0	44.0	23.6	73.2	31.3	54.5
Effective Green, g (s)	46.0	46.0	25.2	75.2	33.3	49.5
Actuated g/C Ratio	0.39	0.39	0.22	0.65	0.29	0.42
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)	1397	599	728	2240	971	1184
v/s Ratio Prot	c0.24		c0.18	0.33	c0.21	0.25
v/s Ratio Perm		0.05				
v/c Ratio	0.62	0.12	0.82	0.50	0.72	0.58
Uniform Delay, d1	28.2	22.4	43.5	10.9	37.5	25.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.2	7.2	0.8	2.4	0.6
Delay (s)	29.5	22.7	50.7	11.7	39.9	26.2
Level of Service	C	C	D	B	D	C
Approach Delay (s/veh)	28.2			25.2	33.1	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	116.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.5%	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.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	602	782	47	398	374
Future Volume (vph)	37	602	782	47	398	374
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	0.97	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)	1770	1583	3539	1529	1769	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.15	1.00
Satd. Flow (perm)	1770	1583	3539	1529	277	3471
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	39	640	832	50	423	398
RTOR Reduction (vph)	0	12	0	25	0	0
Lane Group Flow (vph)	39	628	832	25	423	398
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
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)	13.4	61.0	31.4	31.4	74.0	79.0
Effective Green, g (s)	14.4	66.0	32.4	32.4	76.0	80.0
Actuated g/C Ratio	0.14	0.64	0.31	0.31	0.74	0.78
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)	247	1015	1114	481	836	2698
v/s Ratio Prot		c0.40	c0.24		0.21	0.11
v/s Ratio Perm	0.02			0.02	0.16	
v/c Ratio	0.16	0.62	0.75	0.05	0.51	0.15
Uniform Delay, d1	38.9	11.0	31.6	24.6	15.3	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.3	3.1	0.1	0.7	0.1
Delay (s)	39.3	12.3	34.7	24.6	15.9	3.0
Level of Service	D	B	C	C	B	A
Approach Delay (s/veh)	13.8		34.1			9.7
Approach LOS	B		C			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	12.5
Intersection Capacity Utilization	66.0%	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.

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	437	2	0	564	253	0	3	7	15	0	19
Future Vol, veh/h	36	437	2	0	564	253	0	3	7	15	0	19
Conflicting Peds, #/hr	4	0	6	6	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	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	3	50	2	2	2	2	33	14	7	2	11
Mvmt Flow	40	480	2	0	620	278	0	3	8	16	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	902	0	0	488	0	0	1187	1468	487	1324	1330	764
Stage 1	-	-	-	-	-	-	566	566	-	763	763	-
Stage 2	-	-	-	-	-	-	621	902	-	561	568	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.83	6.34	7.17	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.83	-	6.17	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.83	-	6.17	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.297	3.426	3.563	4.018	3.399
Pot Cap-1 Maneuver	754	-	-	1075	-	-	165	110	557	130	155	390
Stage 1	-	-	-	-	-	-	509	461	-	389	413	-
Stage 2	-	-	-	-	-	-	475	318	-	503	507	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	751	-	-	1069	-	-	147	103	554	117	145	388
Mov Cap-2 Maneuver	-	-	-	-	-	-	147	103	-	117	145	-
Stage 1	-	-	-	-	-	-	479	434	-	388	412	-
Stage 2	-	-	-	-	-	-	449	316	-	467	477	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.76	0	20.78	28.22
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	239	751	-	-	1069	-	-	192
HCM Lane V/C Ratio	-	0.046	0.053	-	-	-	-	-	0.195
HCM Control Delay (s/veh)	0	20.8	10.1	-	-	0	-	-	28.2
HCM Lane LOS	A	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.1	0.2	-	-	0	-	-	0.7

3: JAE Access/SW 115th Avenue & SW Tualatin Road Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBT	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	3.3	0.4	0.6	0.0	0.0	0.1	0.1	0.1	0.0	0.2
Total Delay (hr)	0.1	0.1	0.0	0.5	0.2	0.0	0.0	0.1	0.1	1.0
Total Del/Veh (s)	8.6	0.8	0.6	3.1	2.4	11.9	6.6	19.6	9.2	2.6
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Stop Del/Veh (s)	6.7	0.0	0.0	0.0	0.0	8.4	4.7	17.8	7.5	0.5

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	451	813	15	9	4
Future Vol, veh/h	9	451	813	15	9	4
Conflicting Peds, #/hr	3	0	0	3	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	93	93	93	93	93	93
Heavy Vehicles, %	2	3	7	2	11	2
Mvmt Flow	10	485	874	16	10	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	893	0	-	0	1390	885
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	504	-
Critical Hdwy	4.12	-	-	-	6.51	6.22
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	2.218	-	-	-	3.599	3.318
Pot Cap-1 Maneuver	759	-	-	-	150	344
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	589	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	757	-	-	-	147	343
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.19	0	17.93
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	757	-	-	-	292
HCM Lane V/C Ratio	0.013	-	-	-	0.048
HCM Control Delay (s/veh)	9.8	-	-	-	17.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	452	5	3	809	30	28
Future Vol, veh/h	452	5	3	809	30	28
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	94	94	94	94	94	94
Heavy Vehicles, %	4	20	2	2	3	7
Mvmt Flow	481	5	3	861	32	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	487	0	1352	485
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	867	-
Critical Hdwy	-	-	4.12	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	1076	-	165	572
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	410	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1075	-	164	572
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	408	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.03	16.14
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	385	-	-	1075	-
HCM Lane V/C Ratio	0.16	-	-	0.003	-
HCM Control Delay (s/veh)	16.1	-	-	8.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	1	46	11	0
Future Vol, veh/h	3	0	1	46	11	0
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	9	2
Mvmt Flow	3	0	1	51	12	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	69	15	15	0	-	0
Stage 1	15	-	-	-	-	-
Stage 2	53	-	-	-	-	-
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	936	1064	1603	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	930	1061	1598	-	-	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	966	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.88	0.15	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	38	-	930	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s/veh)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	21	0	29	11	0
Future Vol, veh/h	18	21	0	29	11	0
Conflicting Peds, #/hr	0	0	7	0	0	7
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	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	3	9	2
Mvmt Flow	18	21	0	29	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	47	18	18	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	29	-	-	-	-	-
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	962	1060	1599	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	950	1053	1588	-	-	-
Mov Cap-2 Maneuver	950	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	987	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.74	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1588	-	1003	-	-
HCM Lane V/C Ratio	-	-	0.039	-	-
HCM Control Delay (s/veh)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	48	3	26	32	0
Future Vol, veh/h	1	48	3	26	32	0
Conflicting Peds, #/hr	0	0	4	0	0	4
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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	8	3	2
Mvmt Flow	1	59	4	32	39	0

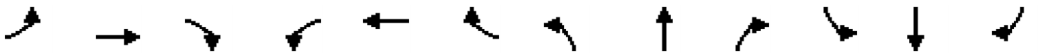
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	82	43	43	0	-	0
Stage 1	43	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	920	1027	1566	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	911	1023	1560	-	-	-
Mov Cap-2 Maneuver	911	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.75	0.76	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	186	-	1021	-	-
HCM Lane V/C Ratio	0.002	-	0.059	-	-
HCM Control Delay (s/veh)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM Signalized Intersection Capacity Analysis
9: SW 124th Avenue & SW Leveton Drive

07/16/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	28	26	39	2	212	7	615	20	31	374	17
Future Volume (vph)	27	28	26	39	2	212	7	615	20	31	374	17
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	0.99		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	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1581		1719	1563		1262	3519		1770	3345	
Flt Permitted	0.95	1.00		0.95	1.00		0.50	1.00		0.29	1.00	
Satd. Flow (perm)	1736	1581		1719	1563		666	3519		535	3345	
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)	29	30	28	42	2	230	8	668	22	34	407	18
RTOR Reduction (vph)	0	22	0	0	173	0	0	2	0	0	3	0
Lane Group Flow (vph)	29	36	0	42	59	0	8	688	0	34	422	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	4%	11%	12%	5%	2%	2%	43%	2%	5%	2%	6%	35%
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	11.4		4.0	13.2		22.2	20.0		22.2	21.5	
Effective Green, g (s)	3.2	12.4		5.0	14.2		24.2	21.0		22.2	21.5	
Actuated g/C Ratio	0.06	0.22		0.09	0.25		0.42	0.36		0.39	0.37	
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)	96	340		149	385		297	1282		253	1248	
v/s Ratio Prot	0.02	0.02		c0.02	c0.04		0.00	c0.20		c0.01	0.13	
v/s Ratio Perm							0.01			0.05		
v/c Ratio	0.30	0.11		0.28	0.15		0.03	0.54		0.13	0.34	
Uniform Delay, d1	26.1	18.1		24.6	17.0		9.7	14.5		11.3	12.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.1		1.0	0.2		0.0	0.4		0.2	0.2	
Delay (s)	27.9	18.3		25.7	17.2		9.8	14.9		11.6	13.1	
Level of Service	C	B		C	B		A	B		B	B	
Approach Delay (s/veh)		21.5			18.5			14.8			13.0	
Approach LOS		C			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	57.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	28	26	39	2	212	7	615	20	31	374	17
Future Volume (veh/h)	27	28	26	39	2	212	7	615	20	31	374	17
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		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1737	1722	1826	1870	1870	1263	1870	1826	1870	1811	1381
Adj Flow Rate, veh/h	29	30	28	42	2	230	8	668	22	34	407	18
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, %	4	11	12	5	2	2	43	2	5	2	6	35
Cap, veh/h	115	198	185	141	3	401	334	1012	33	323	1068	47
Arrive On Green	0.07	0.24	0.22	0.08	0.26	0.24	0.03	0.29	0.27	0.06	0.32	0.32
Sat Flow, veh/h	1753	824	769	1739	14	1566	1203	3511	116	1781	3357	148
Grp Volume(v), veh/h	29	0	58	42	0	232	8	338	352	34	208	217
Grp Sat Flow(s),veh/h/ln	1753	0	1594	1739	0	1579	1203	1777	1850	1781	1721	1784
Q Serve(g_s), s	0.8	0.0	1.5	1.2	0.0	6.7	0.2	8.6	8.6	0.7	4.8	4.9
Cycle Q Clear(g_c), s	0.8	0.0	1.5	1.2	0.0	6.7	0.2	8.6	8.6	0.7	4.8	4.9
Prop In Lane	1.00		0.48	1.00		0.99	1.00		0.06	1.00		0.08
Lane Grp Cap(c), veh/h	115	0	383	141	0	404	334	512	533	323	547	568
V/C Ratio(X)	0.25	0.00	0.15	0.30	0.00	0.57	0.02	0.66	0.66	0.11	0.38	0.38
Avail Cap(c_a), veh/h	545	0	960	372	0	952	789	1071	1115	1082	1338	1388
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	22.8	0.0	15.6	22.3	0.0	17.2	10.6	16.1	16.1	12.6	13.6	13.6
Incr Delay (d2), s/veh	1.1	0.0	0.2	1.2	0.0	1.3	0.0	1.5	1.4	0.1	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	0.5	0.5	0.0	2.2	0.0	3.0	3.1	0.2	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.0	0.0	15.8	23.4	0.0	18.4	10.6	17.6	17.5	12.7	14.0	14.0
LnGrp LOS	C		B	C		B	B	B	B	B	B	B
Approach Vol, veh/h		87			274			698			459	
Approach Delay, s/veh		18.5			19.2			17.5			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	18.8	8.2	16.4	5.5	21.4	7.4	17.2
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	2.7	10.6	3.2	3.5	2.2	6.9	2.8	8.7
Green Ext Time (p_c), s	0.1	3.2	0.0	0.5	0.0	2.0	0.0	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	16.8
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	55	11	27	259	2	28	2	5	1	0	12
Future Vol, veh/h	6	55	11	27	259	2	28	2	5	1	0	12
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	4	2	15	2	2	2	2	40	2	2	2
Mvmt Flow	7	68	14	33	320	2	35	2	6	1	0	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	7.9	10.7	8.4	7.6
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	80%	8%	9%	8%
Vol Thru, %	6%	76%	90%	0%
Vol Right, %	14%	15%	1%	92%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	72	288	13
LT Vol	28	6	27	1
Through Vol	2	55	259	0
RT Vol	5	11	2	12
Lane Flow Rate	43	89	356	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.061	0.108	0.429	0.02
Departure Headway (Hd)	5.044	4.379	4.339	4.468
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	713	821	818	804
Service Time	3.052	2.389	2.422	2.479
HCM Lane V/C Ratio	0.06	0.108	0.435	0.02
HCM Control Delay, s/veh	8.4	7.9	10.7	7.6
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.4	2.2	0.1

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	24	141	12	62	145
Future Vol, veh/h	25	24	141	12	62	145
Conflicting Peds, #/hr	3	0	0	3	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	82	82	82	82	82	76
Heavy Vehicles, %	2	8	2	2	2	2
Mvmt Flow	30	29	172	15	76	191

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	190	0	-	0	273	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	90	-
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	1384	-	-	-	717	860
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	933	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1380	-	-	-	697	858
Mov Cap-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	931	-

Approach	EB	WB	SB
HCM Control Delay, s/v	3.91	0	10.51
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	918	-	-	-	697	858
HCM Lane V/C Ratio	0.022	-	-	-	0.109	0.222
HCM Control Delay (s/veh)	7.7	0	-	-	10.8	10.4
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.8

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	89	153	0	0	0
Future Vol, veh/h	0	89	153	0	0	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	82	82	82	82	82	82
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	0	109	187	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	295	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	109	-
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	1388	-	-	-	696	856
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1388	-	-	-	696	856
Mov Cap-2 Maneuver	-	-	-	-	696	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	916	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1388	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	82	119	19	35	29
Future Vol, veh/h	7	82	119	19	35	29
Conflicting Peds, #/hr	7	0	0	7	0	2
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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	100	145	23	43	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	175	0	-	0	281	166
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	117	-
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	1401	-	-	-	709	879
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	908	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1392	-	-	-	695	871
Mov Cap-2 Maneuver	-	-	-	-	695	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.6	0	9.97
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	142	-	-	-	695	871
HCM Lane V/C Ratio	0.006	-	-	-	0.061	0.041
HCM Control Delay (s/veh)	7.6	0	-	-	10.5	9.3
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	121	0	0	123	0	2	0	0	0	0	0
Future Vol, veh/h	0	121	0	0	123	0	2	0	0	0	0	0
Conflicting Peds, #/hr	7	0	5	5	0	7	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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	50	2	2	2	2	2
Mvmt Flow	0	148	0	0	150	0	2	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	157	0	0	153	0	0	303	310	153	305	310	157
Stage 1	-	-	-	-	-	-	153	153	-	157	157	-
Stage 2	-	-	-	-	-	-	150	157	-	148	153	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.6	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.95	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1423	-	-	1428	-	-	565	605	894	648	605	889
Stage 1	-	-	-	-	-	-	748	771	-	845	768	-
Stage 2	-	-	-	-	-	-	751	768	-	855	771	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1413	-	-	1421	-	-	563	598	889	643	598	883
Mov Cap-2 Maneuver	-	-	-	-	-	-	563	598	-	643	598	-
Stage 1	-	-	-	-	-	-	745	767	-	840	763	-
Stage 2	-	-	-	-	-	-	751	763	-	855	767	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	11.42	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	563	1413	-	-	1421	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-	-	-	-	-
HCM Control Delay (s/veh)	11.4	0	-	-	0	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

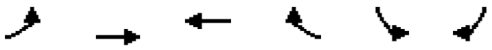
Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	112	58	67	67	46
Future Vol, veh/h	10	112	58	67	67	46
Conflicting Peds, #/hr	1	1	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	85	85	85	85	85	85
Heavy Vehicles, %	17	2	2	2	2	2
Mvmt Flow	12	132	68	79	79	54

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	323	108	134	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	216	-	-	-	-	-
Critical Hdwy	6.57	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	641	946	1451	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	608	944	1449	-	-	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.74	3.53	0
HCM LOS	A		

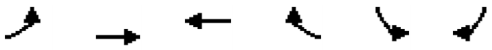
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	835	-	903	-	-
HCM Lane V/C Ratio	0.047	-	0.159	-	-
HCM Control Delay (s/veh)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	316	504	57	163	35
Future Volume (vph)	2	316	504	57	163	35
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	1.00		1.00	1.00
Flpb, ped/bikes	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)	1769	1827	1741		1752	1568
Flt Permitted	0.25	1.00	1.00		0.95	1.00
Satd. Flow (perm)	465	1827	1741		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	351	560	63	181	39
RTOR Reduction (vph)	0	0	4	0	0	29
Lane Group Flow (vph)	2	351	619	0	181	10
Confl. Peds. (#/hr)	1			1		
Heavy Vehicles (%)	2%	4%	8%	2%	3%	3%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	25.9	31.3	25.3		12.1	12.1
Effective Green, g (s)	28.7	32.7	26.7		14.6	14.6
Actuated g/C Ratio	0.52	0.59	0.48		0.26	0.26
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)	288	1080	840		462	413
v/s Ratio Prot	0.00	c0.19	c0.36		c0.10	
v/s Ratio Perm	0.00					0.01
v/c Ratio	0.01	0.33	0.74		0.39	0.02
Uniform Delay, d1	12.9	5.7	11.5		16.7	15.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	3.4		0.4	0.0
Delay (s)	12.9	5.9	14.9		17.1	15.1
Level of Service	B	A	B		B	B
Approach Delay (s/veh)		5.9	14.9		16.8	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	316	504	57	163	35
Future Volume (veh/h)	2	316	504	57	163	35
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	1870	1841	1781	1870	1856	1856
Adj Flow Rate, veh/h	2	351	560	63	181	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	8	2	3	3
Cap, veh/h	463	1264	930	105	311	277
Arrive On Green	0.03	0.69	0.59	0.57	0.18	0.18
Sat Flow, veh/h	1781	1841	1573	177	1767	1572
Grp Volume(v), veh/h	2	351	0	623	181	39
Grp Sat Flow(s),veh/h/ln	1781	1841	0	1749	1767	1572
Q Serve(g_s), s	0.0	4.3	0.0	13.2	5.5	1.2
Cycle Q Clear(g_c), s	0.0	4.3	0.0	13.2	5.5	1.2
Prop In Lane	1.00			0.10	1.00	1.00
Lane Grp Cap(c), veh/h	463	1264	0	1034	311	277
V/C Ratio(X)	0.00	0.28	0.00	0.60	0.58	0.14
Avail Cap(c_a), veh/h	764	1465	0	1962	985	876
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	10.8	3.5	0.0	7.6	22.0	20.3
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.6	1.4	0.2
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	0.9	0.0	3.6	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	10.8	3.7	0.0	8.2	23.4	20.5
LnGrp LOS	B	A		A	C	C
Approach Vol, veh/h		353	623		220	
Approach Delay, s/veh		3.7	8.2		22.9	
Approach LOS		A	A		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.0		14.3	5.6	38.5
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		6.3		7.5	2.0	15.2
Green Ext Time (p_c), s		7.7		0.5	0.0	17.8

Intersection Summary	
HCM 7th Control Delay, s/veh	9.6
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	7.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	362	65	36	730	124	34
Future Vol, veh/h	362	65	36	730	124	34
Conflicting Peds, #/hr	0	0	0	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	93	93	93	93	93	93
Heavy Vehicles, %	2	5	6	2	2	2
Mvmt Flow	389	70	39	785	133	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	459	0	1287	424
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	862	-
Critical Hdwy	-	-	4.16	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.254	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1081	-	181	630
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	413	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1081	-	175	630
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	399	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.4	58.75
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	175	630	-	-	1081	-
HCM Lane V/C Ratio	0.763	0.058	-	-	0.036	-
HCM Control Delay (s/veh)	71.8	11.1	-	-	8.5	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	4.9	0.2	-	-	0.1	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	362	65	36	730	124	34
Future Volume (Veh/h)	362	65	36	730	124	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	389	70	39	785	133	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			TWLTL		
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			459		1287	424
vC1, stage 1 conf vol					424	
vC2, stage 2 conf vol					863	
vCu, unblocked vol			459		1287	424
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.3		3.5	3.3
p0 queue free %			96		63	94
cM capacity (veh/h)			1081		361	630

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	459	39	785	133	37
Volume Left	0	39	0	133	0
Volume Right	70	0	0	0	37
cSH	1700	1081	1700	361	630
Volume to Capacity	0.27	0.04	0.46	0.37	0.06
Queue Length 95th (ft)	0	3	0	41	5
Control Delay (s/veh)	0.0	8.5	0.0	20.7	11.1
Lane LOS		A		C	B
Approach Delay (s/veh)	0.0	0.4		18.6	
Approach LOS				C	

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

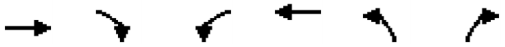
Intersection	
Int Delay, s/veh	8.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	7	16	72	254	20
Future Vol, veh/h	15	7	16	72	254	20
Conflicting Peds, #/hr	0	8	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	13	2	2	20
Mvmt Flow	16	8	17	78	276	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	32	0	141	28
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	-	-	4.23	-	6.42	6.4
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.317	-	3.518	3.48
Pot Cap-1 Maneuver	-	-	1512	-	852	997
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1500	-	835	990
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.35	11.57
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	845	-	-	327	-
HCM Lane V/C Ratio	0.353	-	-	0.012	-
HCM Control Delay (s/veh)	11.6	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.6	-	-	0	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	17	7	13	73	259	19
Future Volume (Veh/h)	17	7	13	73	259	19
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)	18	8	14	79	282	21
Pedestrians					8	
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			34		137	30
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			34		137	30
tC, single (s)			4.2		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.5
p0 queue free %			99		67	98
cM capacity (veh/h)			1498		842	987

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	26	93	303
Volume Left	0	14	282
Volume Right	8	0	21
cSH	1700	1498	851
Volume to Capacity	0.02	0.01	0.36
Queue Length 95th (ft)	0	1	41
Control Delay (s/veh)	0.0	1.2	11.6
Lane LOS		A	B
Approach Delay (s/veh)	0.0	1.2	11.6
Approach LOS			B

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	322	1469	28	0	1648
Future Vol, veh/h	0	322	1469	28	0	1648
Conflicting Peds, #/hr	0	0	0	4	4	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	98	98	98	98	98	98
Heavy Vehicles, %	2	3	3	4	2	2
Mvmt Flow	0	329	1499	29	0	1682

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	749	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	352	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	352	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	67.54	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	352	-
HCM Lane V/C Ratio	-	0.934	-
HCM Control Delay (s/veh)	-	67.5	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	9.7	-

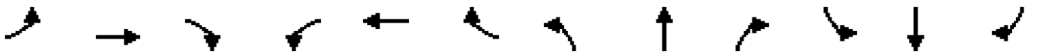


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	332	1468	28	0	1649
Future Volume (Veh/h)	0	332	1468	28	0	1649
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	339	1498	29	0	1683
Pedestrians	4					
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	2344	753			1502	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2344	753			1502	
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	20			100	
cM capacity (veh/h)	30	426			440	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	339	749	749	29	842	842
Volume Left	0	0	0	0	0	0
Volume Right	339	0	0	29	0	0
cSH	426	1700	1700	1700	1700	1700
Volume to Capacity	0.80	0.44	0.44	0.02	0.50	0.50
Queue Length 95th (ft)	177	0	0	0	0	0
Control Delay (s/veh)	39.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	E					
Approach Delay (s/veh)	39.1	0.0			0.0	
Approach LOS	E					

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value



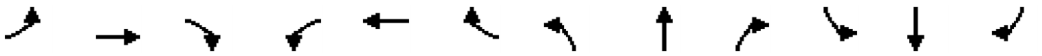
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	236	242	46	318	8	226	150	22	11	113	20
Future Volume (vph)	1	236	242	46	318	8	226	150	22	11	113	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	1.00		1.00	0.98		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)	1543	1671		1626	1821		1596	1749		1703	1620	
Flt Permitted	0.46	1.00		0.23	1.00		0.40	1.00		0.62	1.00	
Satd. Flow (perm)	741	1671		388	1821		673	1749		1117	1620	
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)	1	295	302	58	398	10	282	188	28	14	141	25
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	1	582	0	58	408	0	283	216	0	14	161	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)	57.8	56.9		66.2	61.3		41.3	35.1		21.6	19.4	
Effective Green, g (s)	57.8	57.4		66.2	61.8		41.3	35.6		21.6	19.9	
Actuated g/C Ratio	0.49	0.48		0.56	0.52		0.35	0.30		0.18	0.17	
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)	367	809		272	949		373	525		214	272	
v/s Ratio Prot	0.00	c0.35		c0.01	c0.22		c0.11	0.12		0.00	0.10	
v/s Ratio Perm	0.00			0.11			c0.15			0.01		
v/c Ratio	0.00	0.72		0.21	0.43		0.76	0.41		0.07	0.59	
Uniform Delay, d1	15.8	24.2		15.9	17.5		31.0	33.1		39.9	45.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	3.1		0.1	0.3		7.7	0.6		0.0	3.5	
Delay (s)	15.8	27.3		16.1	17.8		38.7	33.7		40.0	49.1	
Level of Service	B	C		B	B		D	C		D	D	
Approach Delay (s/veh)		27.3			17.6			36.5			48.4	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
20: SW Teton Avenue & SW Herman Road

07/16/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	236	242	46	318	8	226	150	22	11	113	20
Future Volume (veh/h)	1	236	242	46	318	8	226	150	22	11	113	20
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	1	295	302	58	398	10	282	188	28	14	141	25
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	378	383	392	268	882	22	388	441	66	255	185	33
Arrive On Green	0.00	0.45	0.45	0.04	0.49	0.49	0.17	0.29	0.28	0.02	0.13	0.13
Sat Flow, veh/h	1570	847	867	1654	1788	45	1626	1540	229	1725	1374	244
Grp Volume(v), veh/h	1	0	597	58	0	408	282	0	216	14	0	166
Grp Sat Flow(s),veh/h/ln	1570	0	1714	1654	0	1833	1626	0	1769	1725	0	1618
Q Serve(g_s), s	0.0	0.0	26.0	1.6	0.0	12.9	12.7	0.0	8.8	0.6	0.0	8.8
Cycle Q Clear(g_c), s	0.0	0.0	26.0	1.6	0.0	12.9	12.7	0.0	8.8	0.6	0.0	8.8
Prop In Lane	1.00		0.51	1.00		0.02	1.00		0.13	1.00		0.15
Lane Grp Cap(c), veh/h	378	0	774	268	0	904	388	0	506	255	0	218
V/C Ratio(X)	0.00	0.00	0.77	0.22	0.00	0.45	0.73	0.00	0.43	0.05	0.00	0.76
Avail Cap(c_a), veh/h	730	0	1053	570	0	1105	481	0	1147	615	0	1012
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	14.0	0.0	20.6	15.8	0.0	14.7	25.7	0.0	25.8	32.6	0.0	37.0
Incr Delay (d2), s/veh	0.0	0.0	2.6	0.1	0.0	0.4	2.9	0.0	0.6	0.0	0.0	5.9
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	9.7	0.5	0.0	5.0	4.9	0.0	3.7	0.3	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.0	0.0	23.2	16.0	0.0	15.0	28.6	0.0	26.4	32.7	0.0	42.9
LnGrp LOS	B		C	B		B	C		C	C		D
Approach Vol, veh/h		598			466			498			180	
Approach Delay, s/veh		23.1			15.2			27.6			42.1	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	45.1	18.9	16.9	4.1	48.7	5.5	30.4
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	3.6	28.0	14.7	10.8	2.0	14.9	2.6	10.8
Green Ext Time (p_c), s	0.1	11.5	0.2	0.6	0.0	9.5	0.0	3.1

Intersection Summary	
HCM 7th Control Delay, s/veh	24.3
HCM 7th LOS	C



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	145	286	300	1568	27	1373	276
Future Volume (vph)	145	286	300	1568	27	1373	276
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	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1493	1770	3539	1770	3438	1509
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1493	1770	3539	1770	3438	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	311	326	1704	29	1492	300
RTOR Reduction (vph)	0	256	0	0	0	0	85
Lane Group Flow (vph)	158	55	326	1704	29	1492	215
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)	14.3	14.3	27.6	105.2	5.0	81.6	81.6
Effective Green, g (s)	15.3	15.3	29.1	107.2	5.5	83.6	83.6
Actuated g/C Ratio	0.11	0.11	0.21	0.77	0.04	0.60	0.60
Clearance Time (s)	5.0	5.0	5.5	6.0	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5	2.3	4.5	4.5
Lane Grp Cap (vph)	193	163	367	2709	69	2052	901
v/s Ratio Prot	c0.09		c0.18	0.48	0.02	c0.43	
v/s Ratio Perm		0.04					0.14
v/c Ratio	0.82	0.34	0.89	0.63	0.42	0.73	0.24
Uniform Delay, d1	61.0	57.7	53.9	7.4	65.7	20.1	13.3
Progression Factor	1.00	1.00	1.00	1.00	0.97	1.32	1.43
Incremental Delay, d2	22.4	0.9	21.7	1.1	1.7	1.6	0.4
Delay (s)	83.4	58.6	75.6	8.5	65.7	28.2	19.4
Level of Service	F	E	E	A	E	C	B
Approach Delay (s/veh)	66.9			19.3		27.3	
Approach LOS	E			B		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
21: OR 99W (Pacific Highway) & SW Fischer Road

07/16/2025



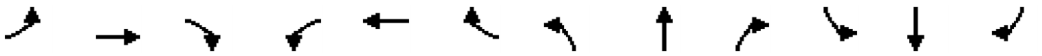
Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	145	286	300	1568	27	1373	276
Future Volume (veh/h)	145	286	300	1568	27	1373	276
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.99
Parking Bus, 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	158	153	326	1704		1492	300
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	365	2944		2064	936
Arrive On Green	0.11	0.11	0.21	0.83		1.00	1.00
Sat Flow, veh/h	1781	1547	1781	3647		3561	1573
Grp Volume(v), veh/h	158	153	326	1704		1492	300
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1777		1735	1573
Q Serve(g_s), s	12.1	13.6	24.9	22.1		0.0	0.0
Cycle Q Clear(g_c), s	12.1	13.6	24.9	22.1		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	204	177	365	2944		2064	936
V/C Ratio(X)	0.78	0.87	0.89	0.58		0.72	0.32
Avail Cap(c_a), veh/h	204	177	394	2944		2064	936
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		0.60	0.60
Uniform Delay (d), s/veh	60.3	60.9	54.1	4.0		0.0	0.0
Incr Delay (d2), s/veh	16.4	32.8	20.1	0.8		1.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	12.8	12.9	5.4		0.4	0.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	76.7	93.7	74.2	4.8		1.4	0.5
LnGrp LOS	E	F	E	A		A	A
Approach Vol, veh/h	311			2030		1792	
Approach Delay, s/veh	85.1			15.9		1.2	
Approach LOS	F			B		A	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		120.0		20.0	32.7	87.3	
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		24.1		15.6	26.9	2.0	
Green Ext Time (p_c), s		64.4		0.0	0.3	62.4	

Intersection Summary	
HCM 7th Control Delay, s/veh	14.8
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	95	70	493	73	347	138	1259	225	440	1028	20
Future Volume (vph)	23	95	70	493	73	347	138	1259	225	440	1028	20
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
Frpb, 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)		3310		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)		3310		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	101	74	524	78	369	147	1339	239	468	1094	21
RTOR Reduction (vph)	0	62	0	0	0	289	0	0	54	0	0	11
Lane Group Flow (vph)	0	137	0	299	303	80	147	1339	185	468	1094	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)		12.4		27.5	27.5	27.5	13.2	55.8	83.3	21.6	64.5	64.5
Effective Green, g (s)		12.4		27.5	27.5	27.5	13.2	55.8	83.3	21.6	64.5	64.5
Actuated g/C Ratio		0.09		0.20	0.20	0.20	0.09	0.40	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)		293		330	334	301	166	1396	928	529	1583	712
v/s Ratio Prot		c0.04		0.18	c0.18		0.08	c0.38	0.04	c0.14	0.32	
v/s Ratio Perm						0.05			0.08			0.01
v/c Ratio		0.47		0.91	0.91	0.26	0.89	0.96	0.20	0.88	0.69	0.01
Uniform Delay, d1		60.7		55.0	55.0	47.7	62.7	41.0	13.0	58.0	29.9	20.5
Progression Factor		1.00		1.00	1.00	1.00	0.93	1.18	1.41	1.00	1.00	1.00
Incremental Delay, d2		0.7		26.8	26.7	0.3	32.1	13.6	0.0	15.9	2.5	0.0
Delay (s)		61.4		81.8	81.7	48.0	90.6	61.9	18.4	73.9	32.4	20.5
Level of Service		E		F	F	D	F	E	B	E	C	C
Approach Delay (s/veh)		61.4			68.9			58.3			44.5	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	55.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	91.8%	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.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1220	656	1003	848	152	308
Future Volume (vph)	1220	656	1003	848	152	308
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)	3374	1553	3400	3343	3127	2515
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3374	1553	3400	3343	3127	2515
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1298	698	1067	902	162	328
RTOR Reduction (vph)	0	280	0	0	0	0
Lane Group Flow (vph)	1298	418	1067	902	162	328
Confl. Peds. (#/hr)						4
Heavy Vehicles (%)	7%	4%	3%	8%	12%	13%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	1 4
Permitted Phases		2				
Actuated Green, G (s)	39.4	39.4	28.7	73.7	18.2	46.7
Effective Green, g (s)	41.4	41.4	30.3	75.7	20.2	41.7
Actuated g/C Ratio	0.40	0.40	0.29	0.73	0.19	0.40
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)	1344	618	991	2435	607	1009
v/s Ratio Prot	c0.38		c0.31	0.27	c0.05	0.13
v/s Ratio Perm		0.27				
v/c Ratio	0.97	0.68	1.08	0.37	0.27	0.33
Uniform Delay, d1	30.6	25.7	36.8	5.2	35.6	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.2	4.1	51.6	0.4	0.1	0.1
Delay (s)	47.8	29.8	88.4	5.7	35.7	21.5
Level of Service	D	C	F	A	D	C
Approach Delay (s/veh)	41.5			50.5	26.2	
Approach LOS	D			D	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	103.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.4%	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.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	222	260	41	839	838
Future Volume (vph)	42	222	260	41	839	838
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)	1597	1524	3195	1458	1751	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.40	1.00
Satd. Flow (perm)	1597	1524	3195	1458	740	3505
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	48	255	299	47	964	963
RTOR Reduction (vph)	0	48	0	40	0	0
Lane Group Flow (vph)	48	207	299	7	964	963
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	13%	6%	13%	8%	3%	3%
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)	13.4	92.6	16.9	16.9	91.1	96.1
Effective Green, g (s)	14.4	97.6	17.9	17.9	93.1	97.1
Actuated g/C Ratio	0.12	0.81	0.15	0.15	0.78	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)	191	1239	476	217	1207	2836
v/s Ratio Prot		0.14	0.09		c0.50	0.27
v/s Ratio Perm	c0.03			0.00	c0.12	
v/c Ratio	0.25	0.17	0.63	0.03	0.80	0.34
Uniform Delay, d1	47.9	2.4	47.9	43.6	11.0	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	3.3	0.1	4.2	0.3
Delay (s)	48.9	2.5	51.2	43.8	15.2	3.3
Level of Service	D	A	D	D	B	A
Approach Delay (s/veh)	9.8		50.2			9.3
Approach LOS	A		D			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	70.2%	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.

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	785	2	8	240	135	1	0	5	48	1	29
Future Vol, veh/h	64	785	2	8	240	135	1	0	5	48	1	29
Conflicting Peds, #/hr	0	0	7	7	0	0	2	0	0	0	0	2
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, %	7	3	2	38	6	6	100	2	20	7	2	11
Mvmt Flow	70	853	2	9	261	147	1	0	5	52	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	862	0	0	1281	1425	861	1344	1353	336
Stage 1	-	-	-	-	-	-	1000	1000	-	352	352	-
Stage 2	-	-	-	-	-	-	281	425	-	992	1002	-
Critical Hdwy	4.17	-	-	4.48	-	-	8.1	6.52	6.4	7.17	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.17	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.17	5.52	-
Follow-up Hdwy	2.263	-	-	2.542	-	-	4.4	4.018	3.48	3.563	4.018	3.399
Pot Cap-1 Maneuver	1125	-	-	646	-	-	91	135	330	126	150	686
Stage 1	-	-	-	-	-	-	197	321	-	655	632	-
Stage 2	-	-	-	-	-	-	556	586	-	290	320	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1125	-	-	642	-	-	79	124	327	114	138	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	124	-	114	138	-
Stage 1	-	-	-	-	-	-	184	299	-	646	623	-
Stage 2	-	-	-	-	-	-	521	578	-	267	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.63	0.22	22.04	47.29
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	79	327	1125	-	-	642	-	-	166
HCM Lane V/C Ratio	0.014	0.017	0.062	-	-	0.014	-	-	0.51
HCM Control Delay (s/veh)	51.3	16.2	8.4	-	-	10.7	-	-	47.3
HCM Lane LOS	F	C	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0	0.1	0.2	-	-	0	-	-	2.5

3: JAE Access/SW 115th Avenue & SW Tualatin Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.1	0.0	0.0	0.1	0.0
Total Delay (hr)	0.1	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.1	1.1
Total Del/Veh (s)	6.1	2.9	3.0	5.6	1.8	1.1		9.5	18.8	6.8	7.4	3.4
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3
Stop Del/Veh (s)	1.9	0.0	0.0	3.0	0.0	0.0		7.6	16.8	4.0	5.4	1.0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	839	380	6	23	4
Future Vol, veh/h	1	839	380	6	23	4
Conflicting Peds, #/hr	1	0	0	1	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	90	90	90	90	90	90
Heavy Vehicles, %	2	3	7	2	5	2
Mvmt Flow	1	932	422	7	26	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	430	0	-	0	1361	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	934	-
Critical Hdwy	4.12	-	-	-	6.45	6.22
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.318
Pot Cap-1 Maneuver	1130	-	-	-	161	628
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	377	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1129	-	-	-	160	627
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	377	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.01	0	17.91
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1129	-	-	-	309
HCM Lane V/C Ratio	0.001	-	-	-	0.097
HCM Control Delay (s/veh)	8.2	-	-	-	17.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	852	42	50	381	15	8
Future Vol, veh/h	852	42	50	381	15	8
Conflicting Peds, #/hr	0	2	2	0	1	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	7	15	17
Mvmt Flow	926	46	54	414	16	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	974	0	1475	951
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	-	-	4.12	-	6.55	6.37
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.218	-	3.635	3.453
Pot Cap-1 Maneuver	-	-	708	-	130	295
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	569	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	707	-	120	295
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	355	-
Stage 2	-	-	-	-	524	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.22	20.29
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	260	-	-	707	-
HCM Lane V/C Ratio	0.096	-	-	0.077	-
HCM Control Delay (s/veh)	20.3	-	-	10.5	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	2	28	108	4
Future Vol, veh/h	1	1	2	28	108	4
Conflicting Peds, #/hr	0	0	4	0	0	4
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	85	85	85	85	85	85
Heavy Vehicles, %	2	100	50	17	2	25
Mvmt Flow	1	1	2	33	127	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	171	133	136	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	38	-	-	-	-	-
Critical Hdwy	6.42	7.2	4.6	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	4.2	2.65	-	-	-
Pot Cap-1 Maneuver	819	709	1200	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	985	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	811	706	1196	-	-	-
Mov Cap-2 Maneuver	811	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.78	0.53	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	120	-	755	-	-
HCM Lane V/C Ratio	0.002	-	0.003	-	-
HCM Control Delay (s/veh)	8	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	15	113	26	71	36
Future Vol, veh/h	2	15	113	26	71	36
Conflicting Peds, #/hr	0	0	5	0	0	5
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	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	17	5	2
Mvmt Flow	3	20	153	35	96	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	466	125	150	0	-	0
Stage 1	125	-	-	-	-	-
Stage 2	341	-	-	-	-	-
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	555	925	1432	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	490	921	1425	-	-	-
Mov Cap-2 Maneuver	490	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	717	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.44	6.37	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1397	-	834	-	-
HCM Lane V/C Ratio	0.107	-	0.028	-	-
HCM Control Delay (s/veh)	7.8	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.1	-	-

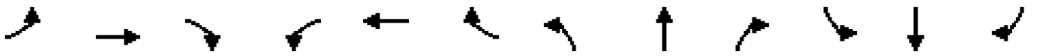
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	12	86	136	68	13
Future Vol, veh/h	1	12	86	136	68	13
Conflicting Peds, #/hr	1	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	13	2	10	4	17
Mvmt Flow	1	15	110	174	87	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	497	102	110	0	-	0
Stage 1	102	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.42	6.33	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.417	2.218	-	-	-
Pot Cap-1 Maneuver	532	924	1480	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	680	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	482	919	1472	-	-	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.27	2.96	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	697	-	859	-	-
HCM Lane V/C Ratio	0.075	-	0.019	-	-
HCM Control Delay (s/veh)	7.6	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-



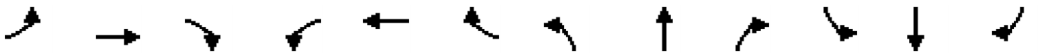
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	106	22	21	13	40	18	253	78	288	556	33
Future Volume (vph)	7	106	22	21	13	40	18	253	78	288	556	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	0.89		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)	1583	1801		1289	1572		1703	3038		1768	3421	
Flt Permitted	0.95	1.00		0.95	1.00		0.35	1.00		0.47	1.00	
Satd. Flow (perm)	1583	1801		1289	1572		624	3038		882	3421	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	8	120	25	24	15	45	20	288	89	327	632	38
RTOR Reduction (vph)	0	6	0	0	35	0	0	23	0	0	3	0
Lane Group Flow (vph)	8	139	0	24	25	0	20	354	0	327	667	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	14%	2%	5%	40%	17%	4%	6%	14%	14%	2%	4%	13%
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	12.5		2.5	14.2		33.2	19.1		33.2	31.3	
Effective Green, g (s)	1.8	13.5		3.5	15.2		35.2	20.1		33.2	31.3	
Actuated g/C Ratio	0.03	0.20		0.05	0.22		0.52	0.29		0.49	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	356		66	350		367	895		612	1570	
v/s Ratio Prot	0.01	c0.08		c0.02	0.02		0.00	0.12		c0.11	0.20	
v/s Ratio Perm							0.03			c0.15		
v/c Ratio	0.20	0.39		0.36	0.07		0.05	0.40		0.53	0.43	
Uniform Delay, d1	32.5	23.8		31.3	20.9		8.2	19.2		11.1	12.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	0.7		3.4	0.1		0.1	0.3		0.9	0.2	
Delay (s)	34.8	24.5		34.7	21.0		8.3	19.5		12.0	12.6	
Level of Service	C	C		C	C		A	B		B	B	
Approach Delay (s/veh)		25.0			24.9			18.9			12.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
9: SW 124th Avenue & SW Leveton Drive

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	106	22	21	13	40	18	253	78	288	556	33
Future Volume (veh/h)	7	106	22	21	13	40	18	253	78	288	556	33
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	1693	1870	1826	1307	1648	1841	1811	1693	1693	1870	1841	1707
Adj Flow Rate, veh/h	8	120	25	24	15	45	20	288	89	327	632	38
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
Percent Heavy Veh, %	14	2	5	40	17	4	6	14	14	2	4	13
Cap, veh/h	57	243	51	75	68	203	419	556	168	606	1287	77
Arrive On Green	0.04	0.16	0.14	0.06	0.19	0.17	0.04	0.23	0.21	0.20	0.38	0.38
Sat Flow, veh/h	1612	1501	313	1245	362	1087	1725	2428	735	1781	3351	201
Grp Volume(v), veh/h	8	0	145	24	0	60	20	189	188	327	329	341
Grp Sat Flow(s),veh/h/ln	1612	0	1813	1245	0	1450	1725	1608	1556	1781	1749	1804
Q Serve(g_s), s	0.2	0.0	3.6	0.9	0.0	1.7	0.3	5.0	5.2	6.5	7.0	7.0
Cycle Q Clear(g_c), s	0.2	0.0	3.6	0.9	0.0	1.7	0.3	5.0	5.2	6.5	7.0	7.0
Prop In Lane	1.00		0.17	1.00		0.75	1.00		0.47	1.00		0.11
Lane Grp Cap(c), veh/h	57	0	294	75	0	271	419	368	356	606	672	693
V/C Ratio(X)	0.14	0.00	0.49	0.32	0.00	0.22	0.05	0.51	0.53	0.54	0.49	0.49
Avail Cap(c_a), veh/h	529	0	1153	281	0	922	1085	1023	990	1163	1435	1480
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	22.8	0.0	18.7	21.9	0.0	17.1	8.0	16.4	16.7	10.9	11.4	11.4
Incr Delay (d2), s/veh	1.1	0.0	1.3	2.4	0.0	0.4	0.0	1.1	1.2	0.7	0.6	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	0.1	0.0	1.4	0.3	0.0	0.5	0.1	1.6	1.6	1.9	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.9	0.0	20.0	24.3	0.0	17.5	8.0	17.5	17.9	11.6	11.9	11.9
LnGrp LOS	C		B	C		B	A	B	B	B	B	B
Approach Vol, veh/h		153			84			397			997	
Approach Delay, s/veh		20.2			19.5			17.2			11.8	
Approach LOS		C			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	15.2	6.9	11.9	6.2	23.7	5.7	13.1
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	8.5	7.2	2.9	5.6	2.3	9.0	2.2	3.7
Green Ext Time (p_c), s	1.4	1.7	0.0	1.4	0.0	3.4	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	14.3
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

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	18	409	23	11	62	0	16	1	22	0	1	1
Future Vol, veh/h	18	409	23	11	62	0	16	1	22	0	1	1
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
Heavy Vehicles, %	2	2	23	13	14	2	13	2	2	2	2	2
Mvmt Flow	20	460	26	12	70	0	18	1	25	0	1	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.4	8.4	8.5	8
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	41%	4%	15%	0%
Vol Thru, %	3%	91%	85%	50%
Vol Right, %	56%	5%	0%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	450	73	2
LT Vol	16	18	11	0
Through Vol	1	409	62	1
RT Vol	22	23	0	1
Lane Flow Rate	44	506	82	2
Geometry Grp	1	1	1	1
Degree of Util (X)	0.063	0.569	0.109	0.003
Departure Headway (Hd)	5.147	4.054	4.763	4.98
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	699	880	755	721
Service Time	3.154	2.134	2.772	2.992
HCM Lane V/C Ratio	0.063	0.575	0.109	0.003
HCM Control Delay, s/veh	8.5	12.4	8.4	8
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.2	3.7	0.4	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	149	254	54	74	7	18
Future Vol, veh/h	149	254	54	74	7	18
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	9	2	2	17
Mvmt Flow	180	306	65	89	8	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	154	0	-	0	775	110
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	665	-
Critical Hdwy	4.13	-	-	-	6.42	6.37
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.453
Pot Cap-1 Maneuver	1420	-	-	-	367	905
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	511	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1420	-	-	-	311	905
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	511	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.92	0	11.27
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	666	-	-	-	311	905
HCM Lane V/C Ratio	0.126	-	-	-	0.027	0.024
HCM Control Delay (s/veh)	7.9	0	-	-	16.9	9.1
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	262	131	0	0	0
Future Vol, veh/h	0	262	131	0	0	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	82	82	82	82	82	82
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	0	320	160	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	479	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	320	-
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	1420	-	-	-	545	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1420	-	-	-	545	885
Mov Cap-2 Maneuver	-	-	-	-	545	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1420	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	233	120	29	12	9
Future Vol, veh/h	27	233	120	29	12	9
Conflicting Peds, #/hr	12	0	0	12	0	1
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	83	83	83	83	83	83
Heavy Vehicles, %	2	5	5	4	2	2
Mvmt Flow	33	281	145	35	14	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	192	0	-	0	520	175
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	346	-
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	1382	-	-	-	516	868
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	717	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1366	-	-	-	491	857
Mov Cap-2 Maneuver	-	-	-	-	491	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	708	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.8	0	11.14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	187	-	-	-	491	857
HCM Lane V/C Ratio	0.024	-	-	-	0.029	0.013
HCM Control Delay (s/veh)	7.7	0	-	-	12.6	9.3
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	209	27	16	154	0	9	0	5	0	0	0
Future Vol, veh/h	0	209	27	16	154	0	9	0	5	0	0	0
Conflicting Peds, #/hr	8	0	3	3	0	8	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	5	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	0	271	35	21	200	0	12	0	6	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	208	0	0	309	0	0	535	542	292	521	559	209
Stage 1	-	-	-	-	-	-	292	292	-	250	250	-
Stage 2	-	-	-	-	-	-	243	250	-	271	309	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1363	-	-	1251	-	-	456	448	747	466	438	831
Stage 1	-	-	-	-	-	-	716	671	-	754	700	-
Stage 2	-	-	-	-	-	-	761	700	-	734	659	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1247	-	-	446	435	745	450	425	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	446	435	-	450	425	-
Stage 1	-	-	-	-	-	-	714	669	-	735	682	-
Stage 2	-	-	-	-	-	-	746	682	-	728	657	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.75	12.16	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	521	1353	-	-	169	-	-	-
HCM Lane V/C Ratio	0.035	-	-	-	0.017	-	-	-
HCM Control Delay (s/veh)	12.2	0	-	-	7.9	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	-

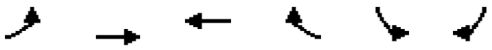
Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	144	71	143	120	31	49
Future Vol, veh/h	144	71	143	120	31	49
Conflicting Peds, #/hr	0	0	2	0	0	2
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	86	86	86	86	86	86
Heavy Vehicles, %	3	2	4	2	9	3
Mvmt Flow	167	83	166	140	36	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	539	67	95	0	-	0
Stage 1	67	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Critical Hdwy	6.43	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	502	997	1486	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	439	995	1484	-	-	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	17.34	4.2	0
HCM LOS	C		

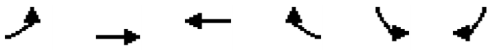
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	979	-	539	-	-
HCM Lane V/C Ratio	0.112	-	0.464	-	-
HCM Control Delay (s/veh)	7.7	0	17.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.4	-	2.4	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	390	281	264	60	6
Future Volume (vph)	19	390	281	264	60	6
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)	1702	1624	1617		1626	1583
Flt Permitted	0.35	1.00	1.00		0.95	1.00
Satd. Flow (perm)	622	1624	1617		1626	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	424	305	287	65	7
RTOR Reduction (vph)	0	0	25	0	0	6
Lane Group Flow (vph)	21	424	567	0	65	1
Confl. Peds. (#/hr)	2			2		
Heavy Vehicles (%)	6%	17%	12%	5%	11%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	29.5	34.9	28.8		4.7	4.7
Effective Green, g (s)	32.3	36.3	30.2		7.2	7.2
Actuated g/C Ratio	0.63	0.70	0.59		0.14	0.14
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)	434	1144	948		227	221
v/s Ratio Prot	0.00	c0.26	c0.35		c0.04	
v/s Ratio Perm	0.03					0.00
v/c Ratio	0.05	0.37	0.60		0.29	0.00
Uniform Delay, d1	6.6	3.0	6.8		19.8	19.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	1.0		0.5	0.0
Delay (s)	6.6	3.2	7.8		20.4	19.1
Level of Service	A	A	A		C	B
Approach Delay (s/veh)		3.4	7.8		20.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	390	281	264	60	6
Future Volume (veh/h)	19	390	281	264	60	6
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	1811	1648	1722	1826	1737	1870
Adj Flow Rate, veh/h	21	424	305	287	65	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	17	12	5	11	2
Cap, veh/h	529	1224	503	474	179	171
Arrive On Green	0.05	0.74	0.62	0.59	0.11	0.11
Sat Flow, veh/h	1725	1648	815	767	1654	1585
Grp Volume(v), veh/h	21	424	0	592	65	7
Grp Sat Flow(s),veh/h/ln	1725	1648	0	1583	1654	1585
Q Serve(g_s), s	0.0	4.8	0.0	12.5	2.0	0.2
Cycle Q Clear(g_c), s	0.0	4.8	0.0	12.5	2.0	0.2
Prop In Lane	1.00			0.48	1.00	1.00
Lane Grp Cap(c), veh/h	529	1224	0	977	179	171
V/C Ratio(X)	0.04	0.35	0.00	0.61	0.36	0.04
Avail Cap(c_a), veh/h	807	1426	0	1929	1002	960
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	8.8	2.4	0.0	6.5	22.2	21.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.6	1.0	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	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.8	2.6	0.0	7.2	23.2	21.5
LnGrp LOS	A	A		A	C	C
Approach Vol, veh/h		445	592		72	
Approach Delay, s/veh		2.9	7.2		23.0	
Approach LOS		A	A		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		43.9		9.8	6.7	37.1
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		6.8		4.0	2.0	14.5
Green Ext Time (p_c), s		9.8		0.1	0.0	17.2

Intersection Summary	
HCM 7th Control Delay, s/veh	6.5
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	674	195	68	347	78	61
Future Vol, veh/h	674	195	68	347	78	61
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	96	96	96	96	96	96
Heavy Vehicles, %	3	3	4	3	14	12
Mvmt Flow	702	203	71	361	81	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	906	0	1308	805
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	503	-
Critical Hdwy	-	-	4.14	-	6.54	6.32
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	-	-	2.236	-	3.626	3.408
Pot Cap-1 Maneuver	-	-	743	-	166	368
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	583	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	742	-	150	367
Mov Cap-2 Maneuver	-	-	-	-	150	-
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	528	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.7	37.84
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	150	367	-	-	742	-
HCM Lane V/C Ratio	0.542	0.173	-	-	0.095	-
HCM Control Delay (s/veh)	54.3	16.8	-	-	10.4	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2.7	0.6	-	-	0.3	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	674	195	68	347	78	61
Future Volume (Veh/h)	674	195	68	347	78	61
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)	702	203	71	361	81	64
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			906		1308	805
vC1, stage 1 conf vol					805	
vC2, stage 2 conf vol					503	
vCu, unblocked vol			906		1308	805
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)					5.5	
tF (s)			2.2		3.6	3.4
p0 queue free %			90		77	83
cM capacity (veh/h)			742		349	367

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	905	71	361	81	64
Volume Left	0	71	0	81	0
Volume Right	203	0	0	0	64
cSH	1700	742	1700	349	367
Volume to Capacity	0.53	0.10	0.21	0.23	0.17
Queue Length 95th (ft)	0	8	0	22	16
Control Delay (s/veh)	0.0	10.4	0.0	18.4	16.9
Lane LOS		B		C	C
Approach Delay (s/veh)	0.0	1.7		17.7	
Approach LOS				C	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

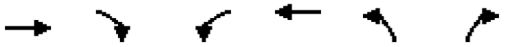
Intersection	
Int Delay, s/veh	8.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	13	38	86	106	89
Future Vol, veh/h	38	13	38	86	106	89
Conflicting Peds, #/hr	0	44	44	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	62	62	62	62	62	62
Heavy Vehicles, %	3	2	17	5	5	7
Mvmt Flow	61	21	61	139	171	144

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	126	0	377	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	-	-	4.27	-	6.45	6.27
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.353	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	1372	-	619	923
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1315	-	563	884
Mov Cap-2 Maneuver	-	-	-	-	563	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.41	14.91
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	675	-	-	552	-
HCM Lane V/C Ratio	0.466	-	-	0.047	-
HCM Control Delay (s/veh)	14.9	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.5	-	-	0.1	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	38	13	38	86	106	89
Future Volume (Veh/h)	38	13	38	86	106	89
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	61	21	61	139	171	144
Pedestrians					44	
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			126		377	116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			126		377	116
tC, single (s)			4.3		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.4
p0 queue free %			95		70	84
cM capacity (veh/h)			1315		566	885

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	82	200	315
Volume Left	0	61	171
Volume Right	21	0	144
cSH	1700	1315	677
Volume to Capacity	0.05	0.05	0.47
Queue Length 95th (ft)	0	4	62
Control Delay (s/veh)	0.0	2.7	14.9
Lane LOS		A	B
Approach Delay (s/veh)	0.0	2.7	14.9
Approach LOS			B

Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	208	1473	42	0	1828
Future Vol, veh/h	0	208	1473	42	0	1828
Conflicting Peds, #/hr	0	1	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	96	96	96	96	96	96
Heavy Vehicles, %	2	6	8	3	2	6
Mvmt Flow	0	217	1534	44	0	1904

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	768	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.02	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.36	-	-	-	-
Pot Cap-1 Maneuver	0	336	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	335	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	33.39	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	335	-
HCM Lane V/C Ratio	-	0.646	-
HCM Control Delay (s/veh)	-	33.4	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	4.3	-

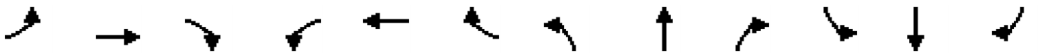


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	208	1473	42	0	1828
Future Volume (Veh/h)	0	208	1473	42	0	1828
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	217	1534	44	0	1904
Pedestrians	1					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			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2487	769			1535	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2487	769			1535	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	48			100	
cM capacity (veh/h)	24	416			429	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	217	767	767	44	952	952
Volume Left	0	0	0	0	0	0
Volume Right	217	0	0	44	0	0
cSH	416	1700	1700	1700	1700	1700
Volume to Capacity	0.52	0.45	0.45	0.03	0.56	0.56
Queue Length 95th (ft)	73	0	0	0	0	0
Control Delay (s/veh)	22.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s/veh)	22.7	0.0			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

* User Entered Value



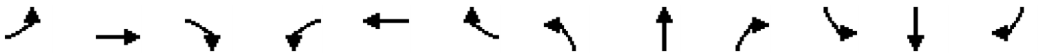
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	216	215	24	269	9	291	151	38	16	216	6
Future Volume (vph)	11	216	215	24	269	9	291	151	38	16	216	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	0.93		1.00	0.99		1.00	0.97		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)	1501	1484		1543	1768		1612	1577		1687	1800	
Flt Permitted	0.51	1.00		0.28	1.00		0.37	1.00		0.63	1.00	
Satd. Flow (perm)	805	1484		451	1768		633	1577		1120	1800	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	12	232	231	26	289	10	313	162	41	17	232	6
RTOR Reduction (vph)	0	19	0	0	1	0	0	0	0	0	1	0
Lane Group Flow (vph)	12	444	0	26	298	0	313	203	0	17	237	0
Confl. Peds. (#/hr)	2					2						
Heavy Vehicles (%)	20%	14%	23%	17%	7%	2%	12%	14%	28%	7%	4%	50%
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)	40.1	39.2		44.3	41.3		43.5	37.6		25.4	23.5	
Effective Green, g (s)	40.1	39.7		44.3	41.8		43.5	38.1		25.4	24.0	
Actuated g/C Ratio	0.40	0.39		0.44	0.42		0.43	0.38		0.25	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)	326	585		230	733		428	596		293	428	
v/s Ratio Prot	0.00	c0.30		c0.00	0.17		c0.12	0.13		0.00	0.13	
v/s Ratio Perm	0.01			0.05			c0.20			0.01		
v/c Ratio	0.04	0.76		0.11	0.41		0.73	0.34		0.06	0.55	
Uniform Delay, d1	18.5	26.4		17.8	20.7		21.0	22.3		28.4	33.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	5.7		0.1	0.4		5.5	0.4		0.0	1.6	
Delay (s)	18.5	32.1		17.8	21.1		26.4	22.7		28.5	35.3	
Level of Service	B	C		B	C		C	C		C	D	
Approach Delay (s/veh)		31.7			20.9			25.0			34.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
20: SW Teton Avenue & SW Herman Road

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	216	215	24	269	9	291	151	38	16	216	6
Future Volume (veh/h)	11	216	215	24	269	9	291	151	38	16	216	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		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	1604	1693	1559	1648	1796	1870	1722	1693	1485	1796	1841	1159
Adj Flow Rate, veh/h	12	232	231	26	289	10	313	162	41	17	232	6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	20	14	23	17	7	2	12	14	28	7	4	50
Cap, veh/h	383	313	312	250	718	25	420	424	107	305	297	8
Arrive On Green	0.01	0.40	0.40	0.03	0.42	0.41	0.18	0.33	0.32	0.02	0.17	0.16
Sat Flow, veh/h	1527	777	774	1570	1726	60	1640	1303	330	1711	1786	46
Grp Volume(v), veh/h	12	0	463	26	0	299	313	0	203	17	0	238
Grp Sat Flow(s),veh/h/ln	1527	0	1551	1570	0	1785	1640	0	1633	1711	0	1832
Q Serve(g_s), s	0.4	0.0	20.4	0.8	0.0	9.4	12.0	0.0	7.7	0.7	0.0	10.0
Cycle Q Clear(g_c), s	0.4	0.0	20.4	0.8	0.0	9.4	12.0	0.0	7.7	0.7	0.0	10.0
Prop In Lane	1.00		0.50	1.00		0.03	1.00		0.20	1.00		0.03
Lane Grp Cap(c), veh/h	383	0	625	250	0	743	420	0	531	305	0	305
V/C Ratio(X)	0.03	0.00	0.74	0.10	0.00	0.40	0.74	0.00	0.38	0.06	0.00	0.78
Avail Cap(c_a), veh/h	741	0	1054	598	0	1191	536	0	1171	698	0	1268
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	14.4	0.0	20.5	16.2	0.0	16.4	21.3	0.0	20.9	27.3	0.0	32.0
Incr Delay (d2), s/veh	0.0	0.0	1.9	0.1	0.0	0.4	2.9	0.0	0.5	0.0	0.0	4.7
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	6.8	0.3	0.0	3.6	4.6	0.0	2.8	0.3	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	22.4	16.3	0.0	16.8	24.1	0.0	21.4	27.3	0.0	36.8
LnGrp LOS	B		C	B		B	C		C	C		D
Approach Vol, veh/h		475			325			516			255	
Approach Delay, s/veh		22.2			16.8			23.0			36.1	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	37.3	18.3	18.3	5.2	38.4	5.6	31.1
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	2.8	22.4	14.0	12.0	2.4	11.4	2.7	9.7
Green Ext Time (p_c), s	0.0	9.4	0.3	0.8	0.0	6.7	0.0	2.9

Intersection Summary	
HCM 7th Control Delay, s/veh	23.6
HCM 7th LOS	C



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	231	358	135	1572	19	1468	103
Future Volume (vph)	231	358	135	1572	19	1468	103
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	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	1528	1656	3312	1770	3406	1452
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1736	1528	1656	3312	1770	3406	1452
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	241	373	141	1638	20	1529	107
RTOR Reduction (vph)	0	162	0	0	0	0	30
Lane Group Flow (vph)	241	211	141	1638	20	1529	77
Confl. Peds. (#/hr)		5	3				3
Heavy Vehicles (%)	4%	4%	9%	9%	2%	6%	8%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	22.5	22.5	16.3	97.6	4.4	84.7	84.7
Effective Green, g (s)	23.5	23.5	17.8	99.6	4.9	86.7	86.7
Actuated g/C Ratio	0.17	0.17	0.13	0.71	0.04	0.62	0.62
Clearance Time (s)	5.0	5.0	5.5	6.0	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5	2.3	4.5	4.5
Lane Grp Cap (vph)	291	256	210	2356	61	2109	899
v/s Ratio Prot	c0.14		0.09	c0.49	0.01	c0.45	
v/s Ratio Perm		0.14					0.05
v/c Ratio	0.83	0.82	0.67	0.70	0.33	0.72	0.09
Uniform Delay, d1	56.3	56.2	58.3	11.5	65.9	18.4	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.16	1.19	0.85
Incremental Delay, d2	17.0	18.5	7.1	1.7	1.4	1.8	0.1
Delay (s)	73.3	74.7	65.4	13.3	78.2	23.7	9.2
Level of Service	E	E	E	B	E	C	A
Approach Delay (s/veh)	74.2			17.4		23.4	
Approach LOS	E			B		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
21: OR 99W (Pacific Highway) & SW Fischer Road

07/15/2025



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	231	358	135	1572	19	1468	103
Future Volume (veh/h)	231	358	135	1572	19	1468	103
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	1841	1841	1767	1767		1811	1781
Adj Flow Rate, veh/h	241	187	141	1638		1529	107
Peak Hour Factor	0.96	0.96	0.96	0.96		0.96	0.96
Percent Heavy Veh, %	4	4	9	9		6	8
Cap, veh/h	282	251	228	2624		2114	925
Arrive On Green	0.16	0.16	0.14	0.78		1.00	1.00
Sat Flow, veh/h	1753	1560	1682	3445		3532	1506
Grp Volume(v), veh/h	241	187	141	1638		1529	107
Grp Sat Flow(s),veh/h/ln	1753	1560	1682	1678		1721	1506
Q Serve(g_s), s	18.7	16.0	11.1	29.1		0.0	0.0
Cycle Q Clear(g_c), s	18.7	16.0	11.1	29.1		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	282	251	228	2624		2114	925
V/C Ratio(X)	0.85	0.74	0.62	0.62		0.72	0.12
Avail Cap(c_a), veh/h	326	290	228	2624		2114	925
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		0.69	0.69
Uniform Delay (d), s/veh	57.1	56.0	57.1	6.5		0.0	0.0
Incr Delay (d2), s/veh	16.7	7.9	4.2	1.1		1.5	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	13.9	4.9	8.3		0.4	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	73.9	63.9	61.3	7.6		1.5	0.2
LnGrp LOS	E	E	E	A		A	A
Approach Vol, veh/h	428			1779		1636	
Approach Delay, s/veh	69.5			11.9		1.4	
Approach LOS	E			B		A	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		113.5		26.5	23.5	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		31.1		20.7	13.1	2.0	
Green Ext Time (p_c), s		48.9		0.8	0.1	68.9	

Intersection Summary	
HCM 7th Control Delay, s/veh	13.9
HCM 7th LOS	B

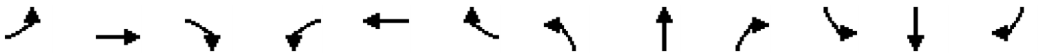
Notes

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.

HCM Signalized Intersection Capacity Analysis
22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	51	28	299	24	164	75	1226	516	399	1199	15
Future Volume (vph)	6	51	28	299	24	164	75	1226	516	399	1199	15
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
Frpb, ped/bikes		1.00		1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.97
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)		3351		1633	1651	1517	1770	3312	1513	3367	3374	1542
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)		3351		1633	1651	1517	1770	3312	1513	3367	3374	1542
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	6	52	29	305	24	167	77	1251	527	407	1223	15
RTOR Reduction (vph)	0	27	0	0	0	146	0	0	89	0	0	7
Lane Group Flow (vph)	0	60	0	165	164	21	77	1251	438	407	1223	8
Confl. Peds. (#/hr)	9					9	2		6	6		2
Heavy Vehicles (%)	2%	2%	2%	5%	4%	3%	2%	9%	5%	4%	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		17.8	17.8	17.8	9.4	64.8	82.6	22.7	78.4	78.4
Effective Green, g (s)		12.0		17.8	17.8	17.8	9.4	64.8	82.6	22.7	78.4	78.4
Actuated g/C Ratio		0.09		0.13	0.13	0.13	0.07	0.46	0.59	0.16	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		207	209	192	118	1532	957	545	1889	863
v/s Ratio Prot		c0.02		c0.10	0.10		0.04	c0.38	0.06	c0.12	0.36	
v/s Ratio Perm						0.01			0.23			0.01
v/c Ratio		0.21		0.80	0.78	0.11	0.65	0.82	0.46	0.75	0.65	0.01
Uniform Delay, d1		59.6		59.3	59.2	54.1	63.7	32.5	16.1	55.9	21.3	13.6
Progression Factor		1.00		1.00	1.00	1.00	0.92	0.90	0.50	1.00	1.00	1.00
Incremental Delay, d2		0.2		18.1	16.5	0.1	7.6	3.6	0.1	5.1	1.7	0.0
Delay (s)		59.8		77.4	75.8	54.2	66.4	32.7	8.3	61.0	23.0	13.6
Level of Service		E		E	E	D	E	C	A	E	C	B
Approach Delay (s/veh)		59.8			69.1			27.2			32.3	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.0	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	74.8%	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.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	885	201	625	1163	762	767
Future Volume (vph)	885	201	625	1163	762	767
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	0.99	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	1518	3367	3471	3400	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1518	3367	3471	3400	2787
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	903	205	638	1187	778	783
RTOR Reduction (vph)	0	123	0	0	0	0
Lane Group Flow (vph)	903	82	638	1187	778	783
Confl. Peds. (#/hr)		1	1			6
Heavy Vehicles (%)	2%	5%	4%	4%	3%	2%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	1 4
Permitted Phases		2				
Actuated Green, G (s)	42.7	42.7	24.9	73.2	33.7	58.2
Effective Green, g (s)	44.7	44.7	26.5	75.2	35.7	53.2
Actuated g/C Ratio	0.38	0.38	0.22	0.63	0.30	0.45
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)	1330	570	750	2195	1020	1247
v/s Ratio Prot	c0.26		c0.19	0.34	c0.23	0.28
v/s Ratio Perm		0.05				
v/c Ratio	0.68	0.14	0.85	0.54	0.76	0.63
Uniform Delay, d1	31.1	24.5	44.3	12.2	37.8	25.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.3	9.0	1.0	3.2	0.8
Delay (s)	33.0	24.8	53.3	13.2	41.0	26.0
Level of Service	C	C	D	B	D	C
Approach Delay (s/veh)	31.5			27.2	33.5	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	118.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	75.4%	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.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	639	902	49	420	408
Future Volume (vph)	39	639	902	49	420	408
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	0.97	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)	1770	1583	3539	1529	1769	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.11	1.00
Satd. Flow (perm)	1770	1583	3539	1529	214	3471
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	41	680	960	52	447	434
RTOR Reduction (vph)	0	7	0	21	0	0
Lane Group Flow (vph)	41	673	960	31	447	434
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
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)	14.2	58.4	34.8	34.8	74.0	79.0
Effective Green, g (s)	15.2	63.4	35.8	35.8	76.0	80.0
Actuated g/C Ratio	0.15	0.61	0.35	0.35	0.73	0.77
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)	259	967	1221	527	759	2677
v/s Ratio Prot		c0.42	c0.27		0.23	0.13
v/s Ratio Perm	0.02			0.02	0.20	
v/c Ratio	0.16	0.70	0.79	0.06	0.59	0.16
Uniform Delay, d1	38.7	13.6	30.5	22.7	18.8	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.4	3.8	0.1	1.4	0.1
Delay (s)	39.1	16.0	34.3	22.8	20.2	3.2
Level of Service	D	B	C	C	C	A
Approach Delay (s/veh)	17.3		33.7			11.8
Approach LOS	B		C			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	71.6%	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.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	461	2	0	599	266	0	3	7	16	0	20
Future Vol, veh/h	38	461	2	0	599	266	0	3	7	16	0	20
Conflicting Peds, #/hr	4	0	6	6	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	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	3	50	2	2	2	2	33	14	7	2	11
Mvmt Flow	42	507	2	0	658	292	0	3	8	18	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	955	0	0	515	0	0	1256	1552	514	1400	1407	809
Stage 1	-	-	-	-	-	-	597	597	-	808	808	-
Stage 2	-	-	-	-	-	-	659	955	-	592	598	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.83	6.34	7.17	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.83	-	6.17	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.83	-	6.17	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.297	3.426	3.563	4.018	3.399
Pot Cap-1 Maneuver	720	-	-	1051	-	-	148	97	538	115	139	367
Stage 1	-	-	-	-	-	-	489	445	-	367	394	-
Stage 2	-	-	-	-	-	-	453	299	-	484	491	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	717	-	-	1045	-	-	130	90	535	103	130	365
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	90	-	103	130	-
Stage 1	-	-	-	-	-	-	458	417	-	366	392	-
Stage 2	-	-	-	-	-	-	425	298	-	446	460	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.78	0	22.55	32.33
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	216	717	-	-	1045	-	-	171
HCM Lane V/C Ratio	-	0.051	0.058	-	-	-	-	-	0.232
HCM Control Delay (s/veh)	0	22.6	10.3	-	-	0	-	-	32.3
HCM Lane LOS	A	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.2	0.2	-	-	0	-	-	0.9

3: JAE Access/SW 115th Avenue & SW Tualatin Road Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBT	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Total Delay (hr)	0.1	0.4	0.0	0.6	0.2	0.0	0.0	0.1	0.0	1.5
Total Del/Veh (s)	12.4	3.2	1.9	3.4	2.4	22.2	8.0	21.5	6.9	3.7
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Stop Del/Veh (s)	8.2	0.0	0.0	0.0	0.0	19.4	6.2	19.8	5.4	0.5

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	476	861	16	9	4
Future Vol, veh/h	9	476	861	16	9	4
Conflicting Peds, #/hr	3	0	0	3	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	93	93	93	93	93	93
Heavy Vehicles, %	2	3	7	2	11	2
Mvmt Flow	10	512	926	17	10	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	946	0	-	0	1469	937
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	4.12	-	-	-	6.51	6.22
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	2.218	-	-	-	3.599	3.318
Pot Cap-1 Maneuver	725	-	-	-	134	321
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	723	-	-	-	131	320
Mov Cap-2 Maneuver	-	-	-	-	258	-
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	570	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.19	0	18.84
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	723	-	-	-	274
HCM Lane V/C Ratio	0.013	-	-	-	0.051
HCM Control Delay (s/veh)	10	-	-	-	18.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	475	7	6	850	38	38
Future Vol, veh/h	475	7	6	850	38	38
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	94	94	94	94	94	94
Heavy Vehicles, %	4	20	2	2	3	7
Mvmt Flow	505	7	6	904	40	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	514	0	1427	510
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	917	-
Critical Hdwy	-	-	4.12	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	1052	-	148	554
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	388	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1051	-	147	553
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	386	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.06	17.47
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	369	-	-	1051	-
HCM Lane V/C Ratio	0.219	-	-	0.006	-
HCM Control Delay (s/veh)	17.5	-	-	8.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	1	63	16	0
Future Vol, veh/h	3	0	1	63	16	0
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	9	2
Mvmt Flow	3	0	1	70	18	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	93	21	21	0	-	0
Stage 1	21	-	-	-	-	-
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	907	1057	1595	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	901	1054	1591	-	-	-
Mov Cap-2 Maneuver	901	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.01	0.11	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	28	-	901	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s/veh)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	107	16	38	15	2
Future Vol, veh/h	25	107	16	38	15	2
Conflicting Peds, #/hr	0	0	7	0	0	7
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	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	3	9	2
Mvmt Flow	25	108	16	38	15	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	94	23	24	0	-	0
Stage 1	23	-	-	-	-	-
Stage 2	71	-	-	-	-	-
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	906	1054	1591	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	885	1047	1580	-	-	-
Mov Cap-2 Maneuver	885	-	-	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	946	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.1	2.16	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	533	-	1011	-	-
HCM Lane V/C Ratio	0.01	-	0.132	-	-
HCM Control Delay (s/veh)	7.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

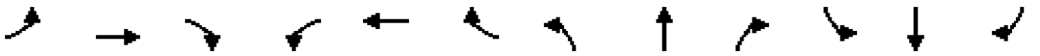
Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	74	8	45	121	2
Future Vol, veh/h	7	74	8	45	121	2
Conflicting Peds, #/hr	0	0	4	0	0	4
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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	8	3	2
Mvmt Flow	9	90	10	55	148	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	227	153	154	0	-	0
Stage 1	153	-	-	-	-	-
Stage 2	74	-	-	-	-	-
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	761	893	1426	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	750	890	1421	-	-	-
Mov Cap-2 Maneuver	750	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.63	1.14	0
HCM LOS	A		

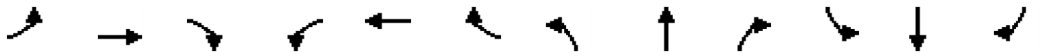
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	272	-	876	-	-
HCM Lane V/C Ratio	0.007	-	0.113	-	-
HCM Control Delay (s/veh)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	29	27	66	2	282	7	668	27	46	395	18
Future Volume (vph)	28	29	27	66	2	282	7	668	27	46	395	18
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	0.99		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	0.99		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)	1736	1583		1719	1562		1262	3515		1770	3342	
Flt Permitted	0.95	1.00		0.95	1.00		0.47	1.00		0.24	1.00	
Satd. Flow (perm)	1736	1583		1719	1562		629	3515		438	3342	
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)	30	32	29	72	2	307	8	726	29	50	429	20
RTOR Reduction (vph)	0	23	0	0	224	0	0	2	0	0	2	0
Lane Group Flow (vph)	30	38	0	72	85	0	8	753	0	50	447	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	4%	11%	12%	5%	2%	2%	43%	2%	5%	2%	6%	35%
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)	2.4	12.5		6.5	16.6		26.4	22.3		26.4	25.6	
Effective Green, g (s)	3.4	13.5		7.5	17.6		28.4	23.3		26.4	25.6	
Actuated g/C Ratio	0.05	0.21		0.11	0.27		0.43	0.36		0.40	0.39	
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	326		197	420		290	1252		260	1308	
v/s Ratio Prot	0.02	0.02		c0.04	c0.05		0.00	c0.21		c0.01	c0.13	
v/s Ratio Perm							0.01			0.07		
v/c Ratio	0.33	0.12		0.37	0.20		0.03	0.60		0.19	0.34	
Uniform Delay, d1	29.9	21.1		26.8	18.5		10.5	17.2		12.5	14.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.2		1.2	0.2		0.0	0.8		0.4	0.2	
Delay (s)	32.1	21.3		27.9	18.7		10.6	18.1		12.8	14.1	
Level of Service	C	C		C	B		B	B		B	B	
Approach Delay (s/veh)		24.8			20.4			18.0			14.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	29	27	66	2	282	7	668	27	46	395	18
Future Volume (veh/h)	28	29	27	66	2	282	7	668	27	46	395	18
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		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1737	1722	1826	1870	1870	1263	1870	1826	1870	1811	1381
Adj Flow Rate, veh/h	30	32	29	72	2	307	8	726	29	50	429	20
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, %	4	11	12	5	2	2	43	2	5	2	6	35
Cap, veh/h	109	214	194	169	3	457	315	1017	41	315	1139	53
Arrive On Green	0.06	0.26	0.24	0.10	0.29	0.27	0.03	0.29	0.28	0.08	0.34	0.34
Sat Flow, veh/h	1753	837	759	1739	10	1570	1203	3483	139	1781	3348	156
Grp Volume(v), veh/h	30	0	61	72	0	309	8	370	385	50	220	229
Grp Sat Flow(s),veh/h/ln	1753	0	1596	1739	0	1580	1203	1777	1845	1781	1721	1783
Q Serve(g_s), s	1.0	0.0	1.8	2.4	0.0	10.6	0.3	11.3	11.4	1.1	5.9	5.9
Cycle Q Clear(g_c), s	1.0	0.0	1.8	2.4	0.0	10.6	0.3	11.3	11.4	1.1	5.9	5.9
Prop In Lane	1.00		0.48	1.00		0.99	1.00		0.08	1.00		0.09
Lane Grp Cap(c), veh/h	109	0	409	169	0	460	315	519	539	315	585	607
V/C Ratio(X)	0.28	0.00	0.15	0.43	0.00	0.67	0.03	0.71	0.71	0.16	0.38	0.38
Avail Cap(c_a), veh/h	461	0	813	314	0	805	698	905	940	913	1131	1172
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	27.2	0.0	17.7	25.9	0.0	19.5	11.9	19.3	19.3	14.3	15.2	15.2
Incr Delay (d2), s/veh	1.3	0.0	0.2	1.7	0.0	1.7	0.0	1.8	1.8	0.2	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	0.4	0.0	0.6	1.0	0.0	3.6	0.1	4.2	4.4	0.4	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.6	0.0	17.9	27.5	0.0	21.2	12.0	21.1	21.1	14.6	15.6	15.6
LnGrp LOS	C		B	C		C	B	C	C	B	B	B
Approach Vol, veh/h		91			381			763			499	
Approach Delay, s/veh		21.4			22.4			21.0			15.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	21.8	9.9	19.6	5.6	25.7	7.8	21.7
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	3.1	13.4	4.4	3.8	2.3	7.9	3.0	12.6
Green Ext Time (p_c), s	0.1	3.4	0.1	0.5	0.0	2.1	0.0	3.2

Intersection Summary	
HCM 7th Control Delay, s/veh	19.7
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	77	12	40	356	2	29	2	8	1	0	13
Future Vol, veh/h	6	77	12	40	356	2	29	2	8	1	0	13
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	4	2	15	2	2	2	2	40	2	2	2
Mvmt Flow	7	95	15	49	440	2	36	2	10	1	0	16
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	8.4	14.3	8.8	8
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	74%	6%	10%	7%
Vol Thru, %	5%	81%	89%	0%
Vol Right, %	21%	13%	1%	93%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	95	398	14
LT Vol	29	6	40	1
Through Vol	2	77	356	0
RT Vol	8	12	2	13
Lane Flow Rate	48	117	491	17
Geometry Grp	1	1	1	1
Degree of Util (X)	0.072	0.149	0.613	0.023
Departure Headway (Hd)	5.376	4.563	4.488	4.857
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	786	811	734
Service Time	3.42	2.592	2.488	2.905
HCM Lane V/C Ratio	0.072	0.149	0.605	0.023
HCM Control Delay, s/veh	8.8	8.4	14.3	8
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.5	4.3	0.1

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	47	244	12	62	145
Future Vol, veh/h	25	47	244	12	62	145
Conflicting Peds, #/hr	3	0	0	3	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	82	82	82	82	82	76
Heavy Vehicles, %	2	8	2	2	2	2
Mvmt Flow	30	57	298	15	76	191

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	315	0	-	0	426	308
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	118	-
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	1245	-	-	-	585	732
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1241	-	-	-	567	730
Mov Cap-2 Maneuver	-	-	-	-	567	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	904	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.77	0	11.85
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	625	-	-	-	567	730
HCM Lane V/C Ratio	0.025	-	-	-	0.133	0.261
HCM Control Delay (s/veh)	8	0	-	-	12.3	11.7
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	107	234	0	0	0
Future Vol, veh/h	0	107	234	0	0	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	82	82	82	82	82	82
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	0	130	285	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	285	0	-	0	416	285
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	130	-
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	1277	-	-	-	593	754
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1277	-	-	-	593	754
Mov Cap-2 Maneuver	-	-	-	-	593	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	896	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1277	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	106	214	19	35	36
Future Vol, veh/h	9	106	214	19	35	36
Conflicting Peds, #/hr	7	0	0	7	0	2
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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	129	261	23	43	44

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	291	0	-	0	431	282
Stage 1	-	-	-	-	280	-
Stage 2	-	-	-	-	151	-
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	1271	-	-	-	582	757
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	877	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1262	-	-	-	568	751
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	871	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.62	0	10.96
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	141	-	-	-	568	751
HCM Lane V/C Ratio	0.009	-	-	-	0.075	0.058
HCM Control Delay (s/veh)	7.9	0	-	-	11.8	10.1
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.2

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	139	8	6	195	0	25	0	13	0	0	0
Future Vol, veh/h	0	139	8	6	195	0	25	0	13	0	0	0
Conflicting Peds, #/hr	7	0	5	5	0	7	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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	50	2	2	2	2	2
Mvmt Flow	0	170	10	7	238	0	30	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	245	0	0	184	0	0	432	439	179	429	444	245
Stage 1	-	-	-	-	-	-	179	179	-	259	259	-
Stage 2	-	-	-	-	-	-	252	259	-	170	184	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.6	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.95	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1321	-	-	1391	-	-	460	512	863	536	509	794
Stage 1	-	-	-	-	-	-	723	751	-	745	693	-
Stage 2	-	-	-	-	-	-	657	693	-	832	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1313	-	-	1384	-	-	455	503	859	520	500	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	455	503	-	520	500	-
Stage 1	-	-	-	-	-	-	719	747	-	736	684	-
Stage 2	-	-	-	-	-	-	653	684	-	817	744	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.23	12.26	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	542	1313	-	-	54	-	-	-
HCM Lane V/C Ratio	0.085	-	-	-	0.005	-	-	-
HCM Control Delay (s/veh)	12.3	0	-	-	7.6	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

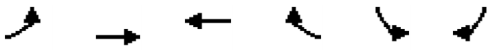
Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	129	66	79	116	115
Future Vol, veh/h	25	129	66	79	116	115
Conflicting Peds, #/hr	1	1	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	85	85	85	85	85	85
Heavy Vehicles, %	17	2	2	2	2	2
Mvmt Flow	29	152	78	93	136	135

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	454	206	273	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	249	-	-	-	-	-
Critical Hdwy	6.57	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	537	834	1290	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	833	1289	-	-	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	758	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.3	3.63	0
HCM LOS	B		

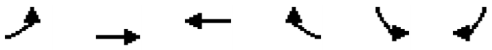
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	819	-	752	-	-
HCM Lane V/C Ratio	0.06	-	0.241	-	-
HCM Control Delay (s/veh)	8	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	338	529	74	228	37
Future Volume (vph)	2	338	529	74	228	37
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	1.00		1.00	1.00
Flpb, ped/bikes	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)	1769	1827	1737		1752	1568
Flt Permitted	0.20	1.00	1.00		0.95	1.00
Satd. Flow (perm)	373	1827	1737		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	376	588	82	253	41
RTOR Reduction (vph)	0	0	5	0	0	29
Lane Group Flow (vph)	2	376	665	0	253	12
Confl. Peds. (#/hr)	1			1		
Heavy Vehicles (%)	2%	4%	8%	2%	3%	3%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	29.0	34.4	28.4		16.0	16.0
Effective Green, g (s)	31.8	35.8	29.8		18.5	18.5
Actuated g/C Ratio	0.51	0.57	0.48		0.30	0.30
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)	235	1049	830		520	465
v/s Ratio Prot	0.00	c0.21	c0.38		c0.14	
v/s Ratio Perm	0.00					0.01
v/c Ratio	0.01	0.36	0.80		0.49	0.03
Uniform Delay, d1	16.9	7.1	13.7		18.0	15.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	5.6		0.6	0.0
Delay (s)	16.9	7.3	19.4		18.6	15.5
Level of Service	B	A	B		B	B
Approach Delay (s/veh)		7.4	19.4		18.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	338	529	74	228	37
Future Volume (veh/h)	2	338	529	74	228	37
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	1870	1841	1781	1870	1856	1856
Adj Flow Rate, veh/h	2	376	588	82	253	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	8	2	3	3
Cap, veh/h	404	1238	902	126	369	328
Arrive On Green	0.02	0.67	0.59	0.57	0.21	0.21
Sat Flow, veh/h	1781	1841	1530	213	1767	1572
Grp Volume(v), veh/h	2	376	0	670	253	41
Grp Sat Flow(s),veh/h/ln	1781	1841	0	1743	1767	1572
Q Serve(g_s), s	0.0	5.7	0.0	17.3	8.9	1.4
Cycle Q Clear(g_c), s	0.0	5.7	0.0	17.3	8.9	1.4
Prop In Lane	1.00			0.12	1.00	1.00
Lane Grp Cap(c), veh/h	404	1238	0	1028	369	328
V/C Ratio(X)	0.00	0.30	0.00	0.65	0.69	0.12
Avail Cap(c_a), veh/h	663	1266	0	1690	852	758
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	14.0	4.5	0.0	9.3	24.6	21.7
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.7	1.8	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	1.5	0.0	5.2	3.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	14.0	4.7	0.0	10.0	26.5	21.8
LnGrp LOS	B	A		B	C	C
Approach Vol, veh/h		378	670		294	
Approach Delay, s/veh		4.7	10.0		25.8	
Approach LOS		A	B		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.4		18.1	5.6	43.8
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		7.7		10.9	2.0	19.3
Green Ext Time (p_c), s		8.3		0.7	0.0	19.1

Intersection Summary	
HCM 7th Control Delay, s/veh	12.0
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	10.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	389	68	38	770	131	36
Future Vol, veh/h	389	68	38	770	131	36
Conflicting Peds, #/hr	0	0	0	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	93	93	93	93	93	93
Heavy Vehicles, %	2	5	6	2	2	2
Mvmt Flow	418	73	41	828	141	39

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	491	0	1365	455
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	910	-
Critical Hdwy	-	-	4.16	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.254	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1052	-	163	605
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1052	-	156	605
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	377	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.4	84.86
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	156	605	-	-	1052	-
HCM Lane V/C Ratio	0.901	0.064	-	-	0.039	-
HCM Control Delay (s/veh)	105.1	11.4	-	-	8.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	6.4	0.2	-	-	0.1	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	389	68	38	770	131	36
Future Volume (Veh/h)	389	68	38	770	131	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	418	73	41	828	141	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			TWLTL		
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			491		1365	455
vC1, stage 1 conf vol					455	
vC2, stage 2 conf vol					910	
vCu, unblocked vol			491		1365	455
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.3		3.5	3.3
p0 queue free %			96		59	94
cM capacity (veh/h)			1052		341	606

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	491	41	828	141	39
Volume Left	0	41	0	141	0
Volume Right	73	0	0	0	39
cSH	1700	1052	1700	341	606
Volume to Capacity	0.29	0.04	0.49	0.41	0.06
Queue Length 95th (ft)	0	3	0	49	5
Control Delay (s/veh)	0.0	8.6	0.0	22.8	11.4
Lane LOS		A		C	B
Approach Delay (s/veh)	0.0	0.4		20.3	
Approach LOS				C	

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	54.5%	ICU Level of Service		A
Analysis Period (min)	15			

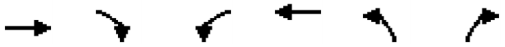
Intersection	
Int Delay, s/veh	8.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	7	17	76	267	21
Future Vol, veh/h	16	7	17	76	267	21
Conflicting Peds, #/hr	0	8	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	13	2	2	20
Mvmt Flow	17	8	18	83	290	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	33	0	149	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	4.23	-	6.42	6.4
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.317	-	3.518	3.48
Pot Cap-1 Maneuver	-	-	1511	-	843	996
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1499	-	826	988
Mov Cap-2 Maneuver	-	-	-	-	826	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.36	11.86
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	836	-	-	329	-
HCM Lane V/C Ratio	0.374	-	-	0.012	-
HCM Control Delay (s/veh)	11.9	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.7	-	-	0	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	16	7	17	76	267	21
Future Volume (Veh/h)	16	7	17	76	267	21
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)	17	8	18	83	290	23
Pedestrians					8	
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			33		148	29
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		148	29
tC, single (s)			4.2		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.5
p0 queue free %			99		65	98
cM capacity (veh/h)			1499		828	989

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	25	101	313
Volume Left	0	18	290
Volume Right	8	0	23
cSH	1700	1499	838
Volume to Capacity	0.01	0.01	0.37
Queue Length 95th (ft)	0	1	44
Control Delay (s/veh)	0.0	1.4	11.8
Lane LOS		A	B
Approach Delay (s/veh)	0.0	1.4	11.8
Approach LOS			B

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	9.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	332	1594	30	0	1739
Future Vol, veh/h	0	332	1594	30	0	1739
Conflicting Peds, #/hr	0	0	0	4	4	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	98	98	98	98	98	98
Heavy Vehicles, %	2	3	3	4	2	2
Mvmt Flow	0	339	1627	31	0	1774

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	813	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	~ 319	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	~ 319	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	104.66	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	319	-
HCM Lane V/C Ratio	-	1.061	-
HCM Control Delay (s/veh)	-	104.7	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	12.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	332	1594	30	0	1739
Future Volume (Veh/h)	0	332	1594	30	0	1739
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	339	1627	31	0	1774
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	2518	818			1631	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2518	818			1631	
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	14			100	
cM capacity (veh/h)	23	393			393	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	339	814	814	31	887	887
Volume Left	0	0	0	0	0	0
Volume Right	339	0	0	31	0	0
cSH	393	1700	1700	1700	1700	1700
Volume to Capacity	0.86	0.48	0.48	0.02	0.52	0.52
Queue Length 95th (ft)	210	0	0	0	0	0
Control Delay (s/veh)	50.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s/veh)	50.4	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

* User Entered Value

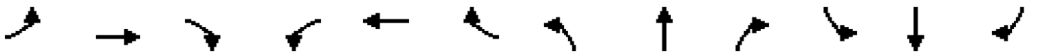
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	270	291	47	337	8	245	157	24	13	123	20
Future Volume (vph)	2	270	291	47	337	8	245	157	24	13	123	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	1.00		1.00	0.98		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)	1543	1667		1626	1821		1596	1748		1703	1622	
Flt Permitted	0.43	1.00		0.14	1.00		0.38	1.00		0.62	1.00	
Satd. Flow (perm)	702	1667		244	1821		639	1748		1107	1622	
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)	2	338	364	59	421	10	306	196	30	16	154	25
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	3	684	0	59	431	0	306	226	0	16	175	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)	57.8	56.9		66.3	61.4		42.8	36.6		22.5	20.3	
Effective Green, g (s)	57.8	57.4		66.3	61.9		42.8	37.1		22.5	20.8	
Actuated g/C Ratio	0.48	0.48		0.55	0.52		0.36	0.31		0.19	0.17	
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)	344	796		196	938		375	539		218	280	
v/s Ratio Prot	0.00	c0.41		c0.01	0.24		c0.13	0.13		0.00	0.11	
v/s Ratio Perm	0.00			0.15			c0.17			0.01		
v/c Ratio	0.01	0.86		0.30	0.46		0.82	0.42		0.07	0.62	
Uniform Delay, d1	16.5	27.8		19.5	18.5		31.4	32.9		40.0	46.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	9.3		0.3	0.4		12.2	0.6		0.1	4.4	
Delay (s)	16.5	37.1		19.8	18.9		43.6	33.5		40.1	50.4	
Level of Service	B	D		B	B		D	C		D	D	
Approach Delay (s/veh)		37.0			19.0			39.3			49.6	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
20: SW Teton Avenue & SW Herman Road

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	270	291	47	337	8	245	157	24	13	123	20
Future Volume (veh/h)	2	270	291	47	337	8	245	157	24	13	123	20
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	2	338	364	59	421	10	306	196	30	16	154	25
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	374	391	421	206	915	22	383	453	69	248	192	31
Arrive On Green	0.00	0.47	0.47	0.04	0.51	0.51	0.18	0.30	0.29	0.02	0.14	0.13
Sat Flow, veh/h	1570	824	887	1654	1791	43	1626	1534	235	1725	1395	226
Grp Volume(v), veh/h	2	0	702	59	0	431	306	0	226	16	0	179
Grp Sat Flow(s),veh/h/ln	1570	0	1711	1654	0	1833	1626	0	1768	1725	0	1621
Q Serve(g_s), s	0.1	0.0	38.1	1.8	0.0	15.7	16.2	0.0	10.8	0.8	0.0	11.2
Cycle Q Clear(g_c), s	0.1	0.0	38.1	1.8	0.0	15.7	16.2	0.0	10.8	0.8	0.0	11.2
Prop In Lane	1.00		0.52	1.00		0.02	1.00		0.13	1.00		0.14
Lane Grp Cap(c), veh/h	374	0	812	206	0	937	383	0	523	248	0	223
V/C Ratio(X)	0.01	0.00	0.86	0.29	0.00	0.46	0.80	0.00	0.43	0.06	0.00	0.80
Avail Cap(c_a), veh/h	671	0	895	458	0	941	409	0	976	548	0	863
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	15.2	0.0	24.5	20.5	0.0	16.3	30.1	0.0	29.7	38.0	0.0	43.6
Incr Delay (d2), s/veh	0.0	0.0	8.4	0.3	0.0	0.4	9.1	0.0	0.6	0.0	0.0	7.2
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	0.0	0.0	15.8	0.7	0.0	6.3	7.1	0.0	4.6	0.3	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.2	0.0	32.9	20.8	0.0	16.7	39.1	0.0	30.3	38.0	0.0	50.8
LnGrp LOS	B		C	C		B	D		C	D		D
Approach Vol, veh/h		704			490			532			195	
Approach Delay, s/veh		32.8			17.2			35.4			49.8	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.1	54.5	22.4	19.3	4.3	58.3	5.9	35.8
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	3.8	40.1	18.2	13.2	2.1	17.7	2.8	12.8
Green Ext Time (p_c), s	0.1	8.8	0.1	0.6	0.0	9.8	0.0	3.2

Intersection Summary	
HCM 7th Control Delay, s/veh	31.3
HCM 7th LOS	C



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	156	303	308	1695	28	1447	281
Future Volume (vph)	156	303	308	1695	28	1447	281
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	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1493	1770	3539	1770	3438	1509
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1493	1770	3539	1770	3438	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	329	335	1842	30	1573	305
RTOR Reduction (vph)	0	251	0	0	0	0	82
Lane Group Flow (vph)	170	78	335	1842	30	1573	223
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)	14.6	14.6	28.0	104.8	5.1	80.9	80.9
Effective Green, g (s)	15.6	15.6	29.5	106.8	5.6	82.9	82.9
Actuated g/C Ratio	0.11	0.11	0.21	0.76	0.04	0.59	0.59
Clearance Time (s)	5.0	5.0	5.5	6.0	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5	2.3	4.5	4.5
Lane Grp Cap (vph)	197	166	372	2699	70	2035	893
v/s Ratio Prot	c0.10		c0.19	0.52	0.02	c0.46	
v/s Ratio Perm		0.05					0.15
v/c Ratio	0.86	0.47	0.90	0.68	0.43	0.77	0.25
Uniform Delay, d1	61.1	58.3	53.8	8.2	65.6	21.5	13.7
Progression Factor	1.00	1.00	1.00	1.00	0.97	1.29	1.32
Incremental Delay, d2	29.8	1.5	23.8	1.4	1.6	2.0	0.4
Delay (s)	90.9	59.9	77.6	9.6	65.3	29.6	18.5
Level of Service	F	E	E	A	E	C	B
Approach Delay (s/veh)	70.5			20.1		28.4	
Approach LOS	E			C		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.3%	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

07/15/2025



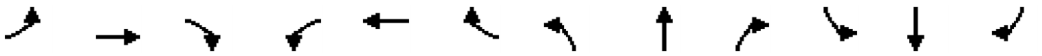
Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	156	303	308	1695	28	1447	281
Future Volume (veh/h)	156	303	308	1695	28	1447	281
Initial Q (Qb), veh	0	0	0	0		0	0
Lane Width Adj.	1.00	1.00	1.00	1.00		1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.99
Parking Bus, 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	170	164	335	1842		1573	305
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	374	2944		2048	928
Arrive On Green	0.11	0.11	0.21	0.83		1.00	1.00
Sat Flow, veh/h	1781	1547	1781	3647		3561	1573
Grp Volume(v), veh/h	170	164	335	1842		1573	305
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1777		1735	1573
Q Serve(g_s), s	13.1	14.7	25.6	25.8		0.0	0.0
Cycle Q Clear(g_c), s	13.1	14.7	25.6	25.8		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	204	177	374	2944		2048	928
V/C Ratio(X)	0.84	0.93	0.90	0.63		0.77	0.33
Avail Cap(c_a), veh/h	204	177	394	2944		2048	928
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	60.7	61.4	53.8	4.3		0.0	0.0
Incr Delay (d2), s/veh	24.4	46.9	21.2	1.0		1.5	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	7.3	14.3	13.4	6.4		0.4	0.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	85.1	108.3	75.1	5.3		1.5	0.5
LnGrp LOS	F	F	E	A		A	A
Approach Vol, veh/h	334			2177		1878	
Approach Delay, s/veh	96.5			16.0		1.4	
Approach LOS	F			B		A	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		120.0		20.0	33.4	86.6	
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		27.8		16.7	27.6	2.0	
Green Ext Time (p_c), s		63.0		0.0	0.2	65.3	

Intersection Summary	
HCM 7th Control Delay, s/veh	15.9
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	97	71	508	74	355	142	1366	256	459	1089	21
Future Volume (vph)	23	97	71	508	74	355	142	1366	256	459	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
Frpb, 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)		3309		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)		3309		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	103	76	540	79	378	151	1453	272	488	1159	22
RTOR Reduction (vph)	0	64	0	0	0	287	0	0	56	0	0	12
Lane Group Flow (vph)	0	139	0	308	311	91	151	1453	216	488	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)		12.4		27.9	27.9	27.9	13.4	55.0	82.9	22.0	63.9	63.9
Effective Green, g (s)		12.4		27.9	27.9	27.9	13.4	55.0	82.9	22.0	63.9	63.9
Actuated g/C Ratio		0.09		0.20	0.20	0.20	0.10	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)		293		334	339	305	169	1376	923	539	1569	706
v/s Ratio Prot		c0.04		c0.18	0.18		0.09	c0.41	0.05	c0.14	0.34	
v/s Ratio Perm						0.06			0.09			0.01
v/c Ratio		0.48		0.92	0.92	0.30	0.89	1.06	0.23	0.91	0.74	0.01
Uniform Delay, d1		60.7		55.0	54.9	47.7	62.6	42.5	13.5	58.0	31.2	20.8
Progression Factor		1.00		1.00	1.00	1.00	0.92	1.18	1.30	1.00	1.00	1.00
Incremental Delay, d2		0.7		29.8	28.4	0.3	31.8	37.3	0.1	18.5	3.2	0.0
Delay (s)		61.4		84.8	83.3	48.1	89.5	87.3	17.6	76.5	34.4	20.9
Level of Service		E		F	F	D	F	F	B	E	C	C
Approach Delay (s/veh)		61.4			70.4			77.3			46.5	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	64.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	95.8%	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.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1220	711	1053	848	161	315
Future Volume (vph)	1220	711	1053	848	161	315
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)	3374	1553	3400	3343	3127	2515
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3374	1553	3400	3343	3127	2515
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1298	756	1120	902	171	335
RTOR Reduction (vph)	0	304	0	0	0	0
Lane Group Flow (vph)	1298	452	1120	902	171	335
Confl. Peds. (#/hr)						4
Heavy Vehicles (%)	7%	4%	3%	8%	12%	13%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	1 4
Permitted Phases		2				
Actuated Green, G (s)	39.4	39.4	28.7	73.7	18.4	46.9
Effective Green, g (s)	41.4	41.4	30.3	75.7	20.4	41.9
Actuated g/C Ratio	0.40	0.40	0.29	0.73	0.20	0.40
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)	1341	617	989	2430	612	1012
v/s Ratio Prot	c0.38		c0.33	0.27	c0.05	0.13
v/s Ratio Perm		0.29				
v/c Ratio	0.97	0.73	1.13	0.37	0.28	0.33
Uniform Delay, d1	30.7	26.7	36.9	5.3	35.6	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.6	5.7	72.4	0.4	0.1	0.1
Delay (s)	48.3	32.4	109.3	5.7	35.7	21.6
Level of Service	D	C	F	A	D	C
Approach Delay (s/veh)	42.5			63.1	26.3	
Approach LOS	D			E	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	104.1	Sum of lost time (s)	18.6
Intersection Capacity Utilization	81.8%	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.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	224	274	41	860	922
Future Volume (vph)	42	224	274	41	860	922
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)	1597	1524	3195	1459	1751	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.42	1.00
Satd. Flow (perm)	1597	1524	3195	1459	772	3505
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	48	257	315	47	989	1060
RTOR Reduction (vph)	0	53	0	39	0	0
Lane Group Flow (vph)	48	204	315	8	989	1060
Confl. Peds. (#/hr)				2	2	
Heavy Vehicles (%)	13%	6%	13%	8%	3%	3%
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)	12.4	76.0	15.5	15.5	74.1	79.1
Effective Green, g (s)	13.4	81.0	16.5	16.5	76.1	80.1
Actuated g/C Ratio	0.13	0.79	0.16	0.16	0.75	0.79
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)	209	1210	516	236	1148	2752
v/s Ratio Prot		0.13	0.10		c0.50	0.30
v/s Ratio Perm	c0.03			0.01	c0.14	
v/c Ratio	0.23	0.17	0.61	0.03	0.86	0.39
Uniform Delay, d1	39.7	2.5	39.8	36.0	11.9	3.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	2.8	0.1	7.0	0.4
Delay (s)	40.4	2.6	42.5	36.1	18.9	3.8
Level of Service	D	A	D	D	B	A
Approach Delay (s/veh)	8.5		41.7			11.1
Approach LOS	A		D			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	71.4%	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.

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	806	2	8	242	137	1	0	5	48	1	29
Future Vol, veh/h	64	806	2	8	242	137	1	0	5	48	1	29
Conflicting Peds, #/hr	0	0	7	7	0	0	2	0	0	0	0	2
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, %	7	3	2	38	6	6	100	2	20	7	2	11
Mvmt Flow	70	876	2	9	263	149	1	0	5	52	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	885	0	0	1306	1453	884	1370	1379	340
Stage 1	-	-	-	-	-	-	1023	1023	-	355	355	-
Stage 2	-	-	-	-	-	-	283	429	-	1015	1024	-
Critical Hdwy	4.17	-	-	4.48	-	-	8.1	6.52	6.4	7.17	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.52	-	6.17	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.52	-	6.17	5.52	-
Follow-up Hdwy	2.263	-	-	2.542	-	-	4.4	4.018	3.48	3.563	4.018	3.399
Pot Cap-1 Maneuver	1120	-	-	633	-	-	87	130	320	121	144	683
Stage 1	-	-	-	-	-	-	191	313	-	652	630	-
Stage 2	-	-	-	-	-	-	554	584	-	281	313	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1120	-	-	629	-	-	75	120	317	110	133	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	120	-	110	133	-
Stage 1	-	-	-	-	-	-	178	292	-	643	621	-
Stage 2	-	-	-	-	-	-	519	576	-	259	291	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.62	0.22	22.71	50.51
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	75	317	1120	-	-	629	-	-	160
HCM Lane V/C Ratio	0.014	0.017	0.062	-	-	0.014	-	-	0.531
HCM Control Delay (s/veh)	53.6	16.5	8.4	-	-	10.8	-	-	50.5
HCM Lane LOS	F	C	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0	0.1	0.2	-	-	0	-	-	2.6

3: JAE Access/SW 115th Avenue & SW Tualatin Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0
Total Delay (hr)	0.1	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.1	1.1
Total Del/Veh (s)	6.1	2.9	2.6	4.5	1.7	1.1	19.9	8.1	14.9	9.0	7.4	3.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3
Stop Del/Veh (s)	2.3	0.0	0.0	2.2	0.0	0.0	19.2	6.4	12.8	6.4	5.2	0.9

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	860	384	6	23	4
Future Vol, veh/h	1	860	384	6	23	4
Conflicting Peds, #/hr	1	0	0	1	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	90	90	90	90	90	90
Heavy Vehicles, %	2	3	7	2	5	2
Mvmt Flow	1	956	427	7	26	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	434	0	-	0	1389	431
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	958	-
Critical Hdwy	4.12	-	-	-	6.45	6.22
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.318
Pot Cap-1 Maneuver	1125	-	-	-	155	624
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	368	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1124	-	-	-	154	624
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	368	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.01	0	18.25
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1124	-	-	-	302
HCM Lane V/C Ratio	0.001	-	-	-	0.099
HCM Control Delay (s/veh)	8.2	-	-	-	18.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	852	63	68	381	19	11
Future Vol, veh/h	852	63	68	381	19	11
Conflicting Peds, #/hr	0	2	2	0	1	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	7	15	17
Mvmt Flow	926	68	74	414	21	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	997	0	1525	962
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	563	-
Critical Hdwy	-	-	4.12	-	6.55	6.37
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.218	-	3.635	3.453
Pot Cap-1 Maneuver	-	-	694	-	121	291
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	545	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	693	-	108	290
Mov Cap-2 Maneuver	-	-	-	-	233	-
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	486	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.64	21.44
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	251	-	-	693	-
HCM Lane V/C Ratio	0.13	-	-	0.107	-
HCM Control Delay (s/veh)	21.4	-	-	10.8	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.4	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	4	19	30	121	29
Future Vol, veh/h	5	4	19	30	121	29
Conflicting Peds, #/hr	0	0	4	0	0	4
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	85	85	85	85	85	85
Heavy Vehicles, %	2	100	50	17	2	25
Mvmt Flow	6	5	22	35	142	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	243	163	180	0	-	0
Stage 1	163	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.42	7.2	4.6	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	4.2	2.65	-	-	-
Pot Cap-1 Maneuver	745	679	1152	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	725	676	1148	-	-	-
Mov Cap-2 Maneuver	725	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	940	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.2	3.18	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	698	-	702	-	-
HCM Lane V/C Ratio	0.019	-	0.015	-	-
HCM Control Delay (s/veh)	8.2	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	19	137	44	75	48
Future Vol, veh/h	4	19	137	44	75	48
Conflicting Peds, #/hr	0	0	5	0	0	5
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	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	17	5	2
Mvmt Flow	5	26	185	59	101	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	569	139	171	0	-	0
Stage 1	139	-	-	-	-	-
Stage 2	430	-	-	-	-	-
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	484	909	1406	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	414	905	1399	-	-	-
Mov Cap-2 Maneuver	414	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.01	6.03	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1353	-	750	-	-
HCM Lane V/C Ratio	0.132	-	0.041	-	-
HCM Control Delay (s/veh)	8	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	-	-

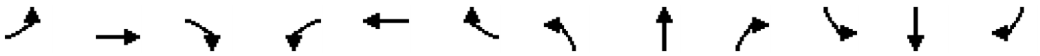
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	20	120	176	72	17
Future Vol, veh/h	2	20	120	176	72	17
Conflicting Peds, #/hr	1	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	13	2	10	4	17
Mvmt Flow	3	26	154	226	92	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	644	109	120	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Critical Hdwy	6.42	6.33	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.417	2.218	-	-	-
Pot Cap-1 Maneuver	438	915	1468	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	380	910	1459	-	-	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.62	3.14	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	730	-	808	-	-
HCM Lane V/C Ratio	0.105	-	0.035	-	-
HCM Control Delay (s/veh)	7.8	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0.1	-	-



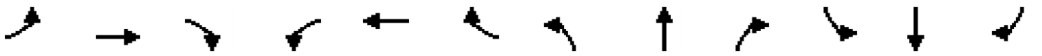
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	106	22	25	13	54	18	253	99	372	556	33
Future Volume (vph)	7	106	22	25	13	54	18	253	99	372	556	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	0.88		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)	1583	1801		1289	1568		1703	3013		1768	3421	
Flt Permitted	0.95	1.00		0.95	1.00		0.35	1.00		0.45	1.00	
Satd. Flow (perm)	1583	1801		1289	1568		628	3013		829	3421	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	8	120	25	28	15	61	20	288	112	423	632	38
RTOR Reduction (vph)	0	6	0	0	48	0	0	33	0	0	3	0
Lane Group Flow (vph)	8	139	0	28	28	0	20	368	0	423	667	0
Confl. Peds. (#/hr)			1	1			1		2	2		1
Heavy Vehicles (%)	14%	2%	5%	40%	17%	4%	6%	14%	14%	2%	4%	13%
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	12.8		2.6	14.5		35.9	19.8		35.9	34.0	
Effective Green, g (s)	1.9	13.8		3.6	15.5		37.9	20.8		35.9	34.0	
Actuated g/C Ratio	0.03	0.19		0.05	0.22		0.53	0.29		0.50	0.48	
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	348		65	340		377	878		629	1631	
v/s Ratio Prot	0.01	c0.08		c0.02	0.02		0.00	0.12		c0.15	0.20	
v/s Ratio Perm							0.03			c0.19		
v/c Ratio	0.19	0.40		0.43	0.08		0.05	0.42		0.67	0.41	
Uniform Delay, d1	33.9	25.1		32.9	22.2		8.0	20.4		11.6	12.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.8		4.5	0.1		0.1	0.3		2.8	0.2	
Delay (s)	36.2	25.9		37.4	22.3		8.1	20.7		14.5	12.3	
Level of Service	D	C		D	C		A	C		B	B	
Approach Delay (s/veh)		26.4			26.4			20.1			13.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
9: SW 124th Avenue & SW Leveton Drive

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	106	22	25	13	54	18	253	99	372	556	33
Future Volume (veh/h)	7	106	22	25	13	54	18	253	99	372	556	33
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	1693	1870	1826	1307	1648	1841	1811	1693	1693	1870	1841	1707
Adj Flow Rate, veh/h	8	120	25	28	15	61	20	288	112	423	632	38
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
Percent Heavy Veh, %	14	2	5	40	17	4	6	14	14	2	4	13
Cap, veh/h	54	237	49	79	53	217	431	484	184	647	1391	84
Arrive On Green	0.03	0.16	0.14	0.06	0.19	0.17	0.04	0.21	0.19	0.25	0.42	0.42
Sat Flow, veh/h	1612	1501	313	1245	284	1154	1725	2275	864	1781	3351	201
Grp Volume(v), veh/h	8	0	145	28	0	76	20	202	198	423	329	341
Grp Sat Flow(s),veh/h/ln	1612	0	1813	1245	0	1438	1725	1608	1532	1781	1749	1804
Q Serve(g_s), s	0.3	0.0	3.9	1.1	0.0	2.4	0.3	6.0	6.3	9.3	7.2	7.2
Cycle Q Clear(g_c), s	0.3	0.0	3.9	1.1	0.0	2.4	0.3	6.0	6.3	9.3	7.2	7.2
Prop In Lane	1.00		0.17	1.00		0.80	1.00		0.56	1.00		0.11
Lane Grp Cap(c), veh/h	54	0	286	79	0	270	431	342	326	647	726	749
V/C Ratio(X)	0.15	0.00	0.51	0.35	0.00	0.28	0.05	0.59	0.61	0.65	0.45	0.45
Avail Cap(c_a), veh/h	486	0	1060	258	0	841	1040	940	895	1050	1319	1361
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	24.9	0.0	20.5	23.8	0.0	18.8	7.8	18.8	19.2	11.6	11.2	11.2
Incr Delay (d2), s/veh	1.2	0.0	1.4	2.7	0.0	0.6	0.0	1.6	1.8	1.1	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	0.1	0.0	1.5	0.4	0.0	0.7	0.1	2.0	2.0	2.8	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.1	0.0	21.9	26.5	0.0	19.4	7.9	20.4	21.0	12.7	11.6	11.6
LnGrp LOS	C		C	C		B	A	C	C	B	B	B
Approach Vol, veh/h		153			104			420			1093	
Approach Delay, s/veh		22.1			21.3			20.1			12.0	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	15.3	7.4	12.4	6.3	27.0	5.8	14.0
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	11.3	8.3	3.1	5.9	2.3	9.2	2.3	4.4
Green Ext Time (p_c), s	1.8	1.9	0.0	1.4	0.0	3.4	0.0	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	15.4
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Intersection Delay, s/veh	15.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	514	23	13	80	0	16	1	31	0	1	1
Future Vol, veh/h	18	514	23	13	80	0	16	1	31	0	1	1
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
Heavy Vehicles, %	2	2	23	13	14	2	13	2	2	2	2	2
Mvmt Flow	20	578	26	15	90	0	18	1	35	0	1	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.6	8.8	8.9	8.4
HCM LOS	C	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	3%	14%	0%
Vol Thru, %	2%	93%	86%	50%
Vol Right, %	65%	4%	0%	50%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	555	93	2
LT Vol	16	18	13	0
Through Vol	1	514	80	1
RT Vol	31	23	0	1
Lane Flow Rate	54	624	104	2
Geometry Grp	1	1	1	1
Degree of Util (X)	0.081	0.728	0.143	0.003
Departure Headway (Hd)	5.394	4.204	4.918	5.318
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	663	867	729	670
Service Time	3.438	2.204	2.948	3.371
HCM Lane V/C Ratio	0.081	0.72	0.143	0.003
HCM Control Delay, s/veh	8.9	17.6	8.8	8.4
HCM Lane LOS	A	C	A	A
HCM 95th-tile Q	0.3	6.6	0.5	0

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	189	328	69	92	10	22
Future Vol, veh/h	189	328	69	92	10	22
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	9	2	2	17
Mvmt Flow	228	395	83	111	12	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	194	0	-	0	989	139
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	851	-
Critical Hdwy	4.13	-	-	-	6.42	6.37
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.227	-	-	-	3.518	3.453
Pot Cap-1 Maneuver	1373	-	-	-	274	871
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	419	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1373	-	-	-	215	871
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	419	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.98	0	13.46
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	658	-	-	-	215	871
HCM Lane V/C Ratio	0.166	-	-	-	0.056	0.03
HCM Control Delay (s/veh)	8.1	0	-	-	22.7	9.3
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0.6	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	307	157	13	3	8
Future Vol, veh/h	32	307	157	13	3	8
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	82	82	82	82	82	82
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	39	374	191	16	4	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	207	0	-	0	652	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	452	-
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	1364	-	-	-	433	842
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1364	-	-	-	417	842
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.73	0	10.58
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	170	-	-	-	659
HCM Lane V/C Ratio	0.029	-	-	-	0.02
HCM Control Delay (s/veh)	7.7	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	288	150	25	12	14
Future Vol, veh/h	49	288	150	25	12	14
Conflicting Peds, #/hr	12	0	0	12	0	1
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	83	83	83	83	83	83
Heavy Vehicles, %	2	5	5	4	2	2
Mvmt Flow	59	347	181	30	14	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	223	0	-	0	673	209
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	465	-
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	1346	-	-	-	421	832
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1331	-	-	-	388	821
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	625	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.14	0	11.85
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	262	-	-	-	388	821
HCM Lane V/C Ratio	0.044	-	-	-	0.037	0.021
HCM Control Delay (s/veh)	7.8	0	-	-	14.6	9.5
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	264	27	16	180	0	9	0	5	0	0	0
Future Vol, veh/h	0	264	27	16	180	0	9	0	5	0	0	0
Conflicting Peds, #/hr	8	0	3	3	0	8	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	5	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	0	343	35	21	234	0	12	0	6	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	242	0	0	381	0	0	640	647	363	626	664	243
Stage 1	-	-	-	-	-	-	363	363	-	283	283	-
Stage 2	-	-	-	-	-	-	276	283	-	343	381	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1325	-	-	1178	-	-	388	390	681	397	381	796
Stage 1	-	-	-	-	-	-	655	624	-	724	677	-
Stage 2	-	-	-	-	-	-	730	677	-	672	613	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1315	-	-	1174	-	-	379	378	680	382	369	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	379	378	-	382	369	-
Stage 1	-	-	-	-	-	-	654	623	-	704	658	-
Stage 2	-	-	-	-	-	-	714	658	-	666	612	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.66	13.33	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	450	1315	-	-	147	-	-	-
HCM Lane V/C Ratio	0.04	-	-	-	0.018	-	-	-
HCM Control Delay (s/veh)	13.3	0	-	-	8.1	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	-

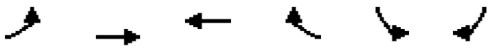
Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	195	75	163	154	37	55
Future Vol, veh/h	195	75	163	154	37	55
Conflicting Peds, #/hr	0	0	2	0	0	2
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	86	86	86	86	86	86
Heavy Vehicles, %	3	2	4	2	9	3
Mvmt Flow	227	87	190	179	43	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	635	77	109	0	-	0
Stage 1	77	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.43	6.22	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.318	2.236	-	-	-
Pot Cap-1 Maneuver	441	984	1469	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	376	982	1466	-	-	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	570	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	28.88	4.02	0
HCM LOS	D		

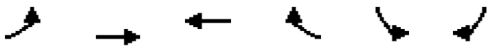
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	926	-	454	-	-
HCM Lane V/C Ratio	0.129	-	0.692	-	-
HCM Control Delay (s/veh)	7.8	0	28.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.4	-	5.2	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	390	281	318	70	6
Future Volume (vph)	19	390	281	318	70	6
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)	1702	1624	1609		1626	1583
Flt Permitted	0.29	1.00	1.00		0.95	1.00
Satd. Flow (perm)	525	1624	1609		1626	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	424	305	346	76	7
RTOR Reduction (vph)	0	0	31	0	0	6
Lane Group Flow (vph)	21	424	620	0	76	1
Confl. Peds. (#/hr)	2			2		
Heavy Vehicles (%)	6%	17%	12%	5%	11%	2%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	32.8	38.2	31.3		6.9	6.9
Effective Green, g (s)	35.6	39.6	32.7		9.4	9.4
Actuated g/C Ratio	0.62	0.69	0.57		0.16	0.16
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)	387	1128	923		268	261
v/s Ratio Prot	0.00	c0.26	c0.39		c0.05	
v/s Ratio Perm	0.03					0.00
v/c Ratio	0.05	0.38	0.67		0.28	0.00
Uniform Delay, d1	8.8	3.6	8.4		20.9	19.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	2.0		0.5	0.0
Delay (s)	8.8	3.8	10.4		21.3	19.9
Level of Service	A	A	B		C	B
Approach Delay (s/veh)		4.0	10.4		21.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	390	281	318	70	6
Future Volume (veh/h)	19	390	281	318	70	6
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	1811	1648	1722	1826	1737	1870
Adj Flow Rate, veh/h	21	424	305	346	76	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	17	12	5	11	2
Cap, veh/h	496	1251	473	536	174	167
Arrive On Green	0.05	0.76	0.64	0.62	0.11	0.11
Sat Flow, veh/h	1725	1648	736	835	1654	1585
Grp Volume(v), veh/h	21	424	0	651	76	7
Grp Sat Flow(s),veh/h/ln	1725	1648	0	1570	1654	1585
Q Serve(g_s), s	0.0	4.9	0.0	15.2	2.5	0.2
Cycle Q Clear(g_c), s	0.0	4.9	0.0	15.2	2.5	0.2
Prop In Lane	1.00			0.53	1.00	1.00
Lane Grp Cap(c), veh/h	496	1251	0	1009	174	167
V/C Ratio(X)	0.04	0.34	0.00	0.65	0.44	0.04
Avail Cap(c_a), veh/h	746	1297	0	1742	912	874
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	9.8	2.3	0.0	6.7	24.7	23.7
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	3.4	1.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	9.8	2.5	0.0	7.4	26.1	23.8
LnGrp LOS	A	A		A	C	C
Approach Vol, veh/h		445	651		83	
Approach Delay, s/veh		2.8	7.4		25.9	
Approach LOS		A	A		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		48.7		10.2	6.9	41.9
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		6.9		4.5	2.0	17.2
Green Ext Time (p_c), s		9.8		0.2	0.0	19.2

Intersection Summary	
HCM 7th Control Delay, s/veh	7.0
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	677	195	68	365	78	61
Future Vol, veh/h	677	195	68	365	78	61
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	96	96	96	96	96	96
Heavy Vehicles, %	3	3	4	3	14	12
Mvmt Flow	705	203	71	380	81	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	909	0	1330	808
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	522	-
Critical Hdwy	-	-	4.14	-	6.54	6.32
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	-	-	2.236	-	3.626	3.408
Pot Cap-1 Maneuver	-	-	741	-	161	366
Stage 1	-	-	-	-	419	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	740	-	145	366
Mov Cap-2 Maneuver	-	-	-	-	145	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	517	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.63	39.58
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	145	366	-	-	740	-
HCM Lane V/C Ratio	0.559	0.174	-	-	0.096	-
HCM Control Delay (s/veh)	57.3	16.9	-	-	10.4	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2.8	0.6	-	-	0.3	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	677	195	68	365	78	61
Future Volume (Veh/h)	677	195	68	365	78	61
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)	705	203	71	380	81	64
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			909		1330	808
vC1, stage 1 conf vol					808	
vC2, stage 2 conf vol					522	
vCu, unblocked vol			909		1330	808
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)					5.5	
tF (s)			2.2		3.6	3.4
p0 queue free %			90		77	83
cM capacity (veh/h)			740		345	366

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	908	71	380	81	64
Volume Left	0	71	0	81	0
Volume Right	203	0	0	0	64
cSH	1700	740	1700	345	366
Volume to Capacity	0.53	0.10	0.22	0.23	0.17
Queue Length 95th (ft)	0	8	0	22	16
Control Delay (s/veh)	0.0	10.4	0.0	18.6	16.9
Lane LOS		B		C	C
Approach Delay (s/veh)	0.0	1.6		17.9	
Approach LOS				C	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

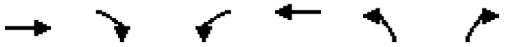
Intersection	
Int Delay, s/veh	8.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	13	38	86	108	89
Future Vol, veh/h	38	13	38	86	108	89
Conflicting Peds, #/hr	0	44	44	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	62	62	62	62	62	62
Heavy Vehicles, %	3	2	17	5	5	7
Mvmt Flow	61	21	61	139	174	144

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	126	0	377	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	-	-	4.27	-	6.45	6.27
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.353	-	3.545	3.363
Pot Cap-1 Maneuver	-	-	1372	-	619	923
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1315	-	563	884
Mov Cap-2 Maneuver	-	-	-	-	563	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	736	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.41	15.03
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	673	-	-	552	-
HCM Lane V/C Ratio	0.472	-	-	0.047	-
HCM Control Delay (s/veh)	15	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.5	-	-	0.1	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	38	13	38	86	108	89
Future Volume (Veh/h)	38	13	38	86	108	89
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	61	21	61	139	174	144
Pedestrians					44	
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			126		377	116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			126		377	116
tC, single (s)			4.3		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.4
p0 queue free %			95		69	84
cM capacity (veh/h)			1315		566	885

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	82	200	318
Volume Left	0	61	174
Volume Right	21	0	144
cSH	1700	1315	676
Volume to Capacity	0.05	0.05	0.47
Queue Length 95th (ft)	0	4	63
Control Delay (s/veh)	0.0	2.7	15.0
Lane LOS		A	B
Approach Delay (s/veh)	0.0	2.7	15.0
Approach LOS			B

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	210	1480	42	0	1878
Future Vol, veh/h	0	210	1480	42	0	1878
Conflicting Peds, #/hr	0	1	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	96	96	96	96	96	96
Heavy Vehicles, %	2	6	8	3	2	6
Mvmt Flow	0	219	1542	44	0	1956

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	772	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.02	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.36	-	-	-	-
Pot Cap-1 Maneuver	0	334	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	333	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	34.21	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	333	-
HCM Lane V/C Ratio	-	0.656	-
HCM Control Delay (s/veh)	-	34.2	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	4.4	-

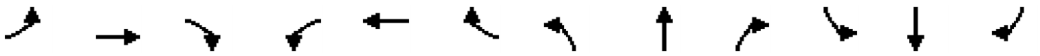


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	210	1480	42	0	1878
Future Volume (Veh/h)	0	210	1480	42	0	1878
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	219	1542	44	0	1956
Pedestrians	1					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			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2521	773			1543	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2521	773			1543	
tC, single (s)	6.8	*6.0			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	100	47			100	
cM capacity (veh/h)	23	414			426	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	219	771	771	44	978	978
Volume Left	0	0	0	0	0	0
Volume Right	219	0	0	44	0	0
cSH	414	1700	1700	1700	1700	1700
Volume to Capacity	0.53	0.45	0.45	0.03	0.58	0.58
Queue Length 95th (ft)	75	0	0	0	0	0
Control Delay (s/veh)	23.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s/veh)	23.1	0.0			0.0	
Approach LOS	C					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

* User Entered Value



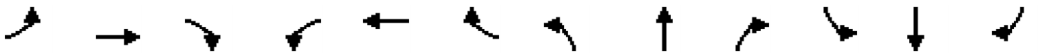
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	218	223	24	279	9	334	151	38	16	216	6
Future Volume (vph)	11	218	223	24	279	9	334	151	38	16	216	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	1.00		1.00	0.97		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)	1501	1481		1543	1768		1612	1577		1687	1800	
Flt Permitted	0.50	1.00		0.27	1.00		0.36	1.00		0.63	1.00	
Satd. Flow (perm)	789	1481		445	1768		612	1577		1120	1800	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	12	234	240	26	300	10	359	162	41	17	232	6
RTOR Reduction (vph)	0	19	0	0	1	0	0	0	0	0	1	0
Lane Group Flow (vph)	12	455	0	26	309	0	359	203	0	17	237	0
Confl. Peds. (#/hr)	2					2						
Heavy Vehicles (%)	20%	14%	23%	17%	7%	2%	12%	14%	28%	7%	4%	50%
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)	42.8	41.9		47.2	44.1		44.8	38.8		25.6	23.6	
Effective Green, g (s)	42.8	42.4		47.2	44.6		44.8	39.3		25.6	24.1	
Actuated g/C Ratio	0.41	0.40		0.45	0.43		0.43	0.38		0.24	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)	328	599		232	752		425	591		284	413	
v/s Ratio Prot	0.00	c0.31		c0.00	0.17		c0.14	0.13		0.00	0.13	
v/s Ratio Perm	0.01			0.05			c0.22			0.01		
v/c Ratio	0.04	0.76		0.11	0.41		0.84	0.34		0.06	0.57	
Uniform Delay, d1	18.6	26.8		18.0	21.0		23.0	23.5		30.2	35.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	5.6		0.1	0.4		13.7	0.4		0.0	2.0	
Delay (s)	18.6	32.4		18.1	21.4		36.7	23.9		30.3	37.8	
Level of Service	B	C		B	C		D	C		C	D	
Approach Delay (s/veh)		32.1			21.1			32.1			37.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
20: SW Teton Avenue & SW Herman Road

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	218	223	24	279	9	334	151	38	16	216	6
Future Volume (veh/h)	11	218	223	24	279	9	334	151	38	16	216	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		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	1604	1693	1559	1648	1796	1870	1722	1693	1485	1796	1841	1159
Adj Flow Rate, veh/h	12	234	240	26	300	10	359	162	41	17	232	6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	20	14	23	17	7	2	12	14	28	7	4	50
Cap, veh/h	367	307	315	232	716	24	445	448	113	295	292	8
Arrive On Green	0.01	0.40	0.40	0.03	0.41	0.41	0.20	0.34	0.34	0.02	0.16	0.16
Sat Flow, veh/h	1527	765	784	1570	1728	58	1640	1303	330	1711	1786	46
Grp Volume(v), veh/h	12	0	474	26	0	310	359	0	203	17	0	238
Grp Sat Flow(s),veh/h/ln	1527	0	1549	1570	0	1786	1640	0	1633	1711	0	1832
Q Serve(g_s), s	0.4	0.0	22.8	0.8	0.0	10.6	15.0	0.0	8.1	0.7	0.0	10.8
Cycle Q Clear(g_c), s	0.4	0.0	22.8	0.8	0.0	10.6	15.0	0.0	8.1	0.7	0.0	10.8
Prop In Lane	1.00		0.51	1.00		0.03	1.00		0.20	1.00		0.03
Lane Grp Cap(c), veh/h	367	0	622	232	0	739	445	0	561	295	0	300
V/C Ratio(X)	0.03	0.00	0.76	0.11	0.00	0.42	0.81	0.00	0.36	0.06	0.00	0.79
Avail Cap(c_a), veh/h	699	0	978	554	0	1106	498	0	1088	658	0	1178
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	22.4	17.7	0.0	17.9	22.5	0.0	21.3	29.5	0.0	34.7
Incr Delay (d2), s/veh	0.0	0.0	2.1	0.1	0.0	0.4	7.6	0.0	0.4	0.0	0.0	5.1
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	7.8	0.3	0.0	4.2	6.3	0.0	3.0	0.3	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.7	0.0	24.5	17.8	0.0	18.4	30.1	0.0	21.7	29.6	0.0	39.9
LnGrp LOS	B		C	B		B	C		C	C		D
Approach Vol, veh/h		486			336			562			255	
Approach Delay, s/veh		24.3			18.3			27.0			39.2	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	39.7	21.2	19.1	5.3	40.8	5.7	34.7
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	2.8	24.8	17.0	12.8	2.4	12.6	2.7	10.1
Green Ext Time (p_c), s	0.0	9.4	0.2	0.8	0.0	6.9	0.0	2.9

Intersection Summary	
HCM 7th Control Delay, s/veh	26.3
HCM 7th LOS	C



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	231	361	136	1580	19	1515	103
Future Volume (vph)	231	361	136	1580	19	1515	103
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	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	1528	1656	3312	1770	3406	1452
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1736	1528	1656	3312	1770	3406	1452
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	241	376	142	1646	20	1578	107
RTOR Reduction (vph)	0	160	0	0	0	0	29
Lane Group Flow (vph)	241	216	142	1646	20	1578	78
Confl. Peds. (#/hr)		5	3				3
Heavy Vehicles (%)	4%	4%	9%	9%	2%	6%	8%
Turn Type	Prot	Perm	Prot	NA	Prot	NA	Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	22.5	22.5	16.3	97.6	4.4	84.7	84.7
Effective Green, g (s)	23.5	23.5	17.8	99.6	4.9	86.7	86.7
Actuated g/C Ratio	0.17	0.17	0.13	0.71	0.04	0.62	0.62
Clearance Time (s)	5.0	5.0	5.5	6.0	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5	2.3	4.5	4.5
Lane Grp Cap (vph)	291	256	210	2356	61	2109	899
v/s Ratio Prot	0.14		0.09	c0.50	0.01	c0.46	
v/s Ratio Perm		c0.14					0.05
v/c Ratio	0.83	0.84	0.68	0.70	0.33	0.75	0.09
Uniform Delay, d1	56.3	56.5	58.3	11.6	65.9	18.9	10.7
Progression Factor	1.00	1.00	1.00	1.00	1.17	1.18	0.82
Incremental Delay, d2	17.0	21.4	7.2	1.7	1.4	1.9	0.1
Delay (s)	73.3	77.9	65.5	13.3	78.7	24.3	9.0
Level of Service	E	E	E	B	E	C	A
Approach Delay (s/veh)	76.1			17.5		24.0	
Approach LOS	E			B		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
21: OR 99W (Pacific Highway) & SW Fischer Road

07/15/2025



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	231	361	136	1580	19	1515	103
Future Volume (veh/h)	231	361	136	1580	19	1515	103
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	1841	1841	1767	1767		1811	1781
Adj Flow Rate, veh/h	241	189	142	1646		1578	107
Peak Hour Factor	0.96	0.96	0.96	0.96		0.96	0.96
Percent Heavy Veh, %	4	4	9	9		6	8
Cap, veh/h	282	251	228	2624		2114	925
Arrive On Green	0.16	0.16	0.14	0.78		1.00	1.00
Sat Flow, veh/h	1753	1560	1682	3445		3532	1506
Grp Volume(v), veh/h	241	189	142	1646		1578	107
Grp Sat Flow(s),veh/h/ln	1753	1560	1682	1678		1721	1506
Q Serve(g_s), s	18.7	16.2	11.2	29.4		0.0	0.0
Cycle Q Clear(g_c), s	18.7	16.2	11.2	29.4		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	282	251	228	2624		2114	925
V/C Ratio(X)	0.85	0.75	0.62	0.63		0.75	0.12
Avail Cap(c_a), veh/h	326	290	228	2624		2114	925
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		0.67	0.67
Uniform Delay (d), s/veh	57.1	56.1	57.2	6.5		0.0	0.0
Incr Delay (d2), s/veh	16.7	8.4	4.4	1.1		1.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	14.1	4.9	8.4		0.5	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	73.8	64.5	61.6	7.7		1.7	0.2
LnGrp LOS	E	E	E	A		A	A
Approach Vol, veh/h	430			1788		1685	
Approach Delay, s/veh	69.7			12.0		1.6	
Approach LOS	E			B		A	

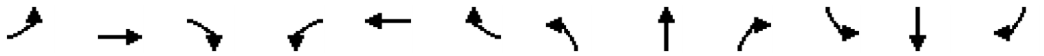
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		113.5		26.5	23.5	90.0	
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6	
Max Green Setting (Gmax), s		84.0		25.0	14.5	* 84	
Max Q Clear Time (g_c+I1), s		31.4		20.7	13.2	2.0	
Green Ext Time (p_c), s		48.8		0.8	0.0	70.6	

Intersection Summary	
HCM 7th Control Delay, s/veh	13.8
HCM 7th LOS	B

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	51	28	308	24	164	75	1233	518	399	1237	15
Future Volume (vph)	6	51	28	308	24	164	75	1233	518	399	1237	15
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
Frpb, ped/bikes		1.00		1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.97
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)		3351		1633	1651	1517	1770	3312	1513	3367	3374	1542
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)		3351		1633	1651	1517	1770	3312	1513	3367	3374	1542
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	6	52	29	314	24	167	77	1258	529	407	1262	15
RTOR Reduction (vph)	0	27	0	0	0	146	0	0	89	0	0	7
Lane Group Flow (vph)	0	60	0	170	168	21	77	1258	440	407	1262	8
Confl. Peds. (#/hr)	9					9	2		6	6		2
Heavy Vehicles (%)	2%	2%	2%	5%	4%	3%	2%	9%	5%	4%	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		17.9	17.9	17.9	9.4	64.7	82.6	22.7	78.3	78.3
Effective Green, g (s)		12.0		17.9	17.9	17.9	9.4	64.7	82.6	22.7	78.3	78.3
Actuated g/C Ratio		0.09		0.13	0.13	0.13	0.07	0.46	0.59	0.16	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		208	211	193	118	1530	957	545	1887	862
v/s Ratio Prot		c0.02		c0.10	0.10		0.04	c0.38	0.06	0.12	c0.37	
v/s Ratio Perm						0.01			0.23			0.01
v/c Ratio		0.21		0.82	0.80	0.11	0.65	0.82	0.46	0.75	0.67	0.01
Uniform Delay, d1		59.6		59.5	59.3	54.0	63.7	32.7	16.1	55.9	21.7	13.7
Progression Factor		1.00		1.00	1.00	1.00	0.93	0.89	0.50	1.00	1.00	1.00
Incremental Delay, d2		0.2		20.7	17.7	0.1	7.5	3.7	0.1	5.1	1.9	0.0
Delay (s)		59.8		80.2	77.0	54.2	66.6	32.9	8.2	61.0	23.6	13.7
Level of Service		E		F	E	D	E	C	A	E	C	B
Approach Delay (s/veh)		59.8			70.5			27.3			32.6	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.4	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	75.2%	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.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	885	208	632	1163	816	807
Future Volume (vph)	885	208	632	1163	816	807
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	0.99	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	1518	3367	3471	3400	2787
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1518	3367	3471	3400	2787
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	903	212	645	1187	833	823
RTOR Reduction (vph)	0	129	0	0	0	0
Lane Group Flow (vph)	903	83	645	1187	833	823
Confl. Peds. (#/hr)		1	1			6
Heavy Vehicles (%)	2%	5%	4%	4%	3%	2%
Turn Type	NA	Perm	Prot	NA	Prot	pt+ov
Protected Phases	2		1	6	8	1 4
Permitted Phases		2				
Actuated Green, G (s)	42.0	42.0	25.5	73.1	35.2	60.2
Effective Green, g (s)	44.0	44.0	27.1	75.1	37.2	55.2
Actuated g/C Ratio	0.37	0.37	0.23	0.62	0.31	0.46
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)	1294	555	758	2166	1051	1278
v/s Ratio Prot	c0.26		c0.19	0.34	c0.25	0.30
v/s Ratio Perm		0.05				
v/c Ratio	0.70	0.15	0.85	0.55	0.79	0.64
Uniform Delay, d1	32.5	25.6	44.7	12.9	38.0	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.3	8.9	1.0	4.0	0.9
Delay (s)	34.8	25.9	53.5	13.9	42.0	25.9
Level of Service	C	C	D	B	D	C
Approach Delay (s/veh)	33.1			27.9	34.0	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	76.9%	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.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	649	986	49	423	419
Future Volume (vph)	39	649	986	49	423	419
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	0.97	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)	1770	1583	3539	1529	1769	3471
Flt Permitted	0.95	1.00	1.00	1.00	0.11	1.00
Satd. Flow (perm)	1770	1583	3539	1529	197	3471
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	41	690	1049	52	450	446
RTOR Reduction (vph)	0	5	0	18	0	0
Lane Group Flow (vph)	41	685	1049	34	450	446
Confl. Peds. (#/hr)				7	7	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
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)	14.5	56.6	36.9	36.9	74.0	79.0
Effective Green, g (s)	15.5	61.6	37.9	37.9	76.0	80.0
Actuated g/C Ratio	0.15	0.59	0.36	0.36	0.73	0.77
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)	263	937	1289	557	719	2670
v/s Ratio Prot		c0.43	c0.30		0.23	0.13
v/s Ratio Perm	0.02			0.02	0.23	
v/c Ratio	0.16	0.73	0.81	0.06	0.63	0.17
Uniform Delay, d1	38.6	15.2	29.9	21.5	20.8	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	3.2	4.5	0.1	1.9	0.1
Delay (s)	38.9	18.4	34.3	21.6	22.7	3.3
Level of Service	D	B	C	C	C	A
Approach Delay (s/veh)	19.6		33.7			13.1
Approach LOS	B		C			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	74.5%	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.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	464	2	0	609	276	0	3	7	16	0	20
Future Vol, veh/h	38	464	2	0	609	276	0	3	7	16	0	20
Conflicting Peds, #/hr	4	0	6	6	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	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	3	50	2	2	2	2	33	14	7	2	11
Mvmt Flow	42	510	2	0	669	303	0	3	8	18	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	977	0	0	518	0	0	1271	1577	517	1420	1426	826
Stage 1	-	-	-	-	-	-	601	601	-	825	825	-
Stage 2	-	-	-	-	-	-	670	977	-	595	602	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.83	6.34	7.17	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.83	-	6.17	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.83	-	6.17	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.297	3.426	3.563	4.018	3.399
Pot Cap-1 Maneuver	706	-	-	1048	-	-	145	93	535	111	135	359
Stage 1	-	-	-	-	-	-	487	444	-	360	387	-
Stage 2	-	-	-	-	-	-	446	292	-	482	489	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	704	-	-	1042	-	-	127	87	532	99	126	357
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	87	-	99	126	-
Stage 1	-	-	-	-	-	-	456	415	-	358	385	-
Stage 2	-	-	-	-	-	-	418	291	-	443	457	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.79	0	23.1	33.46
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	210	704	-	-	1042	-	-	165
HCM Lane V/C Ratio	-	0.052	0.059	-	-	-	-	-	0.239
HCM Control Delay (s/veh)	0	23.1	10.4	-	-	0	-	-	33.5
HCM Lane LOS	A	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.2	0.2	-	-	0	-	-	0.9

3: JAE Access/SW 115th Avenue & SW Tualatin Road Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBT	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	0.1	0.0	0.2	0.2	0.1	0.1	0.0	0.1	0.2
Total Delay (hr)	0.2	0.4	0.0	1.0	0.4	0.0	0.0	0.1	0.1	2.3
Total Del/Veh (s)	21.6	3.1	0.9	5.7	5.3	29.1	9.0	27.6	11.0	5.6
Stop Delay (hr)	0.2	0.0	0.0	0.4	0.2	0.0	0.0	0.1	0.0	1.0
Stop Del/Veh (s)	17.6	0.0	0.0	2.1	2.8	26.4	7.5	25.9	9.0	2.4

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	479	881	16	9	4
Future Vol, veh/h	9	479	881	16	9	4
Conflicting Peds, #/hr	3	0	0	3	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	93	93	93	93	93	93
Heavy Vehicles, %	2	3	7	2	11	2
Mvmt Flow	10	515	947	17	10	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	968	0	-	0	1493	959
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	4.12	-	-	-	6.51	6.22
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	2.218	-	-	-	3.599	3.318
Pot Cap-1 Maneuver	712	-	-	-	129	312
Stage 1	-	-	-	-	358	-
Stage 2	-	-	-	-	570	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	710	-	-	-	127	311
Mov Cap-2 Maneuver	-	-	-	-	252	-
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	568	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.19	0	19.19
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	710	-	-	-	268
HCM Lane V/C Ratio	0.014	-	-	-	0.052
HCM Control Delay (s/veh)	10.1	-	-	-	19.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	475	10	7	850	58	46
Future Vol, veh/h	475	10	7	850	58	46
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	94	94	94	94	94	94
Heavy Vehicles, %	4	20	2	2	3	7
Mvmt Flow	505	11	7	904	62	49

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	517	0	1431	512
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	919	-
Critical Hdwy	-	-	4.12	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.363
Pot Cap-1 Maneuver	-	-	1049	-	147	552
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	387	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1048	-	146	552
Mov Cap-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.07	19.71
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	1048	-
HCM Lane V/C Ratio	0.312	-	-	0.007	-
HCM Control Delay (s/veh)	19.7	-	-	8.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	16	3	67	17	3
Future Vol, veh/h	27	16	3	67	17	3
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	9	2
Mvmt Flow	30	18	3	74	19	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	105	24	25	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	81	-	-	-	-	-
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	893	1053	1589	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	886	1050	1585	-	-	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.03	0.31	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	77	-	941	-	-
HCM Lane V/C Ratio	0.002	-	0.051	-	-
HCM Control Delay (s/veh)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	142	20	40	31	3
Future Vol, veh/h	29	142	20	40	31	3
Conflicting Peds, #/hr	0	0	7	0	0	7
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	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	3	9	2
Mvmt Flow	29	143	20	40	31	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	121	40	41	0	-	0
Stage 1	40	-	-	-	-	-
Stage 2	81	-	-	-	-	-
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	875	1032	1568	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	852	1025	1557	-	-	-
Mov Cap-2 Maneuver	852	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.4	2.45	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	600	-	991	-	-
HCM Lane V/C Ratio	0.013	-	0.174	-	-
HCM Control Delay (s/veh)	7.3	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

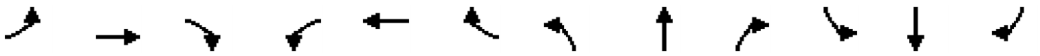
Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	119	15	51	171	3
Future Vol, veh/h	7	119	15	51	171	3
Conflicting Peds, #/hr	0	0	4	0	0	4
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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	8	3	2
Mvmt Flow	9	145	18	62	209	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	313	214	216	0	-	0
Stage 1	214	-	-	-	-	-
Stage 2	99	-	-	-	-	-
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	680	826	1354	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	665	822	1348	-	-	-
Mov Cap-2 Maneuver	665	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	922	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.47	1.75	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	409	-	812	-	-
HCM Lane V/C Ratio	0.014	-	0.189	-	-
HCM Control Delay (s/veh)	7.7	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-



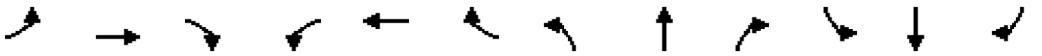
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	29	27	87	2	366	7	668	30	57	395	18
Future Volume (vph)	28	29	27	87	2	366	7	668	30	57	395	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	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	0.99		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	0.99		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)	1736	1583		1719	1562		1262	3512		1770	3342	
Flt Permitted	0.95	1.00		0.95	1.00		0.47	1.00		0.23	1.00	
Satd. Flow (perm)	1736	1583		1719	1562		631	3512		428	3342	
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)	30	32	29	95	2	398	8	726	33	62	429	20
RTOR Reduction (vph)	0	23	0	0	295	0	0	3	0	0	2	0
Lane Group Flow (vph)	30	38	0	95	105	0	8	756	0	62	447	0
Confl. Peds. (#/hr)	4					4						
Heavy Vehicles (%)	4%	11%	12%	5%	2%	2%	43%	2%	5%	2%	6%	35%
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)	2.5	12.4		6.9	16.8		29.4	23.4		29.4	28.6	
Effective Green, g (s)	3.5	13.4		7.9	17.8		31.4	24.4		29.4	28.6	
Actuated g/C Ratio	0.05	0.20		0.11	0.26		0.46	0.36		0.43	0.42	
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)	88	308		197	404		304	1247		300	1391	
v/s Ratio Prot	0.02	0.02		c0.06	c0.07		0.00	c0.22		c0.02	c0.13	
v/s Ratio Perm							0.01			0.07		
v/c Ratio	0.34	0.12		0.48	0.26		0.03	0.61		0.21	0.32	
Uniform Delay, d1	31.5	22.8		28.5	20.2		10.2	18.2		12.2	13.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	0.2		1.9	0.3		0.0	0.8		0.3	0.1	
Delay (s)	33.8	23.0		30.3	20.6		10.2	19.0		12.6	13.6	
Level of Service	C	C		C	C		B	B		B	B	
Approach Delay (s/veh)		26.5			22.4			19.0			13.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
9: SW 124th Avenue & SW Leveton Drive

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	29	27	87	2	366	7	668	30	57	395	18
Future Volume (veh/h)	28	29	27	87	2	366	7	668	30	57	395	18
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	1841	1737	1722	1826	1870	1870	1263	1870	1826	1870	1811	1381
Adj Flow Rate, veh/h	30	32	29	95	2	398	8	726	33	62	429	20
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, %	4	11	12	5	2	2	43	2	5	2	6	35
Cap, veh/h	103	244	221	173	3	522	296	976	44	302	1131	53
Arrive On Green	0.06	0.29	0.28	0.10	0.33	0.32	0.02	0.28	0.27	0.08	0.34	0.34
Sat Flow, veh/h	1753	837	759	1739	8	1572	1203	3462	157	1781	3348	156
Grp Volume(v), veh/h	30	0	61	95	0	400	8	373	386	62	220	229
Grp Sat Flow(s),veh/h/ln	1753	0	1596	1739	0	1580	1203	1777	1842	1781	1721	1783
Q Serve(g_s), s	1.1	0.0	2.0	3.6	0.0	15.7	0.3	13.1	13.2	1.6	6.7	6.7
Cycle Q Clear(g_c), s	1.1	0.0	2.0	3.6	0.0	15.7	0.3	13.1	13.2	1.6	6.7	6.7
Prop In Lane	1.00		0.48	1.00		1.00	1.00		0.09	1.00		0.09
Lane Grp Cap(c), veh/h	103	0	465	173	0	525	296	501	519	302	581	602
V/C Ratio(X)	0.29	0.00	0.13	0.55	0.00	0.76	0.03	0.74	0.74	0.21	0.38	0.38
Avail Cap(c_a), veh/h	407	0	718	277	0	710	632	799	828	804	998	1034
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	31.1	0.0	18.2	29.6	0.0	21.1	13.8	22.5	22.5	16.6	17.3	17.4
Incr Delay (d2), s/veh	1.5	0.0	0.1	2.7	0.0	3.4	0.0	2.2	2.1	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	0.5	0.0	0.7	1.5	0.0	5.7	0.1	5.1	5.3	0.6	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.6	0.0	18.3	32.3	0.0	24.4	13.8	24.7	24.7	16.9	17.7	17.7
LnGrp LOS	C		B	C		C	B	C	C	B	B	B
Approach Vol, veh/h		91			495			767			511	
Approach Delay, s/veh		23.0			25.9			24.6			17.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	23.5	10.9	24.1	5.7	28.3	8.1	26.9
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	3.6	15.2	5.6	4.0	2.3	8.7	3.1	17.7
Green Ext Time (p_c), s	0.2	3.3	0.1	0.5	0.0	2.1	0.0	3.5

Intersection Summary	
HCM 7th Control Delay, s/veh	23.0
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	91	12	49	461	2	29	2	9	1	0	13
Future Vol, veh/h	6	91	12	49	461	2	29	2	9	1	0	13
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	4	2	15	2	2	2	2	40	2	2	2
Mvmt Flow	7	112	15	60	569	2	36	2	11	1	0	16
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	8.8	22.3	9.3	8.4
HCM LOS	A	C	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	73%	6%	10%	7%
Vol Thru, %	5%	83%	90%	0%
Vol Right, %	23%	11%	0%	93%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	109	512	14
LT Vol	29	6	49	1
Through Vol	2	91	461	0
RT Vol	9	12	2	13
Lane Flow Rate	49	135	632	17
Geometry Grp	1	1	1	1
Degree of Util (X)	0.079	0.177	0.791	0.025
Departure Headway (Hd)	5.726	4.739	4.504	5.23
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	756	803	680
Service Time	3.78	2.777	2.531	3.293
HCM Lane V/C Ratio	0.079	0.179	0.787	0.025
HCM Control Delay, s/veh	9.3	8.8	22.3	8.4
HCM Lane LOS	A	A	C	A
HCM 95th-tile Q	0.3	0.6	8.2	0.1

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	58	317	15	81	186
Future Vol, veh/h	30	58	317	15	81	186
Conflicting Peds, #/hr	3	0	0	3	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	82	82	82	82	82	76
Heavy Vehicles, %	2	8	2	2	2	2
Mvmt Flow	37	71	387	18	99	245

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	408	0	-	0	543	399
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	144	-
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	1151	-	-	-	501	651
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	883	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1148	-	-	-	482	649
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	881	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.81	0	14.02
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	614	-	-	-	482	649
HCM Lane V/C Ratio	0.032	-	-	-	0.205	0.377
HCM Control Delay (s/veh)	8.2	0	-	-	14.4	13.9
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	1.8

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	126	307	0	2	0
Future Vol, veh/h	1	126	307	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	82	82	82	82	82	82
Heavy Vehicles, %	2	5	5	2	2	2
Mvmt Flow	1	154	374	0	2	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	374	0	-	0	530	374
Stage 1	-	-	-	-	374	-
Stage 2	-	-	-	-	156	-
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	1184	-	-	-	509	672
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1184	-	-	-	509	672
Mov Cap-2 Maneuver	-	-	-	-	509	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	872	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.06	0	12.11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	14	-	-	-	509
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s/veh)	8	0	-	-	12.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	134	269	17	33	57
Future Vol, veh/h	12	134	269	17	33	57
Conflicting Peds, #/hr	7	0	0	7	0	2
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	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	163	328	21	40	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	356	0	-	0	538	347
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	193	-
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	1203	-	-	-	504	696
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	840	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1195	-	-	-	491	690
Mov Cap-2 Maneuver	-	-	-	-	491	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.66	0	11.61
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	148	-	-	-	491	690
HCM Lane V/C Ratio	0.012	-	-	-	0.082	0.101
HCM Control Delay (s/veh)	8.1	0	-	-	13	10.8
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	165	8	6	248	0	25	0	13	0	0	0
Future Vol, veh/h	0	165	8	6	248	0	25	0	13	0	0	0
Conflicting Peds, #/hr	7	0	5	5	0	7	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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2	50	2	2	2	2	2
Mvmt Flow	0	201	10	7	302	0	30	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	309	0	0	216	0	0	528	535	211	525	540	309
Stage 1	-	-	-	-	-	-	211	211	-	324	324	-
Stage 2	-	-	-	-	-	-	317	324	-	201	216	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.6	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.95	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1251	-	-	1354	-	-	394	451	829	463	449	731
Stage 1	-	-	-	-	-	-	693	728	-	688	650	-
Stage 2	-	-	-	-	-	-	603	650	-	801	724	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1243	-	-	1347	-	-	389	443	825	448	441	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	443	-	448	441	-
Stage 1	-	-	-	-	-	-	690	724	-	679	641	-
Stage 2	-	-	-	-	-	-	599	641	-	785	721	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.18	13.39	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	475	1243	-	-	43	-	-	-
HCM Lane V/C Ratio	0.098	-	-	-	0.005	-	-	-
HCM Control Delay (s/veh)	13.4	0	-	-	7.7	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

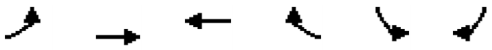
Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	148	68	85	160	166
Future Vol, veh/h	32	148	68	85	160	166
Conflicting Peds, #/hr	1	1	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	85	85	85	85	85	85
Heavy Vehicles, %	17	2	2	2	2	2
Mvmt Flow	38	174	80	100	188	195

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	548	288	385	0	-	0
Stage 1	287	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Critical Hdwy	6.57	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	473	751	1174	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	438	750	1173	-	-	-
Mov Cap-2 Maneuver	438	-	-	-	-	-
Stage 1	675	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.92	3.69	0
HCM LOS	B		

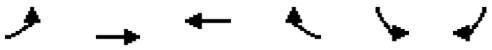
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	800	-	665	-	-
HCM Lane V/C Ratio	0.068	-	0.318	-	-
HCM Control Delay (s/veh)	8.3	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.4	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	338	529	83	291	37
Future Volume (vph)	2	338	529	83	291	37
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	1.00		1.00	1.00
Flpb, ped/bikes	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)	1770	1827	1735		1752	1568
Flt Permitted	0.19	1.00	1.00		0.95	1.00
Satd. Flow (perm)	355	1827	1735		1752	1568
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	2	376	588	92	323	41
RTOR Reduction (vph)	0	0	5	0	0	28
Lane Group Flow (vph)	2	376	675	0	323	13
Confl. Peds. (#/hr)	1			1		
Heavy Vehicles (%)	2%	4%	8%	2%	3%	3%
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	6					4
Actuated Green, G (s)	32.1	37.5	31.5		18.9	18.9
Effective Green, g (s)	34.9	38.9	32.9		21.4	21.4
Actuated g/C Ratio	0.51	0.57	0.48		0.31	0.31
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)	222	1040	835		548	491
v/s Ratio Prot	0.00	c0.21	c0.39		c0.18	
v/s Ratio Perm	0.00					0.01
v/c Ratio	0.01	0.36	0.81		0.59	0.03
Uniform Delay, d1	19.0	8.0	15.0		19.7	16.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	0.2	5.8		1.4	0.0
Delay (s)	19.0	8.2	20.8		21.2	16.3
Level of Service	B	A	C		C	B
Approach Delay (s/veh)		8.2	20.8		20.6	
Approach LOS		A	C		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	338	529	83	291	37
Future Volume (veh/h)	2	338	529	83	291	37
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	1870	1841	1781	1870	1856	1856
Adj Flow Rate, veh/h	2	376	588	92	323	41
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	8	2	3	3
Cap, veh/h	364	1197	864	135	427	380
Arrive On Green	0.02	0.65	0.57	0.56	0.24	0.24
Sat Flow, veh/h	1781	1841	1504	235	1767	1572
Grp Volume(v), veh/h	2	376	0	680	323	41
Grp Sat Flow(s),veh/h/ln	1781	1841	0	1739	1767	1572
Q Serve(g_s), s	0.0	6.6	0.0	20.3	12.6	1.5
Cycle Q Clear(g_c), s	0.0	6.6	0.0	20.3	12.6	1.5
Prop In Lane	1.00			0.14	1.00	1.00
Lane Grp Cap(c), veh/h	364	1197	0	999	427	380
V/C Ratio(X)	0.01	0.31	0.00	0.68	0.76	0.11
Avail Cap(c_a), veh/h	600	1197	0	1536	776	690
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	17.1	5.7	0.0	11.1	26.0	21.8
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.9	2.2	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	2.0	0.0	6.6	5.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	17.1	5.8	0.0	11.9	28.2	21.9
LnGrp LOS	B	A		B	C	C
Approach Vol, veh/h		378	680		364	
Approach Delay, s/veh		5.9	11.9		27.5	
Approach LOS		A	B		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		52.1		21.9	5.6	46.5
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		8.6		14.6	2.0	22.3
Green Ext Time (p_c), s		8.2		0.9	0.0	18.8

Intersection Summary	
HCM 7th Control Delay, s/veh	14.3
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	10.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	397	68	38	771	131	36
Future Vol, veh/h	397	68	38	771	131	36
Conflicting Peds, #/hr	0	0	0	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	93	93	93	93	93	93
Heavy Vehicles, %	2	5	6	2	2	2
Mvmt Flow	427	73	41	829	141	39

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	500	0	1374	463
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	911	-
Critical Hdwy	-	-	4.16	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.254	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1044	-	160	599
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1044	-	154	599
Mov Cap-2 Maneuver	-	-	-	-	154	-
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	377	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.4	87.92
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	154	599	-	-	1044	-
HCM Lane V/C Ratio	0.914	0.065	-	-	0.039	-
HCM Control Delay (s/veh)	108.9	11.4	-	-	8.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	6.5	0.2	-	-	0.1	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	397	68	38	771	131	36
Future Volume (Veh/h)	397	68	38	771	131	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	427	73	41	829	141	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			TWLTL		
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			500		1375	464
vC1, stage 1 conf vol					464	
vC2, stage 2 conf vol					911	
vCu, unblocked vol			500		1375	464
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.3		3.5	3.3
p0 queue free %			96		59	93
cM capacity (veh/h)			1044		340	599

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	500	41	829	141	39
Volume Left	0	41	0	141	0
Volume Right	73	0	0	0	39
cSH	1700	1044	1700	340	599
Volume to Capacity	0.29	0.04	0.49	0.41	0.07
Queue Length 95th (ft)	0	3	0	49	5
Control Delay (s/veh)	0.0	8.6	0.0	22.9	11.4
Lane LOS		A		C	B
Approach Delay (s/veh)	0.0	0.4		20.4	
Approach LOS				C	

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

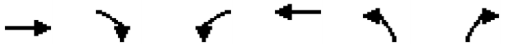
Intersection	
Int Delay, s/veh	8.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	7	17	76	277	21
Future Vol, veh/h	16	7	17	76	277	21
Conflicting Peds, #/hr	0	8	8	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	13	2	2	20
Mvmt Flow	17	8	18	83	301	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	33	0	149	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	4.23	-	6.42	6.4
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.317	-	3.518	3.48
Pot Cap-1 Maneuver	-	-	1511	-	843	996
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1499	-	826	988
Mov Cap-2 Maneuver	-	-	-	-	826	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.36	12.01
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	836	-	-	329	-
HCM Lane V/C Ratio	0.388	-	-	0.012	-
HCM Control Delay (s/veh)	12	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0	-



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	16	7	17	76	277	21
Future Volume (Veh/h)	16	7	17	76	277	21
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)	17	8	18	83	301	23
Pedestrians					8	
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			33		148	29
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			33		148	29
tC, single (s)			4.2		6.4	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.5
p0 queue free %			99		64	98
cM capacity (veh/h)			1499		828	989

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	25	101	324
Volume Left	0	18	301
Volume Right	8	0	23
cSH	1700	1499	837
Volume to Capacity	0.01	0.01	0.39
Queue Length 95th (ft)	0	1	46
Control Delay (s/veh)	0.0	1.4	12.0
Lane LOS		A	B
Approach Delay (s/veh)	0.0	1.4	12.0
Approach LOS			B

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	11.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	342	1634	30	0	1746
Future Vol, veh/h	0	342	1634	30	0	1746
Conflicting Peds, #/hr	0	0	0	4	4	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	98	98	98	98	98	98
Heavy Vehicles, %	2	3	3	4	2	2
Mvmt Flow	0	349	1667	31	0	1782

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	834	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	~ 309	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	~ 309	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	127.38	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	309	-
HCM Lane V/C Ratio	-	1.128	-
HCM Control Delay (s/veh)	-	127.4	-
HCM Lane LOS	-	F	-
HCM 95th %tile Q(veh)	-	14.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	342	1634	30	0	1746
Future Volume (Veh/h)	0	342	1634	30	0	1746
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	349	1667	31	0	1782
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	2562	838			1671	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2562	838			1671	
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	9			100	
cM capacity (veh/h)	21	383			379	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	349	834	834	31	891	891
Volume Left	0	0	0	0	0	0
Volume Right	349	0	0	31	0	0
cSH	383	1700	1700	1700	1700	1700
Volume to Capacity	0.91	0.49	0.49	0.02	0.52	0.52
Queue Length 95th (ft)	238	0	0	0	0	0
Control Delay (s/veh)	59.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s/veh)	59.5	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

* User Entered Value

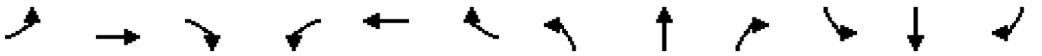
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	289	334	47	340	8	251	157	24	13	123	20
Future Volume (vph)	2	289	334	47	340	8	251	157	24	13	123	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	1.00		1.00	0.98		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)	1543	1660		1626	1821		1596	1748		1703	1622	
Flt Permitted	0.43	1.00		0.08	1.00		0.38	1.00		0.62	1.00	
Satd. Flow (perm)	695	1660		145	1821		640	1748		1107	1622	
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)	2	361	418	59	425	10	314	196	30	16	154	25
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	3	760	0	59	435	0	314	226	0	16	175	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)	57.8	56.9		66.3	61.4		43.0	36.8		22.6	20.4	
Effective Green, g (s)	57.8	57.4		66.3	61.9		43.0	37.3		22.6	20.9	
Actuated g/C Ratio	0.48	0.48		0.55	0.51		0.36	0.31		0.19	0.17	
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)	340	792		146	936		376	541		218	281	
v/s Ratio Prot	0.00	c0.46		c0.02	0.24		c0.13	0.13		0.00	0.11	
v/s Ratio Perm	0.00			0.20			c0.17			0.01		
v/c Ratio	0.01	0.96		0.40	0.46		0.84	0.42		0.07	0.62	
Uniform Delay, d1	16.6	30.3		22.7	18.6		31.7	32.9		40.0	46.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	22.4		0.7	0.4		14.1	0.6		0.1	4.3	
Delay (s)	16.6	52.7		23.4	19.0		45.8	33.5		40.1	50.4	
Level of Service	B	D		C	B		D	C		D	D	
Approach Delay (s/veh)		52.6			19.5			40.6			49.5	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Signalized Intersection Summary
20: SW Teton Avenue & SW Herman Road

07/15/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	289	334	47	340	8	251	157	24	13	123	20
Future Volume (veh/h)	2	289	334	47	340	8	251	157	24	13	123	20
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	2	361	418	59	425	10	314	196	30	16	154	25
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	377	383	444	158	931	22	382	456	70	242	189	31
Arrive On Green	0.00	0.48	0.48	0.04	0.52	0.52	0.18	0.30	0.29	0.02	0.14	0.13
Sat Flow, veh/h	1570	790	915	1654	1791	42	1626	1534	235	1725	1395	226
Grp Volume(v), veh/h	2	0	779	59	0	435	314	0	226	16	0	179
Grp Sat Flow(s),veh/h/ln	1570	0	1706	1654	0	1833	1626	0	1768	1725	0	1621
Q Serve(g_s), s	0.1	0.0	47.9	1.9	0.0	16.5	17.8	0.0	11.4	0.9	0.0	11.9
Cycle Q Clear(g_c), s	0.1	0.0	47.9	1.9	0.0	16.5	17.8	0.0	11.4	0.9	0.0	11.9
Prop In Lane	1.00		0.54	1.00		0.02	1.00		0.13	1.00		0.14
Lane Grp Cap(c), veh/h	377	0	827	158	0	953	382	0	525	242	0	220
V/C Ratio(X)	0.01	0.00	0.94	0.37	0.00	0.46	0.82	0.00	0.43	0.07	0.00	0.81
Avail Cap(c_a), veh/h	656	0	840	394	0	953	385	0	919	523	0	813
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	15.5	0.0	27.2	24.8	0.0	16.7	32.1	0.0	31.4	40.5	0.0	46.5
Incr Delay (d2), s/veh	0.0	0.0	18.4	0.5	0.0	0.4	12.4	0.0	0.6	0.0	0.0	7.7
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	21.9	0.7	0.0	6.7	8.1	0.0	4.9	0.4	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.5	0.0	45.6	25.3	0.0	17.1	44.4	0.0	32.0	40.5	0.0	54.2
LnGrp LOS	B		D	C		B	D		C	D		D
Approach Vol, veh/h		781			494			540			195	
Approach Delay, s/veh		45.5			18.1			39.2			53.0	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	58.6	23.8	20.0	4.3	62.5	5.9	37.9
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	3.9	49.9	19.8	13.9	2.1	18.5	2.9	13.4
Green Ext Time (p_c), s	0.1	3.2	0.0	0.6	0.0	9.8	0.0	3.2

Intersection Summary	
HCM 7th Control Delay, s/veh	37.8
HCM 7th LOS	D



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	156	303	311	1742	28	1453	281
Future Volume (vph)	156	303	311	1742	28	1453	281
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	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1493	1770	3539	1770	3438	1509
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1493	1770	3539	1770	3438	1509
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	329	338	1893	30	1579	305
RTOR Reduction (vph)	0	251	0	0	0	0	83
Lane Group Flow (vph)	170	78	338	1893	30	1579	222
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)	14.6	14.6	28.2	104.8	5.1	80.7	80.7
Effective Green, g (s)	15.6	15.6	29.7	106.8	5.6	82.7	82.7
Actuated g/C Ratio	0.11	0.11	0.21	0.76	0.04	0.59	0.59
Clearance Time (s)	5.0	5.0	5.5	6.0	4.5	6.0	6.0
Vehicle Extension (s)	2.5	2.5	2.3	4.5	2.3	4.5	4.5
Lane Grp Cap (vph)	197	166	375	2699	70	2030	891
v/s Ratio Prot	c0.10		c0.19	0.53	0.02	c0.46	
v/s Ratio Perm		0.05					0.15
v/c Ratio	0.86	0.47	0.90	0.70	0.43	0.78	0.25
Uniform Delay, d1	61.1	58.3	53.7	8.5	65.6	21.7	13.8
Progression Factor	1.00	1.00	1.00	1.00	0.97	1.28	1.32
Incremental Delay, d2	29.8	1.5	23.8	1.5	1.6	2.0	0.4
Delay (s)	90.9	59.9	77.5	10.0	65.4	29.9	18.6
Level of Service	F	E	E	B	E	C	B
Approach Delay (s/veh)	70.5			20.2		28.6	
Approach LOS	E			C		C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.7%	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

07/15/2025



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	156	303	311	1742	28	1453	281
Future Volume (veh/h)	156	303	311	1742	28	1453	281
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	170	150	338	1893		1579	305
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	376	2944		2043	926
Arrive On Green	0.11	0.11	0.21	0.83		1.00	1.00
Sat Flow, veh/h	1781	1547	1781	3647		3561	1573
Grp Volume(v), veh/h	170	150	338	1893		1579	305
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1777		1735	1573
Q Serve(g_s), s	13.1	13.3	25.9	27.4		0.0	0.0
Cycle Q Clear(g_c), s	13.1	13.3	25.9	27.4		0.0	0.0
Prop In Lane	1.00	1.00	1.00				1.00
Lane Grp Cap(c), veh/h	204	177	376	2944		2043	926
V/C Ratio(X)	0.84	0.85	0.90	0.64		0.77	0.33
Avail Cap(c_a), veh/h	204	177	394	2944		2043	926
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		0.53	0.53
Uniform Delay (d), s/veh	60.7	60.8	53.8	4.4		0.0	0.0
Incr Delay (d2), s/veh	24.4	29.6	21.6	1.1		1.6	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	7.3	12.4	13.6	6.7		0.4	0.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	85.1	90.4	75.3	5.5		1.6	0.5
LnGrp LOS	F	F	E	A		A	A
Approach Vol, veh/h	320			2231		1884	
Approach Delay, s/veh	87.6			16.1		1.4	
Approach LOS	F			B		A	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		120.0		20.0	33.6	86.4	
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		29.4		15.3	27.9	2.0	
Green Ext Time (p_c), s		62.1		0.0	0.2	65.5	

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.
User approved ignoring U-Turning movement.

HCM Signalized Intersection Capacity Analysis
22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

07/15/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	97	71	509	74	355	142	1404	265	459	1094	21
Future Volume (vph)	23	97	71	509	74	355	142	1404	265	459	1094	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
Frpb, 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)		3309		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)		3309		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	103	76	541	79	378	151	1494	282	488	1164	22
RTOR Reduction (vph)	0	64	0	0	0	287	0	0	56	0	0	12
Lane Group Flow (vph)	0	139	0	308	312	91	151	1494	226	488	1164	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)		12.4		27.9	27.9	27.9	13.4	55.0	82.9	22.0	63.9	63.9
Effective Green, g (s)		12.4		27.9	27.9	27.9	13.4	55.0	82.9	22.0	63.9	63.9
Actuated g/C Ratio		0.09		0.20	0.20	0.20	0.10	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)		293		334	339	305	169	1376	923	539	1569	706
v/s Ratio Prot		c0.04		0.18	c0.18		0.09	c0.43	0.05	c0.14	0.34	
v/s Ratio Perm						0.06			0.10			0.01
v/c Ratio		0.48		0.92	0.92	0.30	0.89	1.09	0.24	0.91	0.74	0.01
Uniform Delay, d1		60.7		55.0	55.0	47.7	62.6	42.5	13.6	58.0	31.3	20.8
Progression Factor		1.00		1.00	1.00	1.00	0.91	1.18	1.32	1.00	1.00	1.00
Incremental Delay, d2		0.7		29.8	29.2	0.3	31.2	48.0	0.1	18.5	3.2	0.0
Delay (s)		61.4		84.8	84.2	48.1	88.5	98.2	18.0	76.5	34.5	20.9
Level of Service		E		F	F	D	F	F	B	E	C	C
Approach Delay (s/veh)		61.4			70.7			85.7			46.6	
Approach LOS		E			E			F			D	

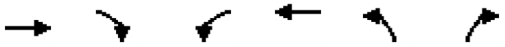
Intersection Summary			
HCM 2000 Control Delay (s/veh)	67.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.7
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 7th Edition methodology does not support exclusive ped or hold phases.

APPENDIX J.

QUEUING ANALYSIS



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1236	632	961	860	148	302
v/c Ratio	0.89	0.70	0.93	0.34	0.29	0.26
Control Delay (s/veh)	37.3	12.6	51.3	5.6	37.0	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.3	12.6	51.3	5.6	37.0	17.9
Queue Length 50th (ft)	347	78	286	62	42	60
Queue Length 95th (ft)	#696	298	#574	206	69	119
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1396	901	1029	2530	1167	1148
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	0.89	0.70	0.93	0.34	0.13	0.26

Intersection Summary

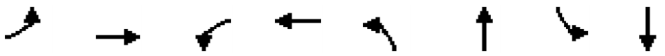
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	241	267	45	909	831
v/c Ratio	0.22	0.19	0.55	0.17	0.77	0.30
Control Delay (s/veh)	40.5	0.8	44.5	12.6	18.6	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.5	0.8	44.5	12.6	18.6	4.4
Queue Length 50th (ft)	27	0	83	0	217	50
Queue Length 95th (ft)	56	16	130	29	#757	164
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	504	1459	1246	596	1179	2753
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	0.09	0.17	0.21	0.08	0.77	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



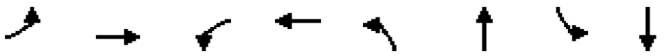
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	139	17	45	19	325	240	623
v/c Ratio	0.03	0.32	0.07	0.11	0.03	0.36	0.36	0.29
Control Delay (s/veh)	30.6	20.5	29.7	11.1	9.2	19.4	10.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	20.5	29.7	11.1	9.2	19.4	10.6	11.1
Queue Length 50th (ft)	2	27	3	3	1	30	22	31
Queue Length 95th (ft)	19	106	31	29	19	129	146	217
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	582	1389	325	1108	927	2371	1081	2839
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	0.10	0.05	0.04	0.02	0.14	0.22	0.22

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	20	402	498	51	7
v/c Ratio	0.03	0.32	0.42	0.13	0.02
Control Delay (s/veh)	2.5	4.8	7.3	16.2	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	2.5	4.8	7.3	16.2	10.7
Queue Length 50th (ft)	1	42	49	11	0
Queue Length 95th (ft)	7	91	195	39	8
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	892	1624	1626	1336	1302
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	0.25	0.31	0.04	0.01

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	429	25	247	271	194	16	228
v/c Ratio	0.03	0.77	0.09	0.35	0.58	0.30	0.04	0.55
Control Delay (s/veh)	15.1	34.3	15.5	20.2	23.5	23.9	19.3	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.1	34.3	15.5	20.2	23.5	23.9	19.3	38.9
Queue Length 50th (ft)	3	200	7	84	99	69	5	114
Queue Length 95th (ft)	15	385	25	199	214	180	21	243
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	564	1043	492	1229	564	1141	655	1301
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	0.41	0.05	0.20	0.48	0.17	0.02	0.18

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Group Flow (vph)	229	353	134	1550	19	1422	102
v/c Ratio	0.81	0.84	0.71	0.64	0.22	0.65	0.11
Control Delay (s/veh)	78.4	41.9	80.4	12.6	76.8	22.0	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	78.4	41.9	80.4	12.6	76.8	22.0	3.1
Queue Length 50th (ft)	201	137	120	393	15	596	6
Queue Length 95th (ft)	294	#281	#214	516	m27	700	m15
Internal Link Dist (ft)	1134			1909		2372	
Turn Bay Length (ft)	275		435		300		200
Base Capacity (vph)	322	449	189	2418	202	2172	955
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.79	0.71	0.64	0.09	0.65	0.11

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.



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	84	153	154	159	72	1183	500	388	1138	14
v/c Ratio	0.27	0.77	0.77	0.49	0.62	0.76	0.51	0.71	0.58	0.01
Control Delay (s/veh)	42.7	83.7	83.2	13.1	74.3	32.0	5.3	63.6	21.2	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)	42.7	83.7	83.2	13.1	74.3	32.0	5.3	63.6	21.2	0.0
Queue Length 50th (ft)	25	143	143	0	62	497	25	174	358	0
Queue Length 95th (ft)	53	223	225	66	m98	597	32	232	443	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	336	226	228	347	134	1549	999	545	1964	945
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	0.25	0.68	0.68	0.46	0.54	0.76	0.50	0.71	0.58	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

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)	742	741	410	1822	1829	1889	1852	126	124	155	163
Average Queue (ft)	396	394	296	1425	1336	1038	836	52	57	62	66
95th Queue (ft)	673	686	479	2060	2214	2359	2070	103	105	129	133
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)				1	7	20	7				
Queuing Penalty (veh)				5	28	85	31				
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		27	11								
Queuing Penalty (veh)		162	64								

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)	107	167	134	234	78	399	488	174
Average Queue (ft)	38	49	49	105	24	220	92	53
95th Queue (ft)	86	117	107	196	59	416	320	132
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 (%)	30	13		5		11	1	
Queuing Penalty (veh)	64	5		2		42	5	

Intersection: 3: JAE Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	L	TR	LTR
Maximum Queue (ft)	73	19	48	45	54	94
Average Queue (ft)	18	1	5	1	6	42
95th Queue (ft)	53	14	27	16	32	75
Link Distance (ft)		1193		552	552	1330
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	25		25			
Storage Blk Time (%)	2		1			
Queuing Penalty (veh)	15		3			

Intersection: 4: SW Tualatin Road & SW 112th Avenue

Movement	SB
Directions Served	LR
Maximum Queue (ft)	66
Average Queue (ft)	23
95th Queue (ft)	57
Link Distance (ft)	540
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	18	52	65
Average Queue (ft)	1	18	17
95th Queue (ft)	13	49	50
Link Distance (ft)	1064		285
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	
Storage Blk Time (%)		4	
Queuing Penalty (veh)		13	

Intersection: 6: SW 108th Ave & North Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	43
Average Queue (ft)	3
95th Queue (ft)	19
Link Distance (ft)	593
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	28
Average Queue (ft)	2	2
95th Queue (ft)	17	14
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	57	39
Average Queue (ft)	8	4
95th Queue (ft)	36	23
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: 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)	81	177	68	76	57	126	208	167	153	166
Average Queue (ft)	9	87	14	22	10	34	80	60	36	56
95th Queue (ft)	44	162	45	57	37	88	168	119	106	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 (%)		10		0		0		0	0	
Queuing Penalty (veh)		1		0		0		1	1	

Intersection: 10: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	99	74	49	26
Average Queue (ft)	62	31	15	2
95th Queue (ft)	90	58	38	13
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: SW Leveton Drive & West Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	65	16	40	65
Average Queue (ft)	17	1	9	17
95th Queue (ft)	51	7	34	52
Link Distance (ft)	1030	399	532	532
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & New 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: 13: SW Leveton Drive & Center Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	34	14	40	35
Average Queue (ft)	3	0	11	11
95th Queue (ft)	17	7	37	37
Link Distance (ft)	413	362	352	352
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
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: 15: SW 108th Ave & SW Leveton Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	81	48
Average Queue (ft)	41	8
95th Queue (ft)	66	35
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)	44	174	172	65	17
Average Queue (ft)	9	40	57	20	2
95th Queue (ft)	36	114	137	49	10
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)		1			
Queuing Penalty (veh)		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)	20	87	83	123	93
Average Queue (ft)	1	34	3	51	40
95th Queue (ft)	12	70	36	100	76
Link Distance (ft)	169		1000		1711
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		100	
Storage Blk Time (%)		11		1	0
Queuing Penalty (veh)		36		1	0

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	48	107
Average Queue (ft)	4	52
95th Queue (ft)	25	87
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)	186	47	35	1804	1752
Average Queue (ft)	31	2	1	559	538
95th Queue (ft)	130	25	16	1872	1852
Link Distance (ft)	1290	1829	1829	1944	1944
Upstream Blk Time (%)				5	4
Queuing Penalty (veh)				40	32
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)	112	370	135	271	159	276	84	218
Average Queue (ft)	11	155	19	100	93	73	10	91
95th Queue (ft)	56	292	69	198	158	187	43	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 (%)		16		7	18	6	0	19
Queuing Penalty (veh)		2		2	33	14	0	3

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	L	T	T	U	T	T	R
Maximum Queue (ft)	447	886	395	694	706	348	1570	1564	400
Average Queue (ft)	271	336	252	287	305	52	473	455	77
95th Queue (ft)	455	743	476	736	740	215	1498	1489	302
Link Distance (ft)		1160		1944	1944		2374	2374	
Upstream Blk Time (%)		0					1	2	
Queuing Penalty (veh)		0					8	11	
Storage Bay Dist (ft)	275		435			300			200
Storage Blk Time (%)	15	23	12	2			18	19	
Queuing Penalty (veh)	52	51	90	2			3	19	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

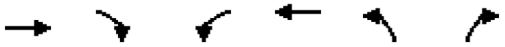
Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	140	165	273	296	201	163	620	662	315	331	415	929
Average Queue (ft)	20	71	143	178	73	76	307	325	198	190	235	306
95th Queue (ft)	89	145	229	260	145	153	506	559	380	296	377	689
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)												1
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)			0	0			1	22	6	1	4	11
Queuing Penalty (veh)			0	0			0	109	37	8	23	42

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	889	16
Average Queue (ft)	282	3
95th Queue (ft)	649	13
Link Distance (ft)	1364	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		400
Storage Blk Time (%)	5	
Queuing Penalty (veh)	1	

Network Summary

Network wide Queuing Penalty: 1145



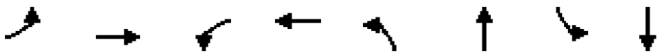
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	860	189	598	1131	703	692
v/c Ratio	0.60	0.26	0.80	0.49	0.78	0.52
Control Delay (s/veh)	30.4	4.9	50.5	11.1	45.0	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.4	4.9	50.5	11.1	45.0	22.0
Queue Length 50th (ft)	255	0	210	193	244	177
Queue Length 95th (ft)	392	51	292	314	309	289
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1435	728	894	2304	1130	1435
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	0.60	0.26	0.67	0.49	0.62	0.48

Intersection Summary



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	39	640	832	50	423	398
v/c Ratio	0.16	0.62	0.75	0.10	0.50	0.15
Control Delay (s/veh)	38.6	14.5	36.4	11.9	20.7	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.6	14.5	36.4	11.9	20.7	3.9
Queue Length 50th (ft)	23	216	242	6	111	23
Queue Length 95th (ft)	52	387	370	36	318	77
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	553	1296	1367	611	838	2698
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	0.07	0.49	0.61	0.08	0.50	0.15

Intersection Summary



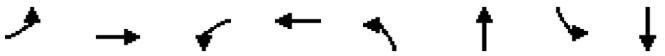
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	58	42	232	8	690	34	425
v/c Ratio	0.08	0.16	0.12	0.39	0.02	0.50	0.07	0.31
Control Delay (s/veh)	30.7	15.6	29.6	6.0	11.7	17.3	12.1	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.7	15.6	29.6	6.0	11.7	17.3	12.1	13.9
Queue Length 50th (ft)	6	7	9	0	1	65	5	38
Queue Length 95th (ft)	44	42	57	52	11	255	30	152
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	674	1191	459	1165	701	2633	1107	2634
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	0.05	0.09	0.20	0.01	0.26	0.03	0.16

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2	351	623	181	39
v/c Ratio	0.00	0.35	0.69	0.36	0.08
Control Delay (s/veh)	4.0	7.7	15.0	19.6	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.0	7.7	15.0	19.6	8.2
Queue Length 50th (ft)	0	46	103	33	0
Queue Length 95th (ft)	3	115	352	141	23
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	669	1804	1656	1206	1091
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	0.00	0.19	0.38	0.15	0.04

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	598	58	408	283	216	14	166
v/c Ratio	0.00	0.72	0.20	0.41	0.73	0.39	0.05	0.66
Control Delay (s/veh)	13.0	29.9	14.0	18.1	40.8	34.0	25.4	57.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.0	29.9	14.0	18.1	40.8	34.0	25.4	57.3
Queue Length 50th (ft)	0	340	19	166	162	118	7	115
Queue Length 95th (ft)	3	454	38	268	214	186	19	167
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	567	833	444	998	405	902	478	838
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	0.00	0.72	0.13	0.41	0.70	0.24	0.03	0.20

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Group Flow (vph)	158	311	326	1704	29	1492	300
v/c Ratio	0.82	0.74	0.89	0.62	0.31	0.73	0.30
Control Delay (s/veh)	91.3	20.5	79.2	8.7	67.2	29.4	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	91.3	20.5	79.2	8.7	67.2	29.4	6.9
Queue Length 50th (ft)	142	20	286	354	26	697	47
Queue Length 95th (ft)	#257	125	#440	453	m36	790	m74
Internal Link Dist (ft)	1134			1909		2372	
Turn Bay Length (ft)	275		435		300		200
Base Capacity (vph)	202	424	391	2756	202	2052	985
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.73	0.83	0.62	0.14	0.73	0.30

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.



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	199	299	303	369	147	1339	239	468	1094	21
v/c Ratio	0.56	0.91	0.91	0.63	0.88	0.96	0.25	0.88	0.69	0.03
Control Delay (s/veh)	46.4	85.4	85.5	10.4	95.5	61.8	4.8	76.6	33.1	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)	46.4	85.4	85.5	10.4	95.5	61.8	4.8	76.6	33.1	0.1
Queue Length 50th (ft)	61	278	283	7	135	613	49	215	416	0
Queue Length 95th (ft)	102	#471	#474	103	m#255	#794	m75	#296	498	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	392	338	342	595	171	1396	983	556	1583	772
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	0.51	0.88	0.89	0.62	0.86	0.96	0.24	0.84	0.69	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.

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)	374	375	202	611	532	441	418	383	396	315	267
Average Queue (ft)	242	225	69	346	230	181	183	252	258	150	149
95th Queue (ft)	353	338	156	547	405	363	366	355	362	266	245
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)									0		
Queuing Penalty (veh)									0		
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		7							7	0	0
Queuing Penalty (veh)		13							51	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)	111	448	316	404	120	379	245	196
Average Queue (ft)	33	236	180	239	29	230	33	45
95th Queue (ft)	91	395	287	366	111	414	142	137
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	23	36		26		18	0	
Queuing Penalty (veh)	138	13		12		35	0	

Intersection: 3: JAE Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	WB	NB	SB
Directions Served	L	TR	TR	LTR
Maximum Queue (ft)	76	40	55	75
Average Queue (ft)	21	4	12	23
95th Queue (ft)	57	28	41	64
Link Distance (ft)		800	552	1330
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	25			
Storage Blk Time (%)	5	0		
Queuing Penalty (veh)	24	0		

Intersection: 4: SW Tualatin Road & SW 112th Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	35	10	66
Average Queue (ft)	6	0	17
95th Queue (ft)	27	5	53
Link Distance (ft)		1064	540
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	4		

Intersection: 5: SW 108th Ave & SW Tualatin Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	21	89
Average Queue (ft)	2	36
95th Queue (ft)	14	71
Link Distance (ft)		285
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	2	

Intersection: 6: SW 108th Ave & North Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	3
95th Queue (ft)	20
Link Distance (ft)	593
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: SW 108th Ave & Center Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	63
Average Queue (ft)	26
95th Queue (ft)	56
Link Distance (ft)	421
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	60	12
Average Queue (ft)	30	0
95th Queue (ft)	57	6
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: 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)	77	124	86	107	43	210	206	77	161	198
Average Queue (ft)	24	34	32	52	5	74	93	18	45	66
95th Queue (ft)	58	83	69	92	25	150	174	51	118	147
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 (%)		1				1			0	
Queuing Penalty (veh)		0				0			0	

Intersection: 10: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	84	107	65	40
Average Queue (ft)	34	50	20	10
95th Queue (ft)	61	80	45	35
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	40	72	105
Average Queue (ft)	4	32	51
95th Queue (ft)	22	62	85
Link Distance (ft)	1030	531	531
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: SW Leveton Drive & New 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: 13: SW Leveton Drive & Center Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	20	59	64
Average Queue (ft)	1	24	25
95th Queue (ft)	11	52	55
Link Distance (ft)	403	352	352
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
Directions Served	LTR
Maximum Queue (ft)	35
Average Queue (ft)	2
95th Queue (ft)	20
Link Distance (ft)	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	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	71	40	13
Average Queue (ft)	38	7	0
95th Queue (ft)	57	29	7
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)	27	165	262	137	47
Average Queue (ft)	1	71	120	57	10
95th Queue (ft)	12	129	215	107	27
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	WB	NB	NB
Directions Served	TR	L	T	L	R
Maximum Queue (ft)	10	44	6	190	172
Average Queue (ft)	0	14	0	84	36
95th Queue (ft)	5	42	4	159	105
Link Distance (ft)	169		1000		1711
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		100	
Storage Blk Time (%)		2		13	0
Queuing Penalty (veh)		16		4	0

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	19	116
Average Queue (ft)	1	61
95th Queue (ft)	12	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
Directions Served	R	T
Maximum Queue (ft)	484	284
Average Queue (ft)	167	10
95th Queue (ft)	428	208
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)	14	502	149	271	159	307	65	206
Average Queue (ft)	1	191	35	120	85	92	6	73
95th Queue (ft)	8	394	95	222	157	228	30	158
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		20	1	9	17	7	1	15
Queuing Penalty (veh)		0	2	4	32	18	1	2

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	L	T	T	U	T	T	R
Maximum Queue (ft)	395	590	460	1226	1204	354	1066	1076	400
Average Queue (ft)	202	256	417	607	556	54	494	499	155
95th Queue (ft)	365	492	521	1348	1308	190	1039	1062	428
Link Distance (ft)		1160		1944	1944		2374	2374	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	275		435			300			200
Storage Blk Time (%)	7	15	37	1			21	28	0
Queuing Penalty (veh)	19	23	290	2			6	77	1

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

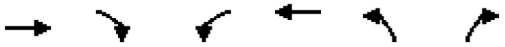
Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	228	292	375	670	458	674	997	1039	315	322	445	492
Average Queue (ft)	69	135	296	376	210	260	635	654	224	212	250	301
95th Queue (ft)	172	240	419	580	387	630	985	1004	429	316	372	443
Link Distance (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	1	6	25		0	17	47	0	2	8	12
Queuing Penalty (veh)	0	1	19	61		0	24	106	1	9	41	52

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	435	22
Average Queue (ft)	292	4
95th Queue (ft)	425	17
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 1105



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1298	698	1067	902	162	328
v/c Ratio	0.94	0.76	1.04	0.36	0.31	0.28
Control Delay (s/veh)	42.8	15.5	75.6	5.9	37.1	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.8	15.5	75.6	5.9	37.1	18.0
Queue Length 50th (ft)	380	109	~339	68	46	66
Queue Length 95th (ft)	#756	#391	#670	223	74	130
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1387	913	1023	2515	1164	1153
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	0.94	0.76	1.04	0.36	0.14	0.28

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

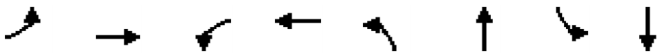
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	48	255	299	47	964	963
v/c Ratio	0.25	0.20	0.63	0.18	0.80	0.34
Control Delay (s/veh)	47.4	0.8	53.3	12.9	20.6	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.3
Total Delay (s/veh)	47.4	0.8	53.3	12.9	20.8	4.7
Queue Length 50th (ft)	35	0	117	0	313	65
Queue Length 95th (ft)	58	17	145	30	#900	197
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	425	1449	1051	511	1211	2836
Starvation Cap Reductn	0	0	0	0	15	1088
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.18	0.28	0.09	0.81	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



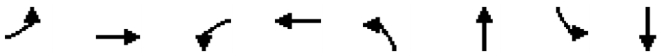
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	145	24	60	20	377	327	670
v/c Ratio	0.03	0.38	0.12	0.14	0.04	0.47	0.53	0.39
Control Delay (s/veh)	36.6	26.2	35.7	10.4	10.4	23.6	14.1	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.6	26.2	35.7	10.4	10.4	23.6	14.1	14.8
Queue Length 50th (ft)	2	36	6	4	2	43	37	40
Queue Length 95th (ft)	21	122	41	36	19	157	203	237
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	472	1213	264	938	784	2052	913	2537
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	0.12	0.09	0.06	0.03	0.18	0.36	0.26

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	21	424	592	65	7
v/c Ratio	0.03	0.34	0.49	0.17	0.02
Control Delay (s/veh)	2.6	5.0	7.9	18.4	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	2.6	5.0	7.9	18.4	12.3
Queue Length 50th (ft)	1	48	65	13	0
Queue Length 95th (ft)	8	106	259	54	10
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	815	1624	1604	1275	1243
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	0.26	0.37	0.05	0.01

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	463	26	299	313	203	17	238
v/c Ratio	0.03	0.76	0.09	0.39	0.70	0.32	0.05	0.60
Control Delay (s/veh)	15.1	33.8	15.5	20.9	31.4	26.7	21.5	44.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.1	33.8	15.5	20.9	31.4	26.7	21.5	44.7
Queue Length 50th (ft)	4	250	9	121	144	88	6	146
Queue Length 95th (ft)	15	431	26	243	#271	200	23	266
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	534	939	460	1114	505	1038	606	1185
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	0.49	0.06	0.27	0.62	0.20	0.03	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Group Flow (vph)	241	373	141	1638	20	1529	107
v/c Ratio	0.83	0.89	0.75	0.68	0.23	0.71	0.11
Control Delay (s/veh)	79.3	50.6	83.6	13.9	78.6	23.0	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	79.3	50.6	83.6	13.9	78.6	23.0	3.2
Queue Length 50th (ft)	210	167	126	455	16	676	7
Queue Length 95th (ft)	#325	#338	#229	576	m26	779	m15
Internal Link Dist (ft)	1134			1909		2372	
Turn Bay Length (ft)	275		435		300		200
Base Capacity (vph)	322	442	189	2399	202	2154	947
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.84	0.75	0.68	0.10	0.71	0.11

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.



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	87	165	164	167	77	1251	527	407	1223	15
v/c Ratio	0.28	0.80	0.78	0.49	0.65	0.82	0.54	0.75	0.65	0.02
Control Delay (s/veh)	42.7	85.6	84.1	12.7	76.8	33.5	5.6	65.3	23.9	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)	42.7	85.6	84.1	12.7	76.8	33.5	5.6	65.3	23.9	0.0
Queue Length 50th (ft)	26	152	151	0	64	548	28	184	413	0
Queue Length 95th (ft)	55	#255	#250	68	m98	645	37	243	494	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	337	228	231	356	134	1533	992	545	1889	913
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	0.26	0.72	0.71	0.47	0.57	0.82	0.53	0.75	0.65	0.02

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.

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)	1388	1417	410	1824	1829	1887	1868	158	161	228	192
Average Queue (ft)	683	710	354	1578	1541	1375	980	64	74	75	77
95th Queue (ft)	1364	1425	502	2167	2326	2582	2221	129	136	164	160
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)	2	4		2	15	37	4				
Queuing Penalty (veh)	0	0		8	66	168	18				
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		39	23							0	0
Queuing Penalty (veh)		256	140							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)	123	171	198	331	184	395	432	168
Average Queue (ft)	38	48	79	160	34	220	97	49
95th Queue (ft)	92	122	157	277	105	410	334	121
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							1	
Queuing Penalty (veh)							5	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	38	11		12		13	1	
Queuing Penalty (veh)	83	5		5		56	6	

Intersection: 3: JAE Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	TR	L	L	TR	LTR
Maximum Queue (ft)	84	30	49	14	56	116
Average Queue (ft)	20	1	5	1	8	44
95th Queue (ft)	58	13	26	12	36	89
Link Distance (ft)		1193		552	552	1330
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	25		25			
Storage Blk Time (%)	2	0	1			
Queuing Penalty (veh)	19	0	3			

Intersection: 4: SW Tualatin Road & SW 112th Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	7	66
Average Queue (ft)	0	23
95th Queue (ft)	5	55
Link Distance (ft)		540
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	23	53	75
Average Queue (ft)	1	21	23
95th Queue (ft)	14	51	57
Link Distance (ft)	1064		285
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		25	
Storage Blk Time (%)		6	
Queuing Penalty (veh)		22	

Intersection: 6: SW 108th Ave & North Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	34	25
Average Queue (ft)	2	1
95th Queue (ft)	16	14
Link Distance (ft)	593	406
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	41	53
Average Queue (ft)	12	10
95th Queue (ft)	40	38
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	50	46
Average Queue (ft)	14	8
95th Queue (ft)	43	33
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: 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)	105	200	90	114	42	140	206	156	146	170
Average Queue (ft)	8	96	21	33	8	43	93	72	40	65
95th Queue (ft)	47	179	64	78	32	101	168	128	110	138
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 (%)		13		0		0		0	0	
Queuing Penalty (veh)		1		0		0		1	0	

Intersection: 10: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	147	79	41	20
Average Queue (ft)	71	35	19	2
95th Queue (ft)	111	61	40	15
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	80	39	62
Average Queue (ft)	19	8	14
95th Queue (ft)	58	31	46
Link Distance (ft)	1030	532	532
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: SW Leveton Drive & New 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: 13: SW Leveton Drive & Center Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	49	7	34	35
Average Queue (ft)	4	0	9	12
95th Queue (ft)	24	5	32	39
Link Distance (ft)	413	362	352	352
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)	40	40
Average Queue (ft)	4	13
95th Queue (ft)	22	40
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	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	144	58	5
Average Queue (ft)	60	12	0
95th Queue (ft)	100	42	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)	50	184	221	70	17
Average Queue (ft)	11	49	86	24	2
95th Queue (ft)	40	126	174	54	12
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)		1			
Queuing Penalty (veh)		0			

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	45	81	114	106
Average Queue (ft)	3	27	50	42
95th Queue (ft)	22	64	99	83
Link Distance (ft)	169			1711
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	100	
Storage Blk Time (%)		9	1	0
Queuing Penalty (veh)		30	1	0

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	47	134
Average Queue (ft)	5	54
95th Queue (ft)	26	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	NB	NB	SB	SB
Directions Served	R	T	T	T	T
Maximum Queue (ft)	201	18	19	1982	1988
Average Queue (ft)	38	1	0	1064	1041
95th Queue (ft)	154	8	9	2571	2571
Link Distance (ft)	1290	1829	1829	1944	1944
Upstream Blk Time (%)				13	12
Queuing Penalty (veh)				118	110
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)	35	380	72	258	159	381	70	209
Average Queue (ft)	5	183	16	119	108	111	11	93
95th Queue (ft)	22	327	48	215	173	275	48	176
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		11	23	8	1	21
Queuing Penalty (veh)		2		3	44	25	1	3

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	L	T	T	U	T	T	R
Maximum Queue (ft)	460	1214	422	603	568	352	2400	2398	400
Average Queue (ft)	338	605	238	247	269	54	1065	1055	124
95th Queue (ft)	534	1282	440	517	523	249	2671	2671	408
Link Distance (ft)		1160		1944	1944		2374	2374	
Upstream Blk Time (%)		21					11	10	
Queuing Penalty (veh)		0					81	79	
Storage Bay Dist (ft)	275		435			300			200
Storage Blk Time (%)	15	46	5	0			44	45	
Queuing Penalty (veh)	53	105	40	0			8	46	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

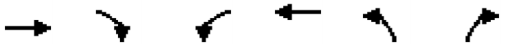
Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	113	146	365	718	498	382	641	693	315	315	465	1404
Average Queue (ft)	14	71	184	255	97	88	348	367	210	152	285	568
95th Queue (ft)	59	134	328	552	324	225	558	611	400	294	495	1323
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)				2	1							19
Queuing Penalty (veh)				0	0							0
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)			8	14			1	26	6	1	3	33
Queuing Penalty (veh)			14	21			1	132	37	3	20	131

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	1398	465
Average Queue (ft)	549	18
95th Queue (ft)	1311	160
Link Distance (ft)	1364	
Upstream Blk Time (%)	15	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		400
Storage Blk Time (%)	24	
Queuing Penalty (veh)	4	

Network Summary

Network wide Queuing Penalty: 1976



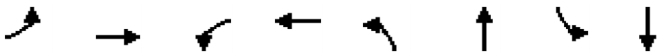
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	903	205	638	1187	778	783
v/c Ratio	0.66	0.29	0.83	0.53	0.82	0.56
Control Delay (s/veh)	33.8	5.6	52.6	12.5	46.3	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.8	5.6	52.6	12.5	46.3	22.0
Queue Length 50th (ft)	294	4	230	228	278	201
Queue Length 95th (ft)	416	58	314	337	349	338
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1365	706	875	2256	1106	1487
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	0.66	0.29	0.73	0.53	0.70	0.53

Intersection Summary



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	41	680	960	52	447	434
v/c Ratio	0.16	0.70	0.79	0.10	0.59	0.16
Control Delay (s/veh)	38.3	18.5	36.4	13.0	25.9	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.3	18.5	36.4	13.0	25.9	4.1
Queue Length 50th (ft)	24	295	265	8	157	25
Queue Length 95th (ft)	53	442	443	40	371	84
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	549	1232	1355	604	761	2676
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	0.07	0.55	0.71	0.09	0.59	0.16

Intersection Summary



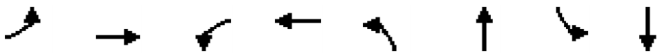
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	61	72	309	8	755	50	449
v/c Ratio	0.10	0.19	0.23	0.45	0.02	0.59	0.13	0.31
Control Delay (s/veh)	33.3	17.1	32.4	5.8	11.4	20.9	12.2	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.3	17.1	32.4	5.8	11.4	20.9	12.2	14.4
Queue Length 50th (ft)	10	11	24	1	1	123	8	44
Queue Length 95th (ft)	46	43	88	59	11	286	40	161
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	566	1049	385	1054	624	2308	941	2364
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	0.05	0.06	0.19	0.29	0.01	0.33	0.05	0.19

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2	376	670	253	41
v/c Ratio	0.00	0.39	0.76	0.45	0.08
Control Delay (s/veh)	5.0	9.3	18.8	23.1	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.0	9.3	18.8	23.1	8.6
Queue Length 50th (ft)	0	62	140	59	0
Queue Length 95th (ft)	3	156	460	224	26
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	582	1740	1603	1110	1008
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	0.00	0.22	0.42	0.23	0.04

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	702	59	431	306	226	16	179
v/c Ratio	0.01	0.86	0.27	0.44	0.79	0.40	0.06	0.68
Control Delay (s/veh)	13.0	39.3	16.1	19.3	44.8	34.0	25.2	58.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.0	39.3	16.1	19.3	44.8	34.0	25.2	58.3
Queue Length 50th (ft)	1	455	19	182	179	124	8	126
Queue Length 95th (ft)	5	#612	39	292	232	194	21	179
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	544	819	381	985	402	887	482	825
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	0.86	0.15	0.44	0.76	0.25	0.03	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Group Flow (vph)	170	329	335	1842	30	1573	305
v/c Ratio	0.86	0.79	0.90	0.67	0.31	0.77	0.31
Control Delay (s/veh)	97.5	25.4	80.5	9.8	66.5	30.7	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	97.5	25.4	80.5	9.8	66.5	30.7	7.0
Queue Length 50th (ft)	154	40	296	416	26	753	49
Queue Length 95th (ft)	#283	#177	#459	532	m36	840	m75
Internal Link Dist (ft)	1134			1909		2372	
Turn Bay Length (ft)	275		435		300		200
Base Capacity (vph)	202	420	391	2746	202	2035	975
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.78	0.86	0.67	0.15	0.77	0.31

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.



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	203	308	311	378	151	1453	272	488	1159	22
v/c Ratio	0.57	0.92	0.92	0.64	0.90	1.06	0.28	0.90	0.74	0.03
Control Delay (s/veh)	46.4	87.6	87.0	11.5	95.5	84.5	5.1	78.9	34.9	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)	46.4	87.6	87.0	11.5	95.5	84.5	5.1	78.9	34.9	0.0
Queue Length 50th (ft)	61	289	292	15	139	~764	53	226	453	0
Queue Length 95th (ft)	104	#491	#492	118	m#257	#911	m79	#318	542	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	393	338	342	594	171	1376	977	556	1571	767
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	0.52	0.91	0.91	0.64	0.88	1.06	0.28	0.88	0.74	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.

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)	455	404	262	854	734	427	457	478	506	410	333
Average Queue (ft)	279	261	74	493	327	201	205	302	315	219	172
95th Queue (ft)	407	382	159	848	623	394	404	438	463	413	275
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)								0	0		
Queuing Penalty (veh)								0	3		
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		14							15	1	1
Queuing Penalty (veh)		27							112	3	3

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	582	469	653	335	396	320	229
Average Queue (ft)	39	287	249	387	85	248	51	60
95th Queue (ft)	104	491	414	603	283	426	194	163
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	24	40		46		21	1	
Queuing Penalty (veh)	155	15		23		43	3	

Intersection: 3: JAE Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	TR	TR	LTR
Maximum Queue (ft)	64	50	82	60	77
Average Queue (ft)	26	3	5	11	26
95th Queue (ft)	59	29	37	41	61
Link Distance (ft)		1193	800	552	1330
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	25				
Storage Blk Time (%)	8	0	0		
Queuing Penalty (veh)	36	0	0		

Intersection: 4: SW Tualatin Road & SW 112th Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	35	12	73
Average Queue (ft)	7	0	19
95th Queue (ft)	30	7	56
Link Distance (ft)		1064	540
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	6		

Intersection: 5: SW 108th Ave & SW Tualatin Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	33	112
Average Queue (ft)	2	47
95th Queue (ft)	15	91
Link Distance (ft)		285
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Intersection: 6: SW 108th Ave & North Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	593
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: SW 108th Ave & Center Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	97
Average Queue (ft)	47
95th Queue (ft)	78
Link Distance (ft)	421
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	68	12
Average Queue (ft)	35	1
95th Queue (ft)	56	8
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: 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)	76	149	105	164	58	224	285	82	160	187
Average Queue (ft)	24	48	45	79	7	79	124	29	47	66
95th Queue (ft)	57	111	87	131	33	159	228	63	115	143
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 (%)		4		0		1			0	
Queuing Penalty (veh)		1		0		0			0	

Intersection: 10: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	76	121	64	43
Average Queue (ft)	39	64	24	12
95th Queue (ft)	65	99	47	39
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: SW Leveton Drive & West Access

Movement	EB	WB	SB	SB
Directions Served	LT	TR	L	R
Maximum Queue (ft)	40	6	77	95
Average Queue (ft)	6	0	35	50
95th Queue (ft)	28	5	65	81
Link Distance (ft)	1030	408	531	531
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: SW Leveton Drive & New 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: 13: SW Leveton Drive & Center Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	26	57	56
Average Queue (ft)	2	27	25
95th Queue (ft)	17	54	54
Link Distance (ft)	403	352	352
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)	25	98
Average Queue (ft)	1	35
95th Queue (ft)	11	79
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	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	96	55	12
Average Queue (ft)	48	10	0
95th Queue (ft)	80	39	6
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)	27	158	330	156	39
Average Queue (ft)	1	78	145	78	10
95th Queue (ft)	12	135	265	132	27
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)	10	61	186	114
Average Queue (ft)	0	15	91	30
95th Queue (ft)	4	47	163	89
Link Distance (ft)	169			1711
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	100	
Storage Blk Time (%)		3	15	0
Queuing Penalty (veh)		21	5	0

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	14	242
Average Queue (ft)	1	66
95th Queue (ft)	7	170
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)	913	10	170	164
Average Queue (ft)	519	0	12	12
95th Queue (ft)	1066	7	178	172
Link Distance (ft)	1290	1829	1944	1944
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	5			
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)	14	675	135	366	159	524	77	237
Average Queue (ft)	1	285	37	140	106	123	11	83
95th Queue (ft)	6	602	97	266	178	329	45	171
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)		0				0		
Queuing Penalty (veh)		0				0		
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		29	1	12	25	11	1	21
Queuing Penalty (veh)		1	4	6	48	29	1	3

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	L	T	T	U	T	T	R
Maximum Queue (ft)	460	742	460	1488	1495	363	1334	1338	400
Average Queue (ft)	249	317	436	868	827	73	619	621	177
95th Queue (ft)	442	620	523	1535	1538	225	1264	1280	462
Link Distance (ft)		1160		1944	1944		2374	2374	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	275		435			300			200
Storage Blk Time (%)	14	19	42	7			26	31	
Queuing Penalty (veh)	43	31	360	21			7	86	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

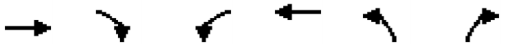
Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	219	281	375	804	753	675	2382	2393	315	351	464	569
Average Queue (ft)	78	148	323	535	401	348	1483	1509	249	229	276	323
95th Queue (ft)	179	240	435	972	921	771	2681	2702	433	332	406	487
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)				10	9		1	1				
Queuing Penalty (veh)				0	0		7	13				
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)	0	0	19	40			41	54	1	3	11	15
Queuing Penalty (veh)	0	0	63	101			58	139	4	14	60	67

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	482	113
Average Queue (ft)	313	8
95th Queue (ft)	449	74
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	2	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 1630



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1298	756	1120	902	171	335
v/c Ratio	0.94	0.81	1.10	0.36	0.32	0.29
Control Delay (s/veh)	43.2	17.3	93.2	6.0	37.3	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.2	17.3	93.2	6.0	37.3	18.1
Queue Length 50th (ft)	382	128	~391	70	50	68
Queue Length 95th (ft)	#759	#491	#717	225	77	132
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1385	934	1021	2510	1163	1155
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	0.94	0.81	1.10	0.36	0.15	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

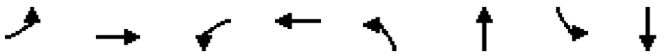
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	48	257	315	47	989	1060
v/c Ratio	0.23	0.20	0.61	0.17	0.86	0.39
Control Delay (s/veh)	40.7	0.8	45.0	12.3	24.6	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay (s/veh)	40.7	0.8	45.0	12.3	24.6	5.1
Queue Length 50th (ft)	28	0	97	0	313	70
Queue Length 95th (ft)	58	17	152	30	#929	223
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	504	1455	1246	597	1150	2751
Starvation Cap Reductn	0	0	0	0	0	873
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.18	0.25	0.08	0.86	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



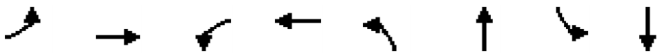
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	145	28	76	20	401	423	670
v/c Ratio	0.04	0.39	0.14	0.18	0.04	0.50	0.66	0.37
Control Delay (s/veh)	38.4	28.0	37.2	9.8	10.3	24.2	16.8	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.4	28.0	37.2	9.8	10.3	24.2	16.8	14.4
Queue Length 50th (ft)	2	40	8	4	2	50	52	41
Queue Length 95th (ft)	21	124	47	39	19	163	272	237
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	448	1151	251	899	773	1937	892	2423
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	0.13	0.11	0.08	0.03	0.21	0.47	0.28

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	21	424	651	76	7
v/c Ratio	0.04	0.37	0.60	0.21	0.02
Control Delay (s/veh)	3.6	5.5	11.3	22.8	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	3.6	5.5	11.3	22.8	14.7
Queue Length 50th (ft)	1	50	79	15	0
Queue Length 95th (ft)	8	113	310	67	10
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	701	1624	1559	1096	1069
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	0.26	0.42	0.07	0.01

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	474	26	310	359	203	17	238
v/c Ratio	0.03	0.75	0.09	0.39	0.81	0.33	0.05	0.62
Control Delay (s/veh)	15.0	33.7	15.5	21.1	39.7	27.4	21.9	46.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	15.0	33.7	15.5	21.1	39.7	27.4	21.9	46.8
Queue Length 50th (ft)	4	265	9	129	179	92	7	153
Queue Length 95th (ft)	15	446	26	254	#385	200	23	266
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	529	882	447	1052	483	976	590	1114
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	0.54	0.06	0.29	0.74	0.21	0.03	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Group Flow (vph)	241	376	142	1646	20	1578	107
v/c Ratio	0.83	0.90	0.75	0.69	0.23	0.73	0.11
Control Delay (s/veh)	78.9	52.9	84.1	14.0	79.1	23.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	78.9	52.9	84.1	14.0	79.1	23.7	3.3
Queue Length 50th (ft)	210	173	127	464	16	714	7
Queue Length 95th (ft)	#325	#348	#231	583	m25	817	m15
Internal Link Dist (ft)	1134			1909		2372	
Turn Bay Length (ft)	275		435		300		200
Base Capacity (vph)	322	440	189	2397	202	2152	945
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.85	0.75	0.69	0.10	0.73	0.11

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.



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	87	170	168	167	77	1258	529	407	1262	15
v/c Ratio	0.28	0.82	0.80	0.49	0.65	0.82	0.54	0.75	0.67	0.02
Control Delay (s/veh)	42.7	87.8	85.4	12.7	77.0	33.8	5.6	65.3	24.6	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)	42.7	87.8	85.4	12.7	77.0	33.8	5.6	65.3	24.6	0.0
Queue Length 50th (ft)	26	157	155	0	64	552	28	184	434	0
Queue Length 95th (ft)	55	#267	#258	68	m98	650	37	243	517	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	337	228	231	356	134	1530	992	545	1887	912
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	0.26	0.75	0.73	0.47	0.57	0.82	0.53	0.75	0.67	0.02

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.

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)	1750	1772	410	1823	1829	1889	1864	136	141	181	192
Average Queue (ft)	1133	1199	399	1650	1649	1497	1187	57	67	74	77
95th Queue (ft)	2004	2058	469	2103	2188	2563	2394	113	122	154	154
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)	6	15		4	13	40	11				
Queuing Penalty (veh)	0	0		17	60	188	51				
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		45	34								
Queuing Penalty (veh)		316	209								

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	164	160	267	118	399	486	172
Average Queue (ft)	41	52	56	123	31	210	80	45
95th Queue (ft)	95	122	115	230	77	386	283	120
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							1	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	32	15		8	0	10	1	
Queuing Penalty (veh)	72	6		3	0	50	8	

Intersection: 3: JAE 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)	82	37	34	10	22	59	95
Average Queue (ft)	19	2	2	1	2	8	45
95th Queue (ft)	56	29	19	7	16	37	83
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	0	0			
Queuing Penalty (veh)	20	0	1	0			

Intersection: 4: SW Tualatin Road & SW 112th Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	7	72
Average Queue (ft)	0	25
95th Queue (ft)	5	59
Link Distance (ft)		540
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 5: SW 108th Ave & SW Tualatin Road

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	5	84	20	78
Average Queue (ft)	0	29	1	25
95th Queue (ft)	4	61	14	62
Link Distance (ft)	1064		727	285
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25		
Storage Blk Time (%)		8		
Queuing Penalty (veh)		31		

Intersection: 6: SW 108th Ave & North Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	63	49
Average Queue (ft)	10	2
95th Queue (ft)	43	20
Link Distance (ft)	593	406
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	46	62
Average Queue (ft)	21	14
95th Queue (ft)	51	46
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	65	63
Average Queue (ft)	22	10
95th Queue (ft)	53	42
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: 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)	102	225	111	145	65	126	226	183	179	159
Average Queue (ft)	9	106	29	37	11	45	109	88	40	57
95th Queue (ft)	49	199	82	95	39	100	199	155	117	121
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 (%)		15	0	0		0		1	0	
Queuing Penalty (veh)		1	0	0		0		3	0	

Intersection: 10: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	194	100	59	27
Average Queue (ft)	87	43	24	3
95th Queue (ft)	151	79	48	19
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	94	34	83
Average Queue (ft)	27	8	22
95th Queue (ft)	69	30	61
Link Distance (ft)	1030	532	532
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: SW Leveton Drive & New Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	34	39
Average Queue (ft)	3	10
95th Queue (ft)	18	36
Link Distance (ft)	399	328
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	45	39
Average Queue (ft)	8	10	15
95th Queue (ft)	34	37	43
Link Distance (ft)	413	352	352
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
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	7	42	45
Average Queue (ft)	0	5	13
95th Queue (ft)	5	27	41
Link Distance (ft)	362	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	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	154	94	5
Average Queue (ft)	73	18	0
95th Queue (ft)	128	60	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)	59	226	216	102	17
Average Queue (ft)	11	61	97	30	3
95th Queue (ft)	40	150	189	70	12
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)	12	83	48	142	93
Average Queue (ft)	0	34	2	60	38
95th Queue (ft)	9	69	26	114	75
Link Distance (ft)	169		1000		1711
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25		100	
Storage Blk Time (%)		11		2	0
Queuing Penalty (veh)		39		1	0

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	60	136
Average Queue (ft)	6	56
95th Queue (ft)	33	99
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)	224	23	26	1973	1977
Average Queue (ft)	45	1	1	1229	1219
95th Queue (ft)	166	14	14	2701	2703
Link Distance (ft)	1290	1829	1829	1944	1944
Upstream Blk Time (%)				16	15
Queuing Penalty (veh)				149	141
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)	78	514	133	290	159	410	85	202
Average Queue (ft)	10	214	16	133	120	135	13	99
95th Queue (ft)	54	400	63	235	178	305	51	182
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		23		14	29	9	0	23
Queuing Penalty (veh)		3		3	56	30	1	4

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	L	T	T	U	T	T	R
Maximum Queue (ft)	460	1127	417	684	704	348	2405	2411	400
Average Queue (ft)	328	585	249	347	365	69	1289	1285	144
95th Queue (ft)	531	1231	464	889	889	285	2970	2972	445
Link Distance (ft)		1160		1944	1944		2374	2374	
Upstream Blk Time (%)		19					15	16	
Queuing Penalty (veh)		0					115	124	
Storage Bay Dist (ft)	275		435			300			200
Storage Blk Time (%)	14	48	13	2			52	53	
Queuing Penalty (veh)	49	111	101	3			10	54	

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

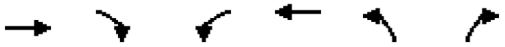
Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	LT	R	L	T	T	R	L	L	T
Maximum Queue (ft)	142	174	375	899	688	261	618	697	315	294	465	1411
Average Queue (ft)	18	77	229	374	169	75	345	375	215	156	322	721
95th Queue (ft)	70	142	396	846	611	183	578	649	394	298	545	1552
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)				9	5							29
Queuing Penalty (veh)				0	0							0
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)	0	0	24	29			1	25	8	2	5	43
Queuing Penalty (veh)	0	0	43	45			1	131	46	15	31	170

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	1402	464
Average Queue (ft)	695	28
95th Queue (ft)	1541	205
Link Distance (ft)	1364	
Upstream Blk Time (%)	22	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		400
Storage Blk Time (%)	36	
Queuing Penalty (veh)	5	

Network Summary

Network wide Queuing Penalty: 2521



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	903	212	645	1187	833	823
v/c Ratio	0.68	0.30	0.83	0.53	0.85	0.57
Control Delay (s/veh)	35.2	5.8	52.9	13.0	48.0	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.2	5.8	52.9	13.0	48.0	22.0
Queue Length 50th (ft)	312	4	236	244	304	208
Queue Length 95th (ft)	416	60	318	337	379	361
Internal Link Dist (ft)	1687			1822	503	
Turn Bay Length (ft)		225	550		300	275
Base Capacity (vph)	1330	697	864	2227	1092	1503
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	0.68	0.30	0.75	0.53	0.76	0.55

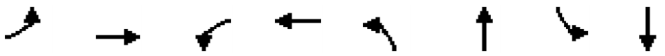
Intersection Summary



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	41	690	1049	52	450	446
v/c Ratio	0.16	0.73	0.81	0.09	0.63	0.17
Control Delay (s/veh)	38.1	20.8	36.6	13.8	28.2	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.1	20.8	36.6	13.8	28.2	4.3
Queue Length 50th (ft)	24	316	294	9	168	26
Queue Length 95th (ft)	53	457	#530	41	383	86
Internal Link Dist (ft)	1180		1024			503
Turn Bay Length (ft)	25	300		150	200	
Base Capacity (vph)	547	1194	1351	600	719	2668
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	0.07	0.58	0.78	0.09	0.63	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



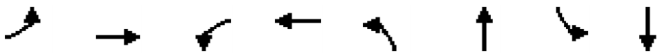
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	61	95	400	8	759	62	449
v/c Ratio	0.11	0.19	0.30	0.55	0.02	0.63	0.16	0.30
Control Delay (s/veh)	33.6	17.3	33.9	6.2	11.6	23.0	12.4	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.6	17.3	33.9	6.2	11.6	23.0	12.4	14.1
Queue Length 50th (ft)	10	11	32	1	1	128	11	46
Queue Length 95th (ft)	46	44	111	66	11	290	47	161
Internal Link Dist (ft)		981		1223		1392		1024
Turn Bay Length (ft)	100		150		150		150	
Base Capacity (vph)	533	984	363	1049	615	2158	897	2208
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	0.06	0.06	0.26	0.38	0.01	0.35	0.07	0.20

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2	376	680	323	41
v/c Ratio	0.01	0.39	0.77	0.55	0.07
Control Delay (s/veh)	6.0	10.2	20.4	25.8	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.0	10.2	20.4	25.8	8.5
Queue Length 50th (ft)	0	73	170	90	0
Queue Length 95th (ft)	3	166	493	295	26
Internal Link Dist (ft)		877	1007	781	
Turn Bay Length (ft)	100			135	
Base Capacity (vph)	533	1729	1566	998	911
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	0.00	0.22	0.43	0.32	0.05

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	779	59	435	314	226	16	179
v/c Ratio	0.01	0.95	0.36	0.44	0.81	0.40	0.06	0.68
Control Delay (s/veh)	13.0	52.2	18.9	19.4	46.3	33.9	25.2	58.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.0	52.2	18.9	19.4	46.3	33.9	25.2	58.4
Queue Length 50th (ft)	1	553	19	184	185	124	8	126
Queue Length 95th (ft)	5	#756	39	295	239	194	21	179
Internal Link Dist (ft)		1007		989		572		1708
Turn Bay Length (ft)	100		100		60		50	
Base Capacity (vph)	540	816	342	983	403	886	482	824
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	0.95	0.17	0.44	0.78	0.26	0.03	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Group Flow (vph)	170	329	338	1893	30	1579	305
v/c Ratio	0.86	0.79	0.90	0.69	0.31	0.78	0.31
Control Delay (s/veh)	97.5	25.4	81.0	10.2	66.6	30.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	97.5	25.4	81.0	10.2	66.6	30.9	7.0
Queue Length 50th (ft)	154	40	299	441	26	758	48
Queue Length 95th (ft)	#283	#177	#465	564	m36	842	m75
Internal Link Dist (ft)	1134			1909		2372	
Turn Bay Length (ft)	275		435		300		200
Base Capacity (vph)	202	420	391	2746	202	2032	974
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.78	0.86	0.69	0.15	0.78	0.31

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.



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	203	308	312	378	151	1494	282	488	1164	22
v/c Ratio	0.57	0.92	0.92	0.64	0.90	1.09	0.29	0.90	0.74	0.03
Control Delay (s/veh)	46.4	87.6	87.5	11.5	94.5	94.3	5.4	78.9	35.0	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)	46.4	87.6	87.5	11.5	94.5	94.3	5.4	78.9	35.0	0.0
Queue Length 50th (ft)	61	289	293	15	139	~806	54	226	457	0
Queue Length 95th (ft)	104	#491	#494	118	m#247	#951	m80	#318	545	0
Internal Link Dist (ft)	481		939			2372			1326	
Turn Bay Length (ft)		300		315	550		140	265		400
Base Capacity (vph)	393	338	342	594	171	1376	977	556	1571	767
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	0.52	0.91	0.91	0.64	0.88	1.09	0.29	0.88	0.74	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.

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)	469	455	258	770	579	404	432	479	496	410	320
Average Queue (ft)	298	279	87	468	332	207	221	327	346	243	188
95th Queue (ft)	428	407	227	787	613	391	417	469	506	428	288
Link Distance (ft)	1714	1714		1829	1829	1829	1829	496	496		
Upstream Blk Time (%)								0	1		
Queuing Penalty (veh)								1	5		
Storage Bay Dist (ft)			225							275	275
Storage Blk Time (%)		15							20	1	1
Queuing Penalty (veh)		32							159	3	2

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	593	719	904	335	398	340	209
Average Queue (ft)	40	300	323	477	100	250	57	55
95th Queue (ft)	105	505	597	824	321	421	222	146
Link Distance (ft)		1173	1027	1027			496	496
Upstream Blk Time (%)			0	0			0	
Queuing Penalty (veh)			0	0			0	
Storage Bay Dist (ft)	25				150	200		
Storage Blk Time (%)	25	41		52		20	0	
Queuing Penalty (veh)	164	16		25		42	1	

Intersection: 3: JAE Access/SW 115th Avenue & SW Tualatin Road

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	TR	TR	LTR
Maximum Queue (ft)	71	37	412	63	84
Average Queue (ft)	26	2	22	13	30
95th Queue (ft)	60	22	213	48	69
Link Distance (ft)		1193	800	552	1330
Upstream Blk Time (%)			1		
Queuing Penalty (veh)			10		
Storage Bay Dist (ft)	25				
Storage Blk Time (%)	13	0	3		
Queuing Penalty (veh)	61	0	0		

Intersection: 4: SW Tualatin Road & SW 112th Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	45	213	63
Average Queue (ft)	6	12	16
95th Queue (ft)	29	177	48
Link Distance (ft)		1064	540
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	4		

Intersection: 5: SW 108th Ave & SW Tualatin Road

Movement	WB	WB	NB
Directions Served	L	T	LR
Maximum Queue (ft)	35	28	129
Average Queue (ft)	3	0	56
95th Queue (ft)	20	0	104
Link Distance (ft)		727	285
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	1	0	
Queuing Penalty (veh)	6	0	

Intersection: 6: SW 108th Ave & North Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	63	7
Average Queue (ft)	26	0
95th Queue (ft)	57	5
Link Distance (ft)	593	406
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: SW 108th Ave & Center Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	99	7
Average Queue (ft)	51	0
95th Queue (ft)	83	7
Link Distance (ft)	421	252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: SW 108th Ave & South Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	110	34
Average Queue (ft)	47	3
95th Queue (ft)	80	18
Link Distance (ft)	415	207
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: 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)	117	189	154	226	45	227	299	100	181	214
Average Queue (ft)	24	53	58	103	5	100	143	40	63	84
95th Queue (ft)	70	134	113	180	26	187	249	81	150	176
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	4	0	3		2		0	1	
Queuing Penalty (veh)	0	1	0	2		0		0	1	

Intersection: 10: SW 118th Drive/JAE Access & SW Leveton Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	224	81	40
Average Queue (ft)	45	88	21	16
95th Queue (ft)	74	163	52	44
Link Distance (ft)	1226	1030	498	610
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: SW Leveton Drive & West Access

Movement	EB	SB	SB
Directions Served	LT	L	R
Maximum Queue (ft)	50	96	126
Average Queue (ft)	12	42	65
95th Queue (ft)	41	77	107
Link Distance (ft)	1030	531	531
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: SW Leveton Drive & New Access

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	7	35
Average Queue (ft)	0	3
95th Queue (ft)	5	18
Link Distance (ft)	408	363
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	63	62
Average Queue (ft)	4	24	33
95th Queue (ft)	23	54	59
Link Distance (ft)	403	352	352
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)	26	81
Average Queue (ft)	1	33
95th Queue (ft)	13	71
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	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	101	76	34
Average Queue (ft)	53	19	2
95th Queue (ft)	85	57	14
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)	12	228	346	193	136
Average Queue (ft)	1	95	151	100	15
95th Queue (ft)	8	181	271	171	70
Link Distance (ft)		933	994		796
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100			135	
Storage Blk Time (%)		6		2	
Queuing Penalty (veh)		0		1	

Intersection: 17: SW Teton Avenue & SW Tualatin Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	10	63	195	331
Average Queue (ft)	0	11	109	70
95th Queue (ft)	4	41	194	286
Link Distance (ft)	169			1711
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25	100	
Storage Blk Time (%)		2	26	0
Queuing Penalty (veh)		16	9	0

Intersection: 18: SW 115th Avenue & SW Hazelbrook Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	278	1000
Average Queue (ft)	52	205
95th Queue (ft)	313	753
Link Distance (ft)	1163	1330
Upstream Blk Time (%)		3
Queuing Penalty (veh)		9
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)	1300	378	373	85	221	216
Average Queue (ft)	825	34	32	3	8	8
95th Queue (ft)	1490	194	205	62	162	158
Link Distance (ft)	1290	1829	1829		1944	1944
Upstream Blk Time (%)	18					
Queuing Penalty (veh)	62					
Storage Bay Dist (ft)				335		
Storage Blk Time (%)			1			
Queuing Penalty (veh)			0			

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)	18	810	149	351	160	563	99	256
Average Queue (ft)	1	348	35	139	109	163	13	90
95th Queue (ft)	9	776	98	269	184	423	51	190
Link Distance (ft)		994		1022		604		1711
Upstream Blk Time (%)		1				1		
Queuing Penalty (veh)		5				0		
Storage Bay Dist (ft)	100		100		60		50	
Storage Blk Time (%)		31	0	13	30	12	0	21
Queuing Penalty (veh)		1	0	7	57	31	0	3

Intersection: 21: OR 99W (Pacific Highway) & SW Fischer Road

Movement	EB	EB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	L	T	T	U	T	T	R
Maximum Queue (ft)	460	690	460	1953	2016	354	1254	1258	400
Average Queue (ft)	245	292	439	1164	1139	53	526	529	172
95th Queue (ft)	433	560	519	2117	2221	201	1097	1100	451
Link Distance (ft)		1160		1944	1944		2374	2374	
Upstream Blk Time (%)				2	20				
Queuing Penalty (veh)				18	192				
Storage Bay Dist (ft)	275		435			300			200
Storage Blk Time (%)	11	21	45	10			21	29	0
Queuing Penalty (veh)	34	33	390	31			6	81	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)	228	270	375	576	380	675	2313	2320	315	344	428	544
Average Queue (ft)	74	149	305	370	199	378	1644	1671	224	228	278	324
95th Queue (ft)	183	242	412	537	332	825	2800	2814	425	332	409	474
Link Distance (ft)		503		959	959		2374	2374				1364
Upstream Blk Time (%)							2	2				
Queuing Penalty (veh)							18	24				
Storage Bay Dist (ft)	275		300			550			140	265	265	
Storage Blk Time (%)		0	5	24		0	45	56	0	4	12	14
Queuing Penalty (veh)		0	17	60		0	64	149	2	22	65	64

Intersection: 22: OR 99W (Pacific Highway) & SW 116th Avenue/SW Durham Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	513	112
Average Queue (ft)	318	8
95th Queue (ft)	465	73
Link Distance (ft)	1364	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)	2	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 2008