

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED



TRANSPORTATION IMPACT ANALYSIS

To
City of Tualatin

For
Majestic SW 115th Avenue
Industrial Project

Prepared
August 30, 2016
Revised April 11, 2017

Project Number
2160026.01



MACKENZIE
Since 1960

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

TABLE OF CONTENTS

I.	Introduction	1
	Project Description	1
	Scope of Analysis	1
II.	Existing Conditions	3
	Site Conditions	3
	Vehicular Transportation Facilities	3
	Pedestrian and Bicycle Facilities	4
	Transit Facilities	4
	Existing Traffic Counts	4
III.	Pre-Development Conditions	5
	Background Traffic Growth	5
	In-Process Traffic Volumes	5
	Planned Transportation Improvements	6
	Pre-Development Traffic	6
IV.	Site Development	9
	Proposed Trip Generation	9
	Trip Distribution and Traffic Assignment	9
	Post-Development Traffic Volumes	10
V.	Site Circulation	12
	Site Access and Circulation	12
	Safety Analysis	12
VI.	Operation Analysis	17
	Intersection Operation Analysis	17
	Intersection Queuing Analysis	20
VII.	Recommendations	24
VIII.	Summary	25
	Existing Conditions	25
	Pre-Development Conditions	25
	Site Development	25
	Post-Development Conditions	25
	Site Circulation	26
	Recommendations	26
IX.	Appendix	27

LIST OF TABLES

Table 1 – Roadway Characteristics	3
Table 2 – Proposed Trip Generation	9
Table 3 – Intersection Crash Data	13
Table 4 – SW Tualatin-Sherwood Road/SW 124th Avenue Crash Review.....	15
Table 5 – SW Tualatin-Sherwood Road/SW 112th Avenue Crash Review.....	16
Table 6 – Intersection Operations Analysis with Existing Network	18
Table 7 – Intersection Operations Analysis with Future Network.....	19
Table 8 – Intersection 95th Percentile Queueing Analysis with Existing Network.....	21
Table 9 – Intersection 95th Percentile Queueing Analysis with Future Network.....	22

LIST OF FIGURES (SEE APPENDIX A)

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Figure 3 – Existing/Planned Traffic Control Devices and Lane Configurations

Figure 4A – 2016 Existing Traffic – AM Peak Hour

Figure 4B – 2016 Existing Traffic – Mid-Day Peak Hour

Figure 4C – 2016 Existing Traffic – PM Peak Hour

Figure 5A – Background Growth, 1 Year at 1.5% per Year – AM Peak Hour

Figure 5B – Background Growth, 1 Year at 1.5% per Year – Mid-Day Peak Hour

Figure 5C – Background Growth, 1 Year at 1.5% per Year – PM Peak Hour

Figure 6A – In-Process Trips – AM Peak Hour

Figure 6B – In-Process Trips – Mid-Day Peak Hour

Figure 6C – In-Process Trips – PM Peak Hour

Figure 7A – 2017 Pre-Development Traffic Volumes – AM Peak Hour

Figure 7B – 2017 Pre-Development Traffic Volumes – Mid-Day Peak Hour

Figure 7C – 2017 Pre-Development Traffic Volumes – PM Peak Hour

Figure 8A – Project Trip Distribution + Assignment – AM Peak Hour

Figure 8B – Project Trip Distribution + Assignment – Mid-Day Peak Hour

Figure 8C – Project Trip Distribution + Assignment – PM Peak Hour

Figure 9A – 2017 Post-Development Traffic Volumes – AM Peak Hour

Figure 9B – 2017 Post-Development Traffic Volumes – Mid-Day Peak Hour

Figure 9C – 2017 Post-Development Traffic Volumes – PM Peak Hour

Figure 10A – 2017 Future Network with Extension Reroutes – AM Peak Hour
Figure 10B – 2017 Future Network with Extension Reroutes – Mid-Day Peak Hour
Figure 10C – 2017 Future Network with Extension Reroutes – PM Peak Hour
Figure 11A – 2017 Pre-Development Traffic with Extension – AM Peak Hour
Figure 11B – 2017 Pre-Development Traffic with Extension – Mid-Day Peak Hour
Figure 11C – 2017 Pre-Development Traffic with Extension – PM Peak Hour
Figure 12A – Project Trip Distribution + Assignment w/ Extension – AM Peak Hour
Figure 12B – Project Trip Distribution + Assignment w/ Extension – Mid-Day Peak Hour
Figure 12C – Project Trip Distribution + Assignment w/ Extension – PM Peak Hour
Figure 13A – 2017 Post-Development Traffic Volumes with Extension – AM Peak Hour
Figure 13B – 2017 Post-Development Traffic Volumes with Extension – Mid-Day Peak Hour
Figure 13C – 2017 Post-Development Traffic Volumes with Extension – PM Peak Hour
Figure 14A – 2017 Future Network with Blake Reroutes – AM Peak Hour
Figure 14B – 2017 Future Network with Blake Reroutes – Mid-Day Peak Hour
Figure 14C – 2017 Future Network with Blake Reroutes – PM Peak Hour
Figure 15A – 2017 Pre-Development Traffic with Blake – AM Peak Hour
Figure 15B – 2017 Pre-Development Traffic with Blake – Mid-Day Peak Hour
Figure 15C – 2017 Pre-Development Traffic with Blake – PM Peak Hour
Figure 16A – Project Trip Distribution + Assignment w/ Blake – AM Peak Hour
Figure 16B – Project Trip Distribution + Assignment w/ Blake – Mid-Day Peak Hour
Figure 16C – Project Trip Distribution + Assignment w/ Blake – PM Peak Hour
Figure 17A – 2017 Post-Development Traffic Volumes with Blake – AM Peak Hour
Figure 17B – 2017 Post-Development Traffic Volumes with Blake – Mid-Day Peak Hour
Figure 17C – 2017 Post-Development Traffic Volumes with Blake – PM Peak Hour

I. INTRODUCTION

This Transportation Impact Analysis (TIA) has been prepared for the proposed Majestic Realty industrial development on SW 115th Avenue in Tualatin, Oregon. Figure 1 in Appendix A presents a vicinity map indicating the project location.

Project Description

The proposed industrial development will consist of a warehousing/distribution facility of up to 229,146 square feet. The proposed building will be constructed on the west side of SW 115th Avenue, near its terminus at the existing Blake Street right-of-way alignment. Access is proposed at one location to SW 115th Avenue. Other access locations are precluded by existing topography and lack of public streets. Figure 2 presents a site plan of the proposed project.

Scope of Analysis

This TIA has been prepared in accordance with the *City of Tualatin Traffic Study Requirements* and the *Tualatin Development Code* (TDC), Section 74.440. This study includes a summary of existing traffic conditions, crash review, proposed trip generation, and an analysis of intersection operations, sight distance, and queuing. Since SW Tualatin-Sherwood Road and SW Avery Street/SW 112th Avenue are Washington County facilities, County standards were also adhered to in this analysis.

A TIA scoping letter dated April 4, 2016, was submitted to City and County staff, and approved in an April 4, 2016 email, with conditions. The traffic scoping letter was developed using assumptions listed in the Koch Corporate Center TIA, prepared for the PacTrust industrial buildings on SW 115th Avenue and dated January 2016. The scoping letter and corresponding communications are attached in Appendix C.

Study Area

The City's *Traffic Study Requirements* specify that all intersections within a ¼-mile radius of the project site should be included as part of the study area. City staff also required the analysis of several intersections along SW Tualatin-Sherwood Road.

Washington County requires analysis for all intersections where project trips will have a 10% impact.

The study intersections were confirmed in the April 4, 2016, scoping letter and related emails, and include the following:

- SW Tualatin-Sherwood Road/SW 124th Avenue
- SW Tualatin-Sherwood Road/SW 120th Avenue
- SW Tualatin-Sherwood Road/SW 115th Avenue
- SW Tualatin-Sherwood Road/SW Avery Street/SW 112th Avenue
- SW 115th Avenue/SW ITEL Street
- SW 115th Avenue/Site Access

The City also required analysis of future conditions with the planned SW 124th Avenue extension and future Blake Street extension. The 124th Avenue extension began construction in the spring of 2016 and will extend from the existing intersection with SW Tualatin-Sherwood Road south to SW Grahams Ferry

Road. SW Blake Street is shown on the TSP extending west from SW 115th Avenue to the new SW 124th Avenue, although the precise alignment has not yet been determined.

Analysis Scenarios

Within this study area, the TIA addresses AM, Mid-Day, and PM peak hour conditions for the following analysis scenarios:

- 2016 Existing
- 2017 Pre-Development without project trips
- 2017 Post-Development with project trips

Roadway Network Scenarios

For the Pre- and Post-Development scenarios, the following roadway network configurations are assumed:

- **Existing Network** – SW 124th Avenue as a three-legged intersection at SW Tualatin-Sherwood Road.
- **Future Network without Blake Street** – SW 124th Avenue as a four-legged intersection at SW Tualatin-Sherwood Road reflective of the extension to the south. This future network does not assume the SW Blake Street connector to SW 115th Avenue.
- **Future Network with Blake Street** – SW 124th Avenue as a four-legged intersection at SW Tualatin-Sherwood Road reflective of the extension to the south. This future network assumes the SW Blake Street connector between SW 115th Avenue and SW 124th Avenue.

II. EXISTING CONDITIONS

The existing conditions analysis is based on a current year 2016 inventory of transportation facilities and traffic data.

Site Conditions

The site of the proposed project is identified as tax lot ID 2S127C000100 and is zoned General Manufacturing (MG). The site is approximately 11.55 acres and has frontage on SW 115th Avenue. An existing curb cut is provided approximately 850 feet south of SW Itel Street. The site is currently vacant.

A half street right-of-way for SW Blake Street exists along the southern frontage of the site, but no street improvements have been provided. Similarly, a half street right-of-way for SW 120th Avenue exists along the western edge of the site, but no street improvements have been provided. Based on recent industrial lands analysis and planning for the surrounding area, the alignments of SW Blake Street and SW 120th Avenue are not likely to use these existing rights-of-way.

Several projects have been approved along SW 115th Avenue and SW Itel Street that will contribute in-process traffic volumes to the study area.

Vehicular Transportation Facilities

Figure 3 presents existing and proposed lane configurations and traffic control devices for the study area intersections. It should be noted that construction of improvements to the SW Tualatin-Sherwood Road/SW 115th Avenue intersection began in April 2016, and are considered to be part of “Existing” conditions. Table 1 below summarizes roadway characteristics within the study area.

TABLE 1 – ROADWAY CHARACTERISTICS						
Roadway	Classification (Jurisdiction)	Posted Speed	Travel Lanes	Bike Lanes	On-Street Parking	Sidewalks
SW Tualatin-Sherwood Road	Major Arterial (Washington County)	45	3	Yes	No	Yes
SW 124th Avenue	Major Arterial (Washington County)	45	4	Yes	No	Yes
SW 120th Avenue	Local Road (City of Tualatin)	None	2	No	No	Partial
SW 115th Avenue	Major Collector (Washington County/ City of Tualatin)	25	3	Partial	No	Partial
SW Itel Street	Connector (City of Tualatin)	25	3	No	No	Yes
SW Avery Street/ SW 112th Avenue	Minor Arterial/ Major Collector (Washington County)	35	2/3	Partial/ Yes	No	Yes

The future extension of SW 124th Avenue south from SW Tualatin-Sherwood Road and the SW Blake Street connection between SW 115th Avenue and SW 124th Avenue will create several new intersection approaches. The future intersection configuration at the SW Tualatin-Sherwood Road with SW 124th Avenue is based upon concept plans provided by Washington County and includes the addition of an eastbound right-turn lane, a northbound left-turn lane and shared through/right lane, and separate southbound lanes for left, through, and right turns. An assumption about the SW Blake Street intersection with SW 124th Avenue is included in Figure 3.

The future SW Blake Street is currently classified as a minor collector roadway between SW 115th and SW 124th Avenues and a connector roadway east of SW 115th Avenue. The City of Tualatin standards call for a minor collector roadway to provide two travel lanes with bike lanes and on-street parking for a total width of 40 to 52 feet. Given the recent planning efforts in the area, a lesser classification may be warranted. A more appropriate classification may be a connector road for the entire length, similar to SW Itel Street, which has a width of 40 feet, and is intended to provide two travel lanes and on-street parking.

During a site visit, it was observed that both passenger vehicles and combination trucks park on the east and west legs of SW Itel Street, resulting in through traffic driving partially in the center turn lane.

Pedestrian and Bicycle Facilities

Sidewalks are provided on both sides of all study area roadways under City and County jurisdiction.

Bike lanes are also provided and clearly marked on most segments of study roadways. Bike lanes on SW 115th Avenue are present south of SW Itel Street but discontinue just north of SW Itel Street. No bike lanes are present on SW Itel Street.

Transit Facilities

The study area is served by the Tualatin Shuttle Blue Line. The Blue Line has a stop at the SW Tualatin-Sherwood Road/SW 115th Avenue intersection and travels between the Westside Express Service (WES) Station and the LAM/Fujimi site. A transit map and schedule is provided in Appendix D.

Existing Traffic Counts

Turning movement counts (TMCs) were conducted on Tuesday, April 12, 2016, during the AM, Mid-Day, and PM peak hours. Existing (2016) traffic volumes are presented in the following figures.

- AM Peak Hour – Figure 4A
- Mid-Day Peak Hour – Figure 4B
- PM Peak Hour – Figure 4C

III. PRE-DEVELOPMENT CONDITIONS

Background Traffic Growth

Background traffic growth for the study area was assumed to be 1.5% per year, consistent with the Koch Corporate Center TIA. One year of background growth was applied to the 2016 existing traffic counts to reflect 2017 background traffic. Background traffic growth is presented in the following figures.

- AM Peak Hour – Figure 5A
- Mid-Day Peak Hour – Figure 5B
- PM Peak Hour – Figure 5C

In-Process Traffic Volumes

In-process traffic volumes are representative of developments which have been approved for peak hour trips, but have not yet been constructed and/or occupied. In-process trips assumed in the 2016 Koch Corporate Center TIA for the following approved developments were added to 2017 background traffic volumes:

- Hedges Business Park (less restaurant trips)
- Koch Corporate Center – Buildings 6 and 7
- Koch Corporate Center – Buildings 1, 5, and 8
- Itel Street Industrial Development
- Franklin Business Park

The Hedges Business Park is located at the northwest corner of SW Tualatin-Sherwood Road with SW 112th Avenue. At the time of the counts, only the restaurant use was in operation. The east building was constructed, but not occupied, and the planned west building has not yet been constructed.

A tenant for Koch Building 1 (southernmost Koch building, east of 115th Avenue) has been identified as operating a warehousing facility. Therefore, in-process trips for the approximately 200,950-square-foot building were estimated using ITE data for the “Warehousing” land use. Trips for the remaining 105,925 square feet belonging to Buildings 5 and 8 were estimated using ITE data for the “Light Industrial” land use, consistent with the original TIA for the project.

Recently approved AM and PM peak hour trips for the Koch Corporate Center – Buildings 10, 11, and 12 were also added to 2017 background traffic volumes. Since the Koch Corporate Center TIA did not provide Mid-Day peak hour trips, in-process trips during the Mid-Day peak hour were estimated using the average rates listed in the Institute of Transportation Engineers’ *Trip Generation Manual, 9th Edition* for the “PM Peak Hour of the Generator” of a “Light Industrial” land use.

All in-process trips included in this analysis are presented in the following figures.

- AM Peak Hour – Figure 6A
- Mid-Day Peak Hour – Figure 6B
- PM Peak Hour – Figure 6C

Planned Transportation Improvements

The *City of Tualatin 2016-2020 Capital Improvement Plan* and the Washington County Capital Improvement Projects list were reviewed for pending transportation improvements to existing facilities within the study area, and none were identified.

Improvements were recently constructed at the SW Tualatin-Sherwood Road/SW 115th Avenue intersection to provide a second westbound left-turn lane, northbound approach lane modifications, and a northbound right-turn signal overlap phase. These improvements are required mitigation for another recent project along SW 115th Avenue, and they will be assumed complete for all analysis scenarios, including existing conditions. The plans for the “SW Tualatin-Sherwood Road and SW 115th Avenue Signal Improvements” are provided in Appendix I.

The current Tualatin Transportation System Plan (TSP) shows the future extension of SW 124th Avenue to the south with a new east-west minor collector connecting to SW 115th Avenue. The SW 124th Avenue extension is currently under construction and is reflected in the “Future Network (without Blake)” analysis. However, the east-west connector is not yet funded and has been considered separately in the alternate “Future Network (with Blake)” analysis.

Pre-Development Traffic

Pre-Development traffic is the summation of the Existing 2016 volumes, background growth, and in-process traffic.

Existing Network

Under existing network conditions, the Pre-Development volumes were calculated by adding background growth and in-process traffic to the existing traffic volumes. The following figures present the 2017 Pre-Development traffic volumes under existing network conditions.

- AM Peak Hour – Figure 7A
- Mid-Day Peak Hour – Figure 7B
- PM Peak Hour – Figure 7C

Future Network with SW 124th Avenue Extension

The 2017 future network volumes with the SW 124th Avenue extension were estimated using travel demand modeling plots from Metro for base year 2010 and future year 2040. The volumes were developed in a two-step process. First, the total 2017 traffic volume on SW 124th Avenue was estimated for the new link south of SW Tualatin-Sherwood Road. Then, the new through and turning volumes at the intersection were estimated by rerouting some traffic from other area roadways. The process is described in more detail below. The travel demand model plots are provided in Appendix E. The SW 124th Avenue extension rerouted traffic calculations are provided in Appendix F.

SW 124th Avenue Link Volumes

The year 2017 link volumes on SW 124th Avenue were developed through the following process. A factor of 0.55 was applied to the 2040 peak 2-hour link volumes to convert to a 1-hour peak volume. Assuming an annual growth rate of 1.5% per year for 23 years, the 2040 1-hour peak volumes were then divided by a factor 1.345 to estimate 2017 peak hour northbound and southbound link volumes for each peak hour.

Intersection Turning Volumes

With the extension of SW 124th Avenue to the south, it was assumed that some percentage of existing network traffic between I-5 and locations in south Tualatin and Wilsonville would reroute to/from SW Avery Street and to/from SW Tualatin-Sherwood Road, and would instead choose to travel to/from the south via the SW 124th Avenue extension. From the 2010 total traffic model plots, it was determined that approximately 10% of existing traffic travels to and from the area via SW Boones Ferry Road and SW Grahams Ferry Road towards south Tualatin and Wilsonville, and approximately 5% of traffic in the area travels south on I-5 via the Tualatin-Sherwood Road/Nyberg interchange.

Using Pre-Development volumes on the existing network, traffic was rerouted from existing roadways to SW 124th Avenue. These rerouted volumes were used to estimate the turning movements to/from the extension; the remainder of the traffic estimated for the roadway extension was assumed to be north-south through traffic.

After reviewing the SW 124th Avenue Extension Traffic Impact Analysis prepared by DEA dated April 2013, additional traffic was assumed to reroute to/from Sherwood onto the 124th Avenue extension. An additional 10% of the 2017 pre-development traffic traveling between Tualatin and Sherwood was assumed to reroute to/from the SW 124th Avenue extension. With these adjustments, the overall volumes on the SW 124th Avenue extension are similar to those in the DEA report.

Network Volumes

The following figures present the 2017 Pre-Development traffic reroutes under future network conditions reflecting the SW 124th Avenue extension to Grahams Ferry Road.

- AM Peak Hour – Figure 10A
- Mid-Day Peak Hour – Figure 10B
- PM Peak Hour – Figure 10C

The following figures present the 2017 Pre-Development traffic volumes under future network conditions reflecting the SW 124th Avenue extension to Grahams Ferry Road.

- AM Peak Hour – Figure 11A
- Mid-Day Peak Hour – Figure 11B
- PM Peak Hour – Figure 11C

Future Network with SW Blake Street

The Pre-Development volumes assumed in the future network with the SW 124th Avenue extension were assumed to be the same for the Pre-Development volumes with the new SW Blake Street connector with one exception: traffic destined for I-5 southbound from SW 115th Avenue was assumed to reroute to SW 124th Avenue via SW Blake Street, rather than SW Tualatin-Sherwood Road.

The following figures present the 2017 Pre-Development traffic reroutes under future network conditions reflecting the future SW 124th Avenue extension with the SW Blake Street connector.

- AM Peak Hour – Figure 14A
- Mid-Day Peak Hour – Figure 14B
- PM Peak Hour – Figure 14C

The following figures present the 2017 Pre-Development traffic volumes under future network conditions reflecting the SW 124th Avenue extension with SW Blake Street connector.

- AM Peak Hour - Figure 15A
- Mid-Day Peak Hour – Figure 15B
- PM Peak Hour – Figure 15C

IV. SITE DEVELOPMENT

Proposed Trip Generation

Trip generation estimates for the proposed industrial development were developed with the use of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 9th Edition*. The City requires that the reasonable worst case for trip generation in the zone be analyzed. Therefore, the proposed warehouse/distribution facility's trip generation estimates were prepared using ITE's land use code (LUC) 110 for "Light Industrial." AM and PM peak hour trips were estimated using the equations for the peak hour of the adjacent street. Mid-Day peak hour trips were estimated using the equation for the peak hour of the generator.

The facility's peak hour trip generation estimates are presented in Table 2.

TABLE 2 – PROPOSED TRIP GENERATION												
ITE Code	Land Use	Size	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	In	Out	Total	
110	Light Industrial	229.15 KSF	159	22	181	28	172	200	20	150	170	1,610

Based on ITE equations for a "Light Industrial" land use, the proposed 229,146-square-foot facility is projected to generate 181 AM peak hour trips, 200 Mid-Day peak hour trips, 170 PM peak hour trips, and 1610 daily trips. Based on the industrial land use, all trips are assumed to be primary trips, and no pass-by reductions are taken.

Trip Distribution and Traffic Assignment

The distribution of trips for the proposed warehousing facility was assumed to be similar to that used in the Koch Corporate Center TIA. This was considered to be appropriate since the Koch Corporate Center will have similar trip types and also relies upon access to and from SW 115th Avenue. The Koch Corporate Center TIA distribution was based on TMCs from September 2015 and on previous traffic studies for other Koch Corporate Center buildings. Trip distribution was also confirmed with Metro travel demand modeling, provided in Appendix E.

Existing Network

Trip distribution under the existing network for the proposed warehousing facility was assumed as follows:

- 15% to/from the north on SW 124th Avenue
- 20% to/from the west on SW Tualatin-Sherwood Road
- 50% to/from the east on SW Tualatin-Sherwood Road
- 15% to/from the east on SW Avery Street

The following figures present the primary trip distribution and assignment for the proposed project under the existing network.

- AM Peak Hour – Figure 8A
- Mid-Day Peak Hour – Figure 8B
- PM Peak Hour – Figure 8C

Future Network with SW 124th Avenue Extension

Trip distribution under the future network for the proposed warehousing facility was assumed as follows:

- 15% to/from the north on SW 124th Avenue
- 15% to/from the south on SW 124th Avenue
- 20% to/from the west on SW Tualatin-Sherwood Road
- 40% to/from the east on SW Tualatin-Sherwood Road
- 10% to/from the east on SW Avery Street

The following figures present the primary trip distribution and assignment for the proposed project under future network conditions reflecting the SW 124th Avenue extension to SW Grahams Ferry Road.

- AM Peak Hour – Figure 12A
- Mid-Day Peak Hour – Figure 12B
- PM Peak Hour – Figure 12C

Future Network with SW Blake Street

Trip distribution under the future network with SW Blake Street for the proposed warehousing facility was assumed as follows:

- 15% to/from the north on SW 124th Avenue
 - 10% via SW Tualatin-Sherwood Road
 - 5% via SW Blake Street
- 15% to/from the south on SW 124th Avenue (via SW Blake Street)
- 20% to/from the west on SW Tualatin-Sherwood Road
 - 15% via SW Tualatin-Sherwood Road
 - 5% via SW Blake Street
- 40% to/from the east on SW Tualatin-Sherwood Road
- 10% to/from the east on SW Avery Street

The following figures present the primary trip distribution and assignment for the proposed project under future network conditions reflecting the SW 124th Avenue extension with SW Blake Street connector.

- AM Peak Hour – Figure 16A
- Mid-Day Peak Hour – Figure 16B
- PM Peak Hour – Figure 16C

Post-Development Traffic Volumes

Post-Development traffic volumes are the sum of the project trips and the Pre-Development traffic volumes.

Existing Network

The following figures present the 2017 Post-Development traffic volumes under existing network conditions.

- Figure 9 Peak Hour – Figure 9A
- Mid-Day Peak Hour – Figure 9B
- PM Peak Hour – Figure 9C

Future Network with SW 124th Avenue Extension

The following figures present the 2017 Post-Development traffic volumes under future network conditions reflecting the SW 124th Avenue extension to Grahams Ferry Road.

- AM Peak Hour – Figure 13A
- Mid-Day Peak Hour – Figure 13B
- PM Peak Hour – Figure 13C

Future Network with Blake Street

The following figures present the 2017 Pre-Development traffic volumes under future network conditions reflecting the SW 124th Avenue extension with SW Blake Street connector.

- AM Peak Hour – Figure 17A
- Mid-Day Peak Hour – Figure 17B
- PM Peak Hour – Figure 17C

V. SITE CIRCULATION

Site Access and Circulation

The proposed facility will be served by one driveway accessing SW 115th Avenue due. Only one driveway is proposed due to topographic limitations. The driveway will serve both trucks and passenger vehicles.

Entry to building tenant spaces will be on the east and south sides of the building, with truck loading docks on the north side. Standard parking stalls will be provided on the east and south sides of the building near building entrances, with a total of 135 parking spaces.

Truck loading and trailer parking will be provided on the north side of the proposed building, and will be gated for security. Approximately 70 parking spaces will be provided for trucks and trailers, measuring 50 feet in length. The loading area provides 135 feet from the front of the parking spaces to the building, and will accommodate truck turning and maneuvering in the loading area.

A fire access connection will be provided on the west side of the building between the truck loading area and passenger vehicle parking. A fire access gate will be installed to prevent passenger vehicles from driving through the truck loading area.

Safety Analysis

Sight Distance Evaluation

Intersection sight distance was evaluated for the industrial facility's access on SW 115th Avenue. The design speed on SW 115th Avenue is 25 mph, per the "SW Tualatin-Sherwood Road and SW 115th Avenue Signal Improvements" plans. The roadway has an average grade of 3.8% sloping down from the dead-end to SW Tualatin-Sherwood Road. Some vehicles exiting the site are anticipated to be combination trucks, requiring a time gap of 11.5 seconds for left turns, and 10.5 seconds for right turns, as opposed to the standard 7.5 and 6.5 seconds for a passenger vehicle, respectively. Since SW 115th Avenue has three lanes of traffic, an additional 0.7 seconds of time should be added to the time gap to account for the center turn lane for a left-turning movement.

Based on the American Association of State Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets, 2011 Edition*, the recommended intersection sight distance for a left turn from stop is approximately 450 feet and approximately 385 feet for a right turn from stop. Intersection sight distance is currently met at the proposed driveway for both left and right turns from stop. Sight distance for left turns is anticipated to still be met following the extension of SW Blake Street to SW 115th Avenue.

Per the Washington County's *Community Development Code (CDC)*, Section 501-8.5 F(4), the required intersection sight distance shall be equal to ten times the design speed. Based on this requirement, the required intersection sight distance is 250 feet. The Washington County intersection sight distance requirement is met for the proposed driveway.

Crash Review

Historical crash data reported for the study area intersections was evaluated for safety. Crash data at the beginning of 2010 through the end of 2014 was obtained from ODOT and used to examine crash patterns

and estimate crash rates. The crash evaluation for crashes between 2010 and 2014 is summarized in Table 3. The raw crash data is provided in Appendix G.

TABLE 3 – INTERSECTION CRASH DATA									
Intersection (ODOT Traffic Control Type)	Year					Total Crashes	ADT	Crash Rate	90th Percentile Rate
	2010	2011	2012	2013	2014				
SW Tualatin-Sherwood Road/ SW 124th Avenue (3SG)	11	16	12	8	13	60	31,086	1.06	0.509
SW Tualatin-Sherwood Road/ SW 120th Avenue (3ST)	2	1	0	2	1	6	27,500	0.12	0.293
SW Tualatin-Sherwood Road/ SW 115th Avenue (4SG)	1	5	7	7	4	24	30,857	0.43	0.860
SW Tualatin-Sherwood Road/ SW Avery Street/SW 112th Avenue (4SG)	13	12	13	11	21	70	30,957	1.24	0.860

SW Tualatin-Sherwood Road/SW 124th Avenue

Fifty-nine (59) of the 60 crashes at the SW Tualatin-Sherwood Road/SW 124th Avenue intersection were rear-end collisions, and one (1) crash was a sideswipe collision. Rear-end collisions are typical at signalized intersections, and the lack of turning movement crashes may be expected with three legs of traffic. Thirty-five (35) of the crashes involved westbound traveling vehicles and 25 crashes involved eastbound traveling vehicles. There were no fatalities but four (4) crashes resulted in severe injuries. No pedestrian or bicycle crashes were reported at this intersection.

SW Tualatin-Sherwood Road/SW 120th Avenue

All 6 crashes at this intersection were rear-end collisions involving vehicles traveling in the westbound direction. The westbound crashes could be indicative of congested conditions from the upstream signal at SW 124th Avenue. None of these crashes resulted in a fatality or severe injury. No pedestrian or bicycle crashes were reported at this intersection.

SW Tualatin-Sherwood Road/SW 115th Avenue

Nineteen of the 24 crashes at this intersection were rear-end collision, four (4) crashes were turning movement collisions, and one (1) crash was a sideswipe-overtaking collision. There were 12 eastbound through crashes and eight (8) westbound through crashes. Turning movement crashes occurred as a result of turning vehicles from Tualatin-Sherwood Road onto the side streets. None of these crashes resulted in a fatality or severe injury. No pedestrian or bicycle crashes were reported at this intersection.

SW Tualatin-Sherwood Road/SW Avery Street/SW 112th Avenue

Sixty-five (65) of the 70 crashes at this intersection were rear-end collisions, four (4) were turning movement collisions, and one (1) was an angle collision. Forty (40) crashes involved westbound through

vehicles and 26 crashes involved eastbound through vehicles. Three (3) turning movement crashes occurred as a result of turning vehicles from Tualatin-Sherwood Road onto the site streets, and one (1) crash involved a vehicle turning from SW Avery Street onto Tualatin-Sherwood Road. There were no fatalities but two (2) crashes resulted in severe injuries. No pedestrian or bike crashes were reported at this intersection.

SW 115th Avenue/SW Itel Street

No data was available for the SW 115th Avenue/SW Itel Street intersection.

Crash Rates

Table 3 also presents intersection crash rates 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. A daily traffic volume was estimated by dividing the PM peak hour volume by a peak-to-daily ratio factor of 0.07, derived from the existing PM peak hour volume at the SW Tualatin-Sherwood Road/SW 124th Avenue intersection and the SW Tualatin-Sherwood Road ADT east of Cipole Road obtained from the Washington County “2014 Traffic Count Table.” To calculate the MEV per year, the daily traffic was then multiplied by 365 days.

All crash rates were compared with ODOT’s 90th percentile intersection crash rates. Two intersections were found to exceed the relevant 90th percentile crash rate: SW Tualatin-Sherwood Road at SW 124th Avenue and SW Tualatin-Sherwood Road at SW Avery Street/SW 112th Avenue.

These two intersections were further reviewed for possible roadway deficiencies. Table 4 and Table 5 present the 2010-2014 crash statistics at the SW Tualatin-Sherwood Road/SW 124th Avenue and SW Tualatin-Sherwood Road/112th Avenue intersections, respectively.

At the intersection of SW Tualatin-Sherwood Road/SW 124th Avenue, all of the reported crashes occurred on SW Tualatin-Sherwood Road and all but one (1) were rear-end collisions. There are no specific remedial measures that can address the driver errors that caused these crashes.

Although there was one (1) angle collision and four (4) turning collisions at the intersection of SW Tualatin-Sherwood Road/SW 112th Avenue, most of the crashes were rear-end collisions. There are no specific remedial measures that can address the driver errors that caused the rear-end collisions. The signal timing parameters are already set to minimize the likelihood of angle and turning collisions.

TABLE 4 – SW TUALATIN-SHERWOOD ROAD/SW 124TH AVENUE CRASH REVIEW						
Crash Characteristic	Year					Total
	2010	2011	2012	2013	2014	
Crash Type						
Rear-end	10	16	12	8	13	59
Sideswipe – Meeting	1	0	0	0	0	1
Injury Severity						
Injury A	0	2	1	1	0	4
Injury B	3	3	0	1	0	7
Injury C	4	7	8	4	7	30
PDO	4	4	3	2	6	19
Cause						
Followed too closely	9	12	9	6	12	48
Inattention	0	4	3	1	0	8
Reckless Driving	0	0	0	1	0	1
Drove left of center on two-way road	1	0	0	0	0	1
Failed to avoid vehicle ahead	0	0	0	0	0	1
Other improper driving	1	0	0	0	0	1
Direction						
Eastbound Through	4	5	4	3	9	25
Westbound Through	7	10	9	5	4	35
TOTAL	44	63	49	32	52	240

TABLE 5 – SW TUALATIN-SHERWOOD ROAD/SW 112TH AVENUE CRASH REVIEW						
Crash Characteristic	Year					Total
	2010	2011	2012	2013	2014	
Crash Type						
Angle	0	0	0	0	1	1
Rear-end	12	11	13	9	20	65
Turning Movement	1	1	0	2	0	4
Injury Severity						
Injury A	0	0	1	0	1	2
Injury B	0	3	1	0	1	5
Injury C	8	4	5	8	14	39
PDO	5	5	6	3	5	24
Cause						
Followed too closely	11	9	11	9	15	55
No Yield	0	1	0	1	0	2
Inattention	1	2	1	0	0	4
Disregarded traffic signal	1	0	0	1	1	3
Failed to avoid vehicle ahead	0	0	0	0	5	5
Too fast for conditions	0	0	1	0	0	1
Direction						
Eastbound Left	0	0	0	1	0	1
Eastbound Through	4	4	6	3	9	26
Eastbound Right	1	0	0	0	0	1
Westbound Left	1	0	0	0	0	1
Westbound Through	8	7	7	6	12	40
Northbound Left	0	1	0	0	0	1
TOTAL	52	48	52	44	84	280

VI. OPERATION ANALYSIS

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 intersections are measured by one overall v/c ratio, LOS, and delay. Unsignalized intersections are typically measured by a single v/c ratio, LOS, and delay representative of the critical movement. This is usually represented by the worst performing stop-controlled movement.

Performance Measures

The two unsignalized study intersections on SW 115th Avenue lie within City of Tualatin jurisdiction. The TDC, Section 74.440(3)(e), requires signalized intersections to operate at LOS D and unsignalized intersections to operate at LOS E.

All study intersections on SW Tualatin-Sherwood Road lie within Washington County jurisdiction. The current Washington County TSP lists a v/c ratio of 0.99 as acceptable during the AM and PM peak hours. County standards only require mitigation for intersections based on safety deficiencies where site generated trips are added. However, the City's standard of LOS D for signalized intersections and LOS E for unsignalized intersections has been considered at these intersections.

Methodology

Intersection operations were analyzed with the use of Synchro 9 software, which utilizes the Transportation Research Board's *Highway Capacity Manual* (HCM) 2000 and HCM 2010 methodologies. Signalized intersections were reported using HCM 2000 in order to obtain a v/c ratio, and the unsignalized intersections were reported using HCM 2010. Signal timing information was obtained from the "Washington County Traffic Engineering Plans Online," and is provided in Appendix H. Post-development signal timings were optimized while keeping existing cycle lengths and offsets to maximize efficiency. A simple connection was assumed in the model to reflect the Blake Street connector, and does not reflect the actual preferred alignment.

Findings

Table 6 presents the AM and PM peak hour capacity results for all development scenarios under existing network conditions, and Table 7 presents capacity results for Pre- and Post-Development scenarios under future conditions, both with and without Blake Street. The Synchro output reports are provided in Appendix J.

TABLE 6 – INTERSECTION OPERATIONS ANALYSIS WITH EXISTING NETWORK

Intersection (Control)	Intersection or Approach	Time Period	Analysis Results (v/c-LOS-Delay)		
			2016 Existing	Existing Network	
				2017 Pre-Development	2017 Post-Development
SW Tualatin-Sherwood Road/ SW 124th Avenue (Signalized)	Intersection	AM	0.74-B-15.5	0.83-B-16.9	0.87-B-19.3
		Mid-Day	--	--	--
		PM	0.78-B-17.6	0.89-C-22.0	0.92-C-25.6
SW Tualatin-Sherwood Road/ SW 120th Avenue (TWSC)	NB	AM	0.10-D-26.2	0.12-D-31.2	0.13-D-33.4
		Mid-Day	--	--	--
		PM	0.08-C-20.5	0.10-C-22.3	0.10-C-22.9
SW Tualatin-Sherwood Road/ SW 115th Avenue (Signalized)	Intersection	AM	0.74-B-15.2	0.83-C-25.6	0.88-C-29.6
		Mid-Day	0.76-B-17.5	0.92-C-33.7	0.98-D-44.4
		PM	0.69-B-12.3	0.84-C-24.7	0.91-C-31.4
SW Tualatin-Sherwood Road/ SW Avery Street/SW 112th Avenue (Signalized)	Intersection	AM	0.77-C-26.6	0.81-C-34.9	0.88-C-39.7
		Mid-Day	--	--	--
		PM	0.67-C-20.4	0.82-C-24.5	0.88-C-26.4
SW 115th Avenue/ SW Itel Street (AWSC)	Intersection	AM	N/A-A-7.2	N/A-A-8.6	N/A-B-11.2
		Mid-Day	N/A-A-7.7	N/A-A-9.4	N/A-C-15.9
		PM	N/A-A-7.2	N/A-A-8.4	N/A-B-11.9
SW 115th Avenue/ Site Access (TWSC)	EB	AM	0.00-A-0.0	0.00-A-0.0	0.03-A-9.1
		Mid-Day	0.00-A-0.0	0.00-A-0.0	0.41-B-11.3
		PM	0.00-A-0.0	0.00-A-0.0	0.24-A-9.8
SW 124th Avenue/ SW Blake Street (TWSC)	WB	AM	N/A	N/A	N/A
		Mid-Day	N/A	N/A	N/A
		PM	N/A	N/A	N/A

Existing Network

Analysis results show that all study area intersections will meet both the City’s and County’s mobility standards for all development scenarios and time periods under existing network conditions.

TABLE 7 – INTERSECTION OPERATIONS ANALYSIS WITH FUTURE NETWORK

Intersection (Control)	Intersection or Approach	Time Period	Analysis Results (v/c-LOS-Delay)			
			Future Network (with 124th)		Future Network (with Blake)	
			2017 Pre-Development	2017 Post-Development	2017 Pre-Development	2017 Post-Development
SW Tualatin-Sherwood Road/ SW 124th Avenue (Signalized)	Intersection	AM	0.89-D-38.8	0.94-D-45.8	0.85-C-34.7	0.88-D-37.1
		Mid-Day	--	--	--	--
		PM	0.80-C-33.2	0.82-C-33.6	0.80-C-32.3	0.82-C-33.5
SW Tualatin-Sherwood Road/ SW 120th Avenue (TWSC)	NB	AM	0.10-D-26.3	0.11-D-28.9	0.09-C-24.1	0.10-D-25.2
		Mid-Day	--	--	--	--
		PM	0.08-C-18.9	0.09-C-19.6	0.08-C-18.1	0.08-C-18.4
SW Tualatin-Sherwood Road/ SW 115th Avenue (Signalized)	Intersection	AM	0.71-C-21.1	0.77-C-26.6	0.68-B-19.8	0.72-C-22.7
		Mid-Day	0.87-C-32.1	0.94-D-39.7	0.78-C-26.3	0.85-C-31.3
		PM	0.78-C-25.4	0.86-C-30.2	0.71-C-20.1	0.76-C-22.9
SW Tualatin-Sherwood Road/ SW Avery Street/SW 112th Avenue (Signalized)	Intersection	AM	0.64-C-23.5	0.70-C-26.4	0.63-C-22.1	0.69-C-23.9
		Mid-Day	--	--	--	--
		PM	0.68-B-19.7	0.72-C-20.5	0.68-C-20.4	0.72-C-20.8
SW 115th Avenue/ SW Itel Street (AWSC)	Intersection	AM	N/A-A-8.6	N/A-B-11.2	N/A-A-8.6	N/A-B-10.1
		Mid-Day	N/A-A-9.4	N/A-C-15.9	N/A-A-9.0	N/A-B-12.2
		PM	N/A-A-8.4	N/A-B-11.9	N/A-A-8.4	N/A-B-10.3
SW 115th Avenue/ Site Access (TWSC)	EB	AM	0.00-A-0.0	0.03-A-9.1	0.00-A-0.0	0.03-A-9.7
		Mid-Day	0.00-A-0.0	0.41-B-11.3	0.00-A-0.0	0.52-B-14.8
		PM	0.00-A-0.0	0.24-A-9.8	0.00-A-0.0	0.27-B-10.8
SW 124th Avenue/ SW Blake Street (TWSC)	WB	AM	0.00-A-0.0	0.00-A-0.0	0.04-B-11.7	0.06-B-11.9
		Mid-Day	--	--	--	--
		PM	0.00-A-0.0	0.00-A-0.0	0.16-B-12.9	0.23-B-13.5

Future Network with SW 124th Avenue Extension

Analysis results show that all study area intersections will meet both the City’s and County’s mobility standards for all development scenarios and time periods under future network conditions.

Future Network with SW Blake Street

As SW Blake Street is constructed, it is anticipated that many Pre-Development trips from the SW 115th Avenue corridor destined for I-5 southbound will reroute to SW 124th Avenue via SW Blake Street, instead of using SW Tualatin-Sherwood Road. Analysis results show that all study area intersections will meet both the City’s and County’s mobility standards for all development scenarios and time periods under future network conditions with SW Blake Street.

Intersection Queuing Analysis

A queuing analysis was conducted for the study area intersections during the AM, Mid-Day, and PM peak hours in order to analyze any potential queue spillbacks. The 95th percentile queues were estimated using SimTraffic 9 microsimulation software. Queue demand results were rounded to the nearest 25 feet to represent average vehicle lengths.

Available queue storage lengths were estimated using Google Earth Pro software, as well as from the “Tualatin-Sherwood Road and SW 115th Avenue Signal Improvements” plans. Existing and planned available queue storage lengths were rounded to the nearest 5 feet.

Table 8 presents the 95th percentile queuing analysis for the AM and PM peak hours under existing network conditions. Results for lane groups tagged with an asterisk (*) represent queuing deficiencies for movements where project trips are added; these are discussed further below. The SimTraffic output reports are provided in Appendix K.

Table 9 presents the 95th percentile queuing analysis for the AM and PM peak hours under future network conditions, with and without the Blake Street connector. Results for lane groups tagged with an asterisk (*) represent queuing deficiencies for movements where project trips are added; these are discussed further below. The SimTraffic output reports are provided in Appendix K.

TABLE 8 – INTERSECTION 95TH PERCENTILE QUEUEING ANALYSIS WITH EXISTING NETWORK

Intersection (Control)	Approach/ Movement	Striped /Effective Storage (feet)	Queue Length (AM/PM)		
			2016 Existing	Existing Network	
				2017 Pre- Development	2017 Post- Development
SW Tualatin-Sherwood Road/ SW 124th Avenue (Signalized)	EBL	100/790	100/100	150/125	200/125
	EBT	790	250/225	700/250	1,225*/300
	WBT+R	805/1,180	325/425	375/925	425/875
	SBL	700	275/250	300/275	400/275
	SBR	700	75/175	75/225	75/250
SW Tualatin-Sherwood Road/SW 120th Avenue (TWSC)	WBL	230/1,260	50/50	75/50	50/25
	NBL+R	280	125/75	250/150	250/125
SW Tualatin-Sherwood Road/ SW 115th Avenue (Signalized)	EBL	185	<25/25	<25/25	<25/50
	EBT	1,265	475/475	1,375/900	1,550/1,100
	EBR	90	125/100	225/125	250*/175*
	WBL	225	125/25	350/100	450*/100
	WBT+R	960	150/200	625/275	1,150/275
	NBL+T	170/215	75/100	125/ 300	150/ 325*
	NBR	330	150/175	175/ 525	225/ 675*
	SBL	110	25/50	25/50	25/50
	SBT+R	215	<25/25	<25/25	<25/25
SW Tualatin Sherwood Road/ SW Avery Street/ SW 112th Avenue (Signalized)	EBL	235/500	100/50	150/125	175/125
	EBT	235/960	600/350	800/700	850/775
	EBR	130/170	275/175	350/350	375*/375*
	WBL	240/460	50/25	175/50	125/25
	WBT	1,430/3,125	375/400	1,525/450	3,500*/350
	WBR	235/300	25/75	250/150	325/100
	NBL	135	400/325	400/375	425*/350*
	NBT+R	600/1,200	275/125	350/300	425/250
	SBL	165	25/75	50/125	50/125
	SBT+R	590	25/75	50/200	75/125
SW 115th Avenue/ SW Itel Street (AWSC)	EBL	340/850	50/50	50/50	50/50
	EBT+R	340/850	50/25	25/50	50/50
	WBL	100/125	<25/<25	<25/<25	25/<25
	WBT+R	480	25/25	75/75	75/125
	NBL	105/155	<25/<25	<25/<25	<25/<25
	NBT+R	1,055	75/50	75/75	75/375
	SBL	100/645	25/25	100/50	100/50
	SBT+R	645	75/50	100/75	175/75
SW 115th Avenue/ Site Access (TWSC)	EBL+R	230	<25/<25	<25/<25	50/75

TABLE 9 – INTERSECTION 95TH PERCENTILE QUEUEING ANALYSIS WITH FUTURE NETWORK

Intersection (Control)	Approach/Movement	Striped/Effective Storage (feet)	Queue Length (AM/PM)			
			Future Network (without Blake)		Future Network (with Blake)	
			2017 Pre-Development	2017 Post-Development	2017 Pre-Development	2017 Post-Development
SW Tualatin-Sherwood Road/ SW 124th Avenue (Signalized)	EBL	100/790	175/175	200/200	175/150	175/150
	EBT	790	1,100 /600	975* /675	875 /350	975* /375
	EBR	375/500	650 /250	650 /275	425/100	550 /100
	WBL	375/1,180	100/325	50/400	25/75	25/25
	WBT	805/1,180	475/800	425/875	425/550	450/575
	WBR	375/500	200/325	150/375	150/175	125/250
	NBL	375/500	350/250	300/300	225/175	200/225
	NBT+R	1,800	625/375	550/425	450/275	425/275
	SBL	350/500	275/325	275/400	375/175	525/200
	SBT	700	225/425	225/575	300/275	550/275
SBR	700	75/200	75/400	75/175	200/175	
SW Tualatin-Sherwood Road/ SW 120th Avenue (TWSC)	WBL	230/1,260	50/50	50/25	50/25	50/50
	NBL+R	280	75/50	75/100	75/50	100/50
SW Tualatin-Sherwood Road/ SW 115th Avenue (Signalized)	EBL	185	50/<25	<25/100	<25/<25	<25/<25
	EBT	1,265	550/750	775/775	450/425	575/500
	EBR	90/120	175/175	250*/200*	150 /125	200*/150*
	WBL	225	225/75	375* /100	225/75	300* /75
	WBT+R	960	225/275	600/300	300/175	350/150
	NBL+T	170/215	175/ 275	200/ 275*	125/200	125/ 225*
	NBR	330	150/ 350	175/ 500*	125/225	150/300
	SBL	110	50/50	25/50	25/25	25/25
SBT+R	215	<25/25	<25/25	<25/25	<25/25	
SW Tualatin Sherwood Road/ SW Avery Street/ SW 112th Avenue (Signalized)	EBL	235/500	75/50	100/75	50/50	100/50
	EBT	235/960	300/375	275/350	375/250	325/300
	EBR	130/170	100/175	100/150	150/100	150/150
	WBL	240/460	75/25	25/25	25/25	50/50
	WBT	1,430/3,125	325/275	425/275	400/250	325/225
	WBR	235/300	75/25	100/75	75/25	100/25
	NBL	135	275/275	275*/275*	275/225	300*/225*
	NBT+R	600/1,200	150/200	125/175	225/100	275/100
	SBL	165	50/125	50/125	50/125	75/125
SBT+R	590	50/100	50/125	50/100	50/125	

TABLE 9 – INTERSECTION 95TH PERCENTILE QUEUEING ANALYSIS WITH FUTURE NETWORK

Intersection (Control)	Approach/Movement	Striped/Effective Storage (feet)	Queue Length (AM/PM)			
			Future Network (without Blake)		Future Network (with Blake)	
			2017 Pre-Development	2017 Post-Development	2017 Pre-Development	2017 Post-Development
SW 115th Avenue/ SW Itel Street (AWSC)	EBL	340/850	50/50	50/50	50/50	50/50
	EBT+R	340/850	50/50	50/50	25/50	50/50
	WBL	100/125	<25/<25	25/<25	25/50	50/50
	WBT+R	480	75/100	75/100	75/75	75/75
	NBL	105/155	<25/<25	<25/<25	<25/25	<25/25
	NBT+R	1,055	75/75	100/125	100/75	100/100
	SBL	100/645	100/50	100/50	100/25	100/25
	SBT+R	645	100/50	125/75	100/75	150/75
SW 115th Avenue/ Site Access (TWSC)	EBL+R	230	N/A	50/75	N/A	50/75
SW 124th Avenue/ SW Blake Street (TWSC)	WBL+R	2,600	N/A	N/A	50/75	50/75

Existing Network

The SW Tualatin-Sherwood Road/SW 112th Avenue/SW Avery Street intersection is anticipated to have 95th percentile queues that exceed available storage for the eastbound right and northbound left-turn lanes under Pre-Development conditions. Under Post-Development conditions, most long queues are anticipated to have minimal changes at this intersection. Queues at the SW Tualatin-Sherwood Road/SW 115th Avenue intersection would grow as the intersection demand nears capacity.

The intersection of SW Tualatin-Sherwood Road/SW 115th Avenue appears to be the source of much of the peak hour queue spillback on the SW Tualatin-Sherwood Road corridor.

Future Network with SW 124th Avenue Extension

Intersection queues would generally decrease with the SW 124th Extension. Fewer movements are anticipated to have 95th percentile queues that exceed available storage under Pre-Development conditions. Network conditions would also greatly improve under Post-Development conditions and changes in queues are generally anticipated to be minimal for all intersections.

Future Network with SW Blake Street

The construction of SW Blake Street is anticipated to have minimal effects on network queues. The 95th percentile queues are generally similar to those estimated with the SW 124th Avenue extension under both Pre-Development and Post-Development conditions.

VII. RECOMMENDATIONS

With the existing network, the City's and County's capacity standards are met at all study area intersections during all analysis periods and scenarios. With the construction of the SW 124th Avenue extension and the SW Blake Street connector, it is anticipated that many trips from the SW 115th Avenue corridor will reroute to SW 124th Avenue via SW Blake Street, which will improve mobility at the SW Tualatin-Sherwood Road/SW 115th Avenue intersection.

Queuing is anticipated to worsen in the Post-Development scenario during both the AM and PM peak hours. The SW 124th Avenue extension and the SW Blake Street connector are anticipated to help decrease queues on SW Tualatin-Sherwood Road as the SW 124th Avenue extension will take traffic off Tualatin-Sherwood Road and many trips associated with the SW 115th corridor will reroute via Blake Street.

The following recommendations are based on these findings, assuming a light industrial land use for the project and all in-process development along SW 115th Avenue:

- Restripe the travel lanes on the east and west legs of SW Itel Street to eliminate the center two-way, left-turn lane (TWLTL) and allow for on-street parking. This will allow through vehicles to drive in a through lane, rather than intruding into the TWLTL. Based on the volumes on Itel Street, the TWLTL is not needed.
- Restripe the westbound left-turn lanes on SW Tualatin-Sherwood Road to provide the maximum available queuing, which is about 350 feet for the inside left-turn lane and about 500 feet for the outside left-turn lane.

VIII. SUMMARY

This TIA addresses both City of Tualatin and Washington County traffic study requirements. The following are key findings supported by these analysis results for the Majestic Realty industrial development.

Existing Conditions

- The project site is located within the City of Tualatin and is zoned General Manufacturing (MG).
- All study area intersections currently meet mobility standards set forth by the City of Tualatin and Washington County in the existing scenario.

Pre-Development Conditions

- A 1.5% annual background growth rate was assumed for the study area, consistent with the *Koch Corporate Center Buildings 10, 11, 12 TIA*, dated January 2016.
- In-process traffic volumes were assumed in the analysis for the Hedges Business Park, Koch Corporate Center – Buildings 6 and 7, Koch Corporate Center – Buildings 1, 5, and 8, Koch Corporate Center – Buildings 10, 11, and 12 developments, Itel Street Industrial Development, and the Franklin Business Park.
- The SW Tualatin-Sherwood/SW 115th Avenue intersection is currently under construction for improvements, including a second westbound left-turn lane, northbound approach lane restriping, and a northbound right-turn signal overlap phase.
- All study area intersections are anticipated to meet mobility standards set forth by the City of Tualatin and Washington County in the Pre-Development scenario under existing network conditions.

Site Development

- A 229,146-square-foot warehousing/distribution facility will be developed on a currently vacant lot.
- Based on ITE trip generation equations for a “Light Industrial” land use, the proposed industrial development is anticipated to generate 181 AM peak hour trips, 170 Mid-Day peak hour trips, 200 PM peak hour trips, and 1,610 daily trips.

Post-Development Conditions

- All study area intersections are anticipated to meet mobility standards set by the City of Tualatin and Washington County in the Post-Development scenario under existing network conditions.
- The SW Tualatin-Sherwood Road/SW 115th Avenue intersection is anticipated to meet both the City’s and County’s capacity standards under future network conditions with both the SW 124th Extension and SW Blake Street.

Site Circulation

- One driveway is proposed on SW 115th Avenue which will serve both passenger vehicles and combination trucks.
- The driveway will connect to an internal drive aisle surrounding the facility. Truck parking will be provided on the north side of the building and passenger vehicle parking will be provided on the south side of the building.

Recommendations

- Restripe the travel lanes on the east and west legs of SW Iteel Street to eliminate the center two-way, left-turn lane (TWLTL) and allow for on-street parking. This will allow through vehicles to drive in a through lane, rather than intruding into the TWLTL.
- Restripe the westbound left-turn lanes on SW Tualatin-Sherwood Road to provide the maximum available queuing, which is about 325 feet for the inside left-turn lane and about 475 feet for the outside left-turn lane.

IX. APPENDIX

Appendix A. Figures

Appendix B. Traffic Count Summaries

Appendix C. Scoping Material

Appendix D. Transit Information

Appendix E. Travel Demand Model Plots

Appendix F. SW 124th Avenue Extension Traffic Reroutes

Appendix G. Crash Data

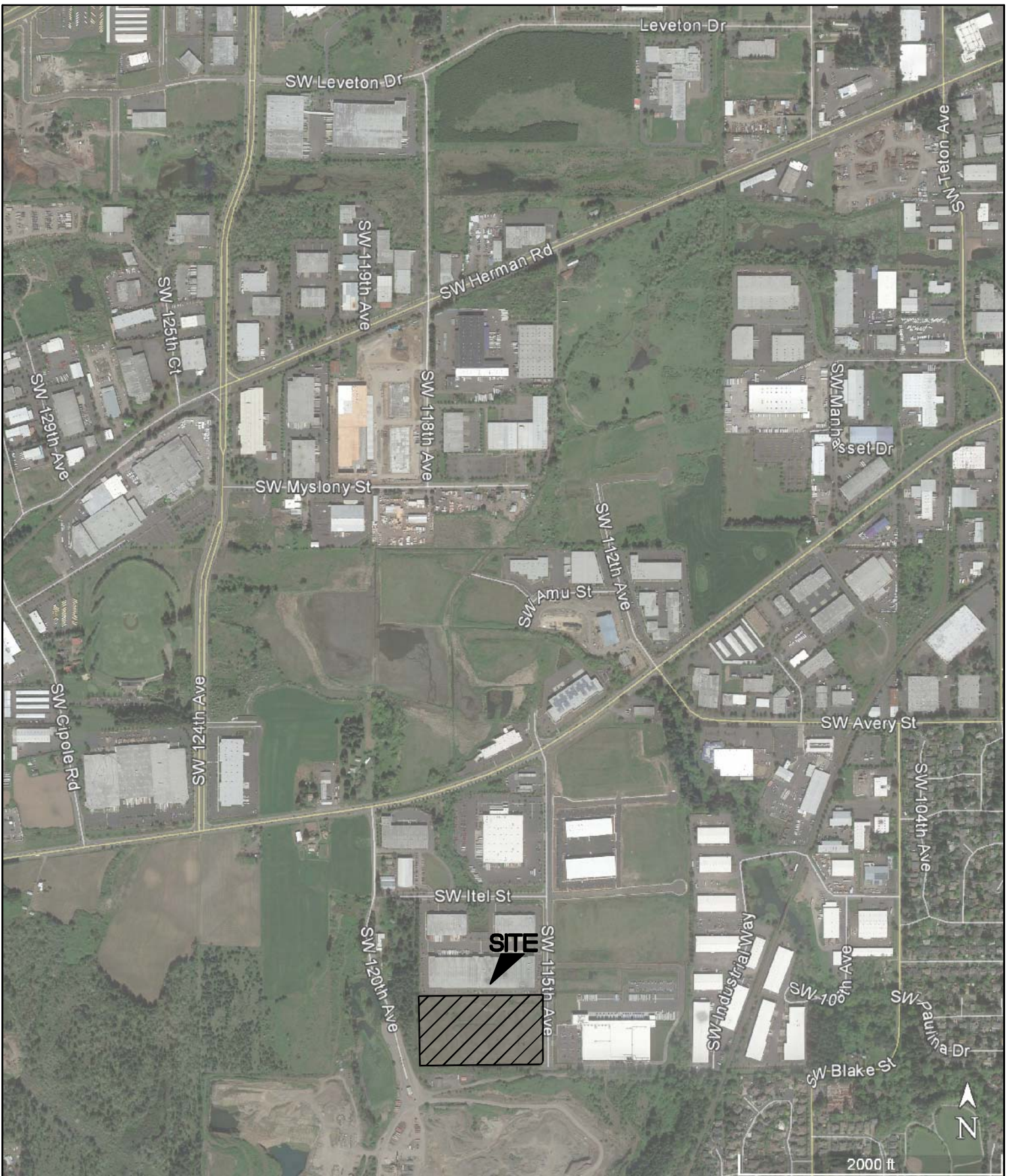
Appendix H. Signal Timings

Appendix I. Future Improvements

Appendix J. Operations Calculations

Appendix K. Queuing Analysis

APPENDIX A
FIGURES



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

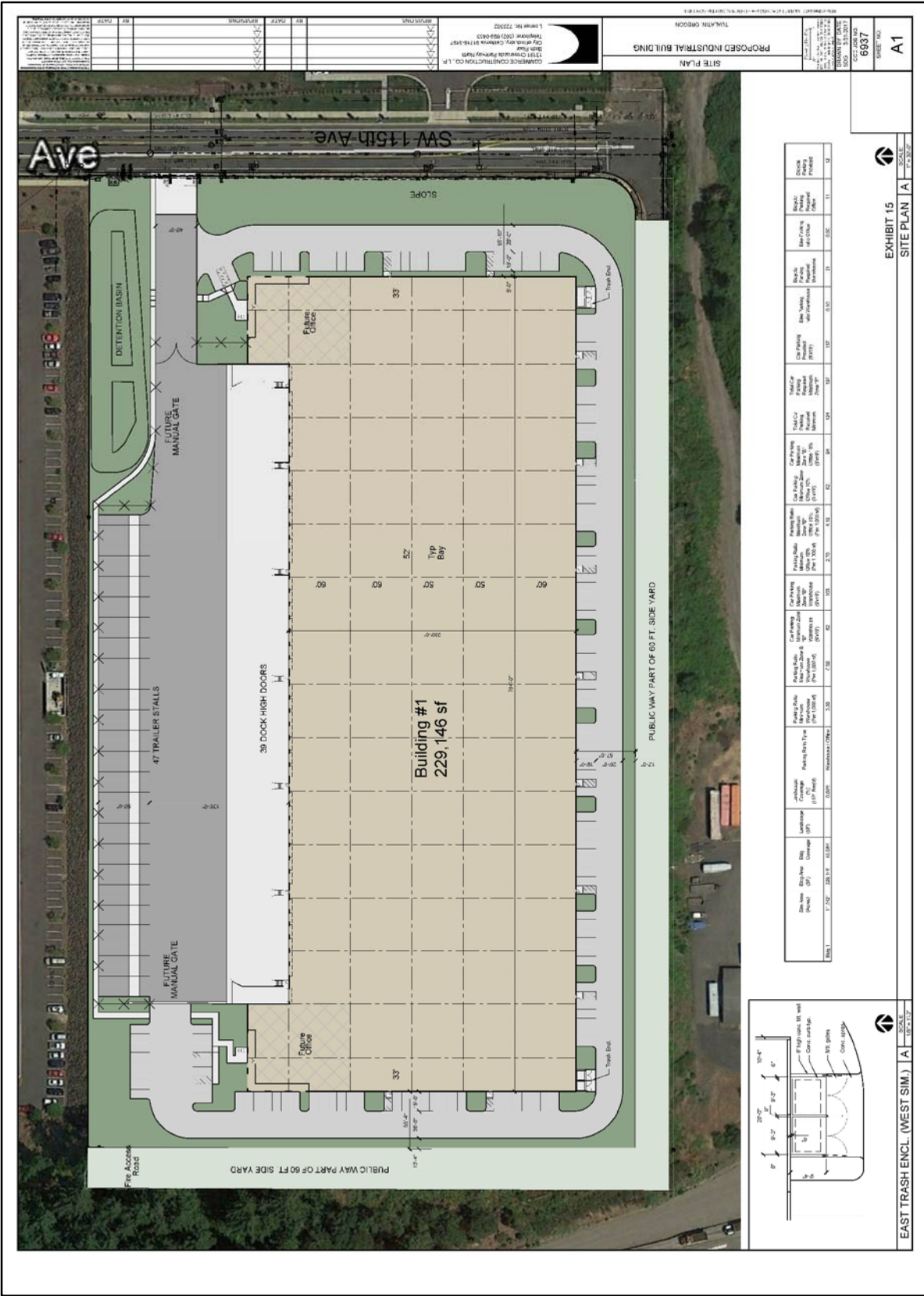
JOB NO:
2160026.01

VICINITY MAP

MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

FIGURE

1



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mcknize.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017
DRAWN BY: JTJ
CHECKED BY: BTA
JOB NO:
2160026.01

SITE PLAN

MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

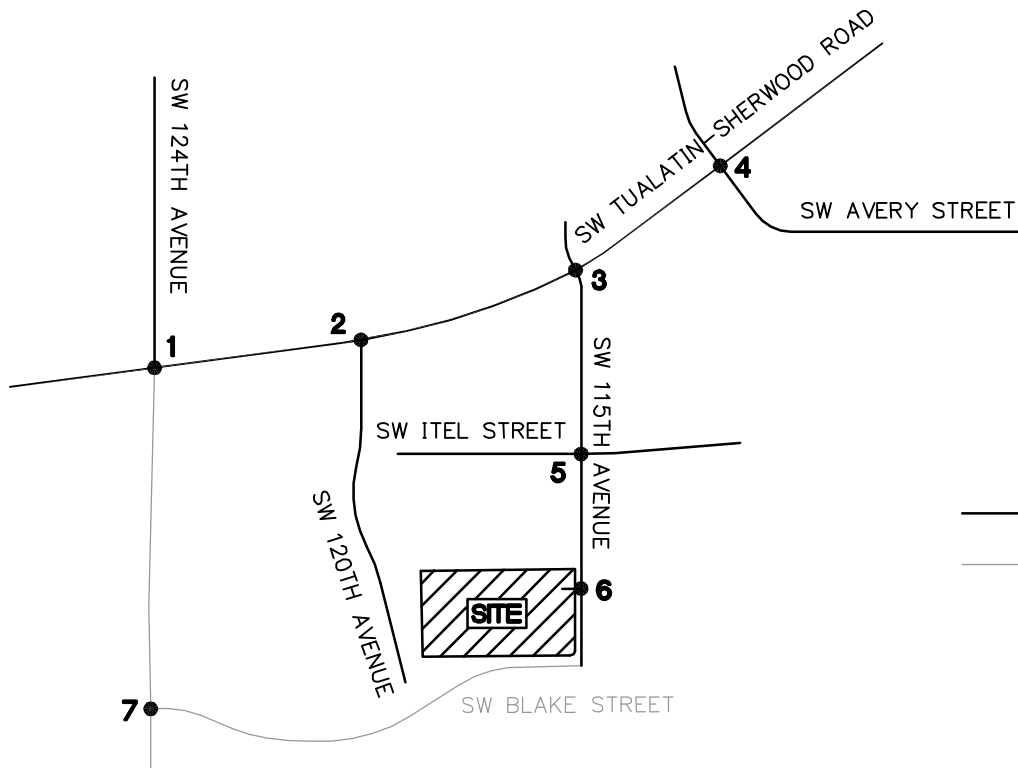
FIGURE

2

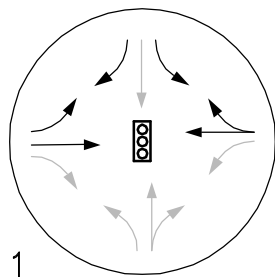
© MACKENZIE 2016 ALL RIGHTS RESERVED
THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



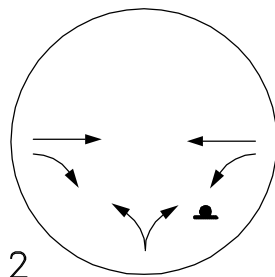
NOT TO SCALE



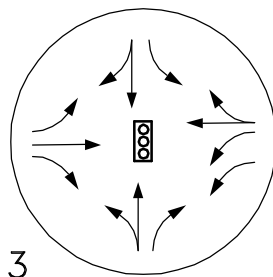
— Existing Network
 - - - Future Extension



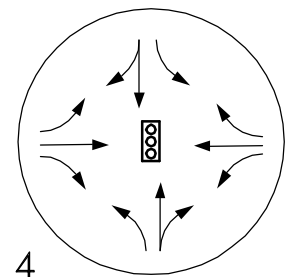
1



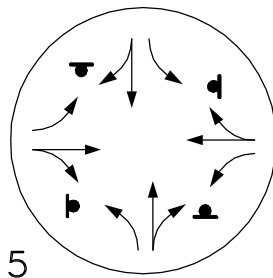
2



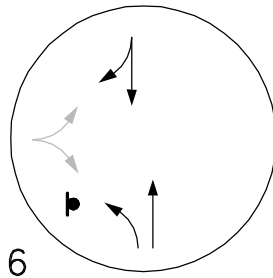
3



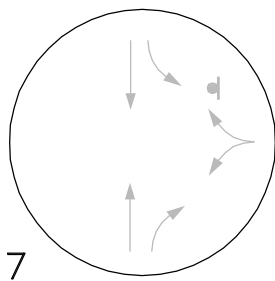
4



5







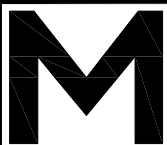
6



7

LEGEND

-  EXISTING
-  PLANNED
-  STOP SIGN
-  SIGNAL



Portland 503.224.9580
Vancouver 360.695.7879
Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

EXISTING / PLANNED TRAFFIC CONTROL DEVICES AND LANE CONFIGURATIONS

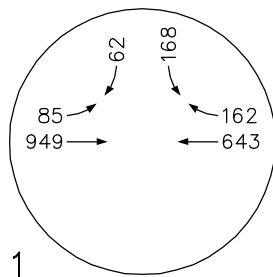
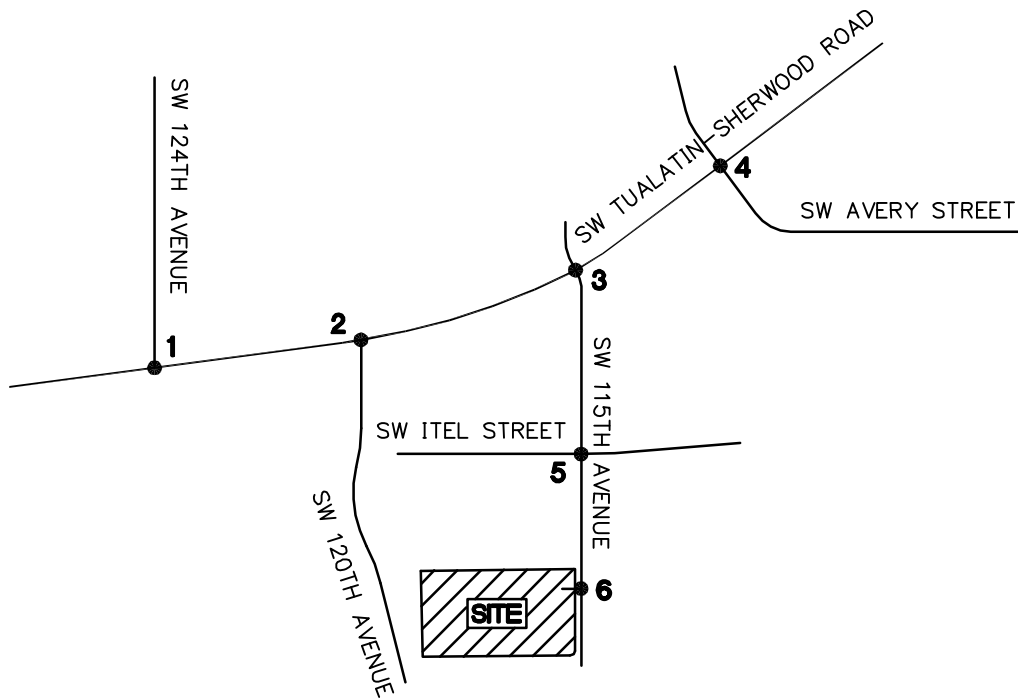
**MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON**

FIGURE

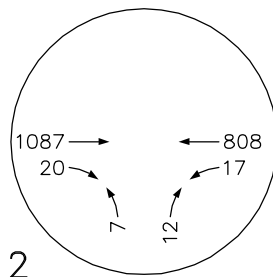
3



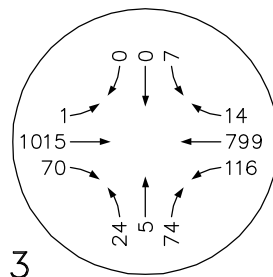
NOT TO SCALE



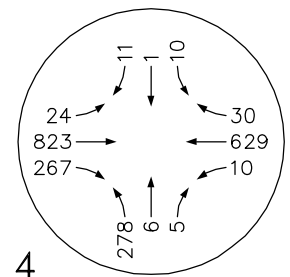
1



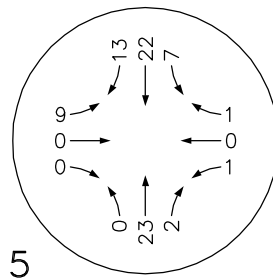
2



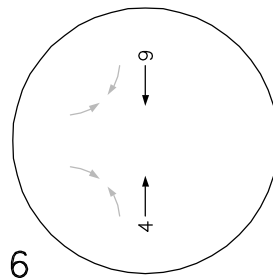
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

2016 EXISTING TRAFFIC -
 AM PEAK HOUR

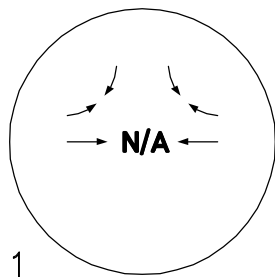
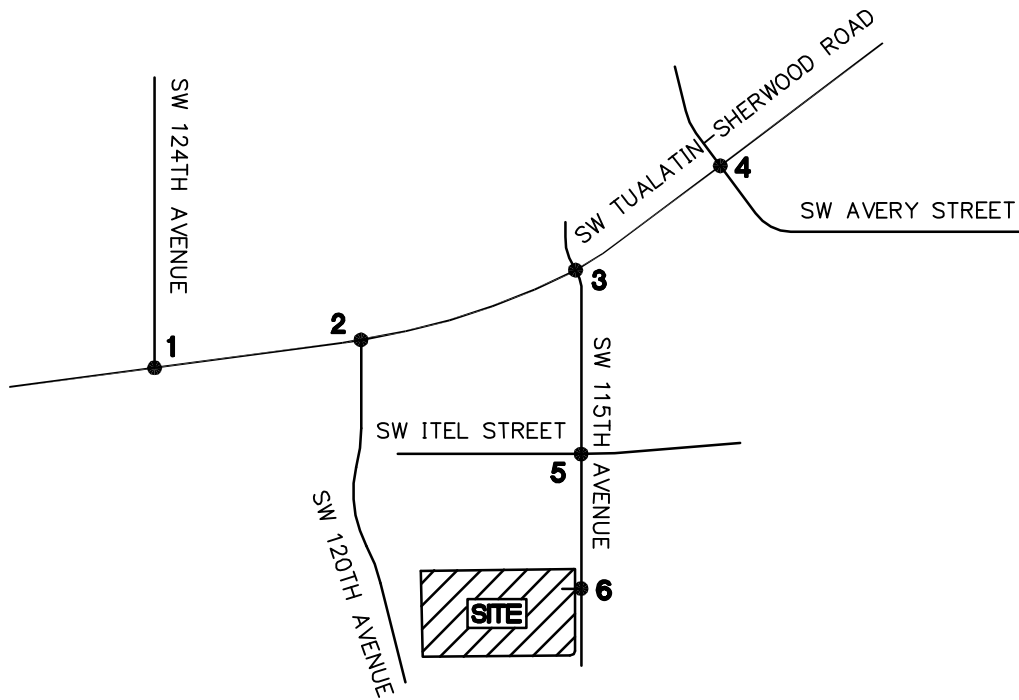
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

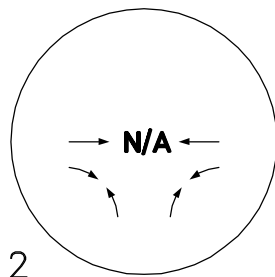
4A



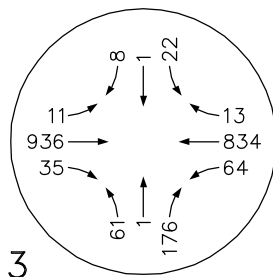
NOT TO SCALE



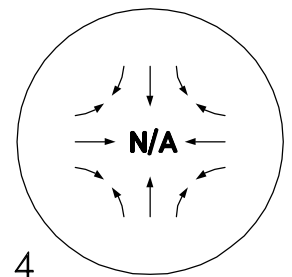
1



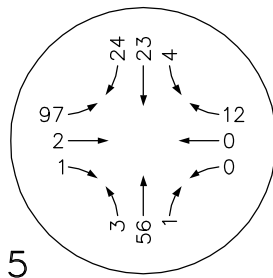
2



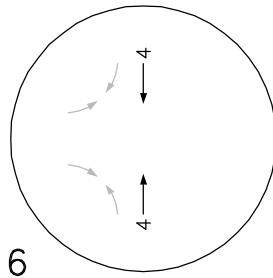
3



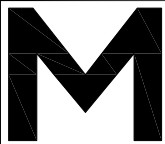
4



5



6



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
2160026.01

2016 EXISTING TRAFFIC -
MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

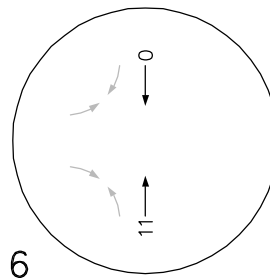
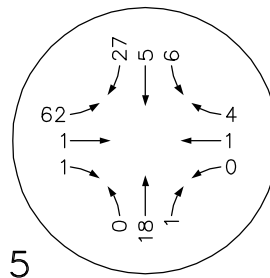
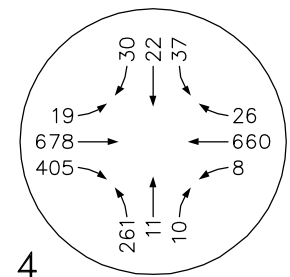
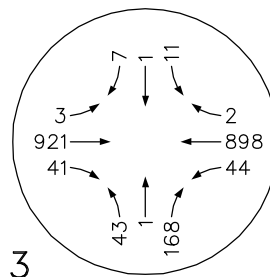
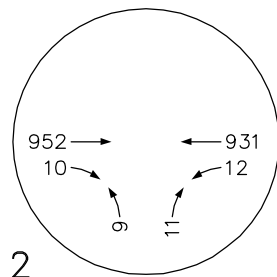
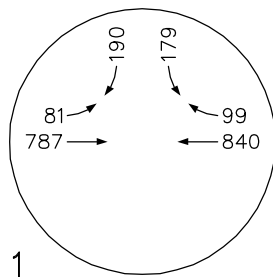
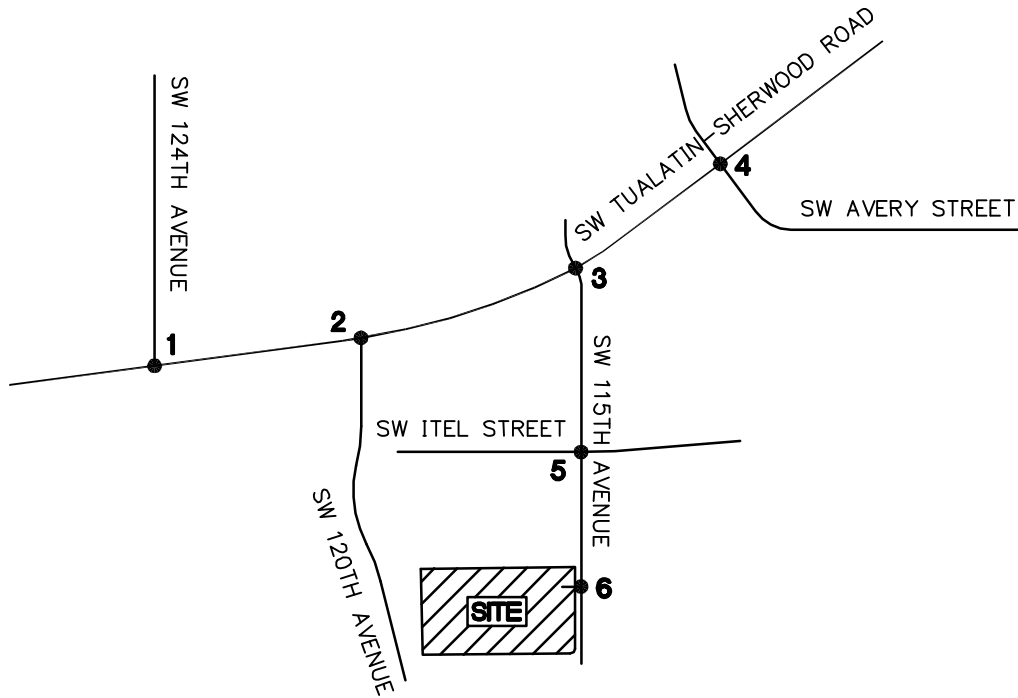
FIGURE

4B

© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



NOT TO SCALE



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

2016 EXISTING TRAFFIC -
 PM PEAK HOUR

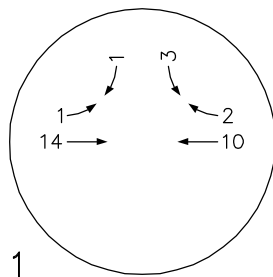
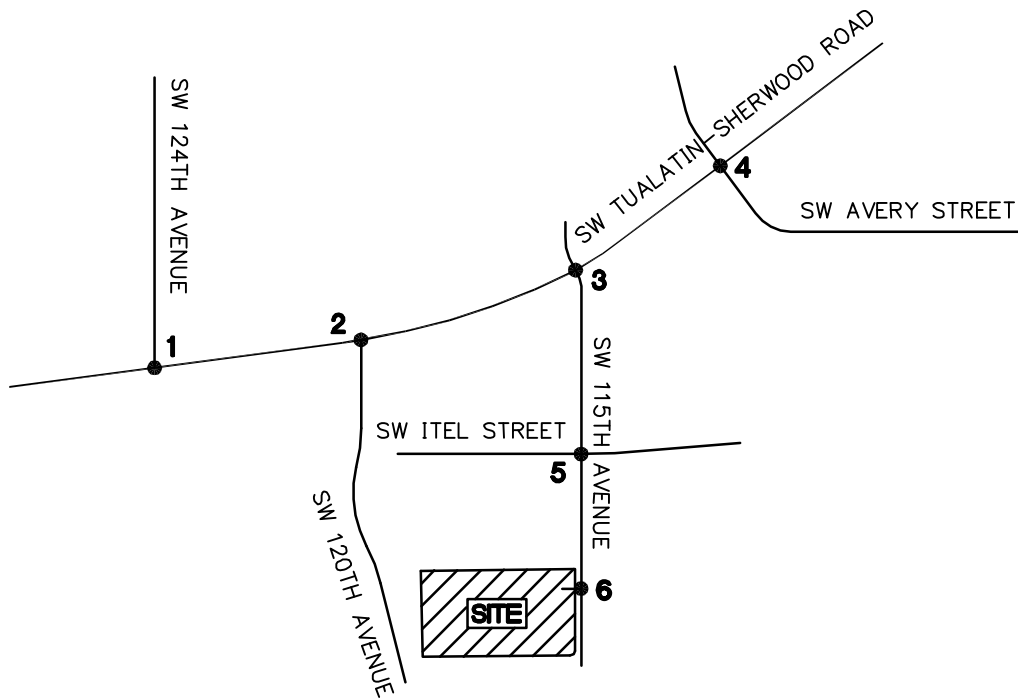
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

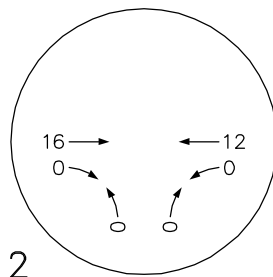
4C



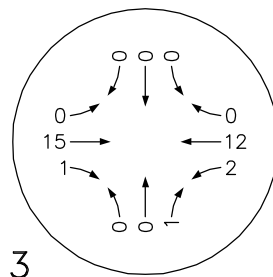
NOT TO SCALE



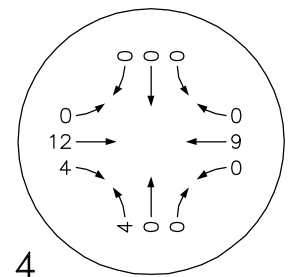
1



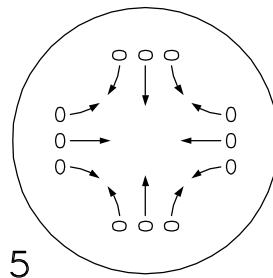
2



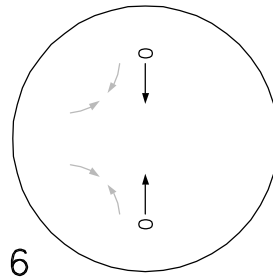
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

BACKGROUND GROWTH
 1 YEAR @ 1.5% PER YEAR -
 AM PEAK HOUR

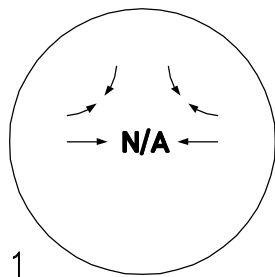
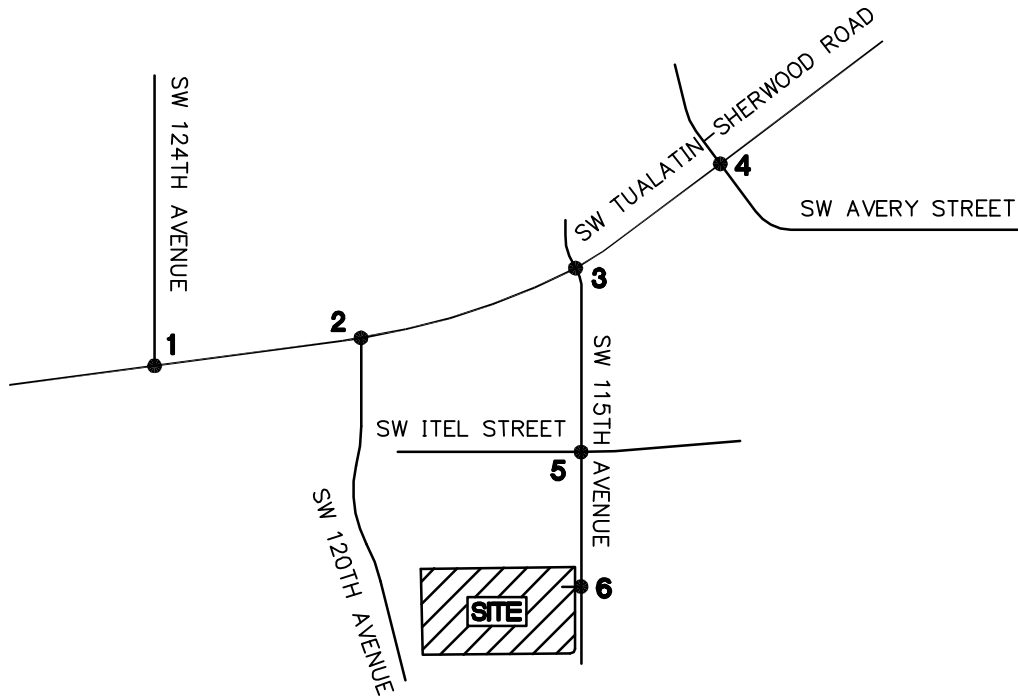
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

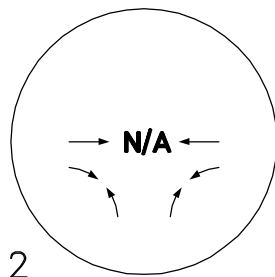
5A



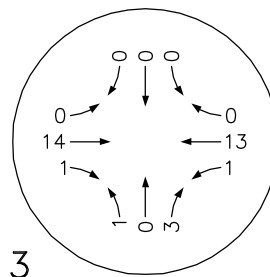
NOT TO SCALE



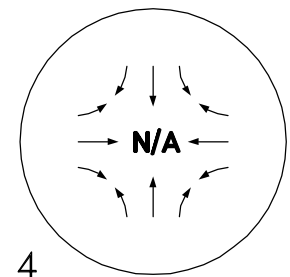
1



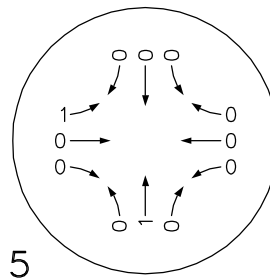
2



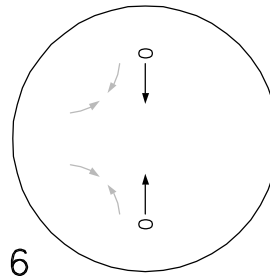
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

BACKGROUND GROWTH
 1 YEAR @ 1.5% PER YEAR -
 MID-DAY PEAK HOUR

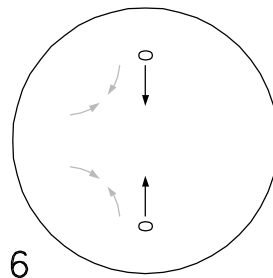
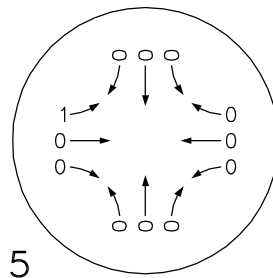
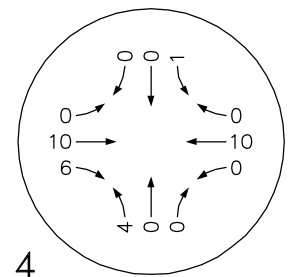
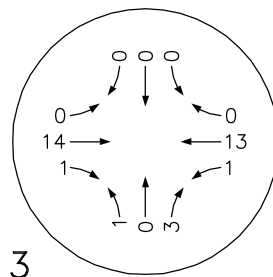
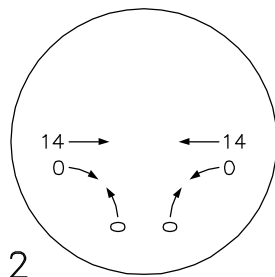
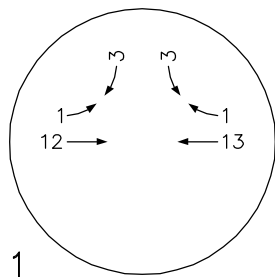
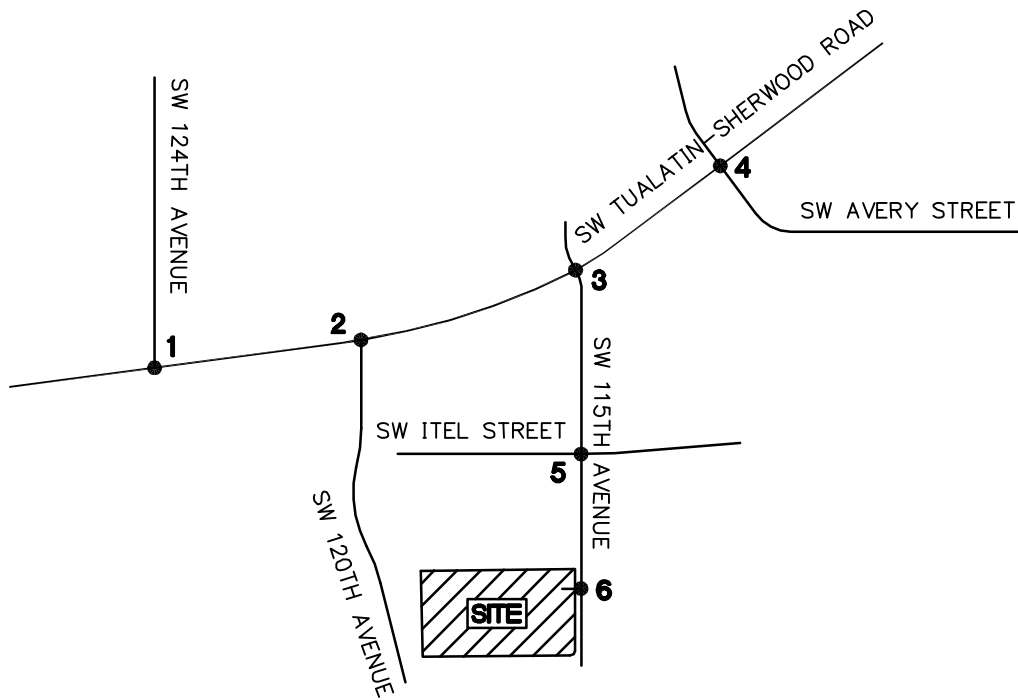
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

5B



NOT TO SCALE



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

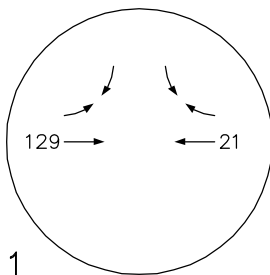
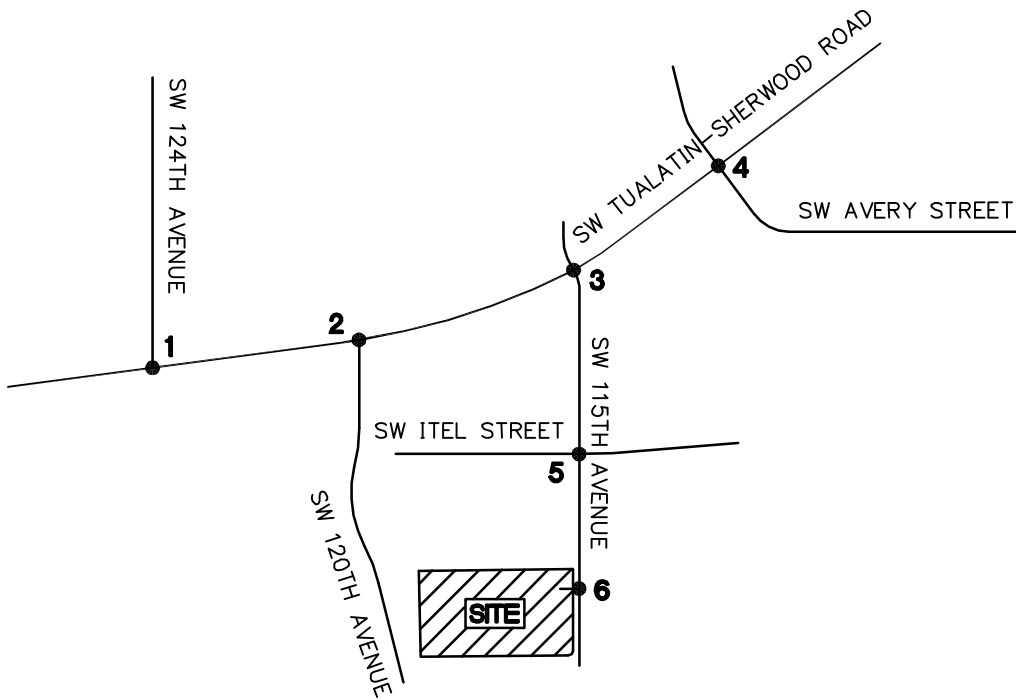
BACKGROUND GROWTH
 1 YEAR @ 1.5% PER YEAR -
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

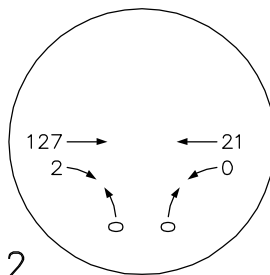
FIGURE
 5C



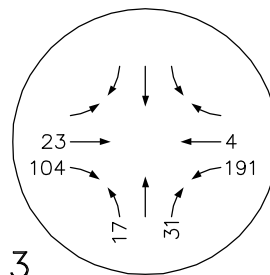
NOT TO SCALE



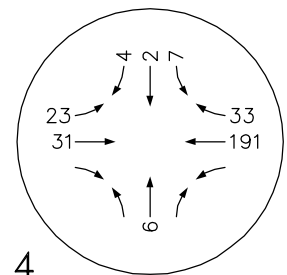
1



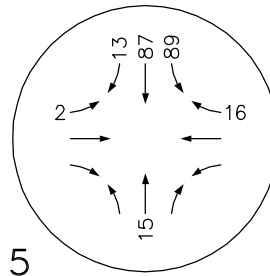
2



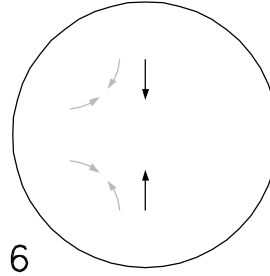
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

IN-PROCESS TRIPS -
 AM PEAK HOUR

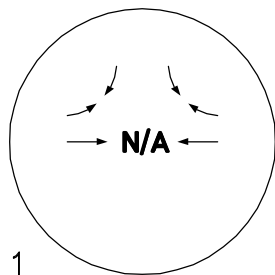
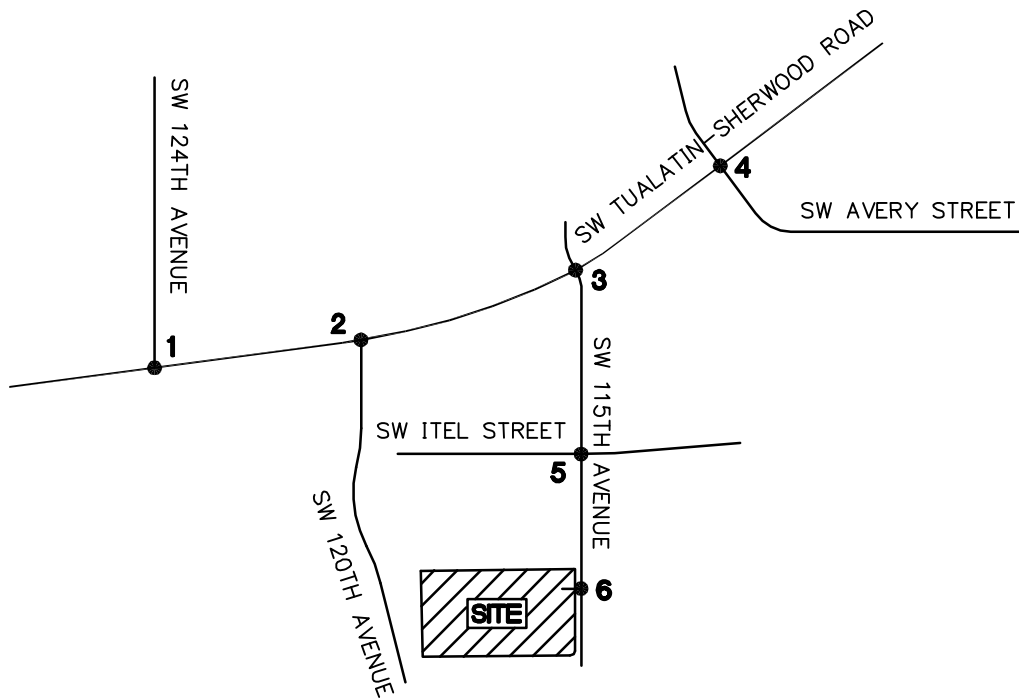
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

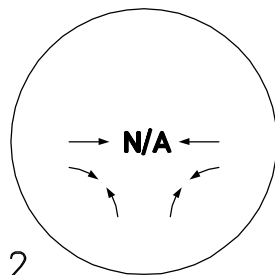
6A



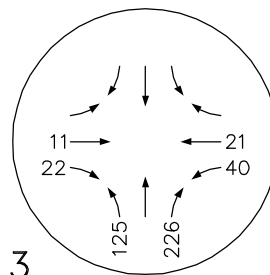
NOT TO SCALE



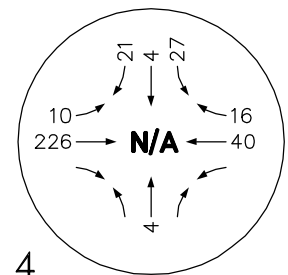
1



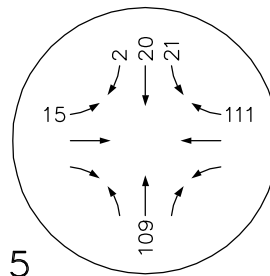
2



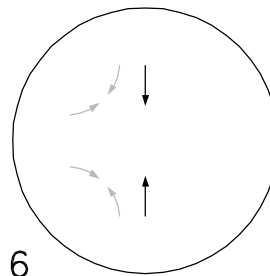
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

IN-PROCESS TRIPS -
 MID-DAY PEAK HOUR

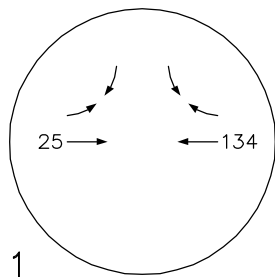
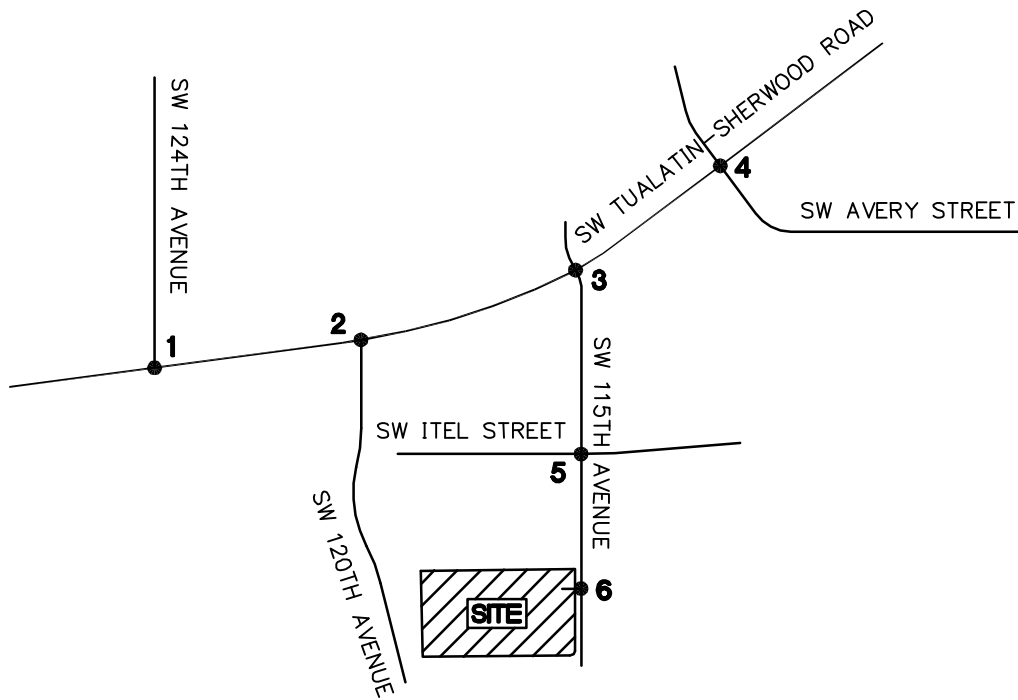
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

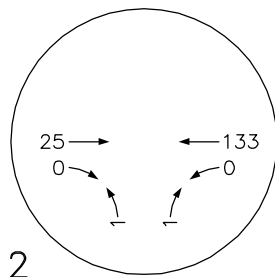
6B



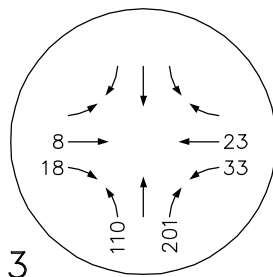
NOT TO SCALE



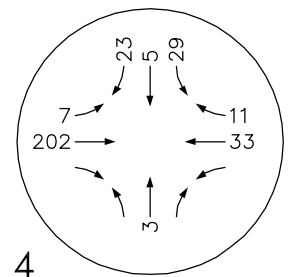
1



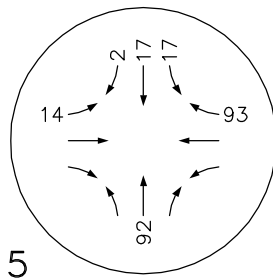
2



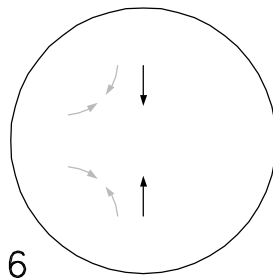
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

IN-PROCESS TRIPS -
 PM PEAK HOUR

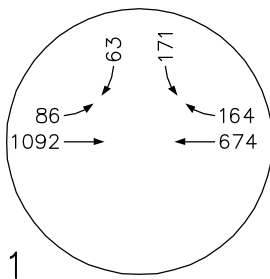
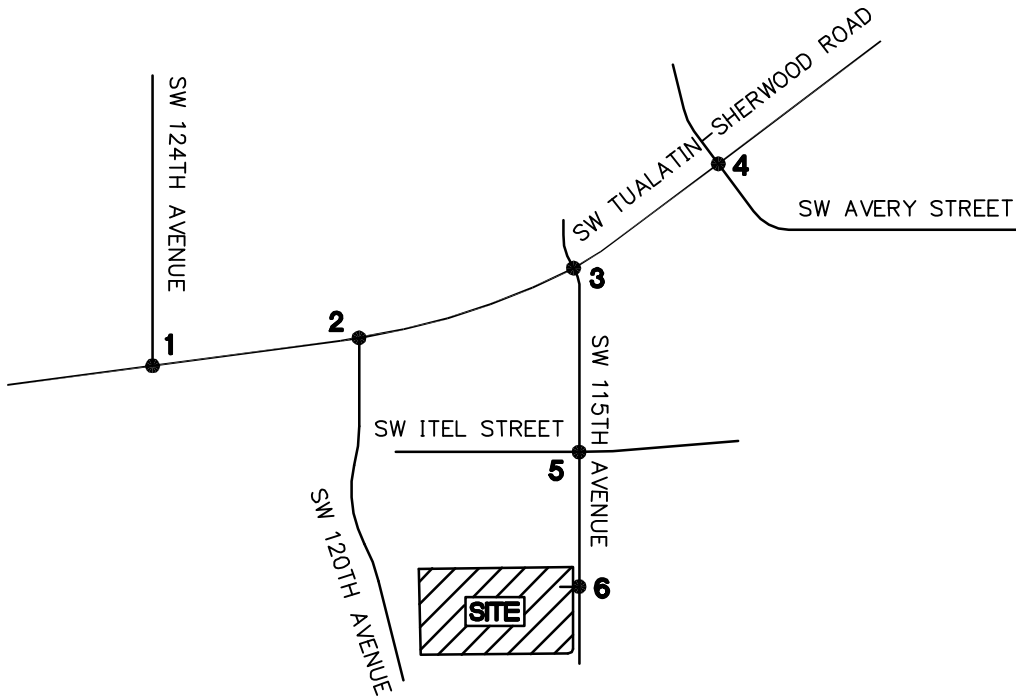
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

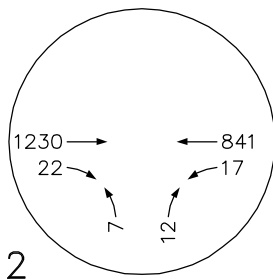
6C



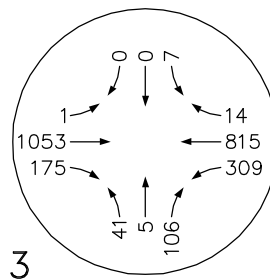
NOT TO SCALE



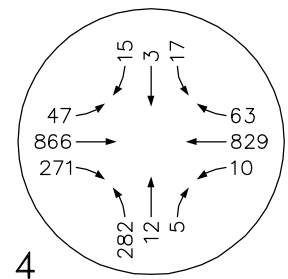
1



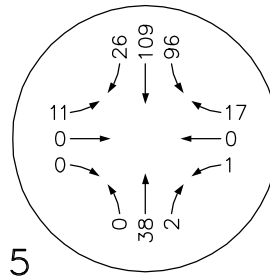
2



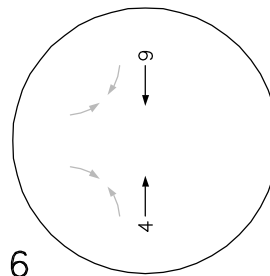
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

2017 PRE-DEVELOPMENT
 TRAFFIC VOLUMES -
 AM PEAK HOUR

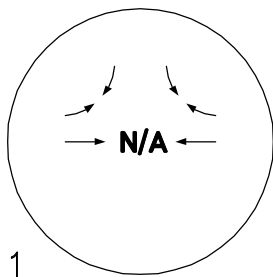
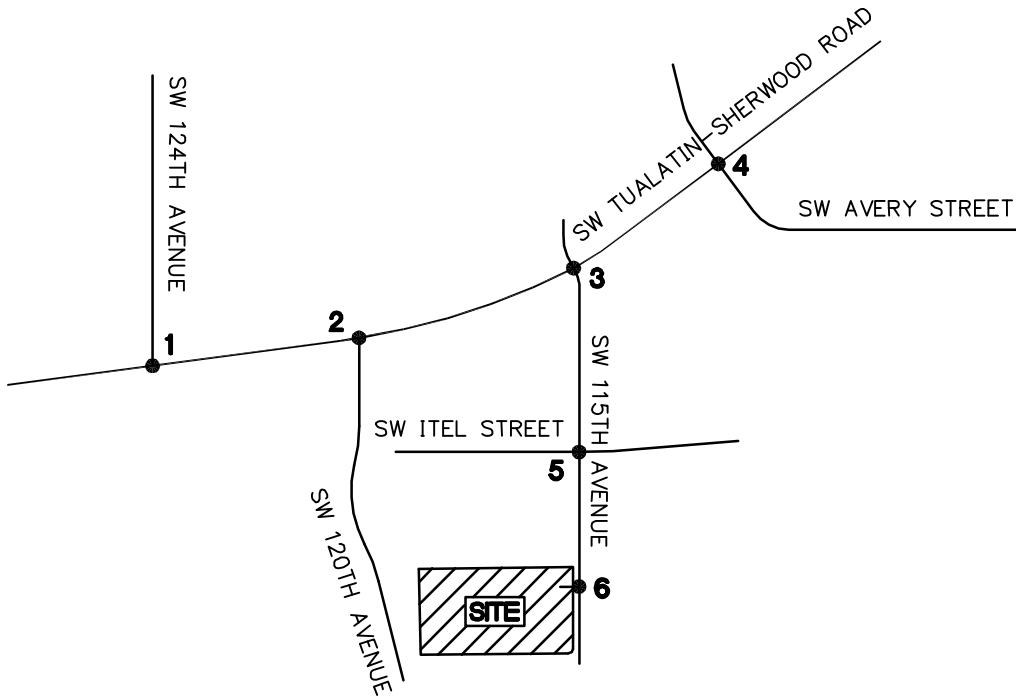
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

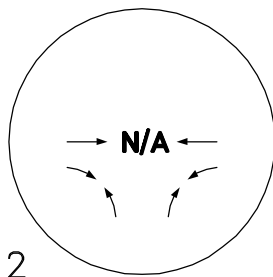
7A



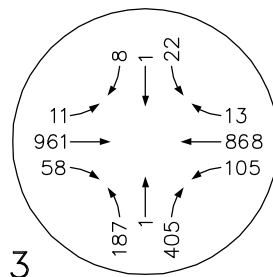
NOT TO SCALE



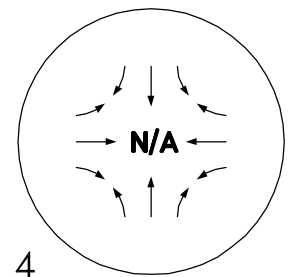
1



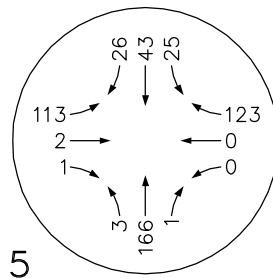
2



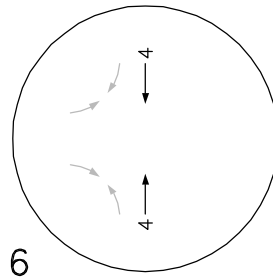
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

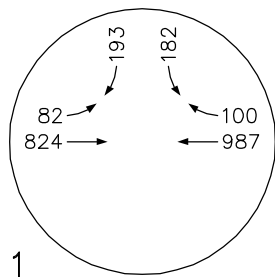
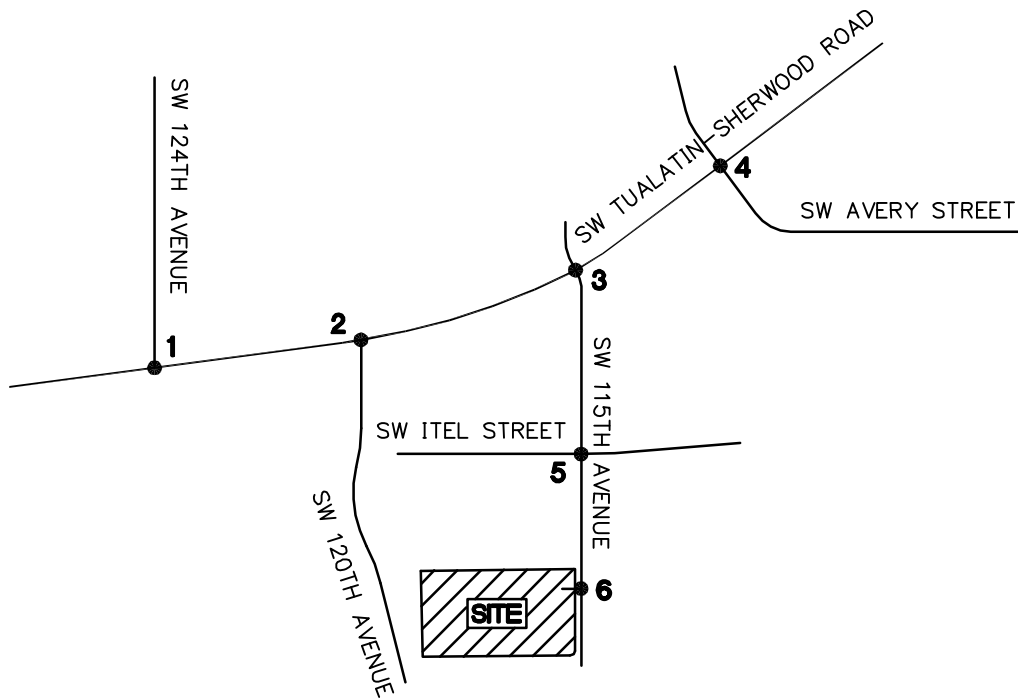
2017 PRE-DEVELOPMENT
 TRAFFIC VOLUMES -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

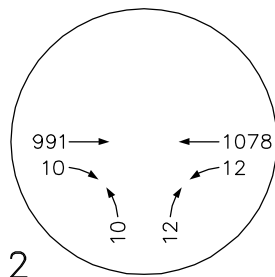
FIGURE
 7B



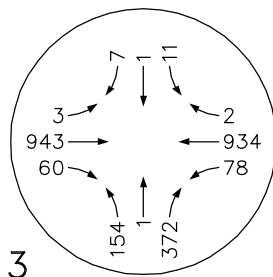
NOT TO SCALE



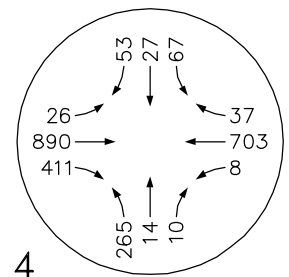
1



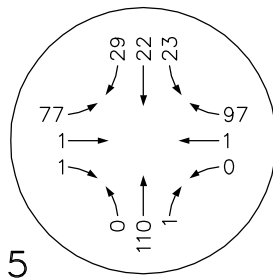
2



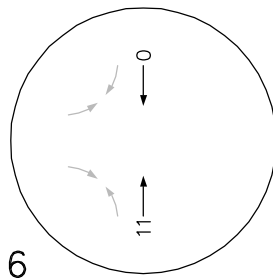
3



4



5



6



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

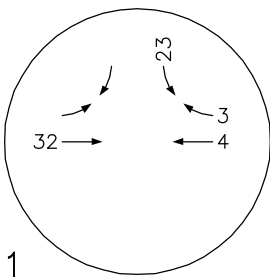
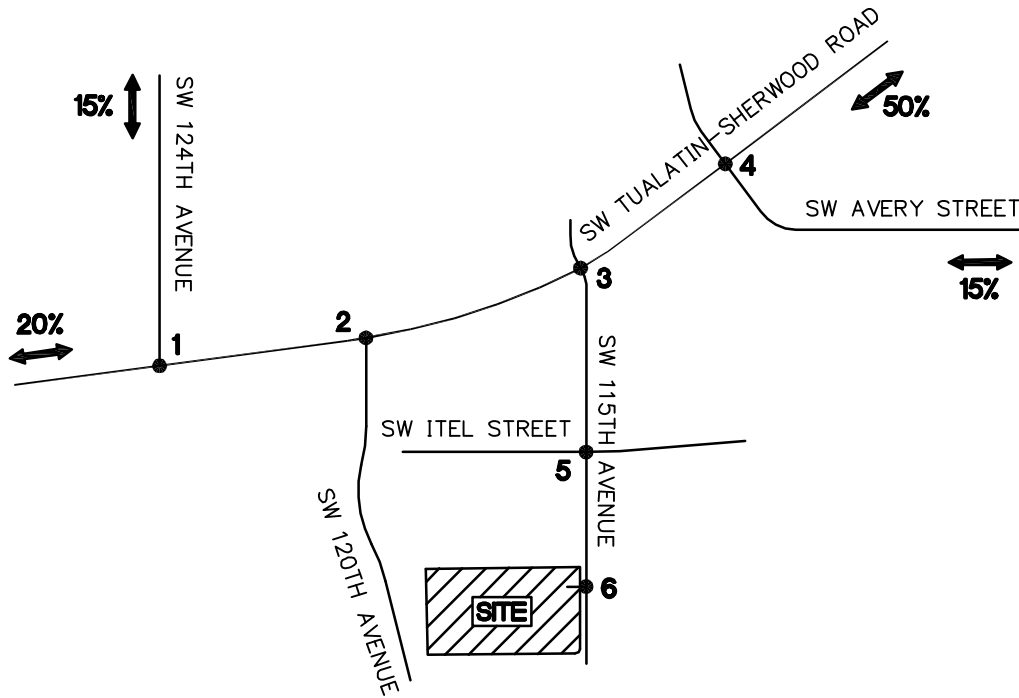
2017 PRE-DEVELOPMENT
TRAFFIC VOLUMES -
PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

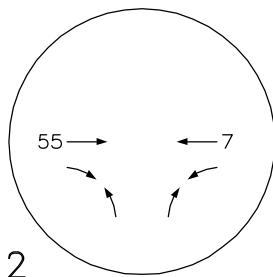
FIGURE
7C



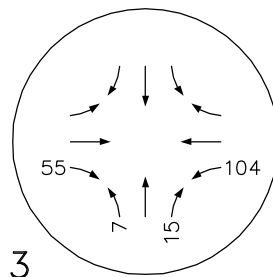
NOT TO SCALE



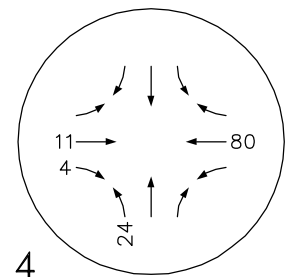
1



2



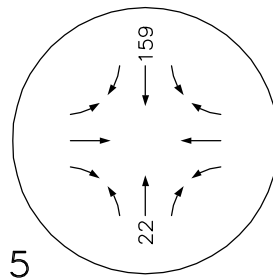
3



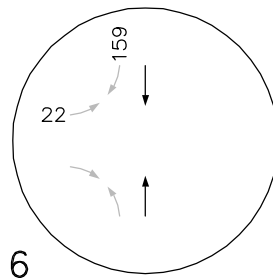
4

AM PEAK HOUR

Entering - 159
 Exiting - 22
 Total - 181



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

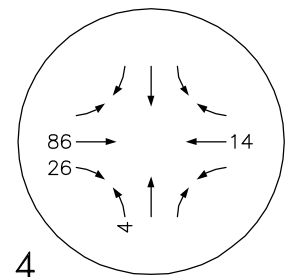
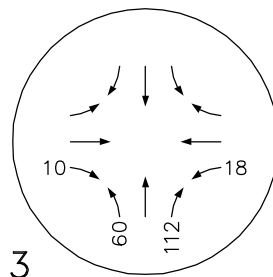
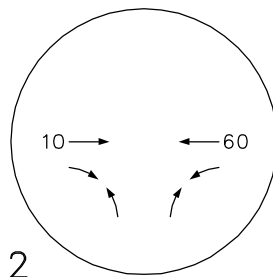
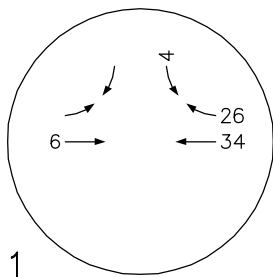
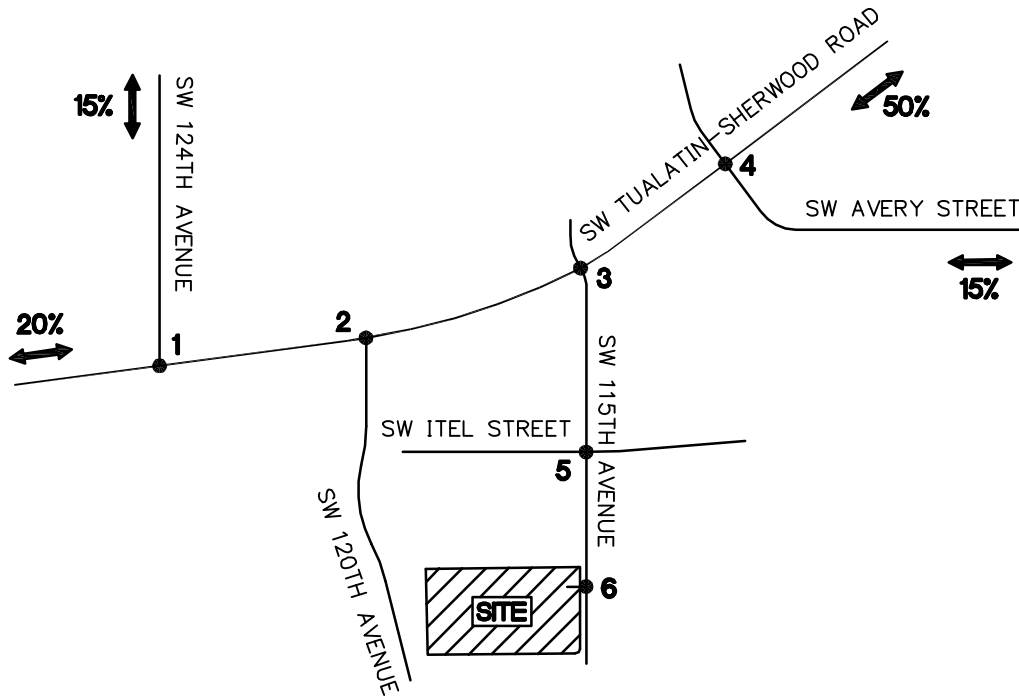
PROJECT TRIP
 DISTRIBUTION + ASSIGNMENT -
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 8A

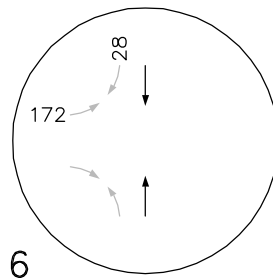
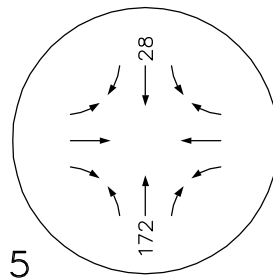


NOT TO SCALE



MID-DAY PEAK HOUR

Entering - 28
 Exiting - 172
 Total - 200



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

PROJECT TRIP
DISTRIBUTION + ASSIGNMENT -
MID-DAY PEAK HOUR

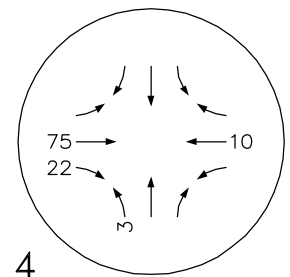
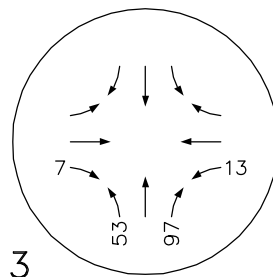
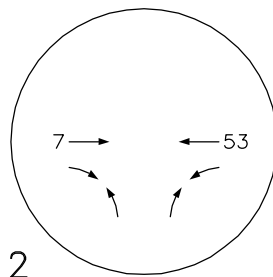
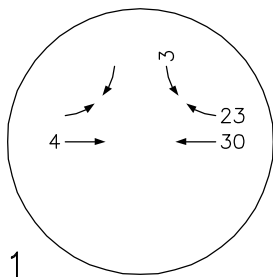
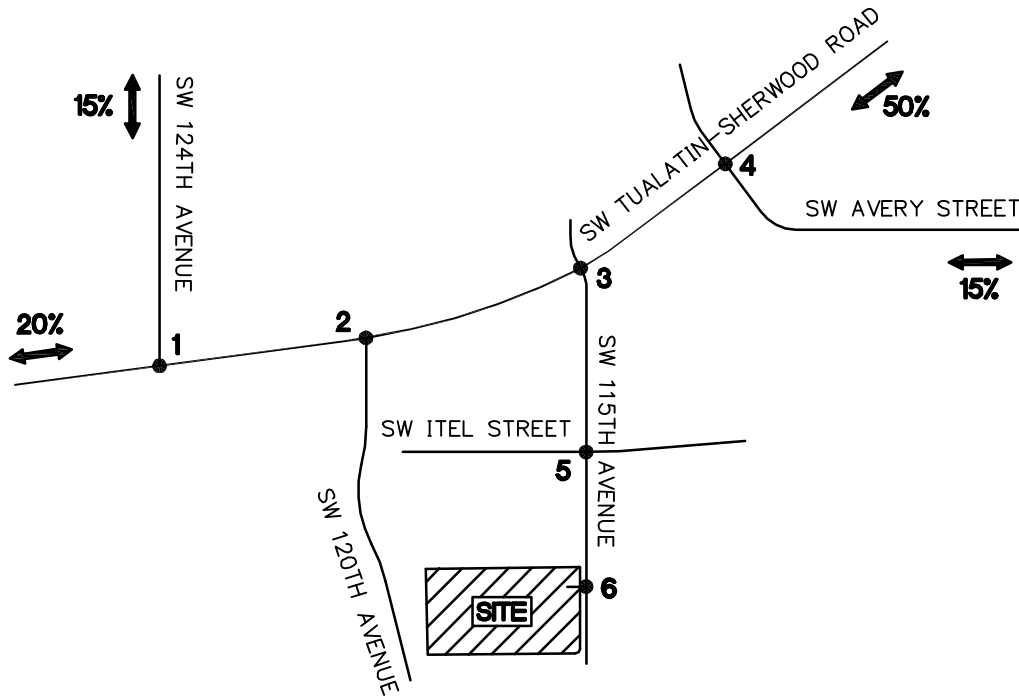
MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

FIGURE
8B

© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

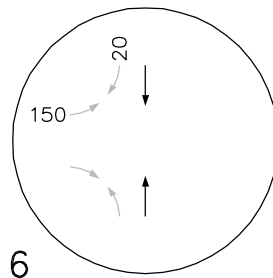
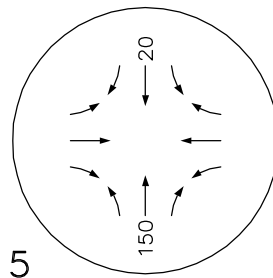


NOT TO SCALE



PM PEAK HOUR

Entering - 20
 Exiting - 150
 Total - 170



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

PROJECT TRIP
DISTRIBUTION + ASSIGNMENT -
PM PEAK HOUR

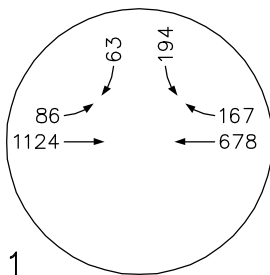
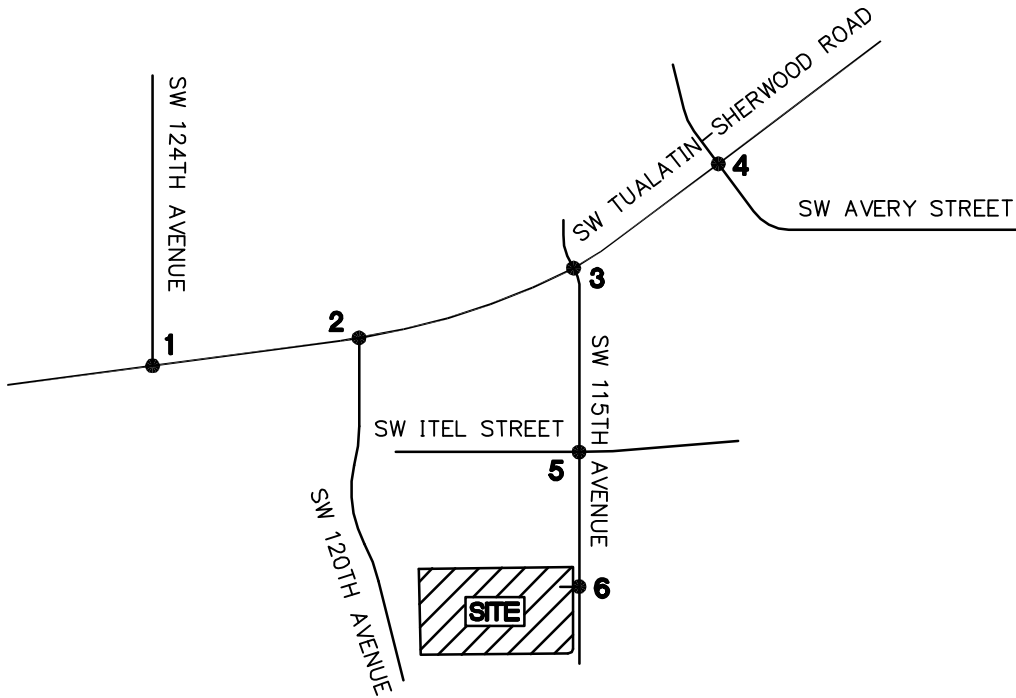
MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

FIGURE
8C

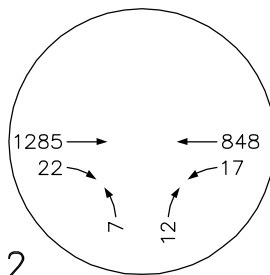
© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



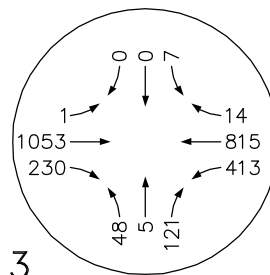
NOT TO SCALE



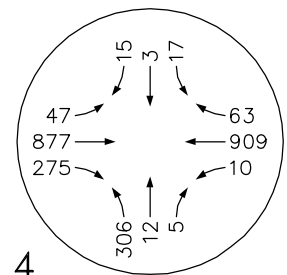
1



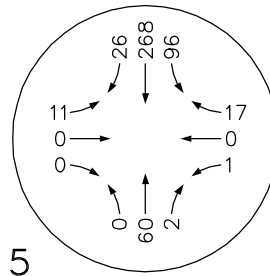
2



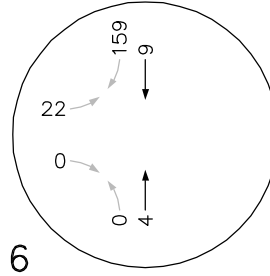
3



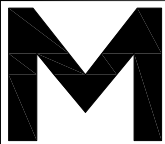
4



5



6



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
2160026.01

2017 POST-DEVELOPMENT
TRAFFIC VOLUMES -
AM PEAK HOUR

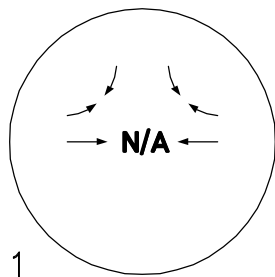
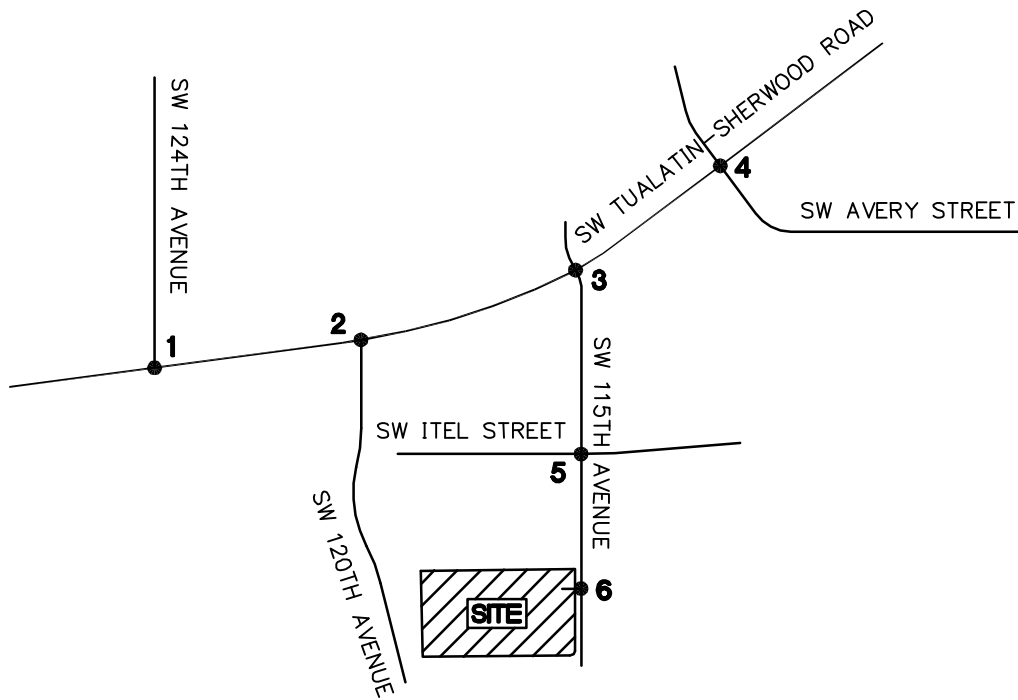
MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

FIGURE

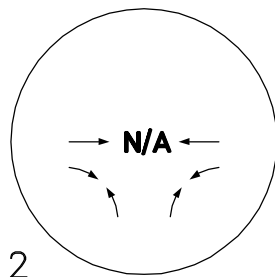
9A



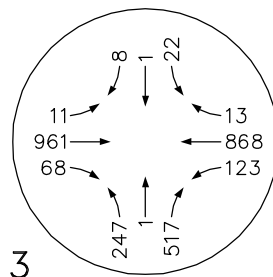
NOT TO SCALE



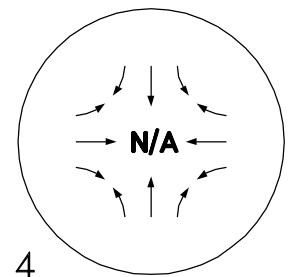
1



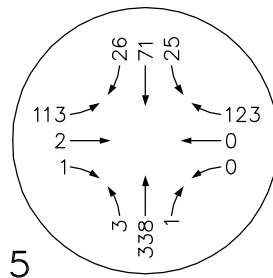
2



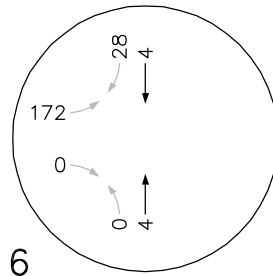
3



4



5



6



Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mcknze.com

Architecture - Interiors
Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

2017 POST-DEVELOPMENT
TRAFFIC VOLUMES -
MID-DAY PEAK HOUR

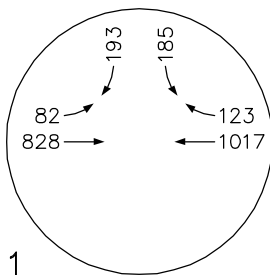
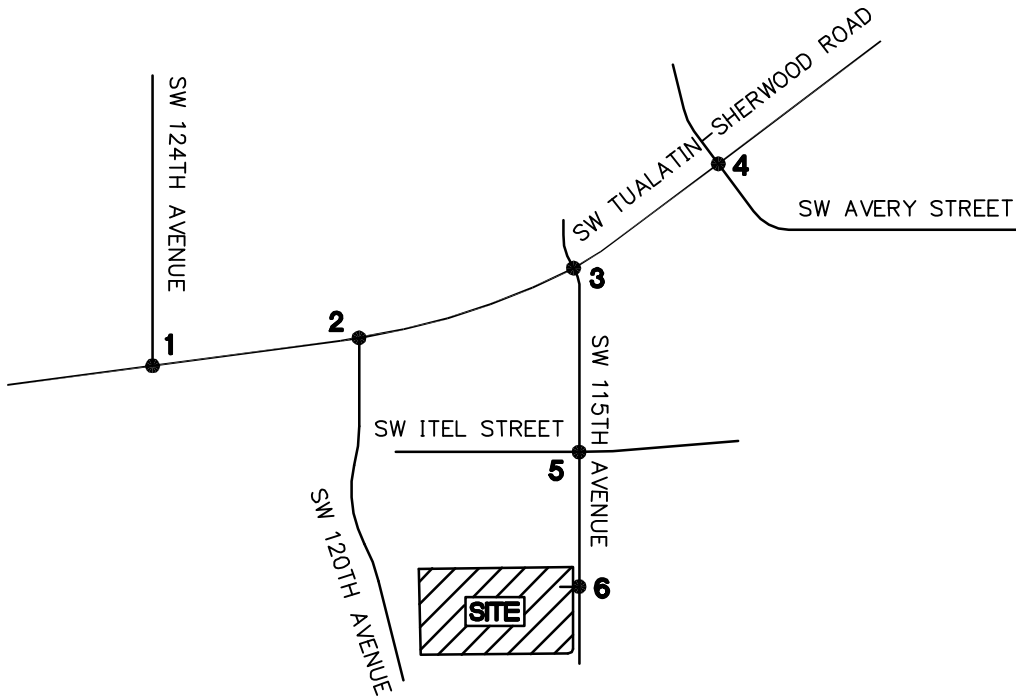
MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

FIGURE

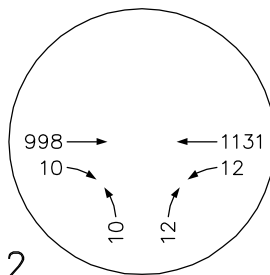
9B



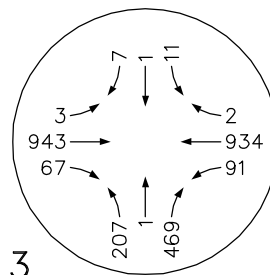
NOT TO SCALE



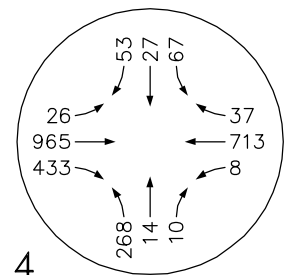
1



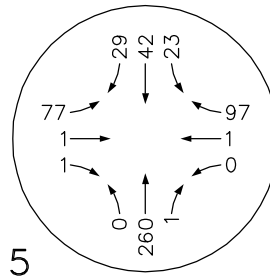
2



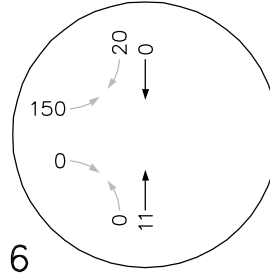
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

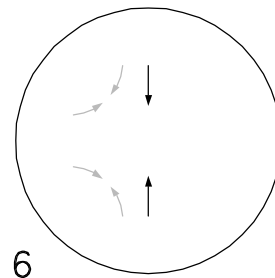
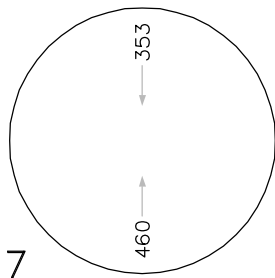
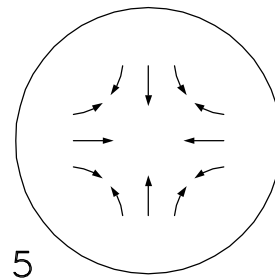
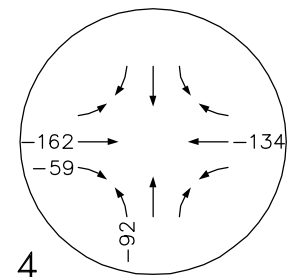
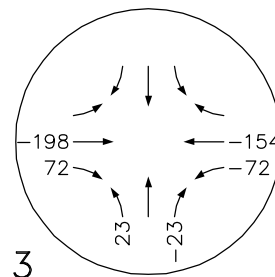
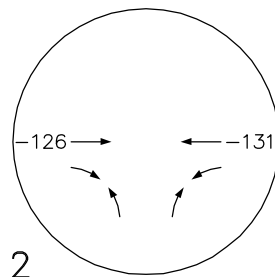
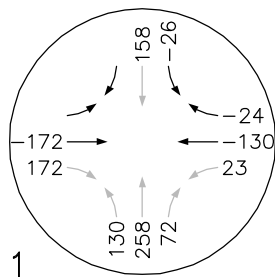
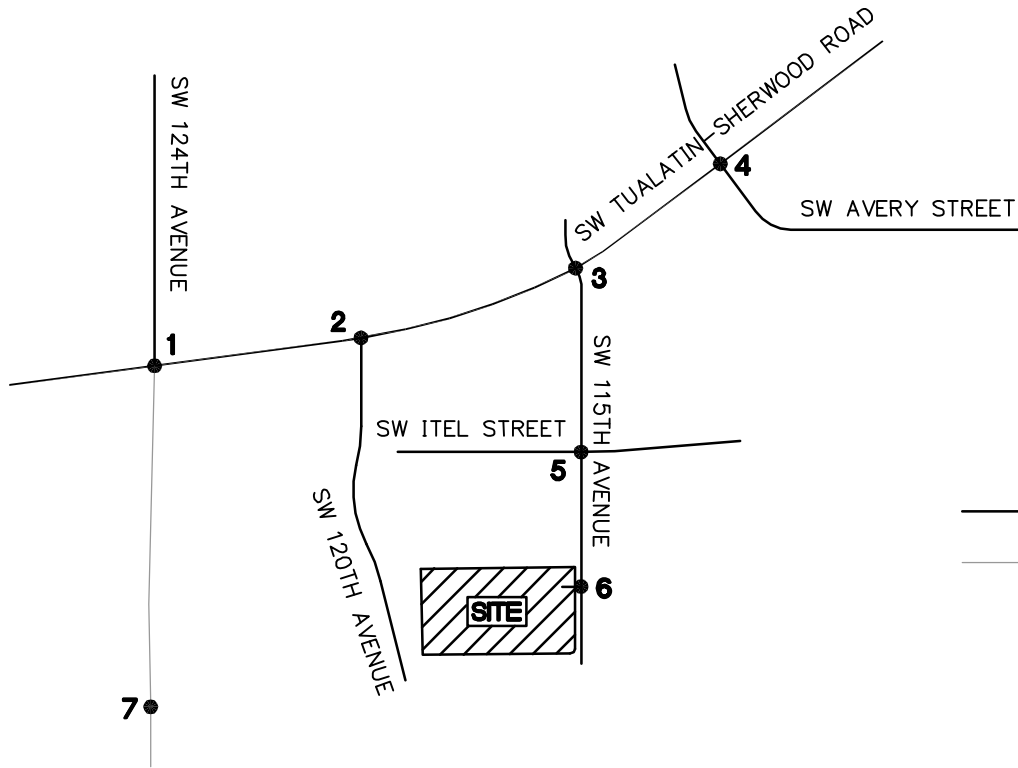
2017 POST-DEVELOPMENT
 TRAFFIC VOLUMES -
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 9C



NOT TO SCALE



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

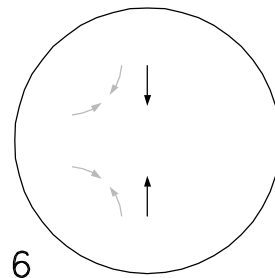
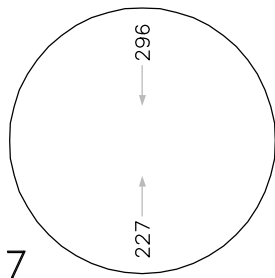
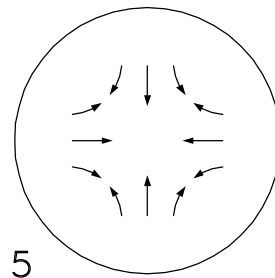
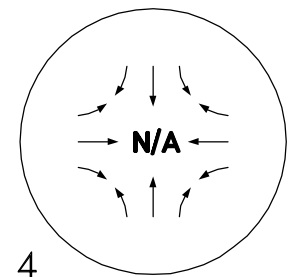
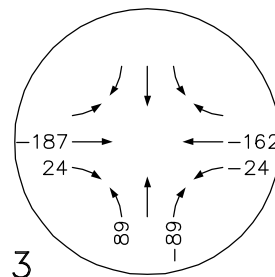
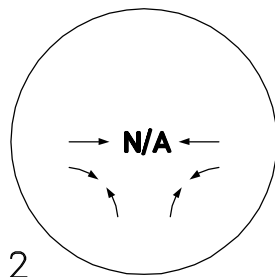
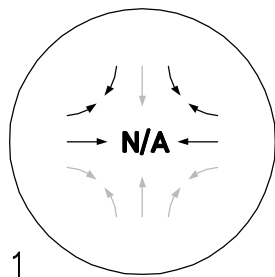
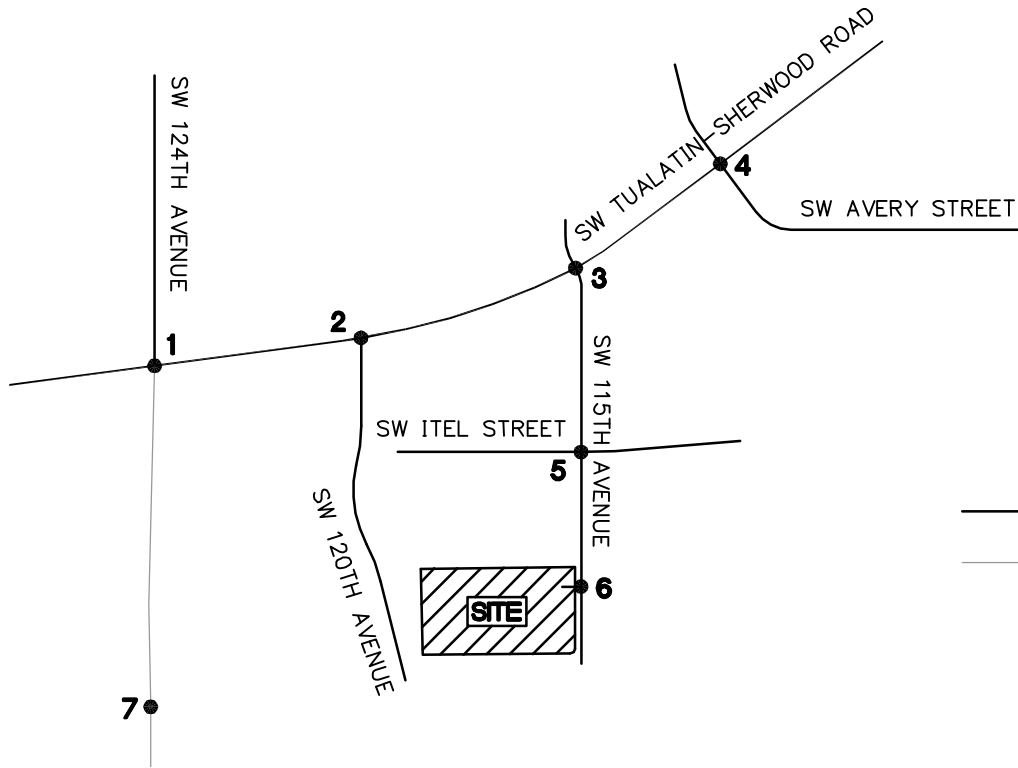
2017 FUTURE NETWORK
 WITH EXTENSION REROUTES -
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 10A



NOT TO SCALE



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

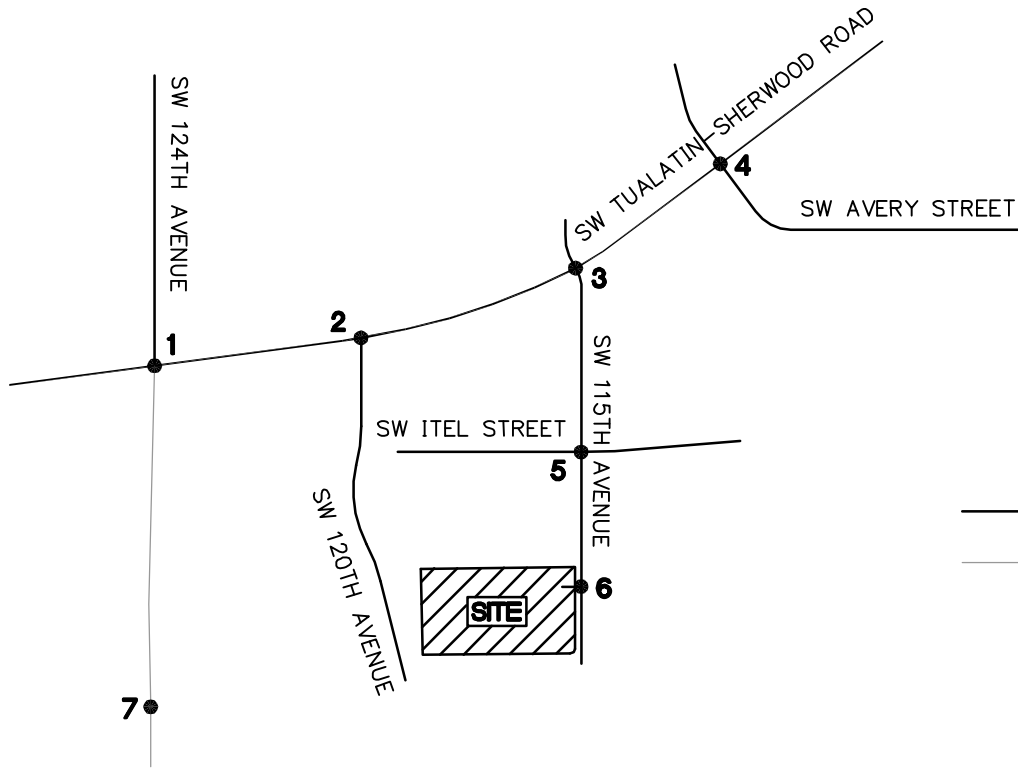
2017 FUTURE NETWORK
 WITH EXTENSION REROUTES -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

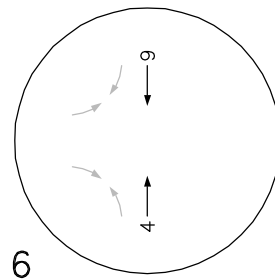
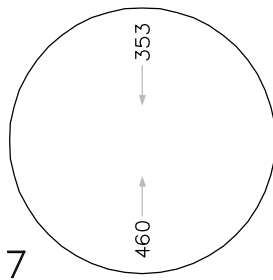
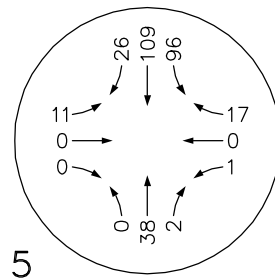
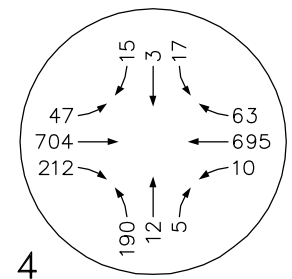
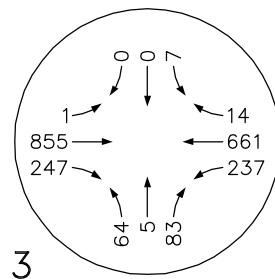
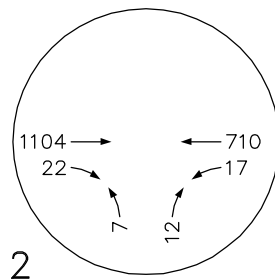
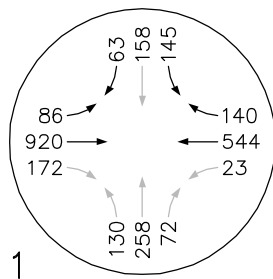
FIGURE
 10B



NOT TO SCALE



— Existing Network
 - - - Future Extension



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

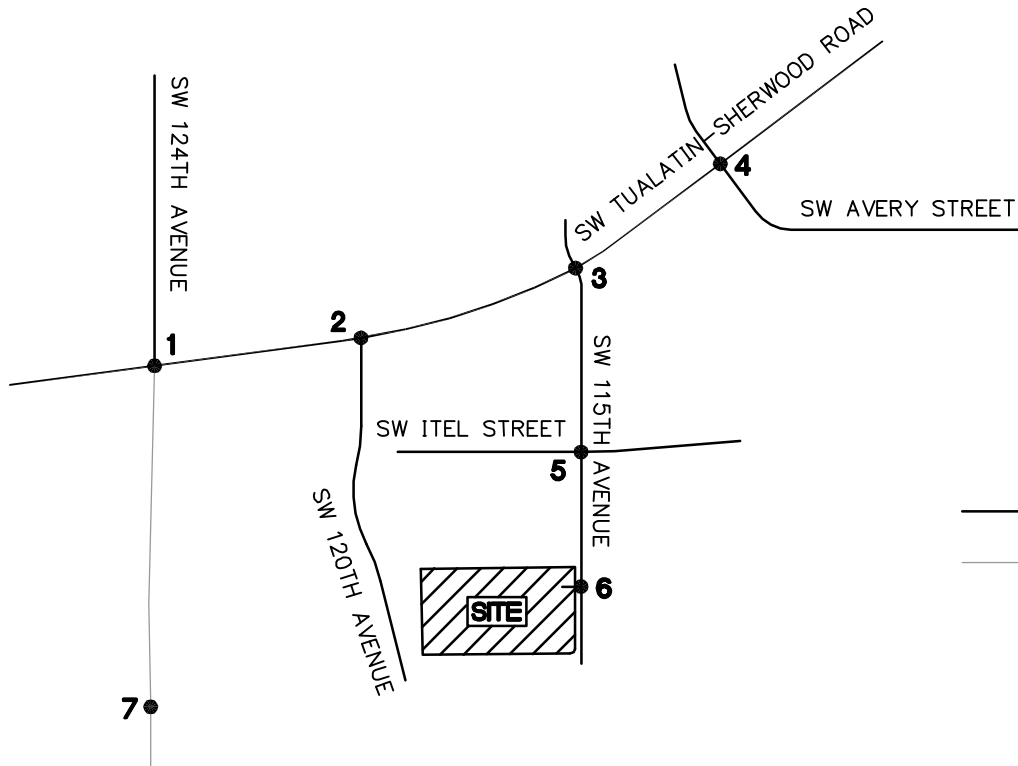
2017 PRE-DEVELOPMENT
 TRAFFIC WITH EXTENSION -
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

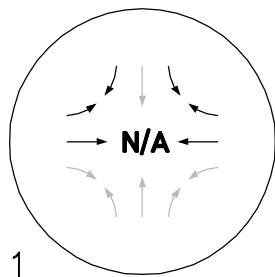
FIGURE
 11A



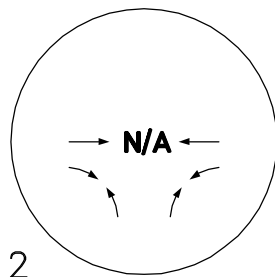
NOT TO SCALE



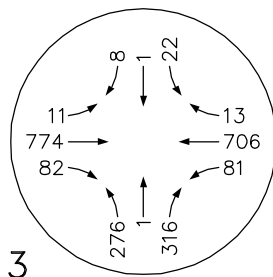
— Existing Network
 - - - Future Extension



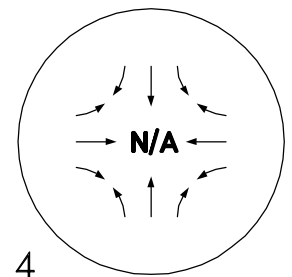
1



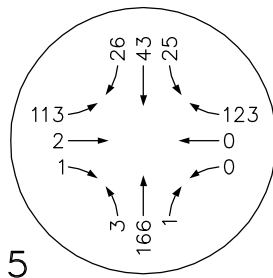
2



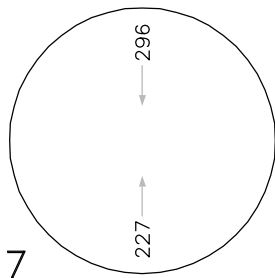
3



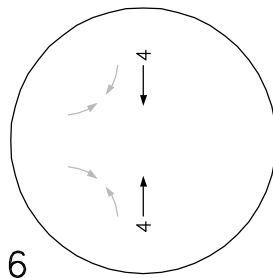
4



5



7



6



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

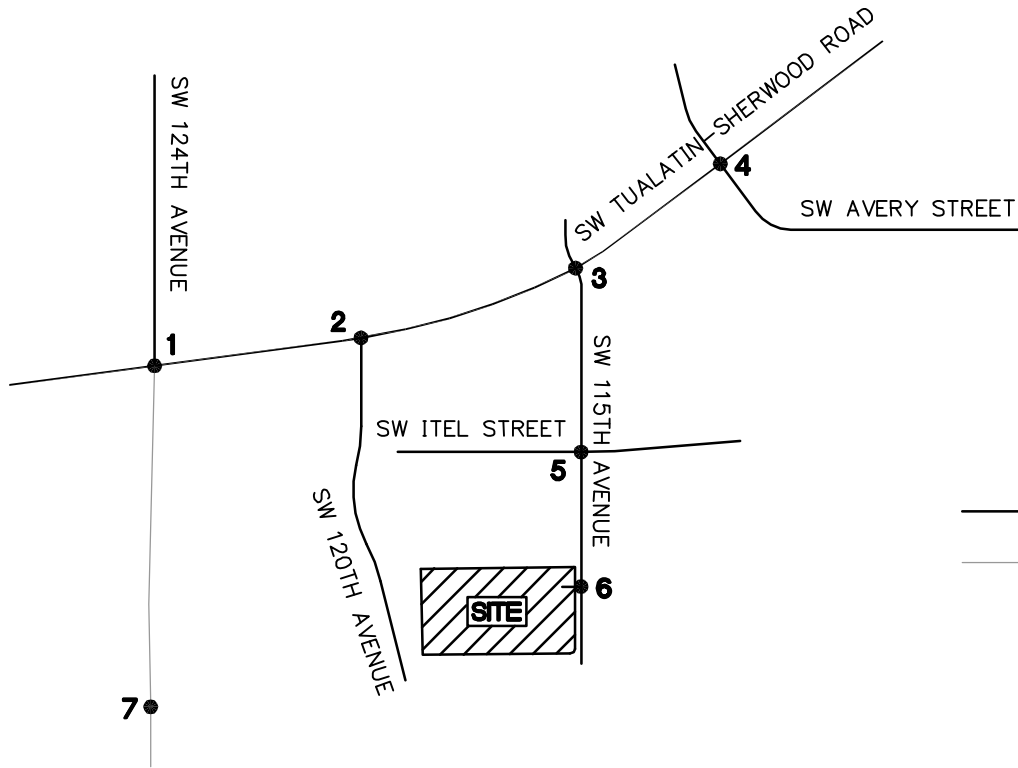
2017 PRE-DEVELOPMENT
 TRAFFIC WITH EXTENSION -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

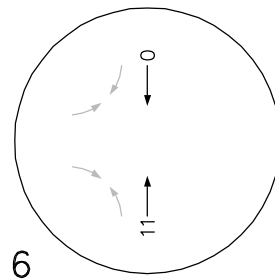
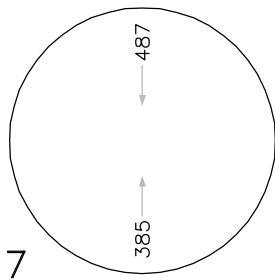
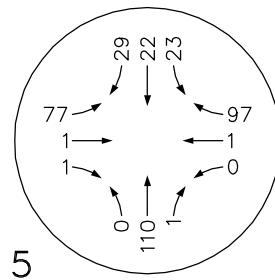
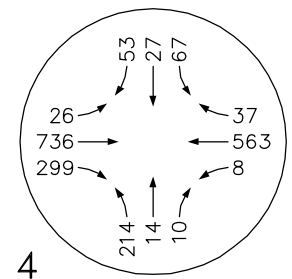
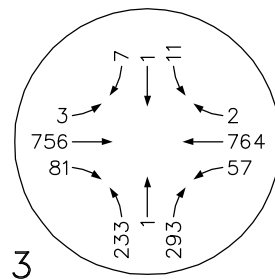
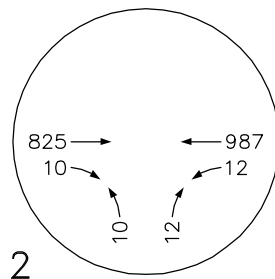
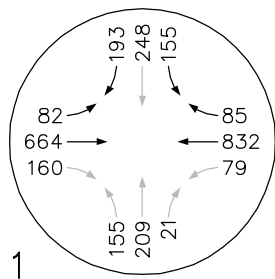
FIGURE
 11B



NOT TO SCALE



— Existing Network
 - - - Future Extension



M **Portland** 503.224.9580 **Vancouver** 360.695.7879 **Seattle** 206.749.9993
 www.mcknze.com
Architecture - Interiors
Planning - Engineering

MACKENZIE
 DATE: 4.4.2017
 DRAWN BY: JTJ
 CHECKED BY: BTA
 JOB NO:
 2160026.01

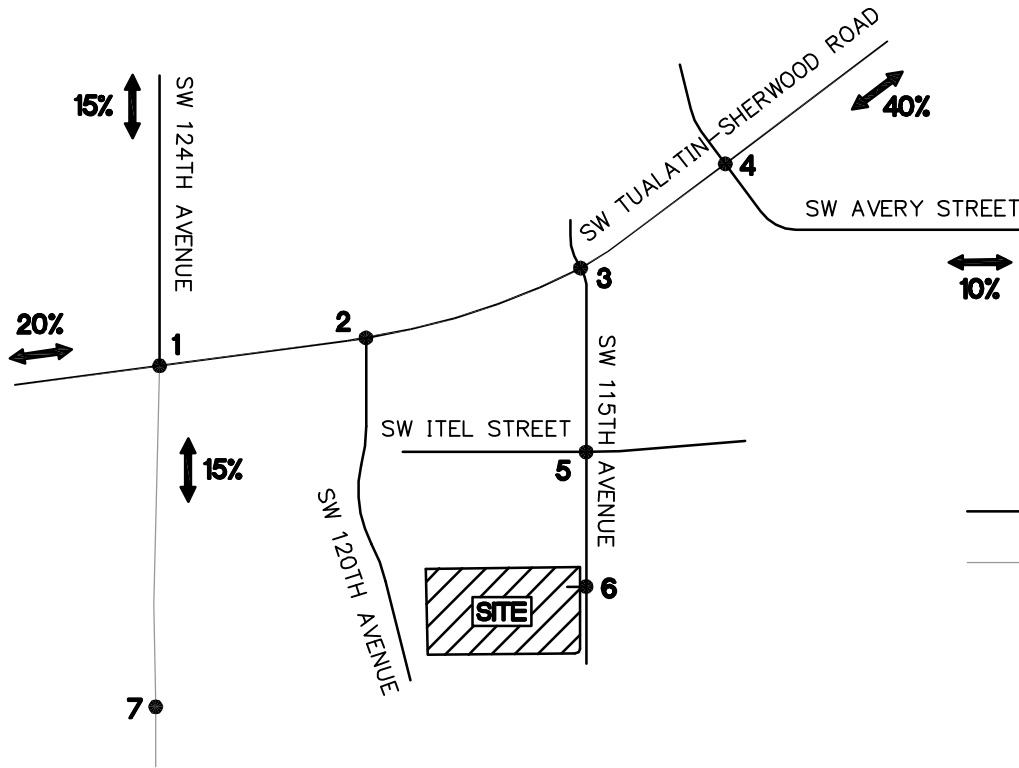
2017 PRE-DEVELOPMENT
TRAFFIC WITH EXTENSION -
PM PEAK HOUR
MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

FIGURE
11C

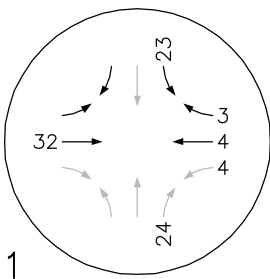
© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



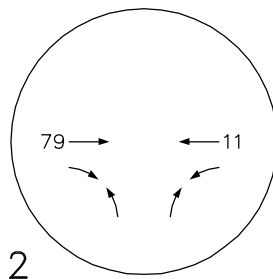
NOT TO SCALE



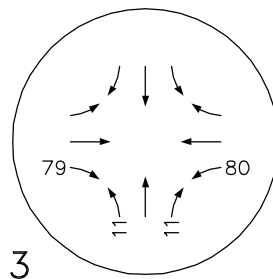
— Existing Network
 - - - Future Extension



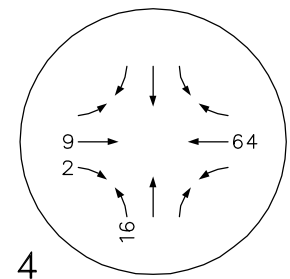
1



2



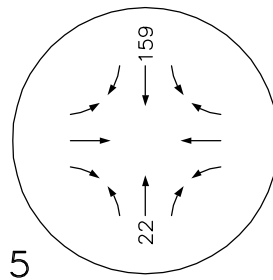
3



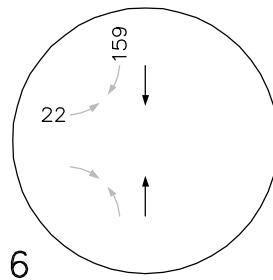
4

AM PEAK HOUR

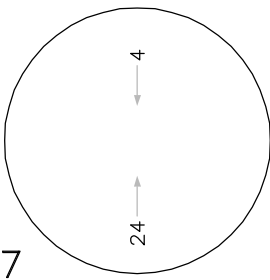
Entering - 159
 Exiting - 22
 Total - 181



5



6



7



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

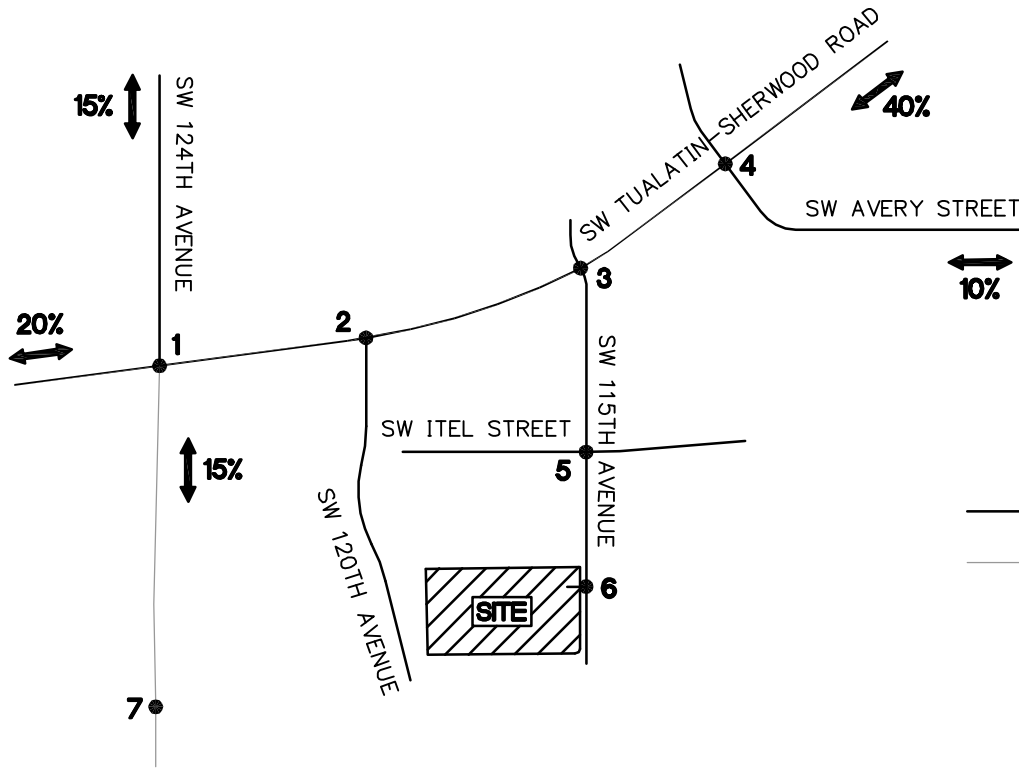
PROJECT TRIP DISTRIBUTION +
 ASSIGNMENT W/ EXTENSION -
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

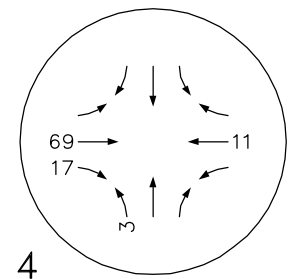
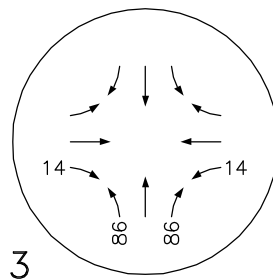
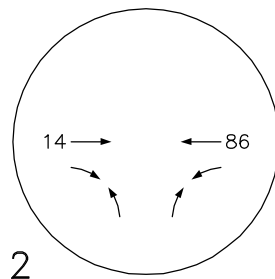
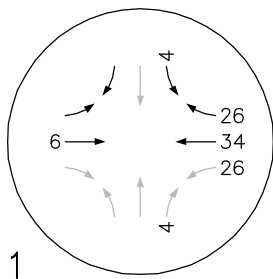
FIGURE
 12A



NOT TO SCALE

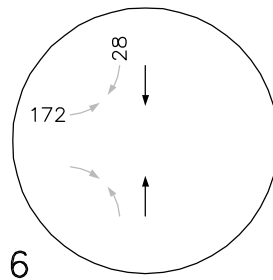
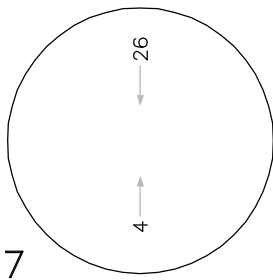
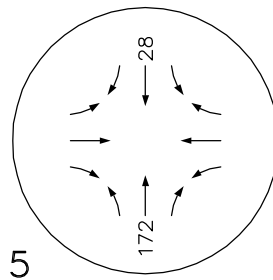


— Existing Network
 - - - Future Extension



MID-DAY PEAK HOUR

Entering - 28
 Exiting - 172
 Total - 200



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

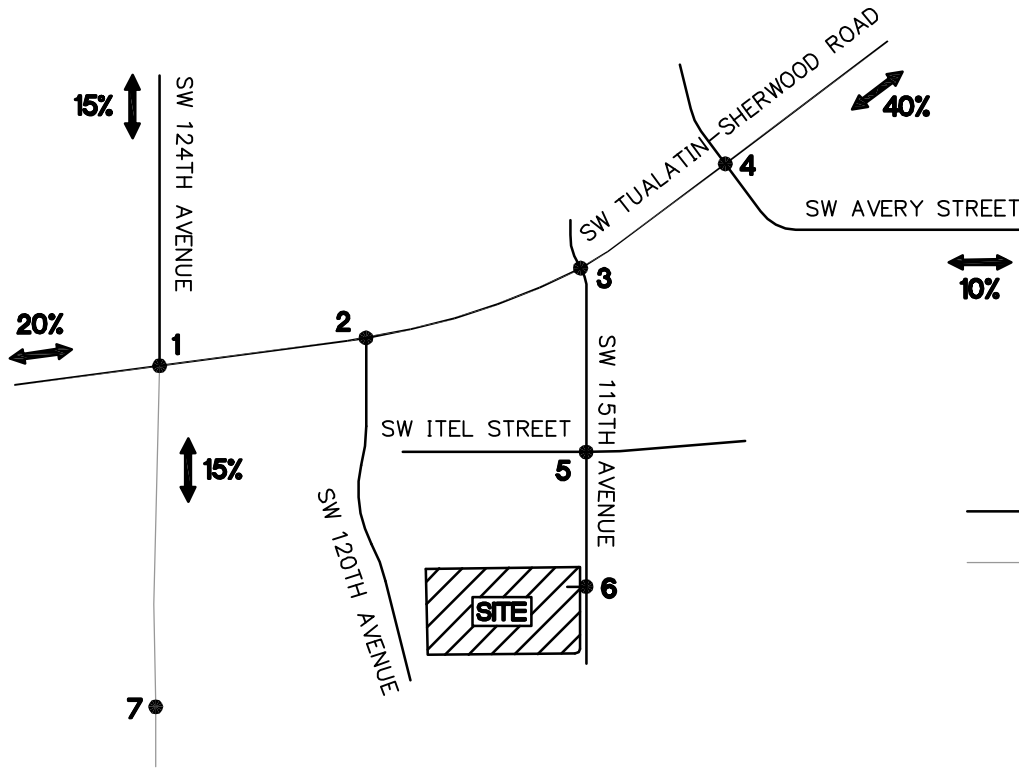
PROJECT TRIP DISTRIBUTION +
 ASSIGNMENT W/ EXTENSION -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

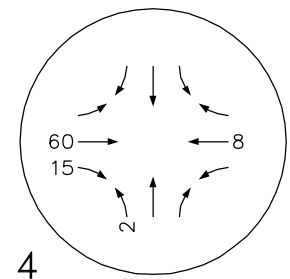
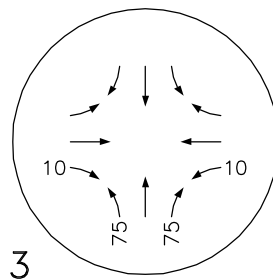
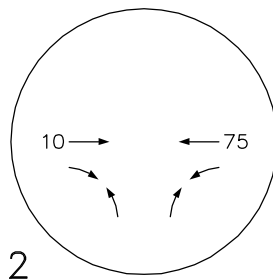
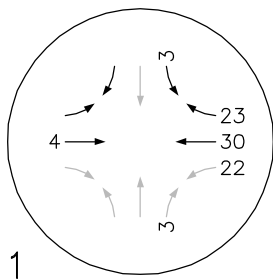
FIGURE
 12B



NOT TO SCALE

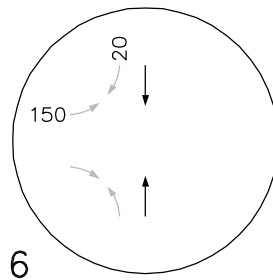
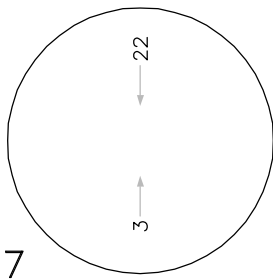
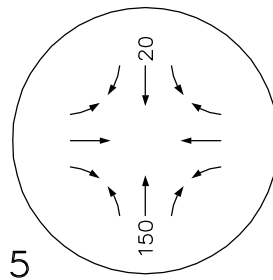


— Existing Network
 - - - Future Extension



PM PEAK HOUR

Entering - 20
 Exiting - 150
 Total - 170



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

PROJECT TRIP DISTRIBUTION +
 ASSIGNMENT W/ EXTENSION -
 PM PEAK HOUR

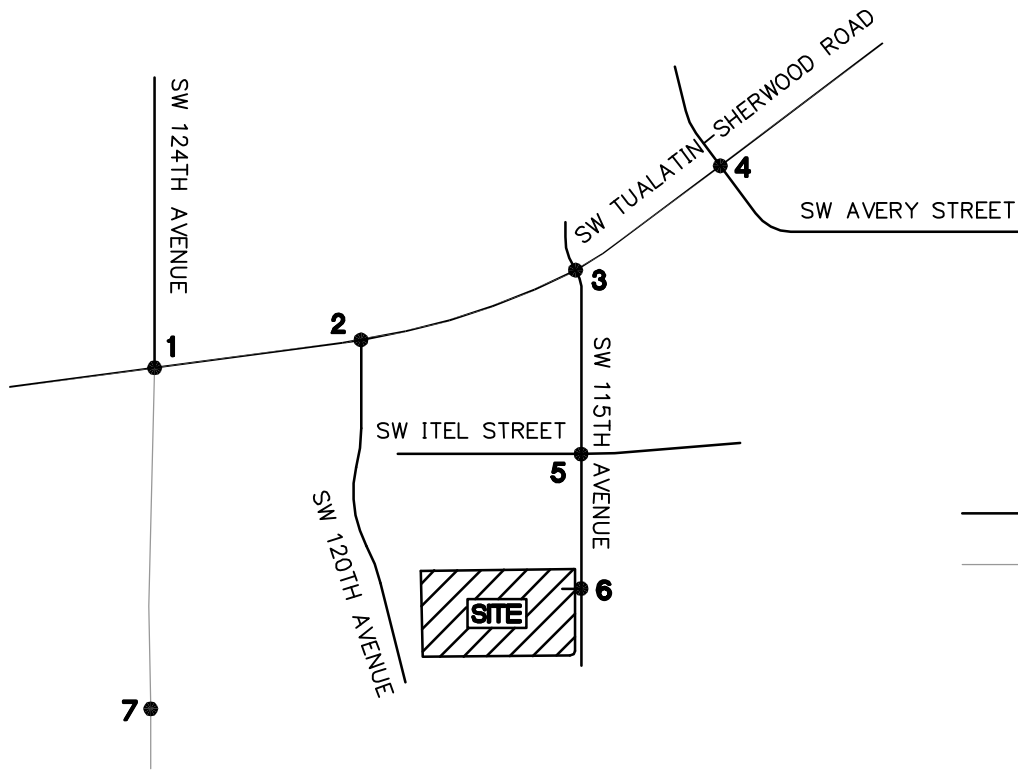
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 12C

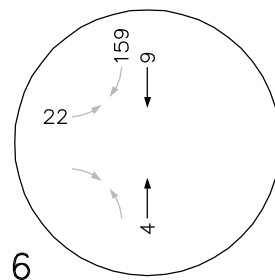
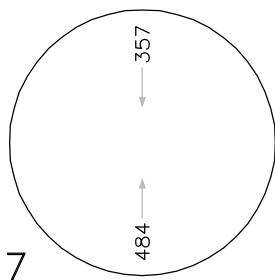
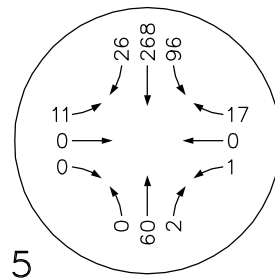
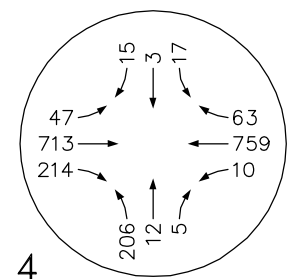
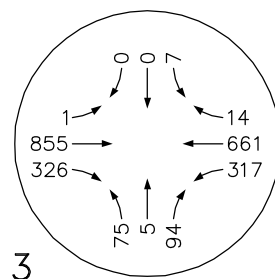
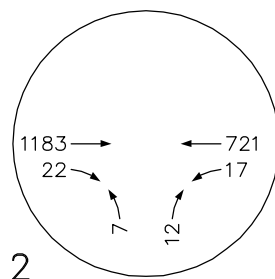
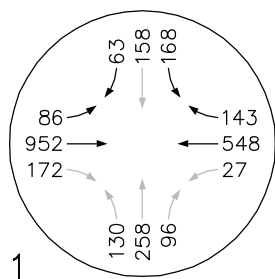
© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



NOT TO SCALE

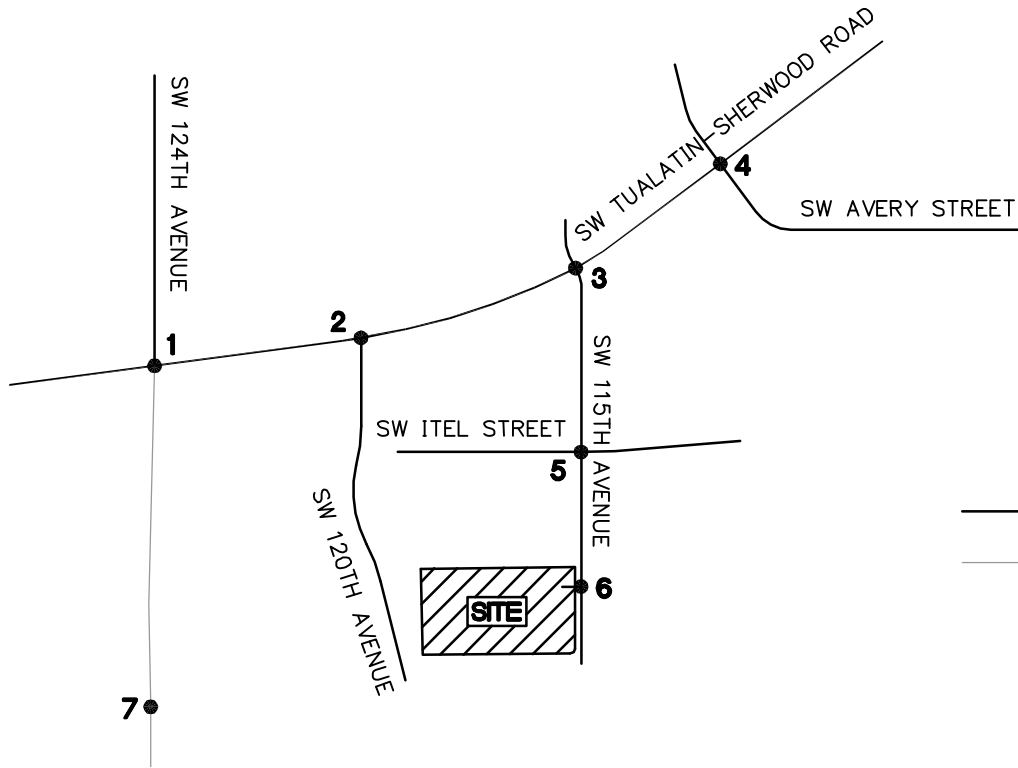


— Existing Network
 - - - Future Extension

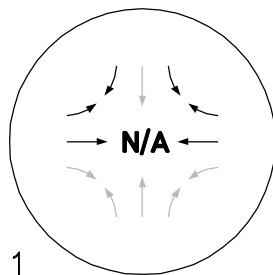




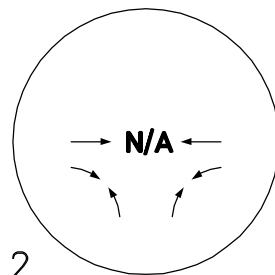
NOT TO SCALE



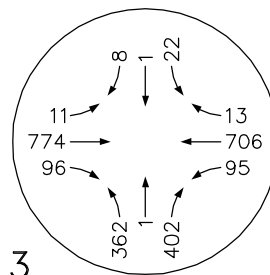
— Existing Network
 - - - Future Extension



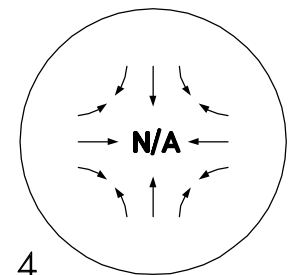
1



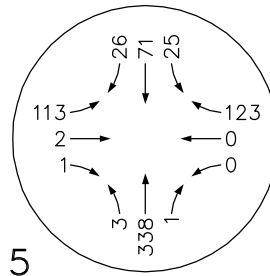
2



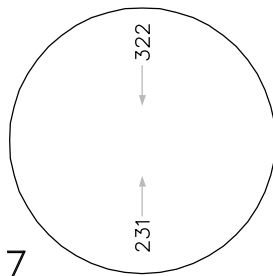
3



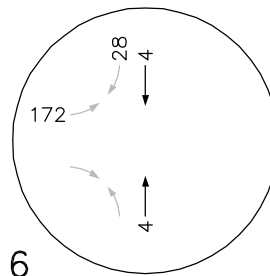
4



5



7



6



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

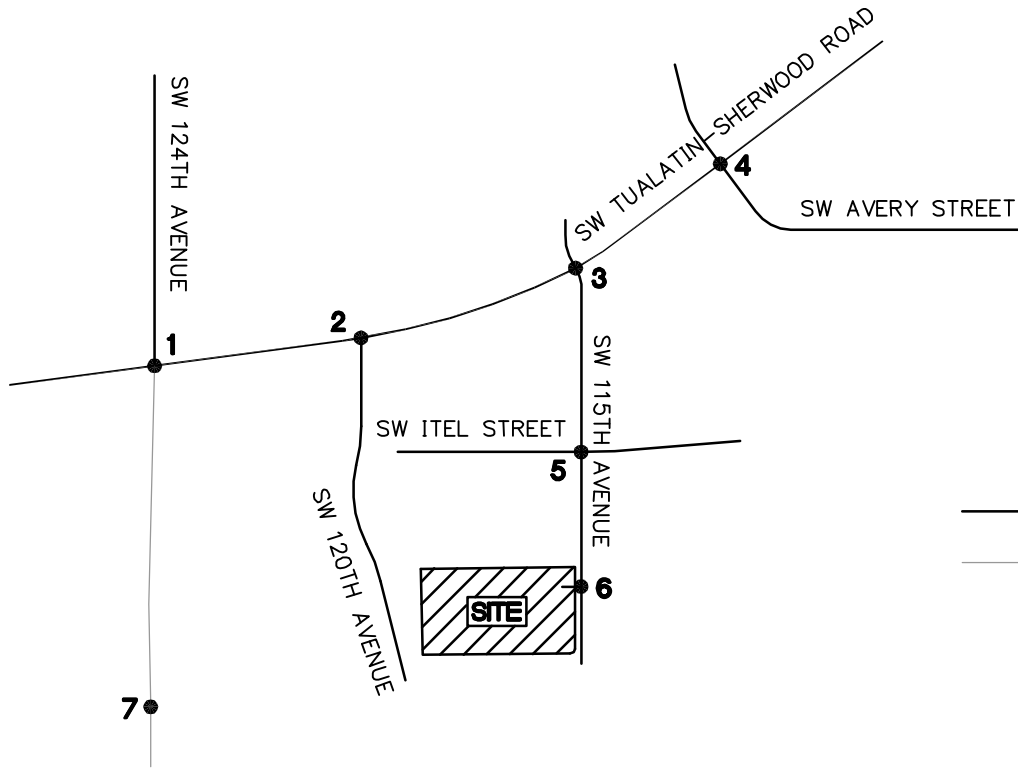
2017 POST-DEVELOPMENT
 TRAFFIC WITH EXTENSION -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

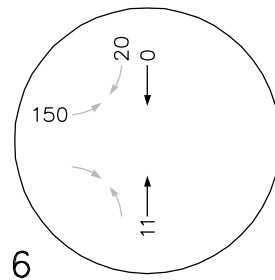
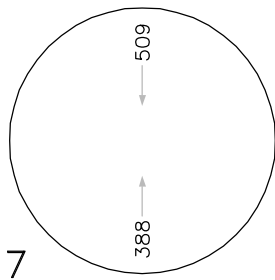
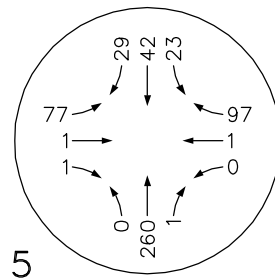
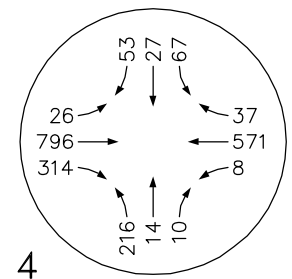
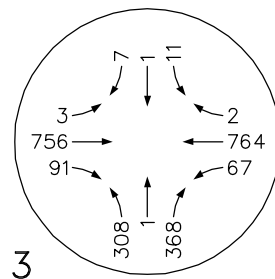
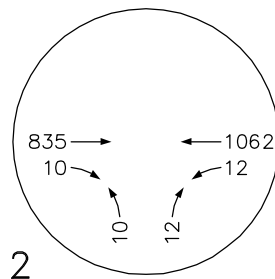
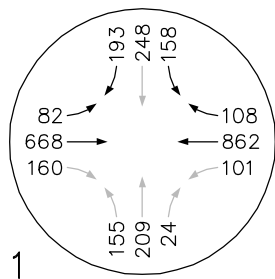
FIGURE
 13B



NOT TO SCALE



— Existing Network
 - - - Future Extension



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

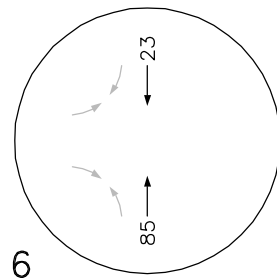
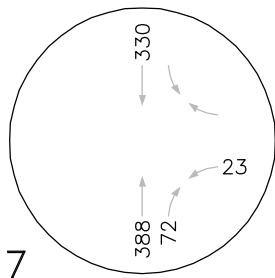
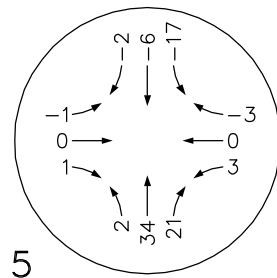
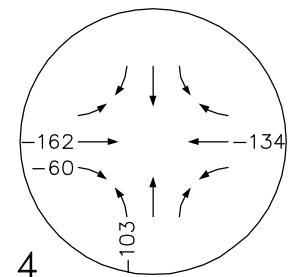
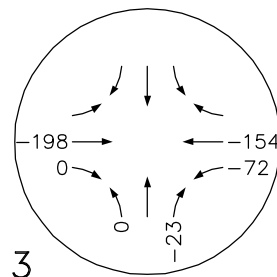
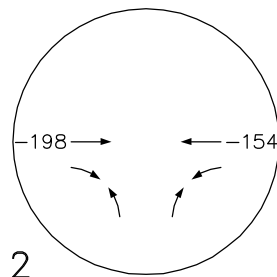
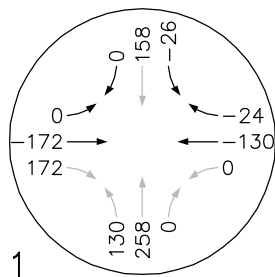
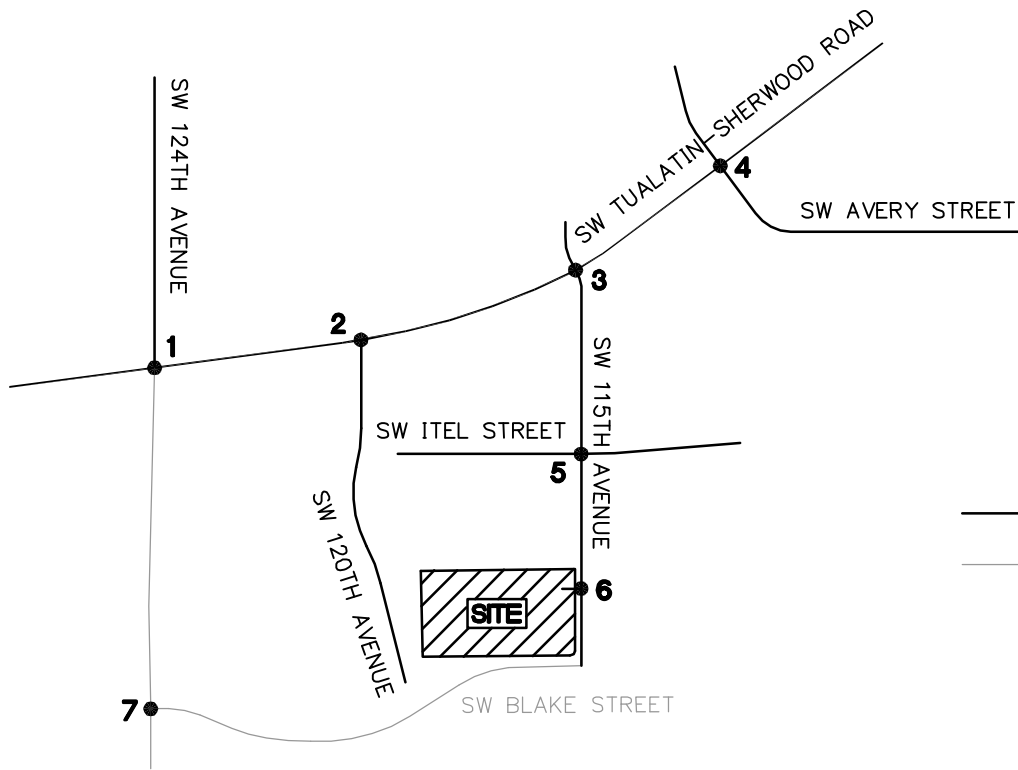
2017 POST-DEVELOPMENT
 TRAFFIC VOLUMES -
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 13C



NOT TO SCALE



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

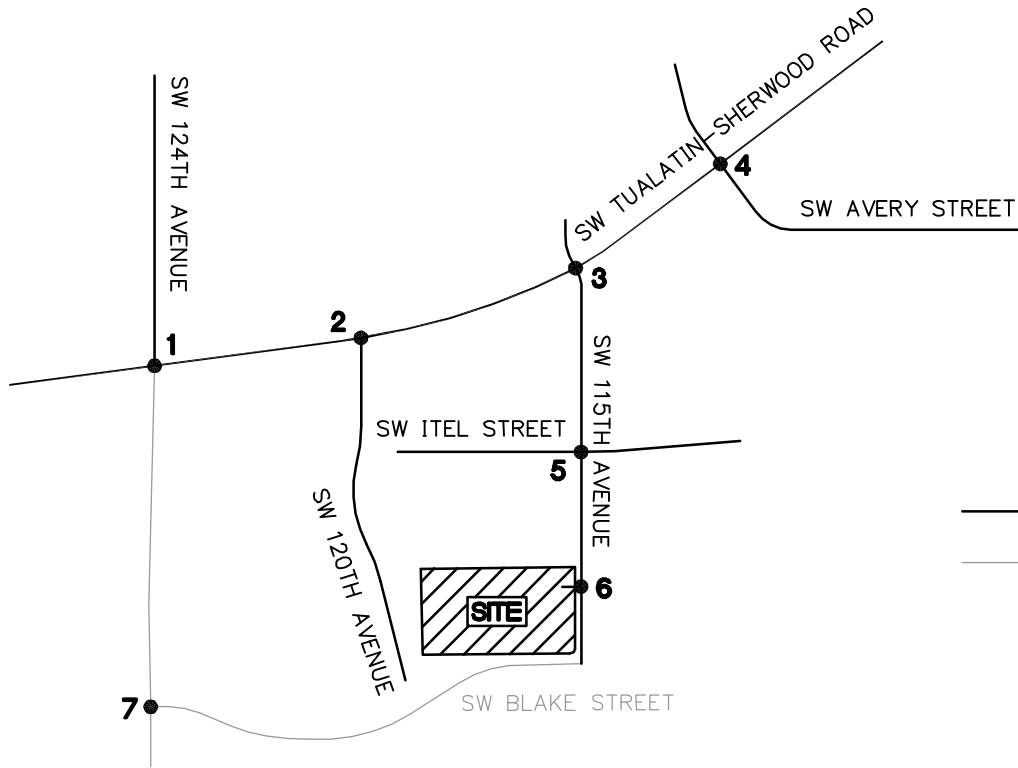
2017 FUTURE NETWORK
 WITH BLAKE REROUTES -
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

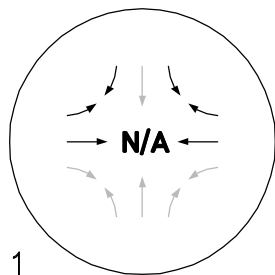
FIGURE
 14A



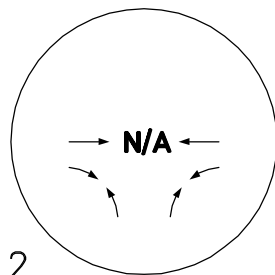
NOT TO SCALE



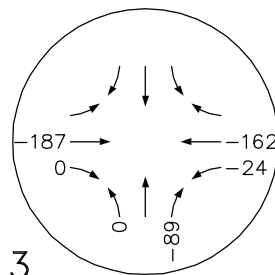
— Existing Network
 - - - Future Extension



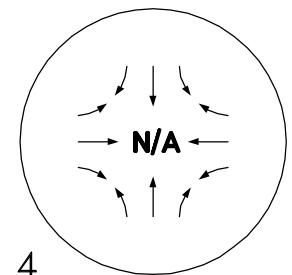
1



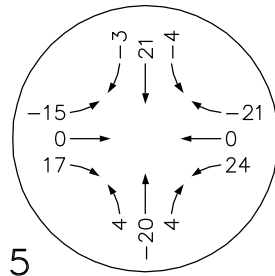
2



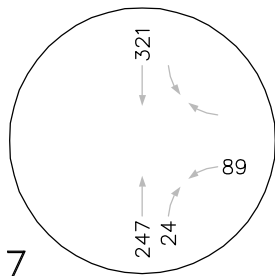
3



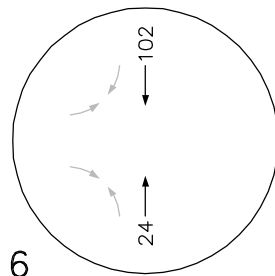
4



5



7



6



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

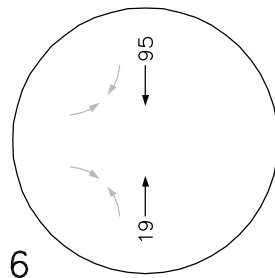
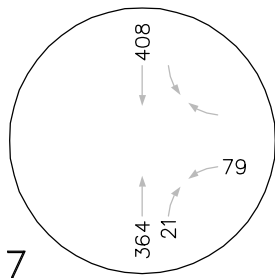
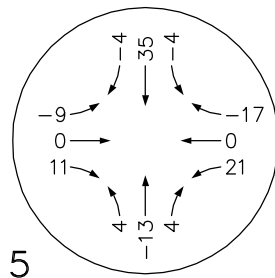
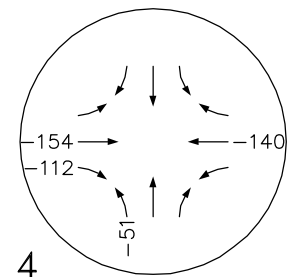
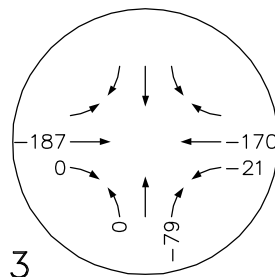
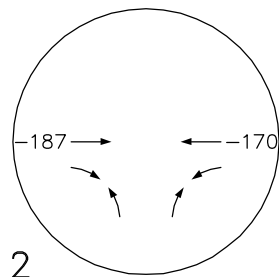
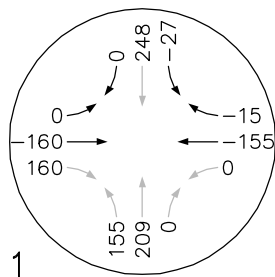
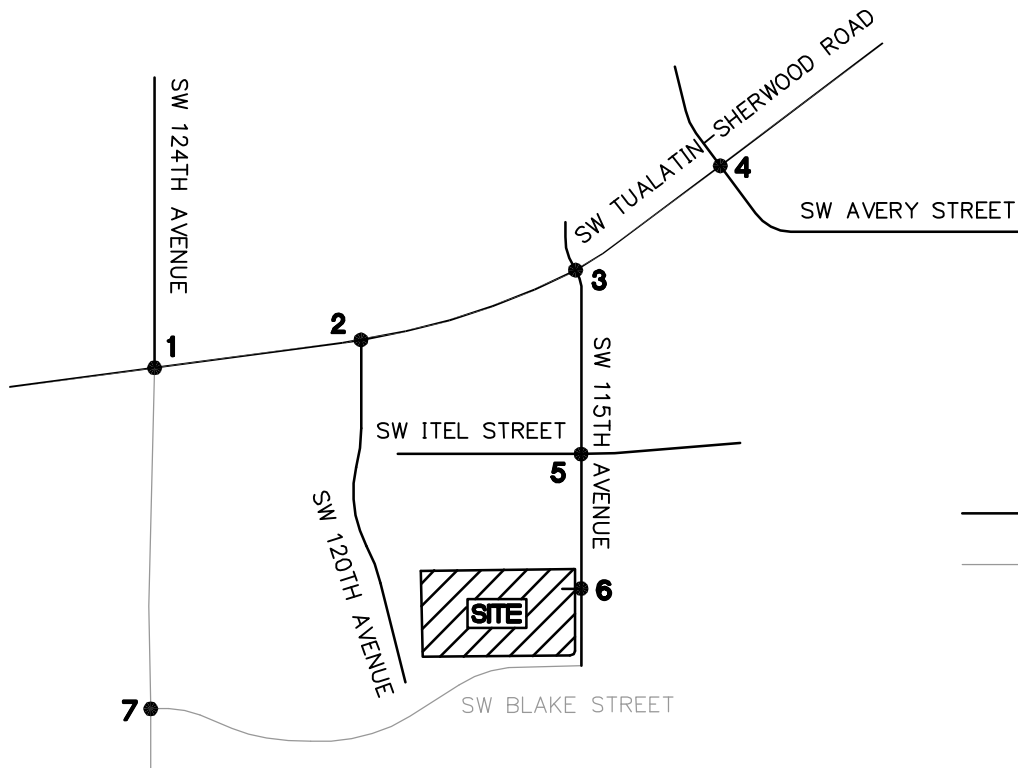
2017 FUTURE NETWORK
 WITH BLAKE REROUTES -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 14B



NOT TO SCALE



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

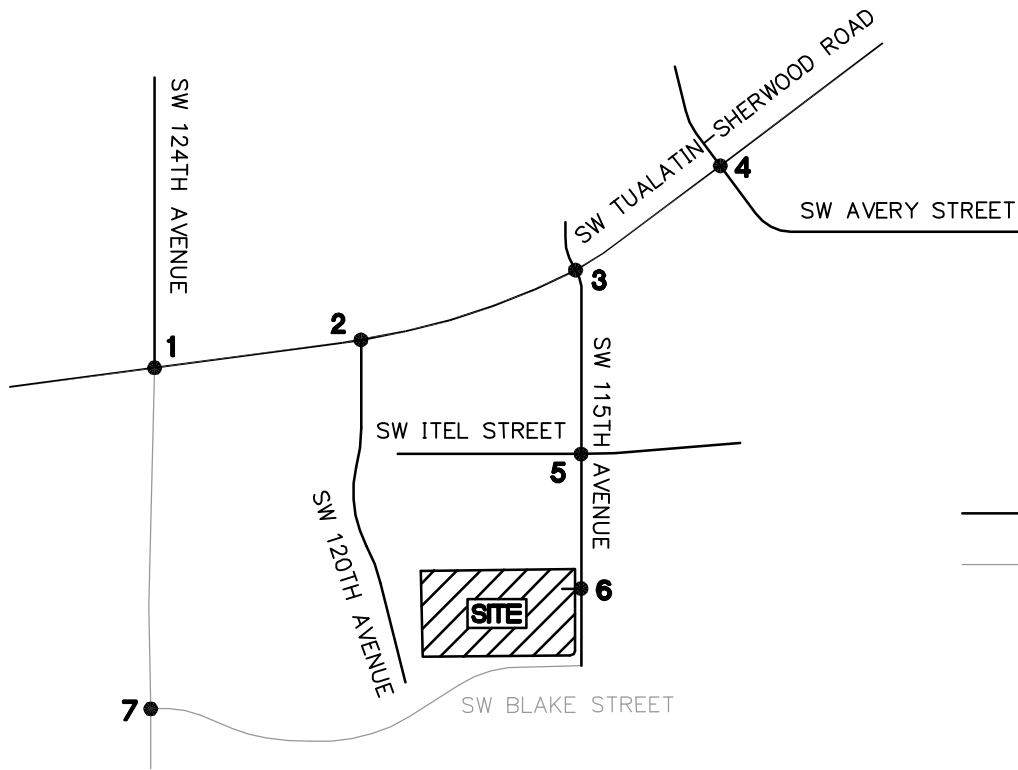
2017 FUTURE NETWORK
 WITH BLAKE REROUTES -
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

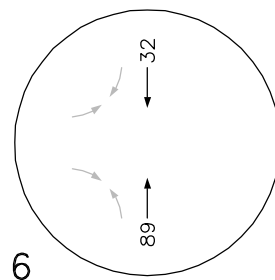
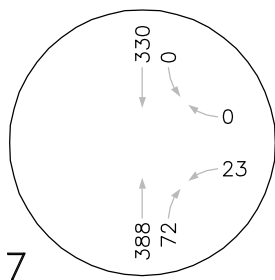
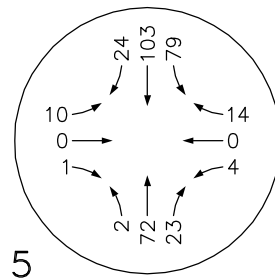
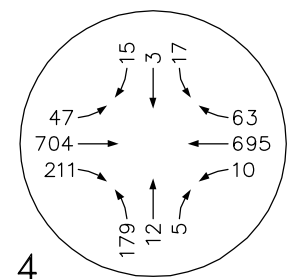
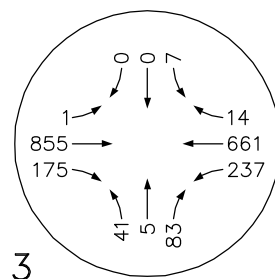
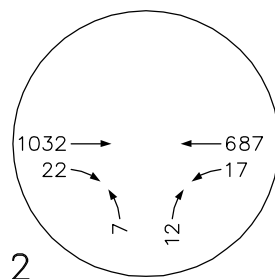
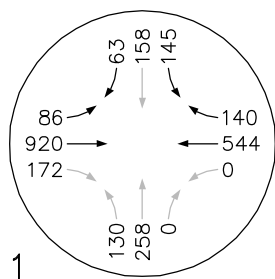
FIGURE
 14C



NOT TO SCALE

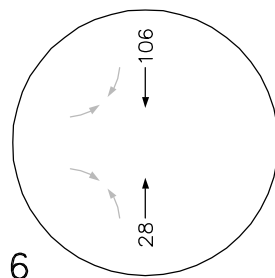
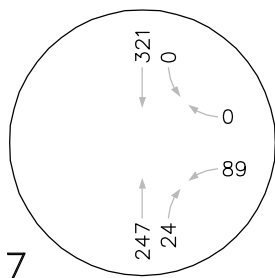
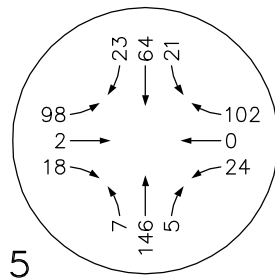
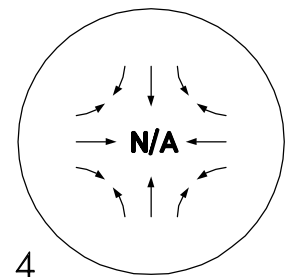
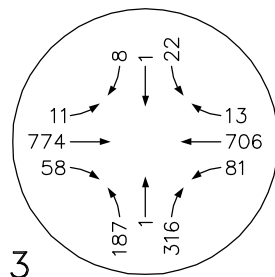
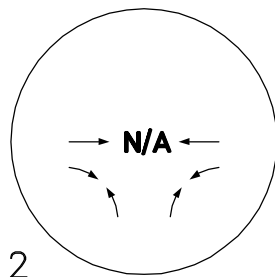
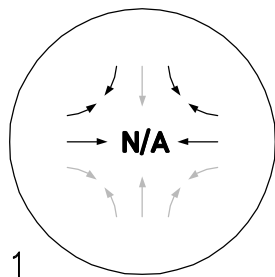
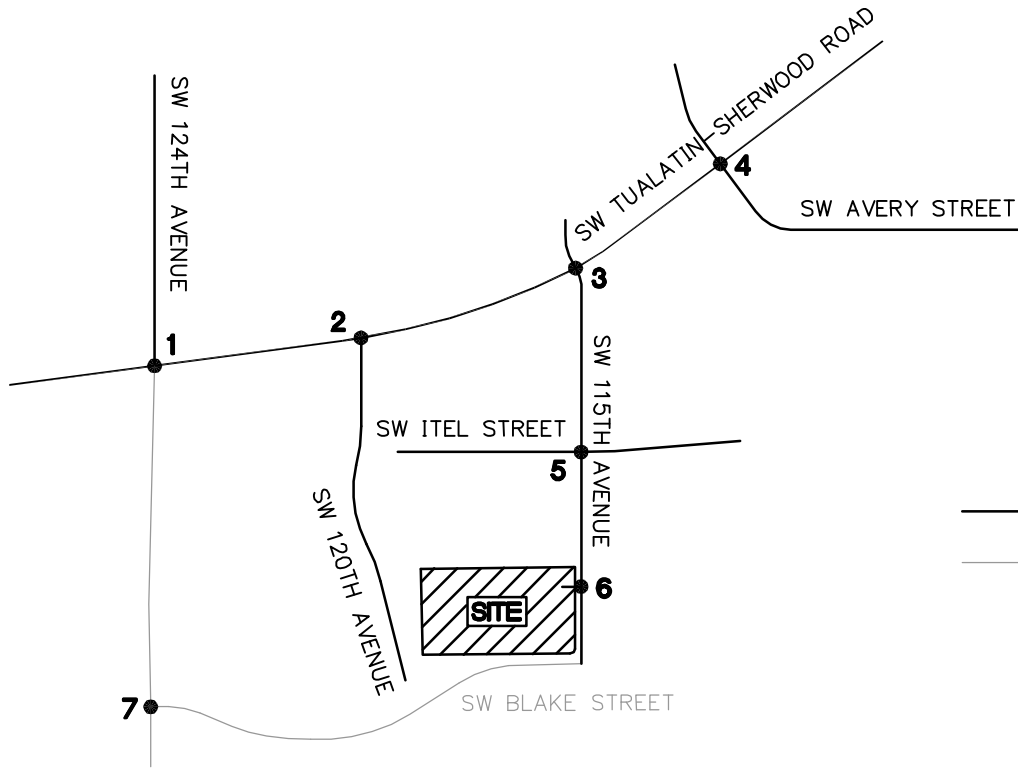


— Existing Network
 - - - Future Extension





NOT TO SCALE



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

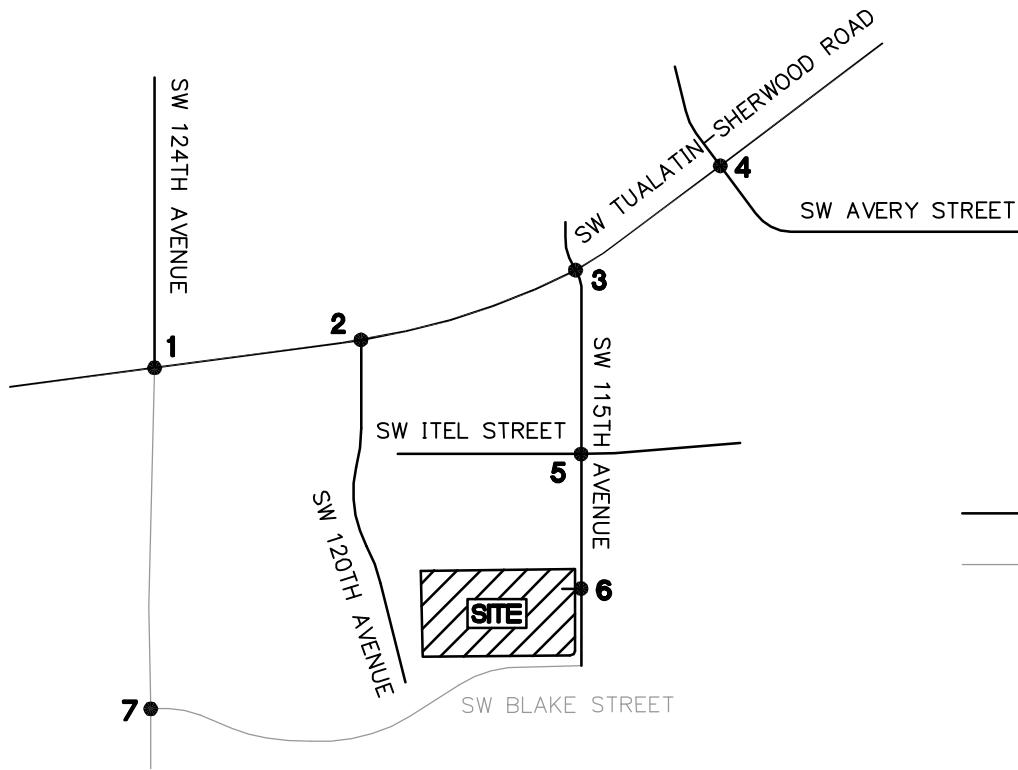
2017 PRE-DEVELOPMENT
 TRAFFIC WITH BLAKE -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

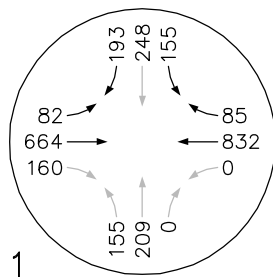
FIGURE
 15B



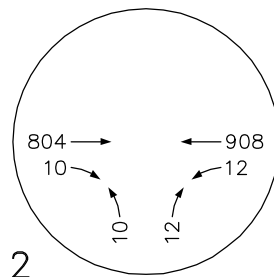
NOT TO SCALE



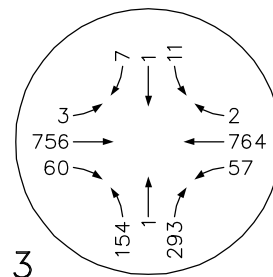
— Existing Network
 - - - Future Extension



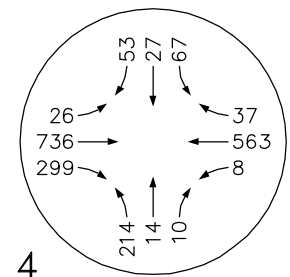
1



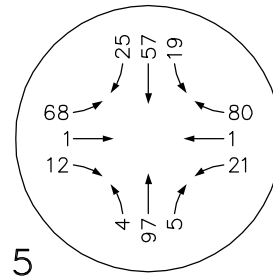
2



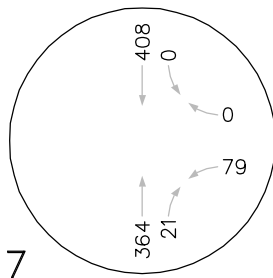
3



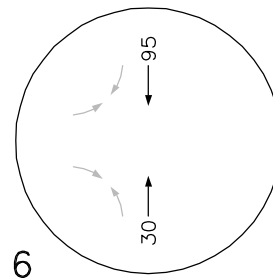
4



5



7



6



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

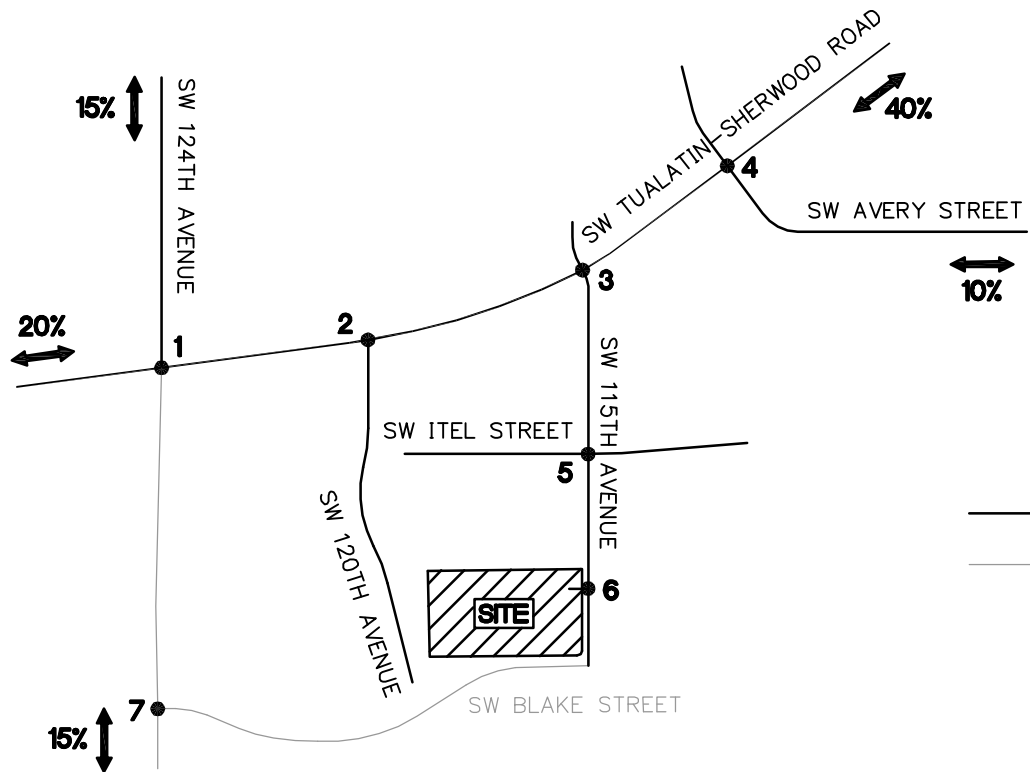
2017 PRE-DEVELOPMENT
 TRAFFIC WITH BLAKE -
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

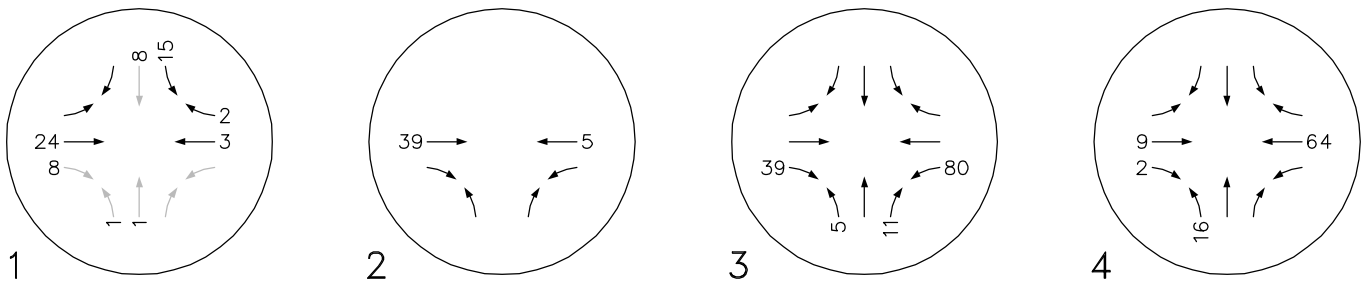
FIGURE
 15C



NOT TO SCALE

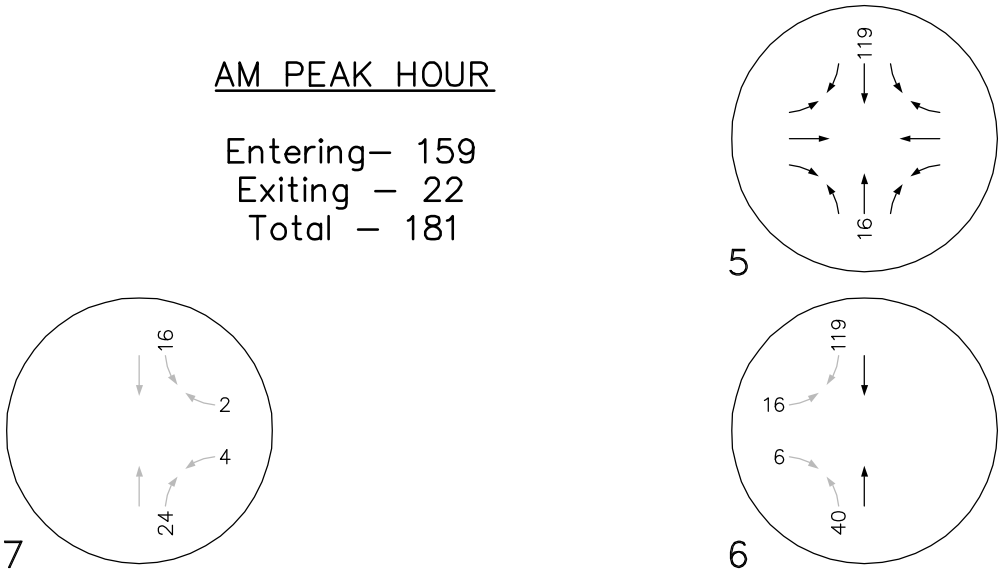


— Existing Network
 - - - Future Extension



AM PEAK HOUR

Entering - 159
 Exiting - 22
 Total - 181



Portland 503.224.9580
Vancouver 360.695.7879
Seattle 206.749.9993
 www.mcknze.com
Architecture - Interiors
Planning - Engineering

MACKENZIE
 DATE: 4.4.2017
 DRAWN BY: JTJ
 CHECKED BY: BTA
 JOB NO:
 2160026.01

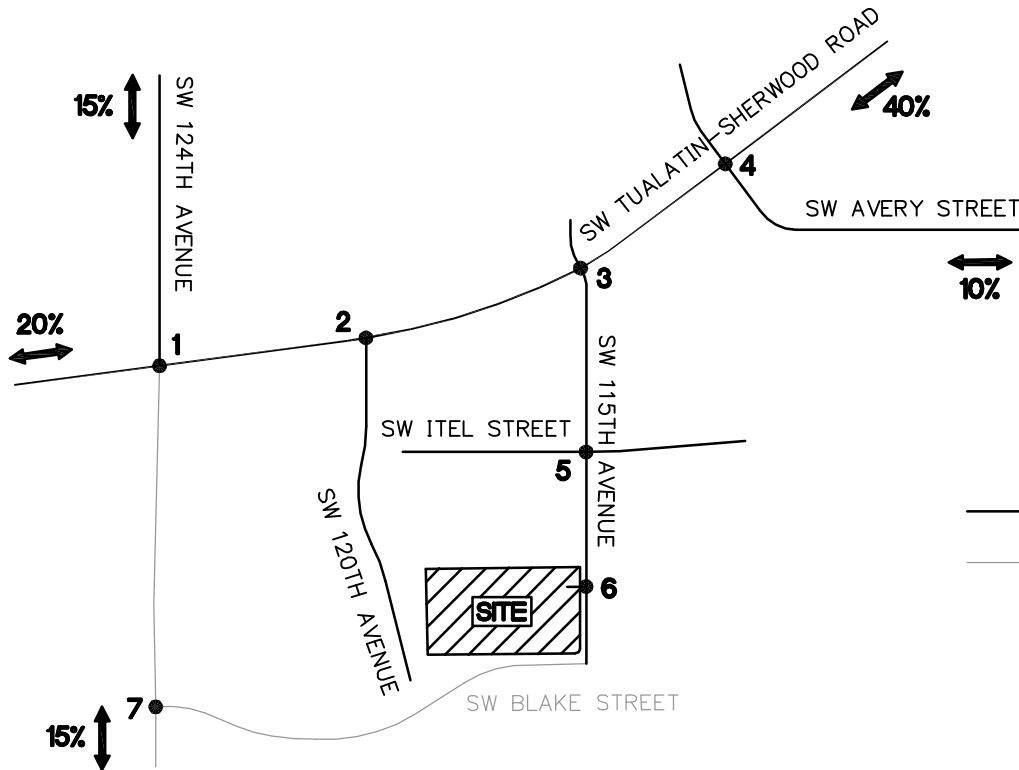
**PROJECT TRIP DISTRIBUTION +
 ASSIGNMENT WITH BLAKE -
 AM PEAK HOUR**
**MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON**

**FIGURE
 16A**

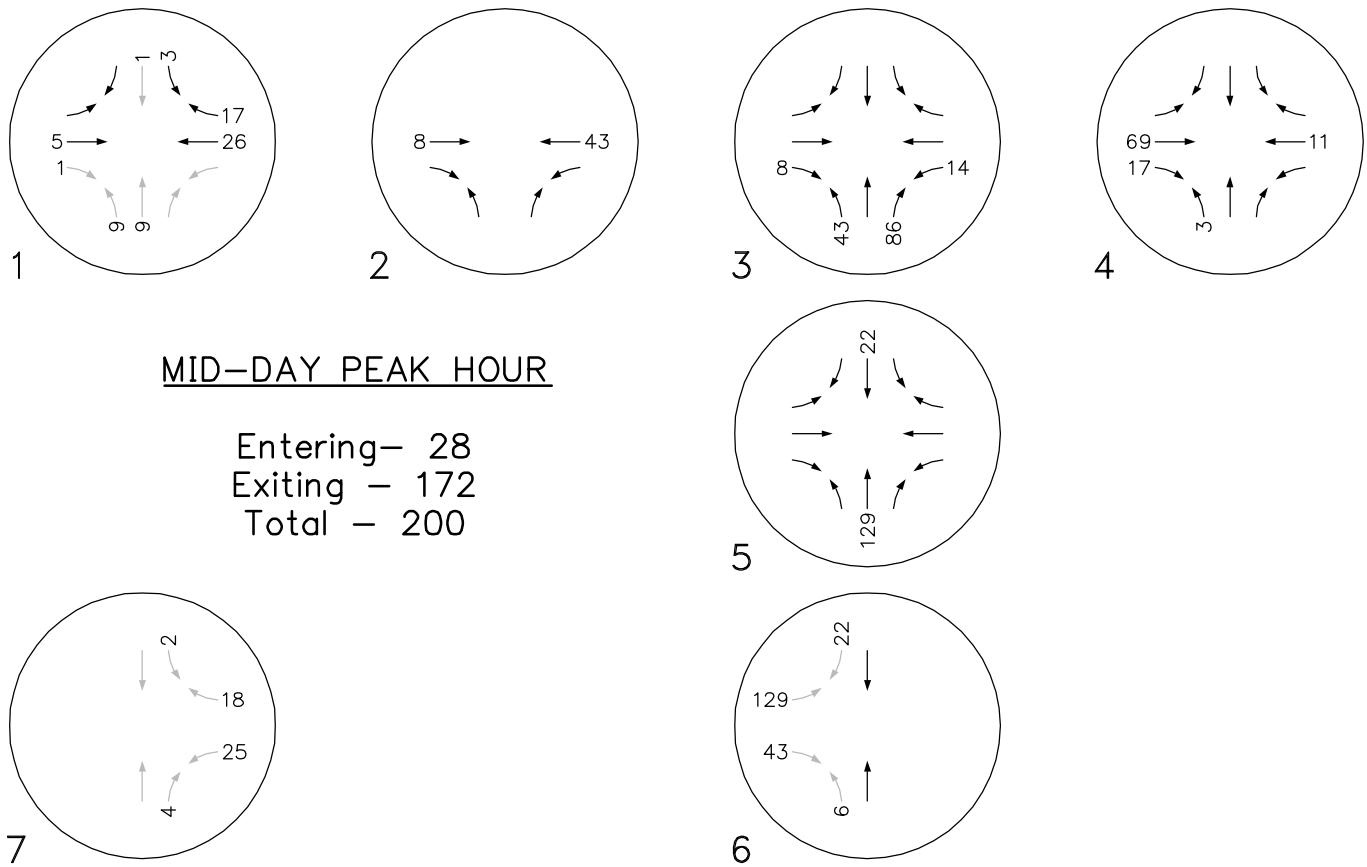
© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



NOT TO SCALE

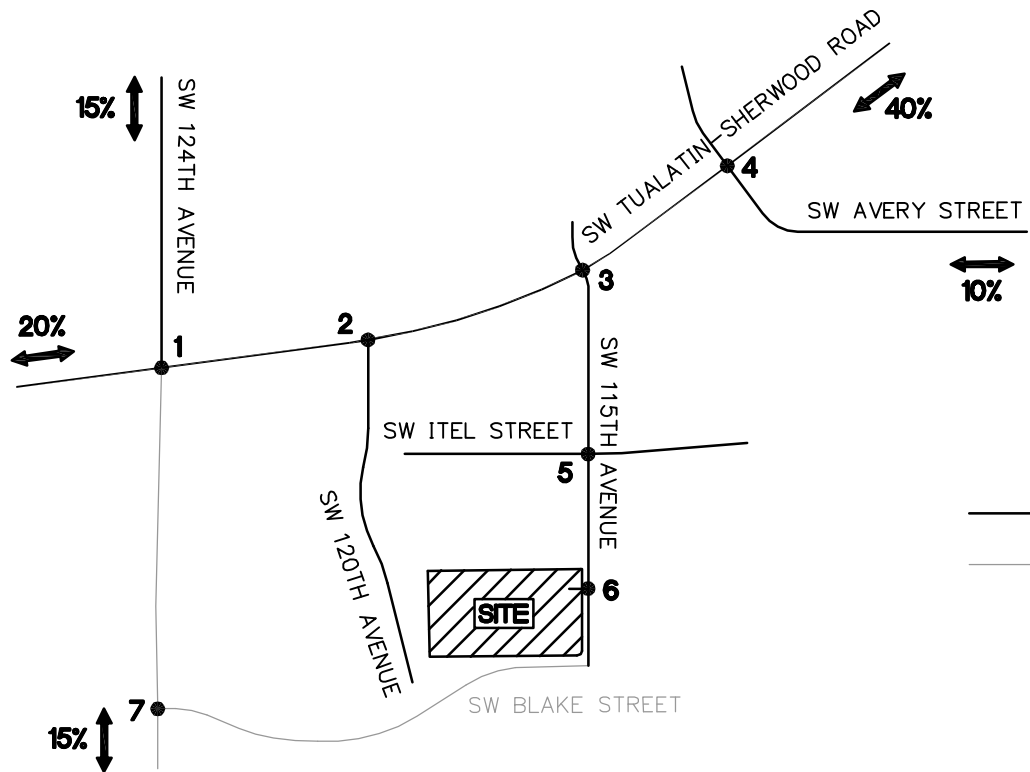


— Existing Network
 - - - Future Extension

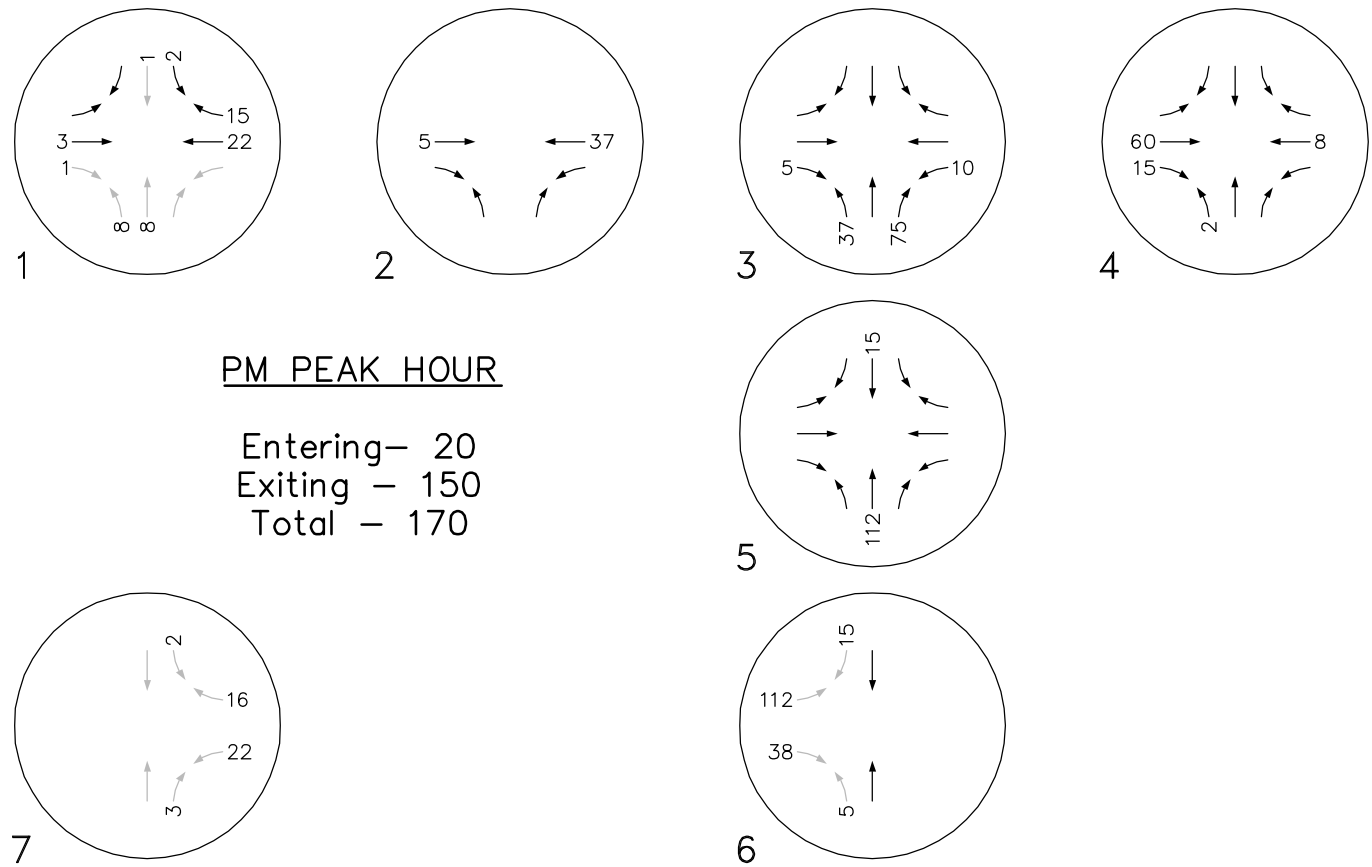




NOT TO SCALE

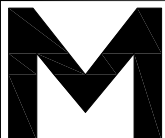


— Existing Network
 - - - Future Extension



PM PEAK HOUR

Entering - 20
 Exiting - 150
 Total - 170



Portland 503.224.9580
Vancouver 360.695.7879
Seattle 206.749.9993
 www.mcknze.com
Architecture - Interiors
Planning - Engineering

MACKENZIE
 DATE: 4.4.2017
 DRAWN BY: JTJ
 CHECKED BY: BTA
 JOB NO:
 2160026.01

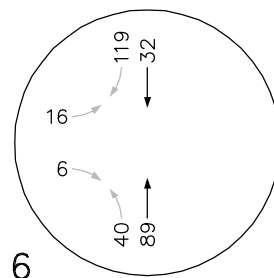
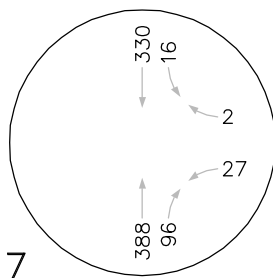
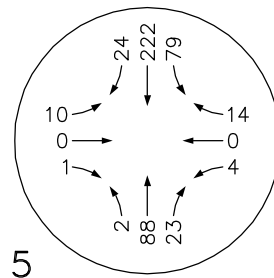
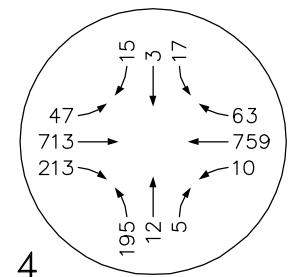
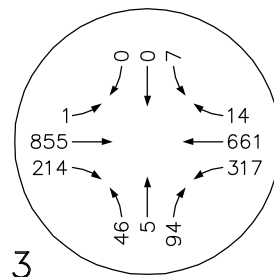
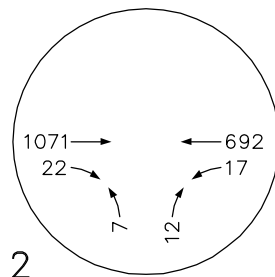
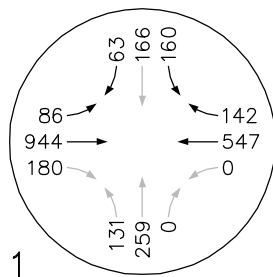
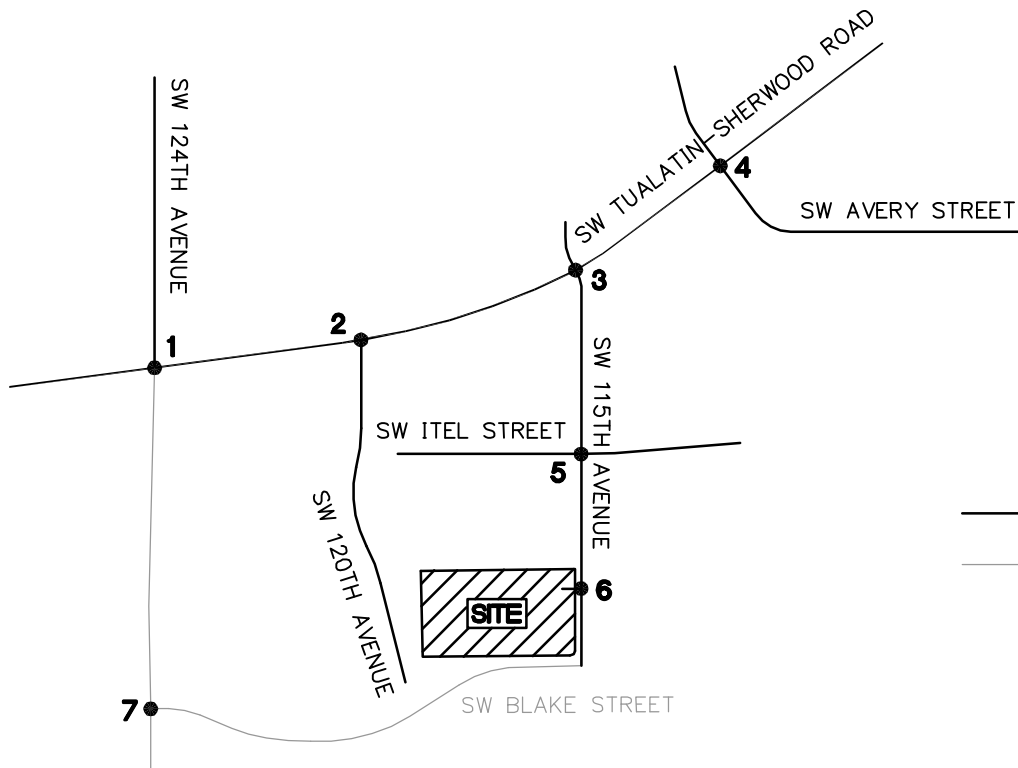
**PROJECT TRIP DISTRIBUTION +
 ASSIGNMENT WITH BLAKE -
 PM PEAK HOUR**
**MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON**

**FIGURE
 16C**

© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

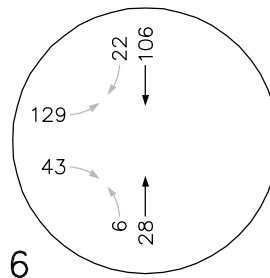
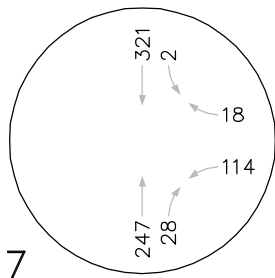
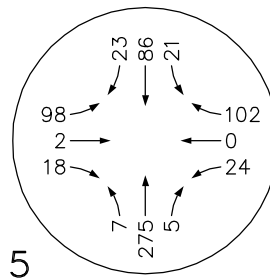
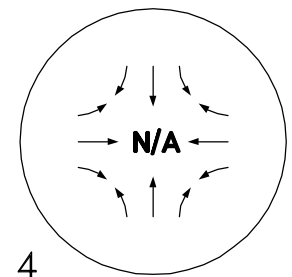
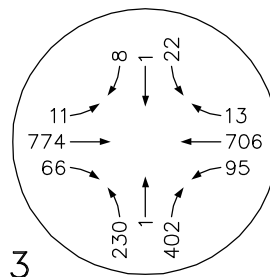
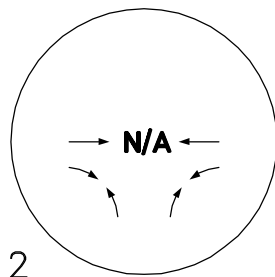
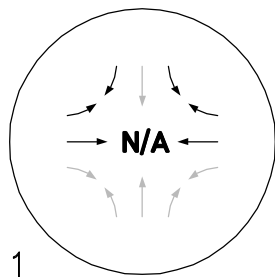
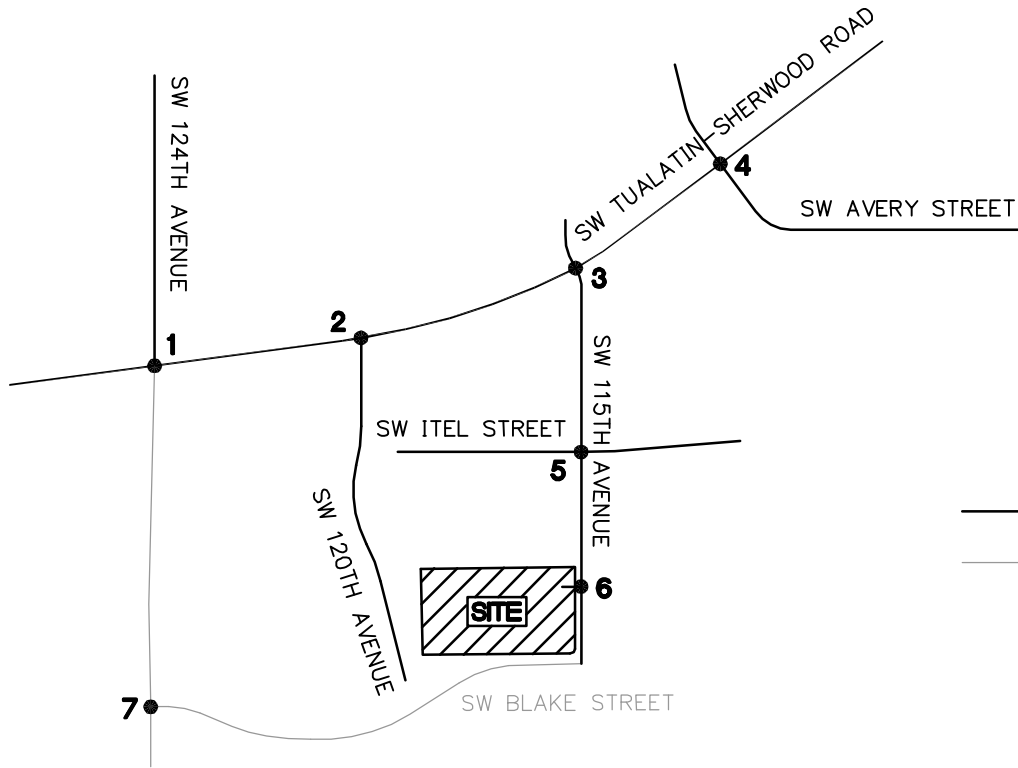


NOT TO SCALE





NOT TO SCALE



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

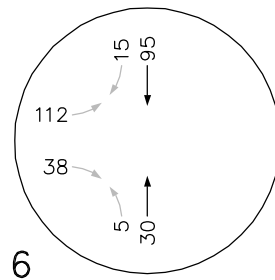
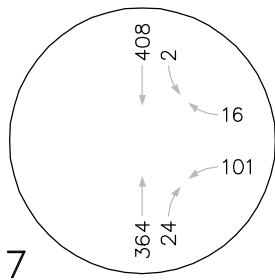
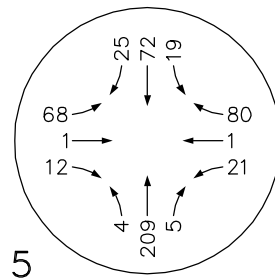
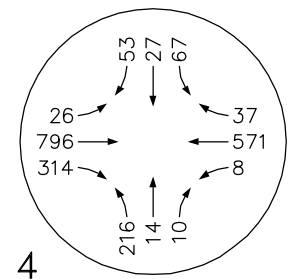
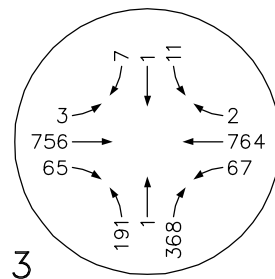
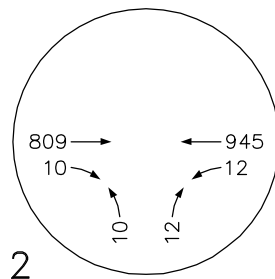
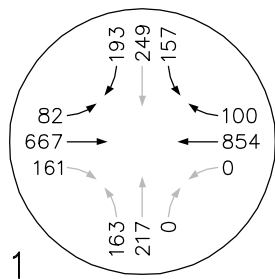
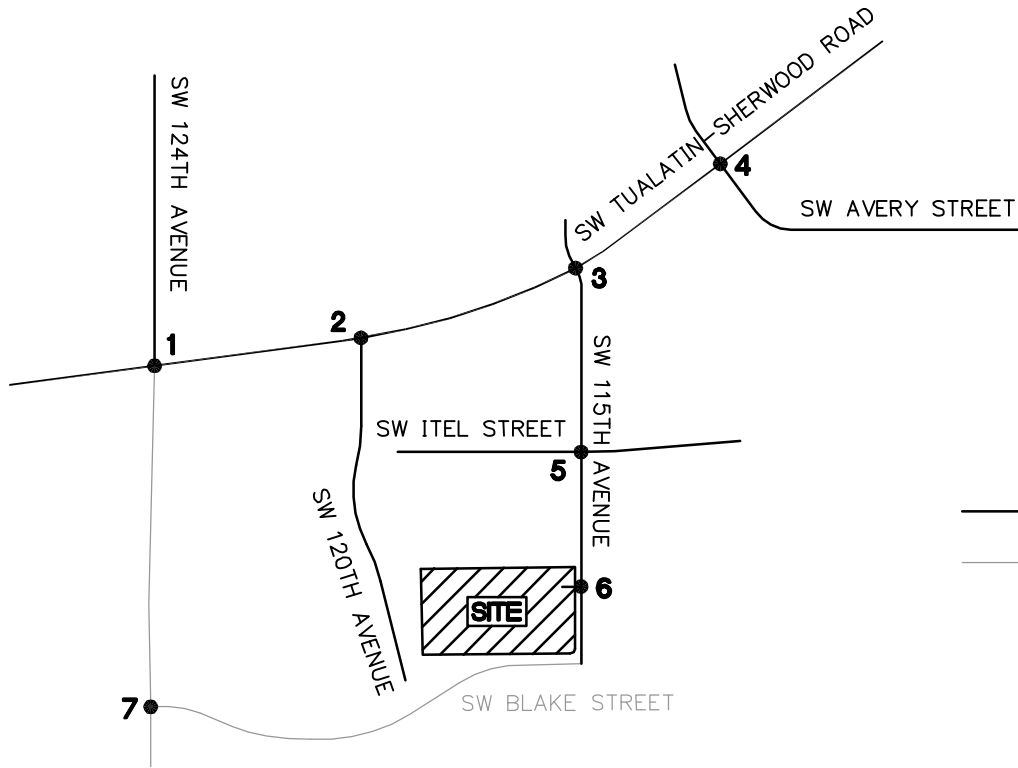
2017 POST-DEVELOPMENT
 TRAFFIC WITH BLAKE -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 17B



NOT TO SCALE



Portland 503.224.9580
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

2017 POST-DEVELOPMENT
 TRAFFIC WITH BLAKE -
 PM PEAK HOUR

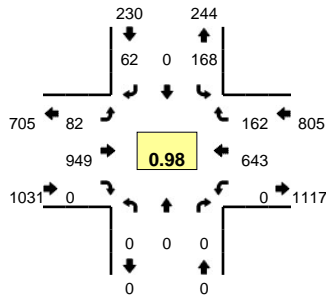
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 17C

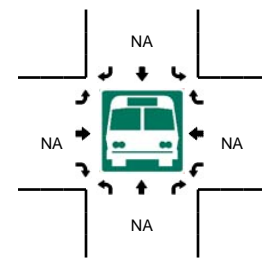
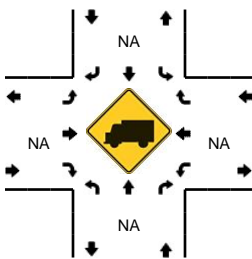
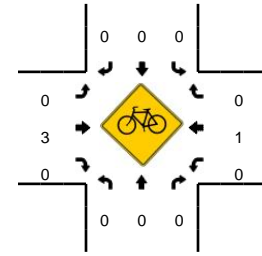
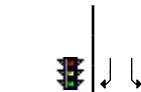
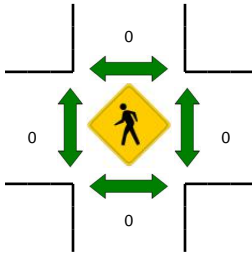
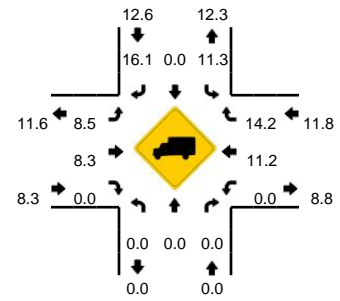
APPENDIX B
**TRAFFIC COUNT
SUMMARIES**

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

QC JOB #: 13773019
DATE: Tue, Apr 12 2016



Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:05 AM -- 7:20 AM

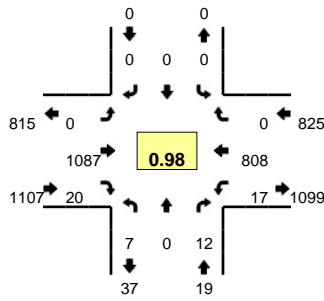


5-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	12	0	7	0	12	79	0	0	0	57	9	0	176	
7:05 AM	0	0	0	0	3	0	5	0	8	93	0	0	0	55	12	0	176	
7:10 AM	0	0	0	0	15	0	4	0	7	85	0	0	0	52	11	0	174	
7:15 AM	0	0	0	0	8	0	3	0	8	88	0	0	0	65	4	0	176	
7:20 AM	0	0	0	0	19	0	2	0	7	70	0	0	0	58	13	0	169	
7:25 AM	0	0	0	0	7	0	4	0	4	85	0	0	0	56	15	0	171	
7:30 AM	0	0	0	0	19	0	7	0	2	78	0	0	0	41	13	0	160	
7:35 AM	0	0	0	0	17	0	5	0	5	78	0	0	0	56	19	0	180	
7:40 AM	0	0	0	0	19	0	5	0	7	77	0	0	0	35	12	0	155	
7:45 AM	0	0	0	0	13	0	5	0	5	84	0	0	0	63	15	0	185	
7:50 AM	0	0	0	0	19	0	9	0	6	68	0	0	0	50	16	0	168	
7:55 AM	0	0	0	0	14	0	5	0	10	72	0	0	0	54	16	0	171	2061
8:00 AM	0	0	0	0	15	0	8	0	13	71	0	0	0	58	16	0	181	2066
8:05 AM	0	0	0	0	7	0	3	0	11	86	0	0	0	58	9	0	174	2064
8:10 AM	0	0	0	0	8	0	7	0	4	76	0	0	0	65	16	0	176	2066
8:15 AM	0	0	0	0	7	0	8	0	7	81	0	0	0	54	5	0	162	2052
8:20 AM	0	0	0	0	5	0	6	0	6	68	0	0	0	51	7	0	143	2026
8:25 AM	0	0	0	0	9	0	8	0	6	73	0	0	0	45	6	0	147	2002
8:30 AM	0	0	0	0	10	0	8	0	5	76	0	0	0	47	5	0	151	1993
8:35 AM	0	0	0	0	2	0	6	0	8	79	0	1	0	49	14	0	159	1972
8:40 AM	0	0	0	0	4	0	3	0	13	68	0	0	0	74	7	0	169	1986
8:45 AM	0	0	0	0	9	0	5	0	11	86	0	0	0	36	4	0	151	1952
8:50 AM	0	0	0	0	9	0	4	0	6	79	0	0	0	46	5	0	149	1933
8:55 AM	0	0	0	0	5	0	4	0	3	77	0	0	0	57	9	0	155	1917
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	104	0	48	0	92	1064	0	0	0	688	108	0	2104	
Heavy Trucks	0	0	0	0	16	0	0	0	12	112	0	0	0	92	20	0	252	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	
Railroad																		
Stopped Buses																		

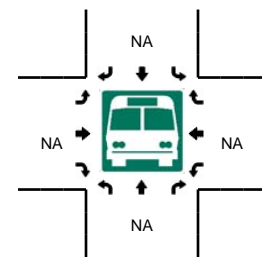
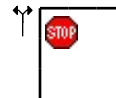
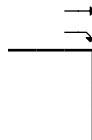
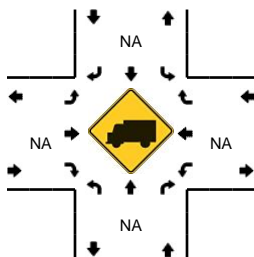
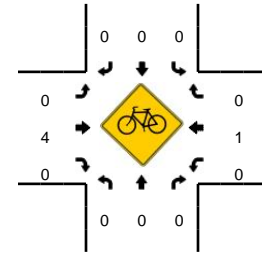
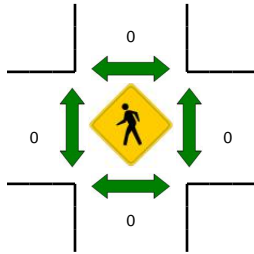
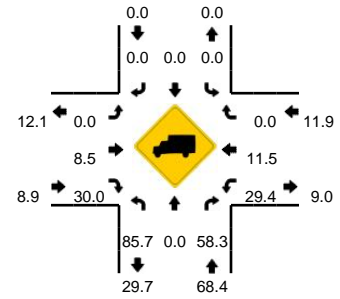
Comments:

LOCATION: SW 120th Ave -- SW Tualatin-Sherwood Rd
CITY/STATE: Tualatin, OR

QC JOB #: 13773016
DATE: Tue, Apr 12 2016



Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:10 AM -- 7:25 AM

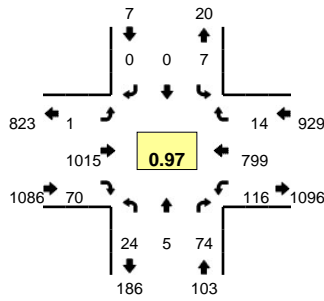


5-Min Count Period Beginning At	SW 120th Ave (Northbound)				SW 120th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	91	2	0	1	57	0	0	152	
7:05 AM	0	0	0	0	0	0	0	0	0	97	0	0	1	64	0	0	162	
7:10 AM	0	0	1	0	0	0	0	0	0	95	2	0	1	73	0	0	172	
7:15 AM	1	0	0	0	0	0	0	0	0	91	1	0	1	65	0	0	159	
7:20 AM	1	0	1	0	0	0	0	0	0	86	4	0	0	77	0	0	169	
7:25 AM	1	0	1	0	0	0	0	0	0	97	2	0	0	62	0	0	163	
7:30 AM	0	0	1	0	0	0	0	0	0	92	4	0	2	56	0	0	155	
7:35 AM	0	0	0	0	0	0	0	0	0	92	2	0	1	66	0	0	161	
7:40 AM	1	0	1	0	0	0	0	0	0	95	1	0	3	52	0	0	153	
7:45 AM	2	0	3	0	0	0	0	0	0	90	1	0	2	73	0	0	171	
7:50 AM	1	0	0	0	0	0	0	0	0	81	0	0	1	78	0	0	161	
7:55 AM	0	0	2	0	0	0	0	0	0	86	2	0	2	62	0	0	154	1932
8:00 AM	0	0	2	0	0	0	0	0	0	89	1	0	2	66	0	0	160	1940
8:05 AM	0	0	0	0	0	0	0	0	0	93	0	0	2	78	0	0	173	1951
8:10 AM	0	0	0	0	0	0	0	0	0	93	0	0	1	72	0	0	166	1945
8:15 AM	0	0	2	0	0	0	0	0	0	86	2	0	2	60	0	0	152	1938
8:20 AM	0	0	2	0	0	0	0	0	0	72	0	0	3	57	0	0	134	1903
8:25 AM	0	0	2	0	0	0	0	0	0	83	1	0	1	55	0	0	142	1882
8:30 AM	0	0	1	0	0	0	0	0	0	75	3	0	3	55	0	0	137	1864
8:35 AM	1	0	2	0	0	0	0	0	0	91	0	0	1	62	0	0	157	1860
8:40 AM	1	0	2	0	0	0	0	0	0	62	1	0	0	75	0	0	141	1848
8:45 AM	1	0	1	0	0	0	0	0	0	94	2	0	1	37	0	0	136	1813
8:50 AM	2	0	1	0	0	0	0	0	0	84	2	0	1	50	0	0	140	1792
8:55 AM	1	0	0	0	0	0	0	0	0	88	3	0	2	72	0	0	166	1804
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	0	8	0	0	0	0	0	0	1088	28	0	8	860	0	0	2000	
Heavy Trucks	8	0	8	0	0	0	0	0	0	108	12	0	4	124	0	0	264	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	
Railroad																		
Stopped Buses																		

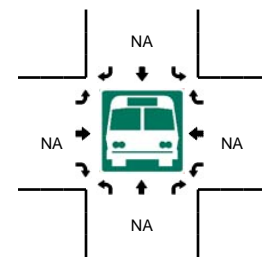
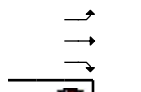
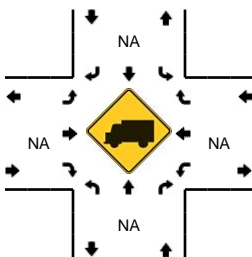
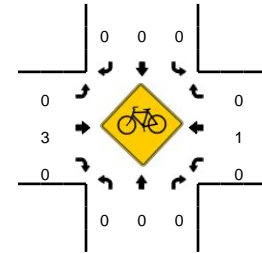
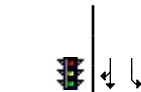
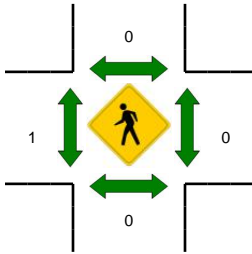
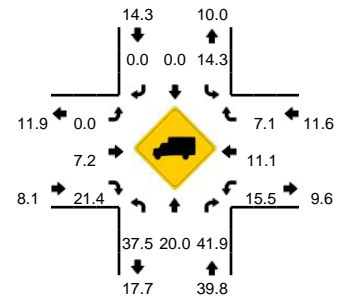
Comments:

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

QC JOB #: 13773004
DATE: Tue, Apr 12 2016



Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

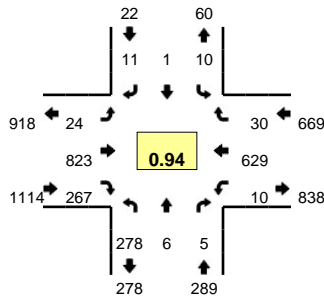


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	0	5	0	1	0	0	0	0	97	4	0	10	60	1	0	179	
7:05 AM	0	0	7	0	1	0	0	0	0	86	6	0	7	64	0	0	171	
7:10 AM	0	0	5	0	2	0	0	0	0	82	8	0	8	77	1	0	183	
7:15 AM	0	0	8	0	0	0	0	0	0	85	7	0	11	67	0	0	178	
7:20 AM	0	0	10	0	0	0	0	0	0	84	6	0	10	62	0	0	172	
7:25 AM	1	0	4	0	1	0	0	0	0	90	6	0	3	56	0	0	161	
7:30 AM	4	1	8	0	2	0	0	0	0	77	10	0	15	53	2	0	172	
7:35 AM	1	0	7	0	1	0	0	0	0	81	7	0	8	68	1	0	174	
7:40 AM	2	0	4	0	0	0	0	0	0	92	10	0	6	64	0	0	178	
7:45 AM	1	0	8	0	0	0	0	0	0	87	3	0	12	66	3	0	180	
7:50 AM	3	0	5	0	1	0	0	0	0	85	2	0	14	79	2	0	191	
7:55 AM	5	0	7	0	0	0	0	0	0	83	4	0	6	67	3	0	175	2114
8:00 AM	3	3	4	0	0	0	0	0	1	86	5	0	10	50	1	0	163	2098
8:05 AM	4	1	4	0	0	0	0	0	0	83	2	0	13	90	1	0	198	2125
8:10 AM	2	0	4	0	0	0	0	0	0	86	3	0	6	65	1	0	167	2109
8:15 AM	0	0	2	0	0	0	0	0	0	92	7	0	10	57	0	0	168	2099
8:20 AM	3	1	3	0	0	0	0	0	1	78	6	0	7	59	2	0	160	2087
8:25 AM	1	0	7	0	0	0	0	0	0	81	2	0	4	55	0	0	150	2076
8:30 AM	3	0	11	0	1	0	0	0	1	75	3	0	9	59	1	0	163	2067
8:35 AM	1	0	4	0	0	1	0	0	0	85	3	0	4	60	1	0	159	2052
8:40 AM	4	2	8	0	1	0	0	0	3	66	2	0	5	64	4	0	159	2033
8:45 AM	1	0	1	0	0	0	1	0	1	71	6	0	6	36	1	0	124	1977
8:50 AM	0	0	9	0	0	0	2	0	2	94	4	0	7	55	3	0	176	1962
8:55 AM	2	0	7	0	1	0	1	0	1	79	2	0	7	74	5	0	179	1966
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	0	68	0	4	0	0	0	0	1056	60	0	128	836	20	0	2196	
Heavy Trucks	8	0	32		0	0	0		0	68	12		32	72	0		224	
Pedestrians																	0	
Bicycles																	0	
Railroad																	0	
Stopped Buses																	0	

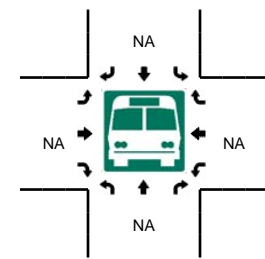
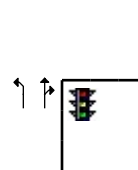
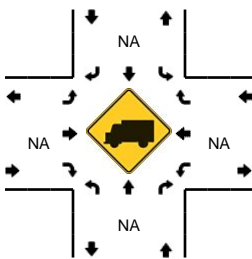
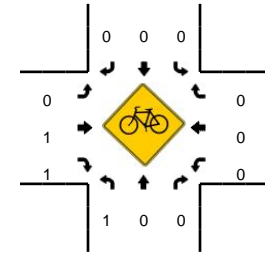
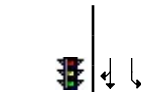
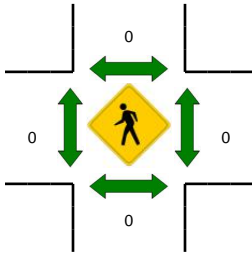
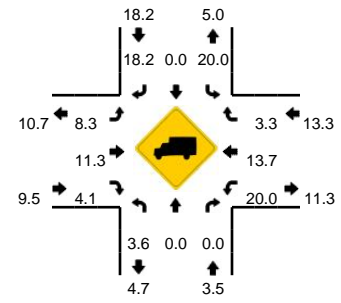
Comments:

LOCATION: SW Avery St -- SW Tualatin-Sherwood Rd
CITY/STATE: Tualatin, OR

QC JOB #: 13773013
DATE: Tue, Apr 12 2016



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

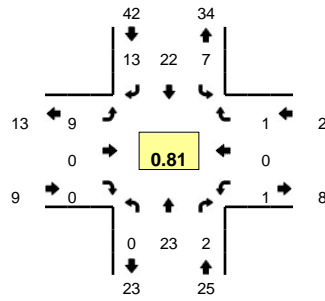


5-Min Count Period Beginning At	SW Avery St (Northbound)				SW Avery St (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	25	1	0	0	0	0	1	0	3	83	15	0	0	55	5	0	188	
7:05 AM	22	1	0	0	0	0	0	0	3	82	14	0	0	46	3	0	171	
7:10 AM	18	0	1	0	2	0	3	0	1	60	30	0	2	74	4	0	195	
7:15 AM	22	0	0	0	1	0	1	0	2	70	22	0	0	47	1	0	166	
7:20 AM	17	0	0	0	0	0	1	0	1	76	19	0	1	48	0	0	163	
7:25 AM	27	0	2	0	1	1	0	0	1	65	20	0	3	37	2	0	159	
7:30 AM	25	2	0	0	0	0	1	0	1	79	14	0	1	51	1	0	175	
7:35 AM	27	0	0	0	1	0	1	0	2	60	24	0	0	41	0	0	156	
7:40 AM	28	0	0	0	0	0	2	0	1	58	32	0	1	45	0	0	167	
7:45 AM	24	1	0	0	2	0	0	0	5	66	25	0	0	57	5	0	185	
7:50 AM	25	1	1	0	0	0	1	0	1	66	21	0	1	70	4	0	191	
7:55 AM	18	0	1	0	3	0	0	0	3	58	31	0	1	58	5	0	178	2094
8:00 AM	25	1	1	0	0	1	1	0	4	61	32	0	0	38	2	0	166	2072
8:05 AM	22	2	0	0	0	0	0	0	4	66	20	0	0	71	1	0	186	2087
8:10 AM	28	1	0	0	0	0	0	0	2	67	18	0	3	47	0	0	166	2058
8:15 AM	12	1	0	0	1	0	1	0	0	67	17	0	0	51	4	0	154	2046
8:20 AM	10	0	1	0	0	0	0	0	0	68	19	0	0	60	2	0	160	2043
8:25 AM	8	0	1	0	0	0	1	0	2	63	23	0	0	44	2	0	144	2028
8:30 AM	21	1	1	0	0	0	1	0	1	69	21	0	1	53	1	0	170	2023
8:35 AM	7	1	1	0	0	0	2	0	0	69	20	0	1	50	2	0	153	2020
8:40 AM	17	2	0	0	0	0	1	0	1	56	15	0	1	54	1	0	148	2001
8:45 AM	20	2	1	0	1	0	0	0	1	57	16	0	2	26	0	0	126	1942
8:50 AM	12	0	1	0	0	0	0	0	0	81	17	0	0	52	5	0	168	1919
8:55 AM	17	0	0	0	0	1	2	0	3	61	12	0	1	71	4	0	172	1913
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	8	4	0	8	0	16	0	28	900	236	0	8	700	48	0	2216	
Heavy Trucks	0	0	0	0	0	0	4	0	0	92	4	0	0	112	4	0	216	
Pedestrians	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

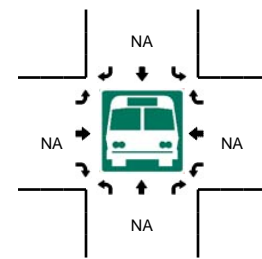
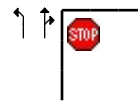
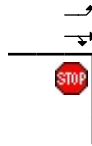
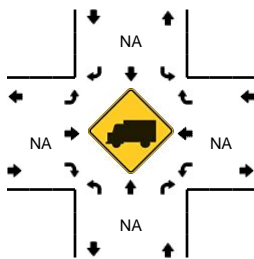
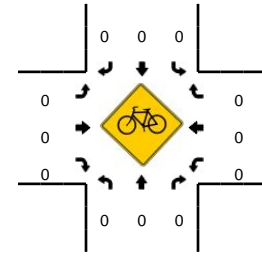
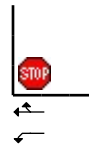
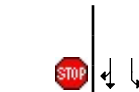
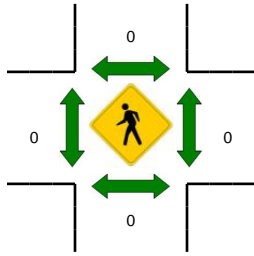
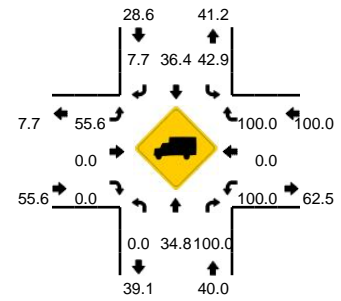
Comments:

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

QC JOB #: 13773007
DATE: Tue, Apr 12 2016



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

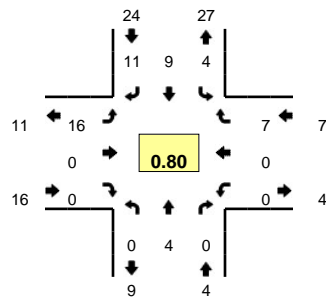


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Itel St (Eastbound)				SW Itel St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	1	0	0	0	4	2	0	1	0	0	0	0	0	0	0	8	
7:05 AM	0	1	0	0	2	0	1	0	1	0	0	0	0	0	0	0	5	
7:10 AM	0	1	0	0	0	2	1	0	2	0	0	0	0	0	0	0	6	
7:15 AM	0	4	0	0	0	1	3	0	0	0	0	0	0	0	0	0	8	
7:20 AM	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	4	
7:25 AM	0	1	0	0	0	4	0	0	1	0	0	0	0	0	0	0	6	
7:30 AM	0	4	0	0	0	1	1	0	1	0	0	0	0	0	0	0	7	
7:35 AM	0	2	0	0	1	0	2	0	0	0	0	0	1	0	0	0	6	
7:40 AM	0	0	1	0	1	1	2	0	1	0	0	0	0	0	0	0	6	
7:45 AM	0	3	1	0	0	6	0	1	0	0	0	0	0	0	1	0	12	
7:50 AM	0	3	0	0	0	1	0	0	1	0	0	0	0	0	0	0	5	
7:55 AM	0	1	0	0	2	1	0	0	1	0	0	0	0	0	0	0	5	78
8:00 AM	0	2	0	0	0	1	1	0	2	0	0	0	0	0	1	0	7	77
8:05 AM	0	1	0	0	0	3	2	0	0	0	0	0	0	0	0	0	6	78
8:10 AM	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	4	76
8:15 AM	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	7	75
8:20 AM	0	0	0	0	0	1	2	0	2	0	0	0	0	0	0	0	5	76
8:25 AM	0	2	0	0	0	0	0	0	4	0	0	0	0	0	0	0	6	76
8:30 AM	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	72
8:35 AM	0	2	0	0	0	5	1	0	0	0	0	0	0	0	0	0	8	74
8:40 AM	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	72
8:45 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	64
8:50 AM	0	1	0	0	1	3	2	0	2	0	0	0	0	0	0	0	9	68
8:55 AM	0	1	0	0	0	3	1	0	2	0	0	0	0	0	0	0	7	70
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	20	8	0	8	28	16	4	4	0	0	0	4	0	4	0	96	
Heavy Trucks	0	8	8		4	8	0		4	0	0		4	0	4		40	
Pedestrians		0				0				0				0			0	
Bicycles		0				0				0				0			0	
Railroad																		
Stopped Buses																		

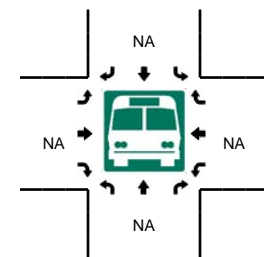
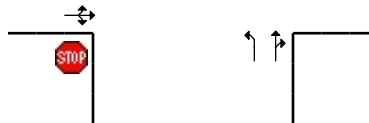
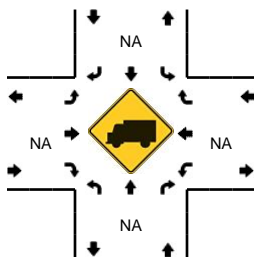
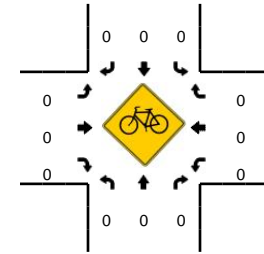
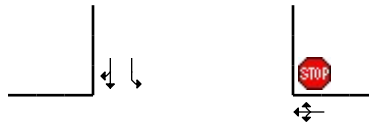
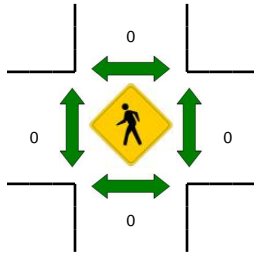
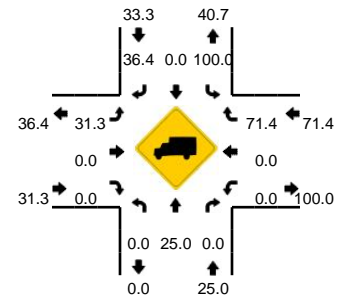
Comments:

LOCATION: SW 115th Ave -- Pacific Motion Dwy/McLane Food Service Dwy
CITY/STATE: Tualatin, OR

QC JOB #: 13773010
DATE: Tue, Apr 12 2016



Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

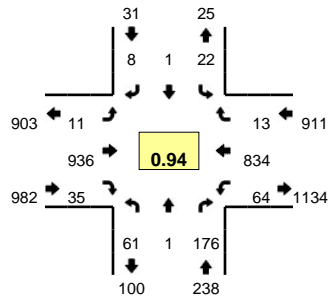


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave Pacific (Southbound)				Motion Dwy/McLane Food Service (Eastbound)				Motion Dwy/McLane Food Service Dwy (Westbound)				Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	1	0	0	1	2	1	0	0	0	0	0	0	0	0	0	5	
7:05 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:10 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	
7:15 AM	0	0	0	0	1	0	1	0	3	0	0	0	0	0	1	0	6	
7:20 AM	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	3	
7:25 AM	0	0	0	0	1	2	1	0	1	0	0	0	0	0	0	0	5	
7:30 AM	0	0	0	0	0	0	1	0	3	0	0	0	0	0	2	0	6	
7:35 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	
7:40 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3	
7:45 AM	0	0	0	0	1	2	3	0	2	0	0	0	0	0	0	0	8	
7:50 AM	0	1	0	0	0	0	2	0	1	0	0	0	0	0	1	0	5	
7:55 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3	
8:00 AM	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	3	
8:05 AM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	1	0	5	
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4	
8:20 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
8:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	
8:35 AM	0	0	0	0	1	1	3	0	1	0	0	0	0	0	1	0	7	
8:40 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3	
8:45 AM	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	4	
8:50 AM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	1	0	4	
8:55 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	0	4	
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	8	0	0	4	8	20	0	16	0	0	0	0	0	0	8	0	64
Heavy Trucks	0	4	0	0	4	0	4	0	8	0	0	0	0	0	0	8	0	28
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

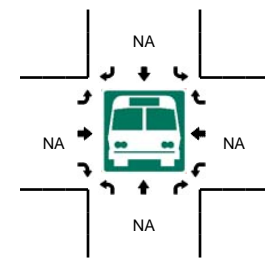
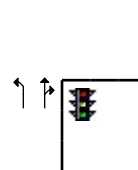
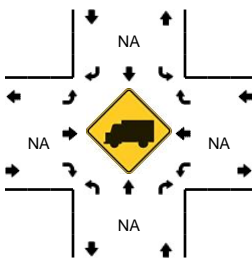
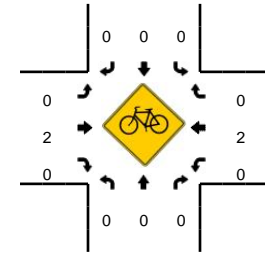
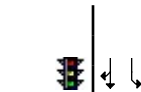
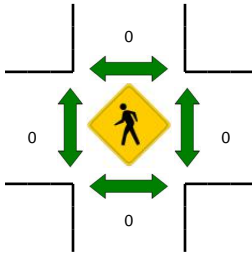
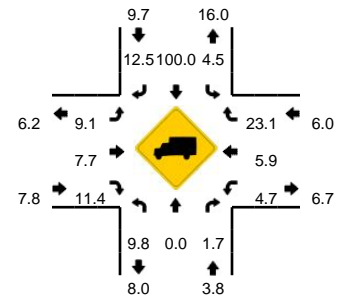
Comments:

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

QC JOB #: 13773005
DATE: Tue, Apr 12 2016



Peak-Hour: 2:55 PM -- 3:55 PM
Peak 15-Min: 3:00 PM -- 3:15 PM

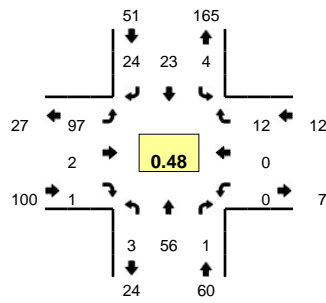


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	1	0	9	0	0	0	0	0	1	96	3	0	5	89	2	0	206	1947
2:05 PM	3	0	4	0	1	1	1	0	0	74	3	0	7	75	3	0	172	1992
2:10 PM	2	1	10	0	1	0	0	0	1	74	4	0	6	66	1	0	166	1978
2:15 PM	3	0	7	0	0	0	1	0	0	67	2	0	5	74	0	0	159	1975
2:20 PM	2	0	7	0	0	0	0	0	1	58	1	0	8	73	1	0	151	1967
2:25 PM	2	0	8	0	4	0	0	0	0	64	1	0	5	51	2	0	137	1952
2:30 PM	2	0	7	0	1	0	0	0	0	92	2	0	3	74	2	0	183	1962
2:35 PM	0	0	10	0	0	0	0	0	0	76	3	0	6	84	1	0	180	2009
2:40 PM	2	0	6	0	2	1	1	0	0	80	1	0	2	77	2	0	174	1993
2:45 PM	1	0	7	0	0	0	1	0	1	80	1	0	4	75	1	0	171	2014
2:50 PM	2	0	2	0	1	0	0	0	2	65	0	0	7	65	1	0	145	1982
2:55 PM	5	0	11	0	1	0	0	0	0	63	3	0	2	81	0	0	166	2010
3:00 PM	3	0	21	0	1	1	2	0	1	74	4	0	5	78	1	0	191	1995
3:05 PM	15	0	37	0	4	0	2	0	2	66	3	0	4	61	3	0	197	2020
3:10 PM	7	0	29	0	4	0	1	0	0	78	0	0	6	62	1	0	188	2042
3:15 PM	2	1	10	0	2	0	0	0	1	83	1	0	11	80	0	0	191	2074
3:20 PM	6	0	4	0	1	0	0	0	0	79	3	0	10	68	0	0	171	2094
3:25 PM	4	0	9	0	0	0	0	0	0	79	1	0	4	67	1	0	165	2122
3:30 PM	4	0	12	0	3	0	0	0	0	79	3	0	6	72	1	0	180	2119
3:35 PM	7	0	17	0	0	0	0	0	0	81	7	0	2	67	0	0	181	2120
3:40 PM	6	0	11	0	2	0	2	0	3	81	4	0	5	72	2	0	188	2134
3:45 PM	2	0	12	0	1	0	1	0	1	84	4	0	5	62	4	0	176	2139
3:50 PM	0	0	3	0	3	0	0	0	3	89	2	0	4	64	0	0	168	2162
3:55 PM	4	0	8	0	0	0	1	0	1	88	4	0	3	48	2	0	159	2155
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	100	0	348	0	36	4	20	0	12	872	28	0	60	804	20	0	2304	
Heavy Trucks	4	0	0		0	4	4		4	68	4		4	64	4		160	
Pedestrians																	0	
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1	
Railroad																		
Stopped Buses																		

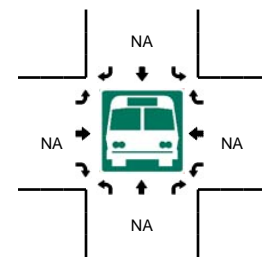
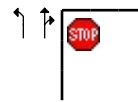
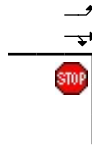
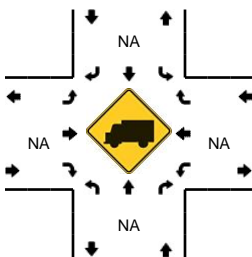
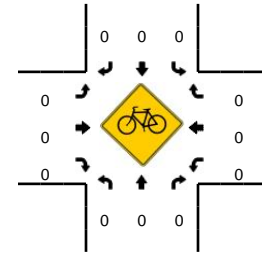
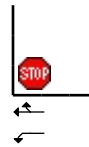
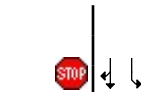
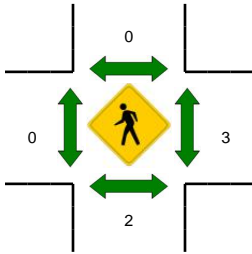
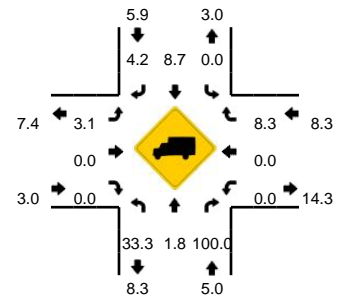
Comments:

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

QC JOB #: 13773008
DATE: Tue, Apr 12 2016



Peak-Hour: 2:50 PM -- 3:50 PM
Peak 15-Min: 3:00 PM -- 3:15 PM

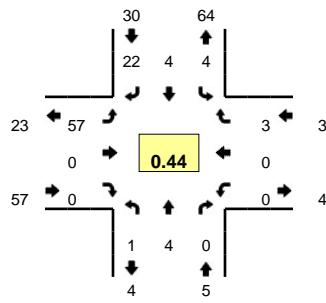


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Itel St (Eastbound)				SW Itel St (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
2:00 PM	0	2	0	0	1	4	0	0	4	0	0	0	0	0	0	1	0	12	104
2:05 PM	0	0	1	0	0	3	2	0	5	0	0	0	0	0	1	0	0	12	108
2:10 PM	0	2	0	0	0	0	1	0	3	0	0	0	0	0	0	1	0	7	110
2:15 PM	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	5	108
2:20 PM	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	4	102
2:25 PM	0	1	0	0	0	2	1	0	1	0	0	0	0	0	0	1	0	6	100
2:30 PM	0	4	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	9	104
2:35 PM	0	3	0	0	0	1	3	0	1	0	0	0	0	0	0	0	0	8	102
2:40 PM	0	1	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	6	105
2:45 PM	0	2	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	6	97
2:50 PM	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	4	88
2:55 PM	2	2	0	0	1	3	0	0	2	0	0	0	0	0	0	0	0	10	89
3:00 PM	0	22	0	0	0	1	3	0	12	0	0	0	0	0	0	4	0	42	119
3:05 PM	0	17	0	0	0	5	1	0	26	0	0	0	0	0	0	1	0	50	157
3:10 PM	0	5	1	0	0	3	2	0	11	1	1	0	0	0	0	0	0	24	174
3:15 PM	0	1	0	0	1	4	3	0	9	0	0	0	0	0	0	2	0	20	189
3:20 PM	0	3	0	0	0	5	2	0	3	0	0	0	0	0	0	0	0	13	198
3:25 PM	1	0	0	0	1	1	0	0	3	1	0	0	0	0	0	2	0	9	201
3:30 PM	0	2	0	0	0	0	2	0	10	0	0	0	0	0	0	0	0	14	206
3:35 PM	0	2	0	0	1	0	1	0	9	0	0	0	0	0	0	3	0	16	214
3:40 PM	0	2	0	0	0	0	3	0	8	0	0	0	0	0	0	0	0	13	221
3:45 PM	0	0	0	0	0	0	5	0	3	0	0	0	0	0	0	0	0	8	223
3:50 PM	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	4	223
3:55 PM	0	3	0	0	0	0	1	0	3	0	0	0	0	0	0	1	0	8	221
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	176	4	0	0	36	24	0	196	4	4	0	0	0	0	20	0	464	
Heavy Trucks	0	0	4	0	0	4	4	0	0	0	0	0	0	0	0	0	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																			
Stopped Buses																			

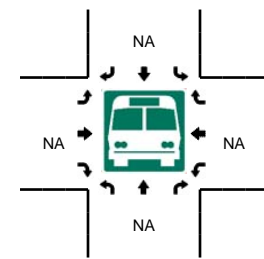
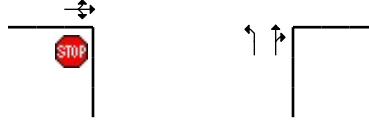
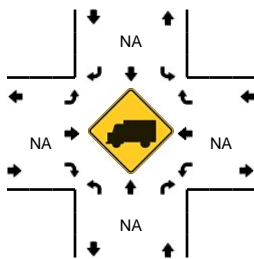
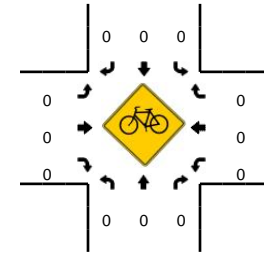
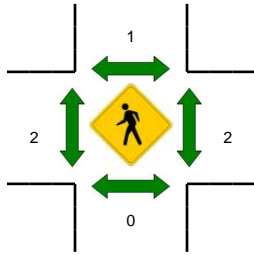
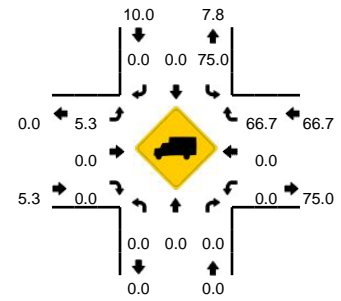
Comments:

LOCATION: SW 115th Ave -- Pacific Motion Dwy/McLane Food Service Dwy
CITY/STATE: Tualatin, OR

QC JOB #: 13773011
DATE: Tue, Apr 12 2016



Peak-Hour: 2:20 PM -- 3:20 PM
Peak 15-Min: 2:55 PM -- 3:10 PM

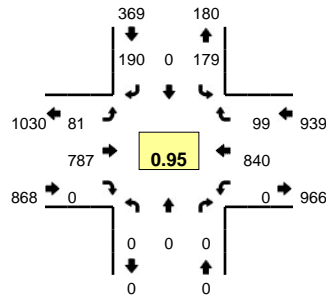


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave Pacific (Southbound)				Motion Dwy/McLane Food Service (Eastbound)				Motion Dwy/McLane Food Service Dwy (Westbound)				Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
1:50 PM	0	3	0	0	0	0	3	0	0	0	0	0	0	0	1	0	7	55
1:55 PM	0	1	0	0	0	3	1	0	2	0	0	0	0	0	0	0	7	55
2:00 PM	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	4	59
2:05 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	55
2:10 PM	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	4	54
2:15 PM	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	4	53
2:20 PM	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3	53
2:25 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	52
2:30 PM	0	0	0	0	1	1	0	0	2	0	0	0	0	0	1	0	5	51
2:35 PM	0	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0	4	53
2:40 PM	0	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	4	51
2:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	48
2:50 PM	0	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	4	45
2:55 PM	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	25	63
3:00 PM	0	1	0	0	0	1	4	0	15	0	0	0	0	0	0	0	21	80
3:05 PM	0	1	0	0	0	1	2	0	4	0	0	0	0	0	0	0	8	87
3:10 PM	1	0	0	0	1	0	4	0	2	0	0	0	0	0	0	0	8	91
3:15 PM	0	0	0	0	0	1	4	0	2	0	0	0	0	0	1	0	8	95
3:20 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	93
3:25 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	92
3:30 PM	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	4	91
3:35 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	89
3:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83
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	8	0	0	0	8	24	0	176	0	0	0	0	0	0	0	216	
Heavy Trucks	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

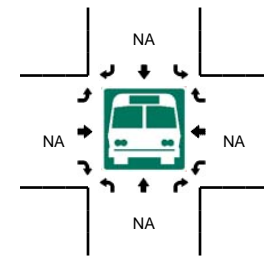
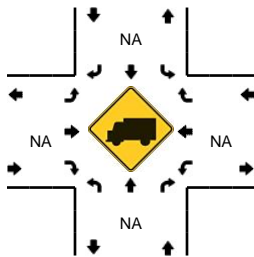
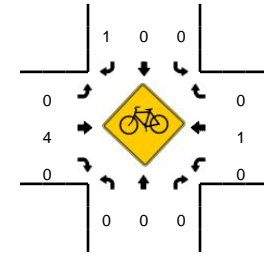
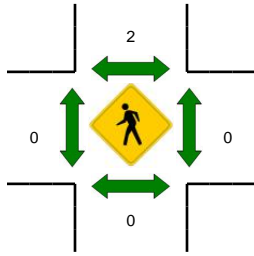
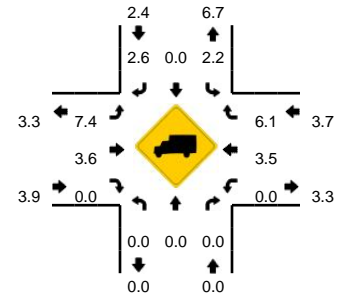
Comments:

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

QC JOB #: 13773021
DATE: Tue, Apr 12 2016



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

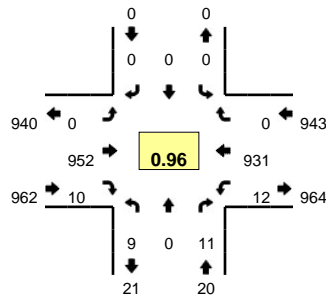


5-Min Count Period Beginning At	SW 124th Ave (Northbound)				SW 124th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	12	0	18	0	10	76	0	0	0	62	4	0	182	
4:05 PM	0	0	0	0	20	0	15	0	7	62	0	0	0	72	9	0	185	
4:10 PM	0	0	0	0	13	0	16	0	8	74	0	0	0	69	8	0	188	
4:15 PM	0	0	0	0	17	0	17	0	7	68	0	0	0	68	4	0	181	
4:20 PM	0	0	0	0	16	0	11	0	8	65	0	0	0	67	6	0	173	
4:25 PM	0	0	0	0	12	0	13	0	2	51	0	0	0	82	4	0	164	
4:30 PM	0	0	0	0	13	0	10	0	8	75	0	0	0	71	10	0	187	
4:35 PM	0	0	0	0	13	0	13	0	5	72	0	0	0	61	15	0	179	
4:40 PM	0	0	0	0	12	0	21	0	4	60	0	0	0	74	6	0	177	
4:45 PM	0	0	0	0	8	0	14	0	3	67	0	0	0	75	6	0	173	
4:50 PM	0	0	0	0	16	0	19	0	9	56	0	0	0	65	8	0	173	
4:55 PM	0	0	0	0	19	0	20	0	8	54	0	0	0	68	4	0	173	2135
5:00 PM	0	0	0	0	15	0	16	0	5	62	0	0	0	77	4	0	179	2132
5:05 PM	0	0	0	0	13	0	19	0	13	87	0	0	0	70	12	0	214	2161
5:10 PM	0	0	0	0	23	0	16	0	11	55	0	0	0	62	12	0	179	2152
5:15 PM	0	0	0	0	20	0	11	0	8	60	0	0	0	71	8	0	178	2149
5:20 PM	0	0	0	0	17	0	14	0	2	66	0	0	0	75	8	0	182	2158
5:25 PM	0	0	0	0	10	0	17	0	5	73	0	0	0	71	6	0	182	2176
5:30 PM	0	0	0	0	10	0	16	0	8	69	0	0	0	56	11	0	170	2159
5:35 PM	0	0	0	0	18	0	20	0	6	66	0	0	0	69	2	0	181	2161
5:40 PM	0	0	0	0	11	0	11	0	2	74	0	0	0	78	11	0	187	2171
5:45 PM	0	0	0	0	8	0	18	0	4	73	0	0	0	66	6	0	175	2173
5:50 PM	0	0	0	0	13	0	14	0	3	55	0	0	0	67	11	0	163	2163
5:55 PM	0	0	0	0	15	0	11	0	5	46	0	0	0	64	10	0	151	2141
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	204	0	204	0	116	816	0	0	0	836	112	0	2288	
Heavy Trucks	0	0	0	0	4	0	4	0	12	24	0	0	0	20	4	0	68	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Railroad																		
Stopped Buses																		

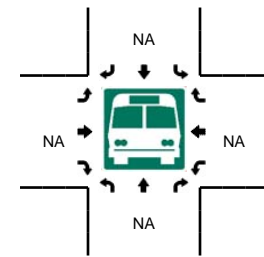
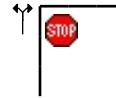
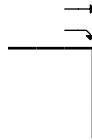
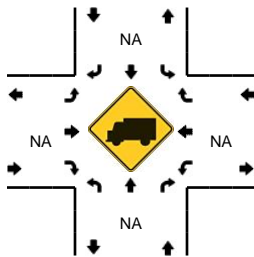
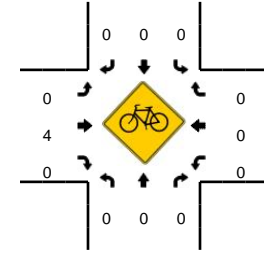
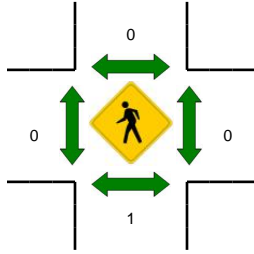
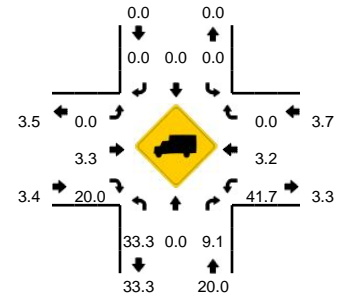
Comments:

LOCATION: SW 120th Ave -- SW Tualatin-Sherwood Rd
CITY/STATE: Tualatin, OR

QC JOB #: 13773018
DATE: Tue, Apr 12 2016



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

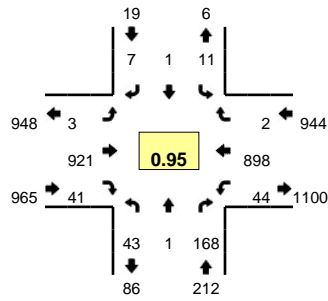


5-Min Count Period Beginning At	SW 120th Ave (Northbound)				SW 120th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	82	0	0	0	68	0	0	150	
4:05 PM	1	0	1	0	0	0	0	0	0	82	1	0	0	72	0	0	157	
4:10 PM	0	0	2	0	0	0	0	0	0	80	2	0	0	80	0	0	166	
4:15 PM	1	0	0	0	0	0	0	0	0	80	2	0	0	71	0	0	155	
4:20 PM	1	0	0	0	0	0	0	0	0	89	0	0	0	73	0	0	164	
4:25 PM	0	0	0	0	0	0	0	0	0	66	1	0	0	75	0	0	142	
4:30 PM	0	0	1	0	0	0	0	0	0	75	4	0	0	87	0	0	169	
4:35 PM	1	0	4	0	0	0	0	0	0	86	3	0	0	75	0	0	170	
4:40 PM	2	0	0	0	0	0	0	0	0	75	0	0	0	84	0	0	163	
4:45 PM	2	0	0	0	0	0	0	0	0	71	0	0	0	71	0	0	145	
4:50 PM	0	0	4	0	0	0	0	0	0	73	0	0	0	79	0	0	157	
4:55 PM	2	0	0	0	0	0	0	0	0	72	1	0	0	68	0	0	144	1882
5:00 PM	0	0	0	0	0	0	0	0	0	80	0	0	0	78	0	0	159	1891
5:05 PM	0	0	1	0	0	0	0	0	0	97	0	0	0	80	0	0	179	1913
5:10 PM	1	0	1	0	0	0	0	0	0	82	1	0	0	77	0	0	162	1909
5:15 PM	1	0	0	0	0	0	0	0	0	76	0	0	0	80	0	0	158	1912
5:20 PM	0	0	0	0	0	0	0	0	0	92	0	0	0	76	0	1	169	1917
5:25 PM	0	0	0	0	0	0	0	0	0	73	1	0	0	76	0	0	150	1925
5:30 PM	0	0	10	0	0	0	0	0	0	81	1	0	0	66	0	0	158	1914
5:35 PM	3	0	2	0	0	0	0	0	0	83	1	0	0	71	0	0	160	1904
5:40 PM	0	0	0	0	0	0	0	0	0	86	0	0	0	84	0	0	170	1911
5:45 PM	0	0	3	0	0	0	0	0	0	74	0	0	0	78	0	0	155	1921
5:50 PM	3	0	1	0	0	0	0	0	0	73	0	0	0	67	0	0	144	1908
5:55 PM	1	0	1	0	0	0	0	0	0	64	0	0	0	76	0	0	142	1906
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	0	20	0	0	0	0	0	0	944	28	0	20	984	0	0	2008	
Heavy Trucks	0	0	4	0	0	0	0	0	0	20	4	0	8	32	0	0	68	
Pedestrians			4				0			0				0			4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

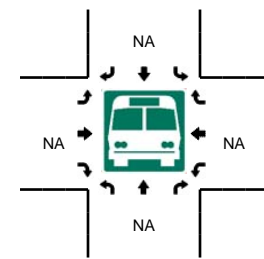
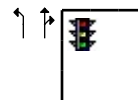
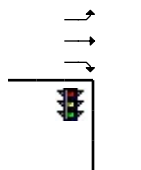
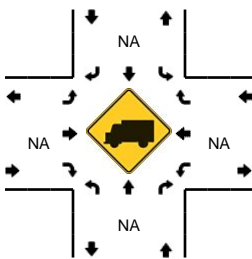
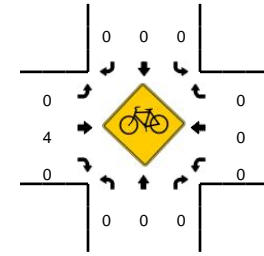
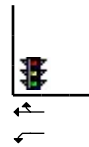
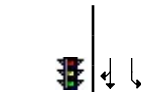
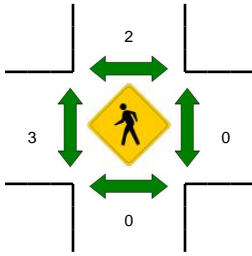
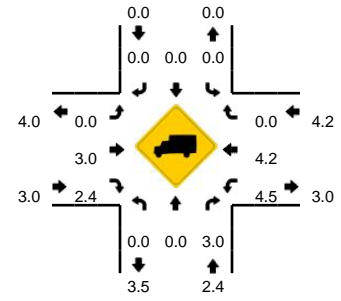
Comments:

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

QC JOB #: 13773006
DATE: Tue, Apr 12 2016



Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

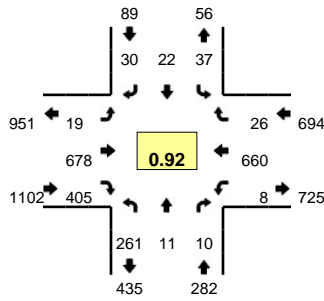


5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	0	7	0	4	0	2	0	0	78	4	0	4	62	2	0	169	
4:05 PM	3	0	11	0	1	0	1	0	0	94	3	0	2	64	2	0	181	
4:10 PM	0	0	7	0	0	0	1	0	0	75	4	0	7	78	1	0	173	
4:15 PM	2	0	8	0	0	1	2	0	1	78	3	0	6	73	1	0	175	
4:20 PM	4	1	10	0	2	1	1	0	1	77	2	0	1	65	2	0	167	
4:25 PM	3	0	7	0	0	0	3	0	0	66	3	0	7	73	0	0	162	
4:30 PM	7	0	7	0	2	0	0	0	0	75	5	0	3	76	0	0	175	
4:35 PM	6	1	13	0	1	0	0	0	0	79	0	0	7	72	0	0	179	
4:40 PM	3	0	7	0	3	1	1	0	1	75	3	0	8	80	1	0	183	
4:45 PM	4	0	17	0	1	0	2	0	1	73	3	0	2	68	0	0	171	
4:50 PM	3	0	21	0	1	0	0	0	1	76	4	0	4	80	0	0	190	
4:55 PM	5	0	15	0	0	0	0	0	0	66	3	0	1	63	0	0	153	2078
5:00 PM	1	0	12	0	0	0	0	0	0	81	2	0	1	81	0	0	178	2087
5:05 PM	4	0	23	0	2	0	1	0	0	82	7	0	0	67	1	0	187	2093
5:10 PM	3	0	20	0	0	0	0	0	0	82	7	0	3	79	0	0	194	2114
5:15 PM	2	0	18	0	1	0	0	0	0	73	2	0	4	78	0	0	178	2117
5:20 PM	2	0	8	0	0	0	0	0	0	93	2	0	4	81	0	0	190	2140
5:25 PM	6	0	11	0	0	0	1	0	0	63	2	0	4	63	1	0	151	2129
5:30 PM	1	0	18	0	4	0	0	0	0	74	6	0	4	68	1	0	176	2130
5:35 PM	3	0	10	0	2	0	1	0	0	90	3	0	2	67	0	0	178	2129
5:40 PM	6	0	9	0	1	0	0	0	0	90	4	0	1	70	0	0	181	2127
5:45 PM	2	0	9	0	0	0	0	0	0	71	3	0	2	79	0	0	166	2122
5:50 PM	3	0	11	0	0	0	0	0	0	77	1	0	4	65	0	0	161	2093
5:55 PM	4	0	7	0	2	0	1	0	0	64	3	0	1	76	0	0	158	2098
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	28	0	184	0	4	0	0	0	0	992	44	0	44	952	0	0	2248	
Heavy Trucks	0	0	0		0	0	0		0	40	0		0	28	0		68	
Pedestrians						8				0				0			8	
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4	
Railroad																		
Stopped Buses																		

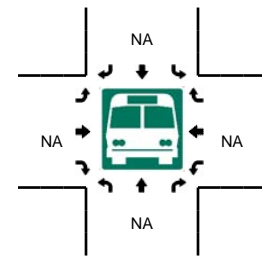
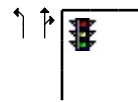
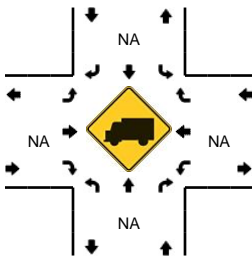
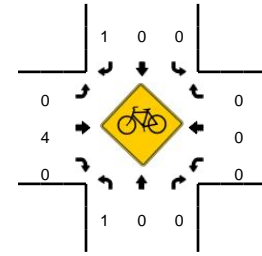
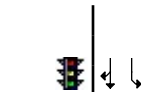
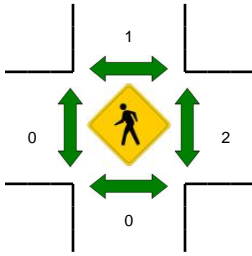
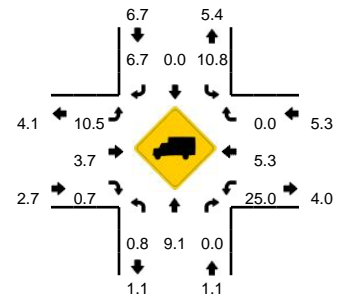
Comments:

LOCATION: SW Avery St -- SW Tualatin-Sherwood Rd
CITY/STATE: Tualatin, OR

QC JOB #: 13773015
DATE: Tue, Apr 12 2016



Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

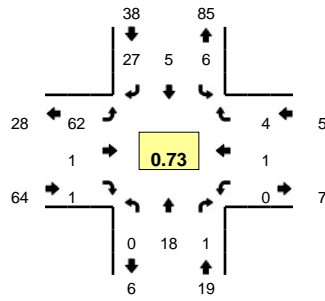


5-Min Count Period Beginning At	SW Avery St (Northbound)				SW Avery St (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	22	1	2	0	6	1	4	0	0	65	30	0	1	50	3	0	185	
4:05 PM	15	1	3	0	5	2	7	0	1	73	38	0	1	44	0	0	190	
4:10 PM	23	0	1	0	4	0	0	0	0	48	37	0	0	62	1	0	176	
4:15 PM	19	0	2	0	4	0	3	0	2	49	35	0	0	55	0	0	169	
4:20 PM	26	0	0	0	3	1	1	0	2	53	27	0	1	38	0	0	152	
4:25 PM	16	0	0	0	2	1	0	0	1	56	30	0	0	69	2	0	177	
4:30 PM	33	0	0	0	3	2	5	0	1	53	24	0	1	41	4	0	167	
4:35 PM	20	3	2	0	2	4	1	0	0	51	33	0	2	58	0	0	176	
4:40 PM	37	1	1	0	4	2	2	0	2	54	36	0	1	52	2	0	194	
4:45 PM	15	1	0	0	2	2	3	0	1	61	25	0	0	56	3	0	169	
4:50 PM	16	0	0	0	2	2	4	0	4	66	32	0	1	48	6	0	181	
4:55 PM	15	1	0	0	2	1	2	0	1	56	26	0	1	62	1	0	168	2104
5:00 PM	23	0	2	0	5	0	2	0	6	46	31	0	1	46	2	0	164	2083
5:05 PM	15	2	1	0	5	3	3	0	0	66	44	0	0	59	0	0	198	2091
5:10 PM	33	1	3	0	5	5	4	0	1	58	40	0	0	44	3	0	197	2112
5:15 PM	20	1	1	0	3	0	2	0	0	60	45	0	0	63	1	0	196	2139
5:20 PM	18	1	0	0	2	0	2	0	2	51	39	0	1	62	2	0	180	2167
5:25 PM	16	1	0	0	0	1	4	0	1	58	24	0	0	50	0	0	155	2145
5:30 PM	15	0	0	0	1	0	2	0	2	60	33	0	0	52	0	0	165	2143
5:35 PM	15	5	2	0	0	0	3	0	1	62	41	0	0	53	5	0	187	2154
5:40 PM	21	0	0	0	4	1	4	0	3	64	31	0	0	47	1	0	176	2136
5:45 PM	12	1	1	0	1	1	2	0	2	57	31	0	0	61	1	0	170	2137
5:50 PM	26	0	1	0	1	0	1	0	0	51	31	0	2	49	2	0	164	2120
5:55 PM	13	0	1	0	1	0	0	0	0	49	28	0	0	61	1	0	154	2106
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	272	16	20	0	52	32	36	0	4	736	516	0	0	664	16	0	2364	
Heavy Trucks	0	0	0		0	0	0		0	36	4		0	32	0		72	
Pedestrians		0				4				0				0			4	
Bicycles	0	0	0		0	0	1		0	4	0		0	0	0		5	
Railroad																		
Stopped Buses																		

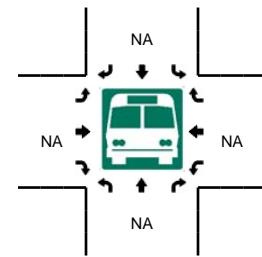
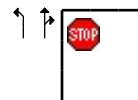
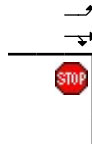
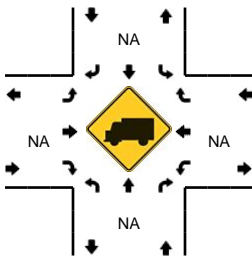
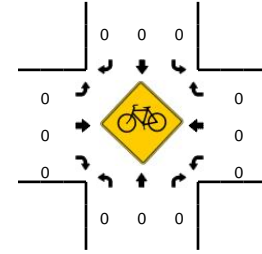
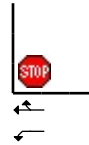
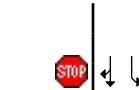
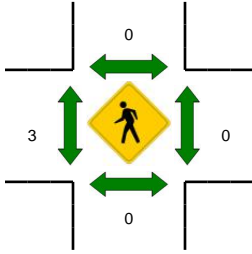
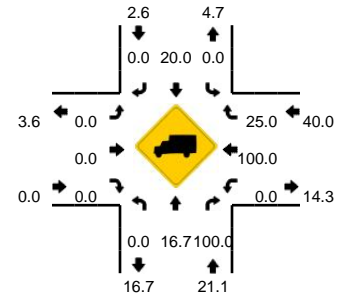
Comments:

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

QC JOB #: 13773009
DATE: Tue, Apr 12 2016



Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:40 PM -- 4:55 PM



5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Itel St (Eastbound)				SW Itel St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	3	0	0	0	1	3	0	0	0	0	0	0	0	3	0	10	
4:05 PM	0	1	0	0	0	2	2	0	5	0	0	0	0	0	1	0	11	
4:10 PM	0	1	0	0	0	0	4	0	2	0	0	0	0	0	0	0	7	
4:15 PM	0	0	1	0	1	0	1	0	2	0	0	0	0	0	0	0	5	
4:20 PM	0	1	0	0	0	0	1	0	5	0	0	0	0	0	3	0	10	
4:25 PM	0	2	0	0	1	0	3	1	1	0	0	0	0	0	1	0	9	
4:30 PM	0	1	0	0	0	0	2	0	0	1	0	0	0	0	1	0	5	
4:35 PM	0	1	0	0	0	1	6	0	1	0	0	0	0	0	1	0	10	
4:40 PM	0	1	0	0	1	0	5	0	2	0	1	0	0	0	1	0	11	
4:45 PM	0	3	0	0	0	1	1	0	12	0	0	0	0	0	0	0	17	
4:50 PM	0	0	0	0	1	2	0	1	11	0	0	0	0	0	0	0	15	
4:55 PM	0	0	0	0	0	0	1	0	3	0	0	0	0	0	1	0	5	115
5:00 PM	0	4	0	0	1	0	0	0	4	0	0	0	0	0	0	0	9	114
5:05 PM	0	2	0	0	0	1	0	0	5	1	0	0	0	0	0	0	9	112
5:10 PM	0	0	0	0	1	0	1	0	4	0	0	0	0	0	0	0	6	111
5:15 PM	0	2	1	0	0	0	2	0	2	0	0	0	0	0	0	0	7	113
5:20 PM	0	0	0	0	0	0	4	0	7	0	0	0	0	0	0	0	11	114
5:25 PM	0	3	0	0	0	0	3	0	0	0	0	0	0	0	1	0	7	112
5:30 PM	0	2	0	0	1	0	4	0	11	0	0	0	0	0	1	0	19	126
5:35 PM	0	1	0	0	0	1	0	0	2	0	0	0	0	0	2	1	7	123
5:40 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5	117
5:45 PM	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	105
5:50 PM	0	2	0	0	0	2	1	0	1	0	0	0	0	0	1	0	7	97
5:55 PM	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6	98
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	16	0	0	8	12	24	4	100	0	4	0	0	4	0	0	172	
Heavy Trucks	0	4	0	0	0	4	0	0	0	0	0	0	0	4	0	0	12	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

APPENDIX C
SCOPING MATERIAL

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

April 4, 2016

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

Re: **Majestic SW 115th Avenue**
Traffic Scoping Letter
Project Number 2160026.01

Dear Mr. Doran:

Mackenzie has prepared this traffic scoping letter to present our assumptions and approach in advance of preparing the required Transportation Impact Analysis (TIA) for the proposed Majestic Realty industrial development on SW 115th Avenue in Tualatin, Oregon. This scoping letter is based on scoping matters already discussed at the City's Scoping Meeting for the overall project. Minutes of that March 9 meeting are attached for reference.

We request that you confirm the assumptions regarding trip generation, trip distribution, background growth, study area intersections, and analysis time periods. We further request information on in-process trips. We understand Washington County staff will review the TIA and provide comments and recommendations as appropriate; Jinde Zhu is copied on this letter. Many assumptions presented in this scoping letter are consistent with the TIA prepared for Buildings 10, 11, and 12 for the Koch Corporate Center, dated January 2016, by Transpo Group.

PROJECT DESCRIPTION

A 235,000 square foot warehousing/distribution facility with access to SW 115th Avenue is proposed in Tualatin, Oregon. The proposed project site is zoned General Manufacturing (MG) and is currently undeveloped. The site is currently provided a curb cut approximately 850 feet south of the SW 115th Avenue intersection with SW Itel Street, as measured from centerline-to-centerline. The proposed development is expected to build-out in 2017. A site plan for the proposed project is attached to this letter.

Access

The proposed access for the project will be located approximately 850 feet south of the SW Itel Street intersection with SW 115th Avenue, near the location of the existing curb cut provided with the construction of SW 115th Avenue. This spacing meets the City's minimum access spacing of 100 feet, as specified in the *Tualatin Development Code (TDC)*, Section 11.630(5)(a)(viii).

Frontages

As discussed at the March 9 Scoping Meeting, uncertainty surrounds the need for future roadways along the subject site's west and south frontages, where the site abuts undeveloped rights-of-way for SW 120th Avenue and SW Blake Street, respectively. The City of Tualatin *Transportation System Plan (TSP)*, February 2014 Edition, indicates SW Blake Street may be realigned away from the site frontage, and our June 2015 regional employment lands feasibility



P 503.224.9560 ■ F 503.228.1285 ■ W MCKNZE.COM ■ RiverEast Center, 1515 SE Water Avenue, #100, Portland, OR 97214
ARCHITECTURE ■ INTERIORS ■ STRUCTURAL ENGINEERING ■ CIVIL ENGINEERING ■ LAND USE PLANNING ■ TRANSPORTATION PLANNING ■ LANDSCAPE ARCHITECTURE
Portland, Oregon ■ Vancouver, Washington ■ Seattle, Washington

evaluations suggested further realignment may be appropriate to support development in the site vicinity. Additional research is necessary to inform decisions surrounding the future use and disposition of the adjoining rights-of-way. In addition, further research is necessary to confirm adequate emergency access can be provided for fire protection around the proposed building. The TIA for the proposed warehousing facility will present the research findings along with our reasoning and recommendations.

TRIP GENERATION

Trip generation estimates have been developed for the proposed warehouse/distribution facility with the use of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 9th Edition. The City requires that the reasonable worst case for trip generation be analyzed. Therefore, the proposed warehouse/distribution facility's trip generation estimates were prepared using ITE's land use code (LUC) 150 for "Warehousing." Trips for the proposed project were estimated based on building square footage, consistent with the Koch Corporate Center TIA.

The warehouse facility's peak hour trip generation estimates are presented in Table 1.

TABLE 1 – PROPOSED TRIP GENERATION												
ITE Code	Land Use	Size	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	In	Out	Total	
150	Warehousing	235.0 KSF	104	28	132	28	117	145	26	77	103	1,028

Based on ITE equations for a "Warehousing" land use, the proposed 235,000 square foot warehousing and distribution facility is projected to generate 132 AM peak hour trips, 103 PM peak hour trips, and 1,028 daily trips. A weekday afternoon peak hour, or mid-day peak hour, may be analyzed to capture employee shift changes. Trips for the mid-day peak hour were estimated based on ITE's data for the "PM Peak Hour of the Generator," consistent with the Koch Corporate Center TIA. The proposed warehouse is anticipated to generate 145 mid-day peak hour trips. Based on the industrial land use, all trips are assumed to be primary trips, and no pass-by reductions are taken.

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of trips for the proposed warehousing facility was assumed to be similar to that used in the Koch Corporate Center TIA. This was considered to be appropriate since the Koch Corporate Center will have similar trip types and also relies upon access to SW 115th Avenue. The Koch Corporate Center TIA distribution was based on turning movement counts (TMCs) from September 2015 and on previous traffic studies for other Koch Corporate Center buildings. Trip distribution for the proposed warehousing facility is proposed as follows:

- 35% to/from the west on SW Tualatin-Sherwood Road
- 50% to/from the east on SW Tualatin-Sherwood Road
- 15% to/from the east on SW Avery Street



STUDY AREA

The TDC requires that the study area for a TIA include all intersections within $\frac{1}{4}$ mile. Washington County's Comprehensive Plan considers a development to impact a roadway if traffic generated by the development exceeds 10% of the roadway's ADT. Based on these criteria, the following intersections will be analyzed:

- SW 115th Avenue/Site Access
- SW 115th Avenue/SW Itel Street
- SW Tualatin-Sherwood Road/SW 115th Avenue
- SW Tualatin-Sherwood Road/SW Avery Street

BACKGROUND CONDITIONS

Improvement Projects

The *City of Tualatin 2016-2020 Capital Improvement Plan* and the Washington County Capital Improvement Projects list were reviewed for pending transportation improvements to existing facilities within the study area, and none were identified. Improvements are under construction currently at the SW Tualatin-Sherwood Road/SW 115th Avenue intersection to provide a second eastbound left-turn lane, northbound approach lane modifications, and a northbound right-turn signal overlap phase. These improvements are required mitigation for another recent project along SW 115th Avenue, and they will be assumed complete for all future analysis scenarios.

Future Alignments

The City of Tualatin's TSP classifies SW 115th Avenue as a Major Collector with a future extension (also Major Collector) to the south. This future extension of SW 115th Avenue is planned to connect to the extension of SW 124th Avenue, a Major Arterial. Washington County also lists the extension of SW 124th Avenue from Tualatin-Sherwood Road to Grahams Ferry Road, which will include one travel lane in each direction with wide shoulders. Construction is scheduled to begin in the spring of 2016, and project completion is anticipated in the fall of 2018.

The City TSP classifies additional study area roadways for future extensions:

- SW Blake Street as a Future Minor Collector
- SW 120th Avenue as a Future Connector
- SW Itel Street as a Future Connector

However, as alluded to above, additional research is needed to inform decisions about the future dispositions of these roadways. For the purposes of this project TIA, it is clear these roadways will not be provided as through streets prior to build-out of the proposed warehousing facility.

TRANSPORTATION IMPACT ANALYSIS

Based on the City's traffic study requirements, as well as on the required scope for the Koch Corporate Center TIA, this TIA for Majestic Realty will review conditions at the study area intersections during peak hours determined from the following weekday time periods:

- 7 AM to 9 AM – AM Peak Hour
- 12 PM to 4 PM – Afternoon Peak Hour
- 4 PM to 6 PM – PM Peak Hour

The TIA will review conditions at the study area intersections for the following scenarios, during the AM, afternoon, and PM peak hours:

- 2016 Existing
- 2017 Pre-Development without Warehousing/Distribution Facility
- 2017 Post-Development with Warehousing/Distribution Facility

Intersection capacity analyses will be conducted for each scenario using Synchro software and the Transportation Research Board's *Highway Capacity Manual* (HCM) 2000 and HCM 2010 methodologies. A 95th percentile queueing analyses will also be conducted for the study area intersections under all scenarios using SimTraffic software.

Existing Traffic

In accordance with the City's TIA requirements, traffic counts will be conducted at a time when school is in session and there are no unusual weather or traffic patterns. Traffic counts will include TMCs at the study area intersections.

Pre-Development Conditions

Pre-development conditions will be estimated by applying a growth rate to existing traffic counts and adding in-process trips.

Background growth is assumed to be 1.5%, consistent with the Koch Corporate Center TIA for the same study area.

In-process trips presented in the Koch Corporate Center TIA, as well as any other in-process trips obtained from City staff, will be added to growth-factored counts to reflect pre-development conditions. In-process trips presented in the Koch Corporate Center traffic study include those from Hedges Business Park, Koch Corporate Center – Buildings 6 and 7, and Koch Corporate Center – Buildings 1, 5, and 8. These projects will be reviewed for occupancy, and their trips (based on the trip generation rate during the peak hour of the generator, consistent with the Koch Corporate Center TIA) will be included to the extent reasonable. In addition, although Koch Corporate Center Buildings 10, 11, and 12 are not yet approved, the application has been deemed complete, and their trips will be included. The enclosed Figure A presents the total in-process trips anticipated with these projects. If recent development approvals could add trips to study area intersections, those also will be accounted.

Safety

A safety evaluation will be conducted at the study intersections. It will include evaluating crash history as well as evaluating sight distance at the site driveway. Crash data will be compiled for the last five complete years of available statistics (January 1, 2010, to December 31, 2014). Crash rates will be computed for each intersection and evaluated against ODOT's 90th percentile crash rate standards. Intersection sight distance evaluations will be based on AASHTO methodology.



City of Tualatin Standards

The TDC, Section 74.440(3)(e), requires signalized intersections to operate at LOS D and unsignalized intersections to operate at LOS E. The following study area intersections lie within City jurisdiction:

- SW 115th Avenue/Site Access
- SW 115th Avenue/SW Itel Street

The TIA will address the need for improvements for facilities that do not meet City standards.

Washington County Standards

The current Washington County TSP lists a v/c ratio of 0.99 as acceptable during the AM and PM peak hours. However, County standards only require mitigation for intersections based on safety deficiencies where site generated trips are added. The following study area intersections lie within Washington County jurisdiction:

- SW Tualatin-Sherwood Road/SW 115th Avenue
- SW Tualatin-Sherwood Road/SW Avery Street

The TIA will address the need for improvements for facilities that do not meet County standards or are identified as safety deficient.

DATA REQUEST

Please provide the trip generation and distribution data, plus the trip assignment figures, for the Hedges Business Park.

SUMMARY

In summary, please confirm the following assumptions for the TIA:

- Study area intersections
- Analysis scenarios and analysis periods
- An annual growth rate of 1.5%
- The list of in-process projects, and provide others as needed
- Planned roadway improvements affecting the study area
- Trip generation and distribution assumptions

If you should have any questions or comments, please do not hesitate to contact either one of us.

Sincerely,


Brent Ahrend, PE
Senior Associate | Traffic Engineer


David Holt, PE (WA)
Transportation Engineer

Enclosures: Scoping Meeting Minutes
Preliminary Site Plan



Figures

- c: Erin Engman – City of Tualatin
Jinde Zhu – Washington County
Gabriela Frask, Bob Frentress, Dave Larson, Suzannah Stanley, Janet Jones – Mackenzie

PROJECT NUMBER: 2160026.MK ISSUE DATE: March 16, 2016
PROJECT NAME: Majestic SW 115th Avenue

RECORDED BY: Suzannah Stanley, Land Use Planner
TO: FILE
PRESENT: Tony Doran, Erin Engman, Melinda Anderson – City of Tualatin
Phillip Brown, Marc Burns, John Perkins – Majestic Realty Co
Gabriela Frask, Dave Larson, Brent Ahrend, Suzannah Stanley, Bob Frentress – Mackenzie

SUBJECT: Scoping Meeting Notes (March 9, 2016)

ACTION ITEMS

- 1.1 Bob Frentress will confirm if the 1200-C issued for the grading that has already been done on the site is still valid. **Update after meeting: There is no valid 1200-C on the site.**
- 1.2 Bob Frentress will research Pacific Coast Fruit records to determine if the 70' Blake right-of-way was already dedicated and confirm requirements for improvements. **Update after meeting: Site development plans in Mackenzie's records show a 37' of right-of-way dedication but no improvements, though the project did not go through Architectural Review so no conditions were added.**
- 1.3 Bob Frentress will coordinate with the building official to see if one access will suffice for fire access due to topographic constraints.
- 1.4 Bob Frentress will follow up with Tony Doran regarding his research on the feasibility/approvability of a request to vacate the rights-of-way abutting the site (SW 120th and SW Blake) if they won't be needed for future streets.
- 1.5 Suzannah Stanley will follow up with Erin Engman on the two items she is looking into:
 - a. The Pacific Coast Fruit decision to confirm how the landscaped setback requirements were applied.
 - b. Confirmation that building setbacks are determined through the Architectural Review process rather than set, and potential approvability of setback variances if one is needed.

INFORMATION ITEMS

Architectural Review

1. Erin Engman outlined the Architectural Review (AR)/AR Board (ARB) approval process:

- A. Scoping meeting
 - B. Pre-application meeting
 - C. Neighborhood meeting
 - D. Application submittal
 - E. 30-day completeness period, completeness items, application deemed complete
 - F. ARB hearing scheduled within 30 days of completeness
2. Tony Doran noted that the City is now requiring written responses to engineering standards of the Tualatin Development Code and Tualatin Municipal Code. Narratives should be provided in Word format.
 3. Tony Doran explained that the applicant could expect to receive AR approval 8-16 weeks from date of completeness but getting through the completeness process is taking longer due to staffing changes.
 4. A Service Provider Letter from Clean Water Services (CWS) will be required for AR submittal.

Development Code Requirements

1. Erin Engman noted that SW 115th Avenue is a Collector street with a bike lane and an 8' bike connection will be required from the lane to the bike parking on the site. (Pedestrian connections from the main entrances to the sidewalk will also be required.)
2. Majestic Realty Co asked if landscaping was required on the north side of the loading area for the site plan proposed by Pacific Coast Fruit. Erin Engman will review the Pacific Coast Fruit decision to confirm how the landscaped setback requirements were applied.
3. Regarding architectural requirements and changes required of nearby industrial buildings, Erin Engman recommended we review the minutes of the ARB meeting approving the Koch Corporate Center buildings 1, 5, and 8 (attached).
4. Suzannah Stanley presented the proposal to include adequate parking for a mix of industrial and office uses. The current site plan shows adequate parking for warehouse with some supporting office.
5. Erin Engman was concerned about potential change of use if tenants are in a different use category. John Perkins suggested that we could show potential future parking in the truck court area if a tenant needs more parking. Tony Doran said that typically, multiple options are not approved through one AR, and that if a future tenant needed a parking modification, likely a Minor AR (4-6 week staff level decision) would be required. However, Mackenzie could submit two options to the City's Planning Manager, Aquilla Hurd-Ravich, the two options for parking to confirm if they could both be approved through the initial AR. Mackenzie (Suzannah Stanley) can do this once site plans are determined.

Permitting

1. Public works permits (if required) and water quality permits will be required before the building permit can be issued. These permits can take 2-3 months to issue/process, or longer if Washington County Department of Land Use and Transportation has concerns about the public

- works improvements. If no public works permit is required, concurrent review of the water quality permit and other site permits is possible.
2. Building permits can be submitted after the ARB has issued a decision. (The City does not allow concurrent review of land use applications and any permits.) However, mass grading/erosion control permits can be issued *before* the AR application is submitted, and can be amended through a quicker process later on. Tony Doran recommended we submit to Oregon Department of Environmental Quality for the 1200-C erosion control permit as soon as possible. Bob Frentress will confirm if the 1200-C issued for the grading that has already been done on the site is still valid. **Update after meeting: There is no valid 1200-C on the site.**
 3. A geotechnical report will be required for permit submittal.

Transportation

1. Washington County owns SW Tualatin-Sherwood Road and may have comments on the increase in trips from the proposed building. Tony Doran will include the County's comments in his response following the scoping meeting.
2. Road improvements are planned for SW 124th Avenue to the west of the site (see attached map from Washington County). The wetlands directly west of the site may affect the proposed road alignment.
3. Tony Doran explained that the existing streets in the area were built under the old Transportation System Plan (TSP). There are new classifications:
 - A. SW 120th Avenue is an Industrial Connector (per attached page showing standard sections for collectors)
 - B. SW Blake Street is planned as a Minor Collector (but is not planned to extend across the railroad into the residential area)
 - C. There are plans for SW 124th Avenue to continue south to connect with SW Blake Street
4. Tony Doran gave the traffic study requirements (attached) to Brent Ahrend.
5. Phillip Brown asked if there are plans for the subject site to have access to SW 120th Avenue, which is shown along the west boundary of the site on the current TSP. The final alignment of SW 120th could change based on recent road alignment reviews. The alignment of SW 120th and need for half-street improvements will need to be addressed through this process.
6. Transpo is working on a study of the SW 115th and SW Itel intersection (4-way stop) to determine what the peak hours are. Melinda Anderson noted that at a recent visit to the area she saw parking issues more than traffic backup at that intersection (many vehicles parked on-street).
7. Tony Doran noted that Majestic Realty Co could propose vacating the rights of way abutting the site (SW 120th and SW Blake) if they won't be needed for future streets. Vacation requests are approved through a City Council decision process. Tony Doran will follow up with information as to the feasibility/approvability of this request. He clarified the right-of-way shown/needed is likely 70' on the current TSP. Mackenzie (Bob Frentress) will research Pacific Coast Fruit records to determine if the 70' Blake right-of-way was already dedicated and confirm requirements for improvements. **Update after meeting: Site development plans in Mackenzie's records show a**

37' right-of-way dedication but no improvements, though the project did not go through Architectural Review so no conditions were added.

- A. Phillip Brown asked about potential adjustments or variances to building setback requirements based on the (probably unused) rights-of-way to the south and west. We believe the building setbacks are determined through the Architectural Review process rather than set, but Erin Engman will follow up on this issue and potential approvability of setback variances if one is needed.
8. Tony Doran explained that SW 115th Avenue is fully constructed and no improvements will be required to the existing 72' right-of-way, unless the applicant's traffic study demonstrates that improvements are needed.
9. A traffic impact study will be needed for the project. Tony Doran noted the City is relying on applicants to provide more detail and address the applicable code sections due to staffing situations. He also noted the completeness review will likely take longer and include revisions to the analysis as staff works with the applicant.

Engineering

1. Phillip Brown asked if the water quality facilities nearby had been sized for future development of the subject site. Tony Doran replied that the public facilities are for right-of-way runoff only and existing neighboring facilities are for those lots only. Tony also mentioned that water quality and detention is required on-site; these areas can count towards the 15% overall site landscaping requirement. Stormwater calculations will be required at AR submittal.
2. Bob Frentress asked if stormwater could discharge to SW 115th Avenue; Tony Doran replied that Mackenzie sized the system several years ago and there may have been a 25-year detention requirement. The AR application must include documentation if we want to use this system.
3. Tony Doran presented the existing utility map and noted that new laterals are planned for the site. Sanitary and water lines are stubbed to the site from SW 115th Avenue, but there is no storm service. **Updated after meeting: The sanitary line may be stubbed too high up the hill for use by the proposed building.**
4. Tony Doran explained that the new AR application requirements include a hydraulic modeling estimate sheet. There may be fees based on water capacity and Tualatin Valley Fire and Rescue (TVFR) may have hydrant spacing requirements.
5. Regarding fire access, Ty Darby at TVFR and Dave Flemings (Interim Building Official at Tualatin) can review the site plan for fire access. Suzannah Stanley asked about the potential for additional access points to SW 115th Avenue if they are required for fire access. Tony Doran clarified that the access limitations are that driveways (maximum 40' wide) must be at least 150' from intersections, though there may be flexibility for emergency-only access. TVFR may also approve alternate means and methods for fire access in this case. Bob Frentress will coordinate with the building official to see one access will suffice for fire access due to topographic constraints.
6. Tony Doran noted that Clean Water Services may be updating their code and requirements for stormwater treatment. It is not known when these changes will go into effect.

Economic Development

1. Melinda Anderson asked about Majestic's timing for the project. Phillip Brown said that they are in escrow and plan to start the process as soon as possible.
2. Suzannah Stanley asked about any potential enterprise or urban renewal zones or other potential incentives. Melinda Anderson said that the City has submitted an application to the State of Oregon for incentives in some industrial areas; she will check if the subject site was included in those areas. There are two urban renewal districts in Tualatin but neither is near the site.

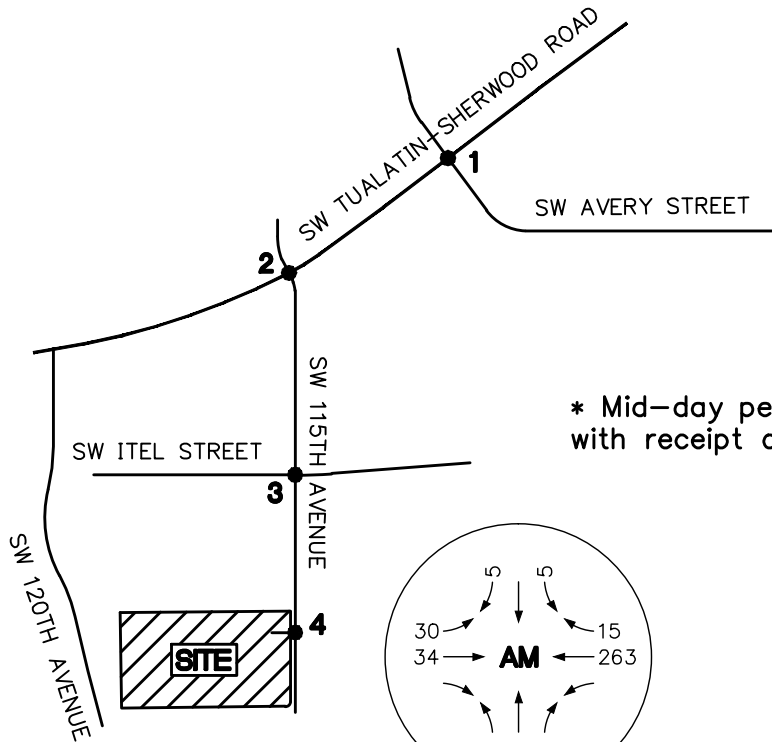
Every effort has been made to accurately record this meeting. If any errors or omissions are noted, please provide written response within five days of receipt.

Enclosure(s): Materials from City

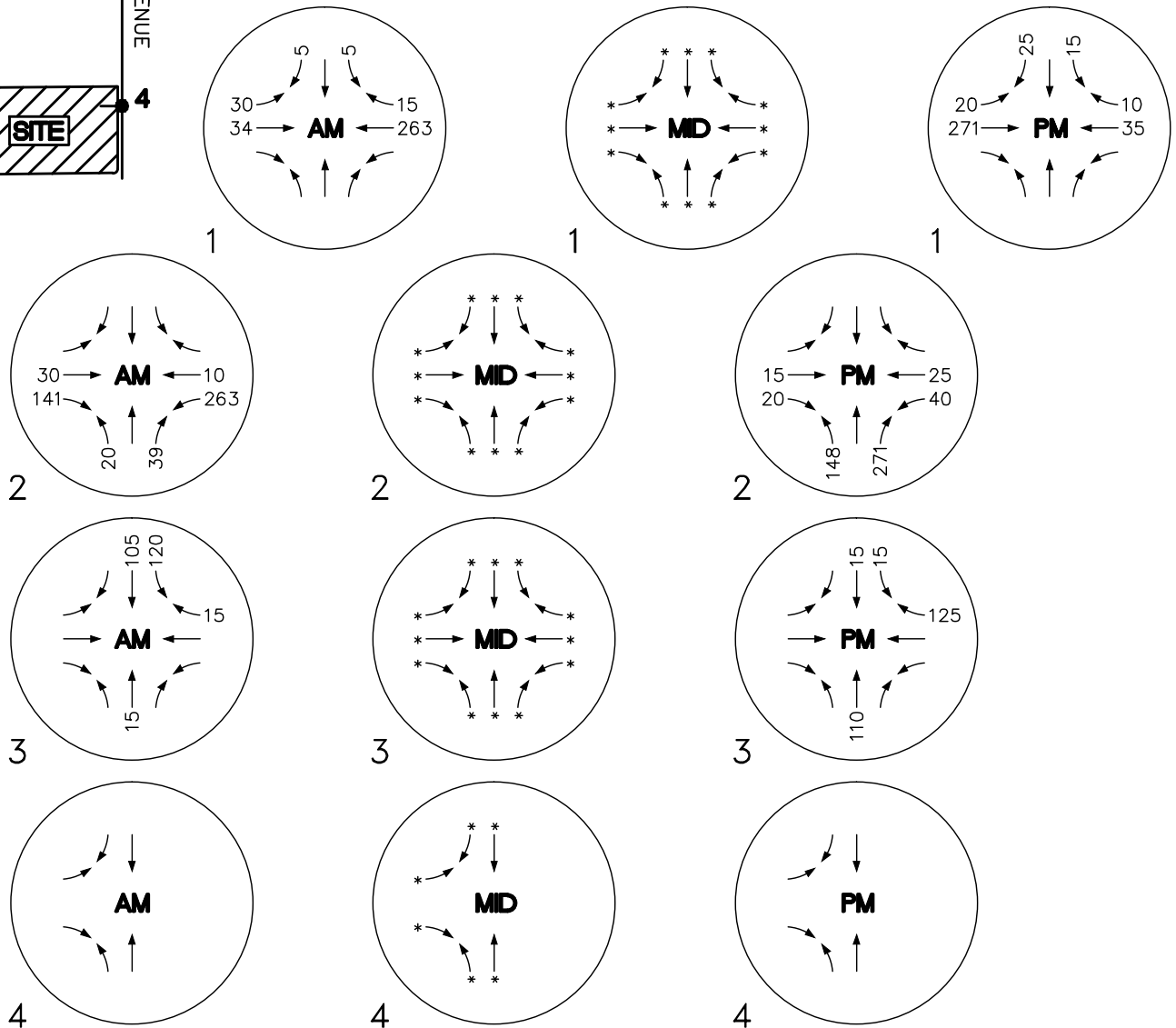
c: Present



NOT TO SCALE



* Mid-day peak hour in-process trips to be confirmed with receipt of Hedges Business Park traffic study.



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2016

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
2160026.01

IN-PROCESS TRIPS

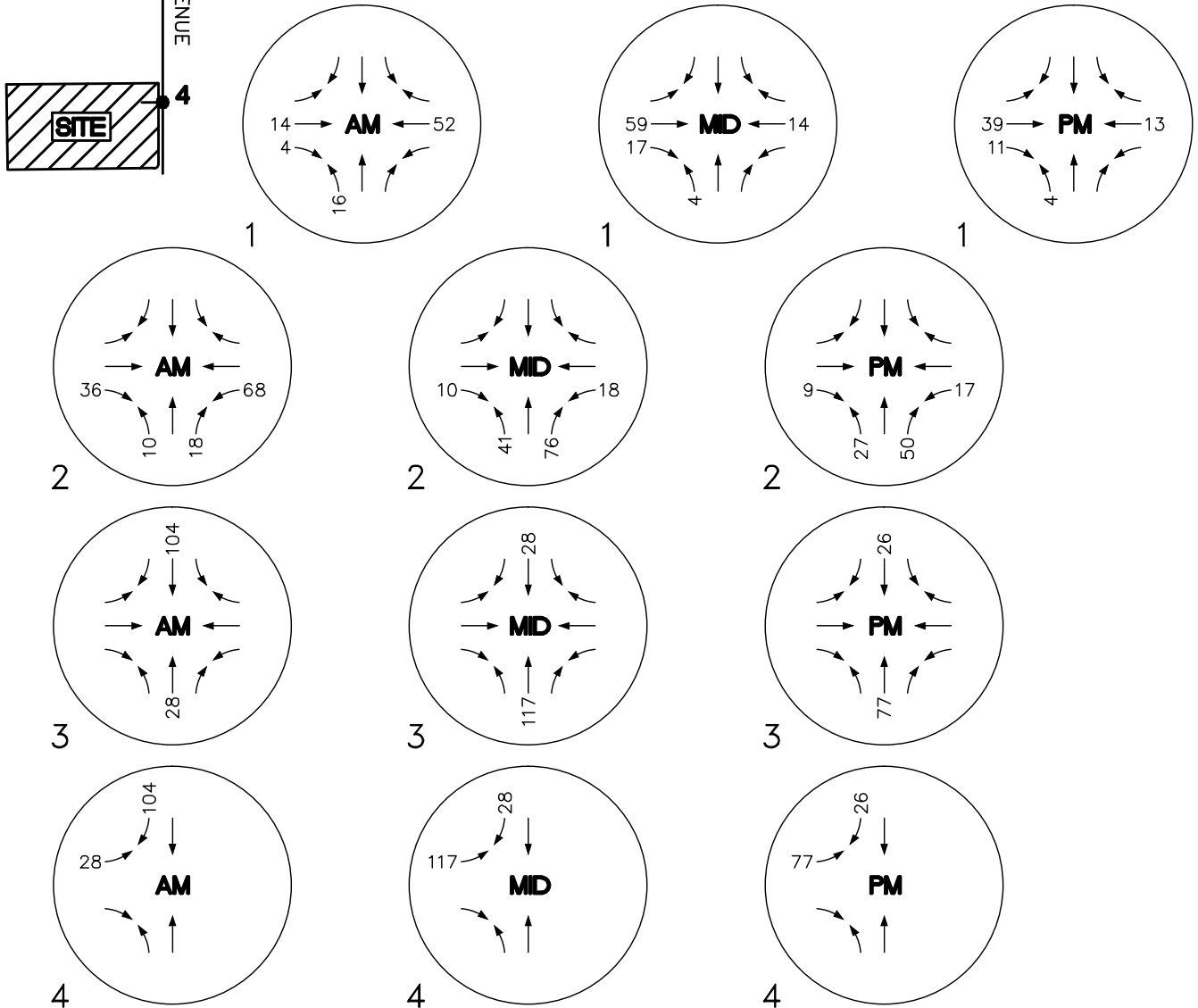
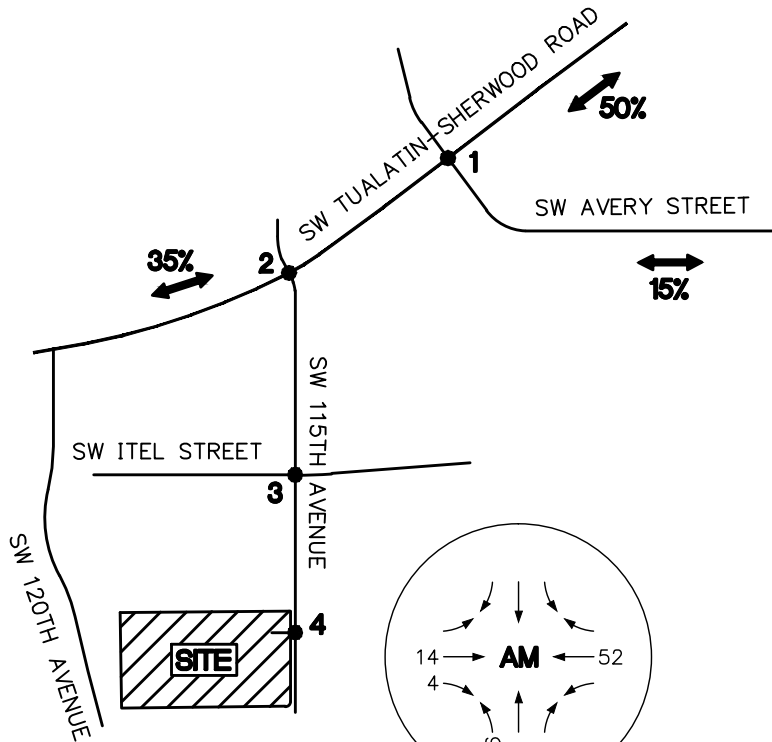
MAJESTIC SW 115TH AVENUE
TUALATIN, OREGON

FIGURE

A



NOT TO SCALE



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture - Interiors
 Planning - Engineering

MACKENZIE

DATE: 4.4.2016

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

B

Janet T. Jones

From: Brent Ahrend
Sent: Monday, April 18, 2016 2:49 PM
To: Tony Doran
Cc: David Holt; Janet T. Jones; Gabriela Frask; Suzannah Stanley
Subject: RE: Majestic SW 115th Avenue

Categories: Filed by Newforma

Tony,

Are you able to provide us with a copy of the Hedges Business Park traffic analysis or any information about the site location and proposed buildings/uses? I believe this is the last piece of information we need to complete our analysis.

Thanks,

Brent

From: Tony Doran [mailto:TDORAN@ci.tualatin.or.us]
Sent: Monday, April 18, 2016 9:37 AM
To: Brent Ahrend
Subject: RE: Majestic SW 115th Avenue

Brent,

Tualatin doesn't have a process to evaluate trip generation and require improvements when tenants change. Therefore evaluation of the reasonable worst case use allowed by zoning is needed at time of constructing a new building. This would be light industrial.

While Blake doesn't exist and would require dedication from other properties it is part of Tualatin's code addressing functional street connectivity. As all applicable code needs to be addressed with development, even if you feel it is likely you will prove that construction is not needed at this time for this development, the submittal of that proof is needed for the architectural review analysis. This will assure a defensible land use decision in case of appeal.

Tony Doran
Engineering Associate
City of Tualatin
(503) 691-3035

From: Brent Ahrend [mailto:BAhrend@mcknze.com]
Sent: Thursday, April 14, 2016 9:29 AM
To: Tony Doran
Cc: Jinde Zhu; Gabriela Frask; Bob Frentress Jr.; Dave Larson; Suzannah Stanley; Janet T. Jones; David Holt; Erin Engman
Subject: RE: Majestic SW 115th Avenue

Tony,

Thanks for your comments. We have the following responses:

Access: The TIA will address TSP Figure 11-1 and TDC Chapter 75 as they apply to the project.

Trip Generation: If we have a warehouse use tenant, can we use the warehouse trip rate, or will you still require the use of light industrial trip rates?

Study Area: The TIA will include the T-S Road intersections at 112th/Avery, 115th, 120th, and 124th.

Scenarios: The TIA will address future conditions at the 124th/T-S Rd. signal in two ways:

- In the current 3-leg configuration
- In the future 4-leg configuration, including the interim extension as a 2-lane roadway to Grahams Ferry Rd. that's about to begin construction, as if the 4th leg would be added within the analysis period

We request the TIA not include the future 124th/Blake intersection for several reasons:

- Future realignment and construction of Blake St. would require redevelopment of the Tigard Sand & Gravel quarry.
- The Blake St. extension to 124th is not funded for completion within the analysis period.
- Until properties to the west develop and roadway connections are provided, all trips from the properties along 115th Avenue that travel to and from the south on 124th Avenue will need to use T-S Road to get between the two.

Impact Analysis: The TIA will report v/c ratio, LOS, and average delay for all intersections.

Coordination: The TIA also will address any supplemental comments from Washington County staff.

Please confirm we may use a warehouse rate for a specific tenant, and that we will not be required to analyze a Blake connection to 124th.

Also, you did not respond to our question about in-process project information. We have info for all the sites except Hedges Business Park. Can you provide us with a copy of that traffic analysis or any information about the site location and proposed buildings/uses. We need this to estimate mid-day peak volumes.

Thanks,

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning



Architecture · Interiors · Engineering · Planning

P 503.224.9560 W mcknze.com C [vcard](#)

RiverEast Center
1515 SE Water Ave, Suite 100
Portland OR 97214

This email is confidential, may be legally privileged, and is intended solely for the addressee. If you are not the intended recipient, access is prohibited. As email can be altered, its integrity is not guaranteed.

From: Tony Doran [<mailto:TDORAN@ci.tualatin.or.us>]

Sent: Wednesday, April 06, 2016 9:33 AM

To: Brent Ahrend

Cc: Jinde Zhu; Gabriela Frask; Bob Frentress Jr.; Dave Larson; Suzannah Stanley; Janet T. Jones; David Holt; Erin Engman

Subject: RE: Majestic SW 115th Avenue

Brent,

Your proposed scope looks nicely extensive; however there are a few more requested additions and tweaks:

- Access - the code that should be referred to would include Figure 11-1 that identifies 115th as a major collector and Blake as a minor collector plus TDC 75.140(a) and (b) for access requirements, respectively.
- Trip Generation - The ITE code should be 110 Light Industrial to remain consistent both with the reasonable worst case use allowed in this zone and as you recommend with the studies for Koch.
- Study Area – Include 112th, 120th, and 124th intersections with T-S Rd. Additionally, evaluate the two situations of 124th as it is currently not constructed and after future construction south to connect to BFR. With the scenario of a constructed 124th include the intersection with Blake in the evaluation.
- When evaluating intersections, include LOS for all intersections including the ones on T-S Rd and 124th as they are within Tualatin and our code applies in addition to WashCo's.
- Lastly, please include any requests from Jinde to be added as well. Thank you.

Thank you for attaching the scoping meeting notes for some clarifications:

- Permitting (2) – submit the 1200C to Tualatin. We will route the plans to CWS and then CWS to DEQ.
- Transportation (7) – The cross-sections for Blake is 76' and 60' for 120th. See [Figure 11-1: Functional Classification and Traffic Signal Plan](#) for classifications and [Figures 74-2A-G: Street Design Standards](#) for cross-sections.

Tony Doran
Engineering Associate
City of Tualatin
(503) 691-3035

From: Brent Ahrend [<mailto:BAhrend@mcknze.com>]

Sent: Monday, April 04, 2016 12:49 PM

To: Tony Doran

Cc: Jinde Zhu; Gabriela Frask; Bob Frentress Jr.; Dave Larson; Suzannah Stanley; Janet T. Jones; David Holt; Erin Engman

Subject: Majestic SW 115th Avenue

Tony,

As discussed at the scoping meeting on March 9, we are providing our proposed scope for the Transportation Impact Analysis.

Please contact me or David Holt if you have any questions.

Thanks,

Brent T. Ahrend, PE
Senior Associate | Asst Department Head – Transportation Planning



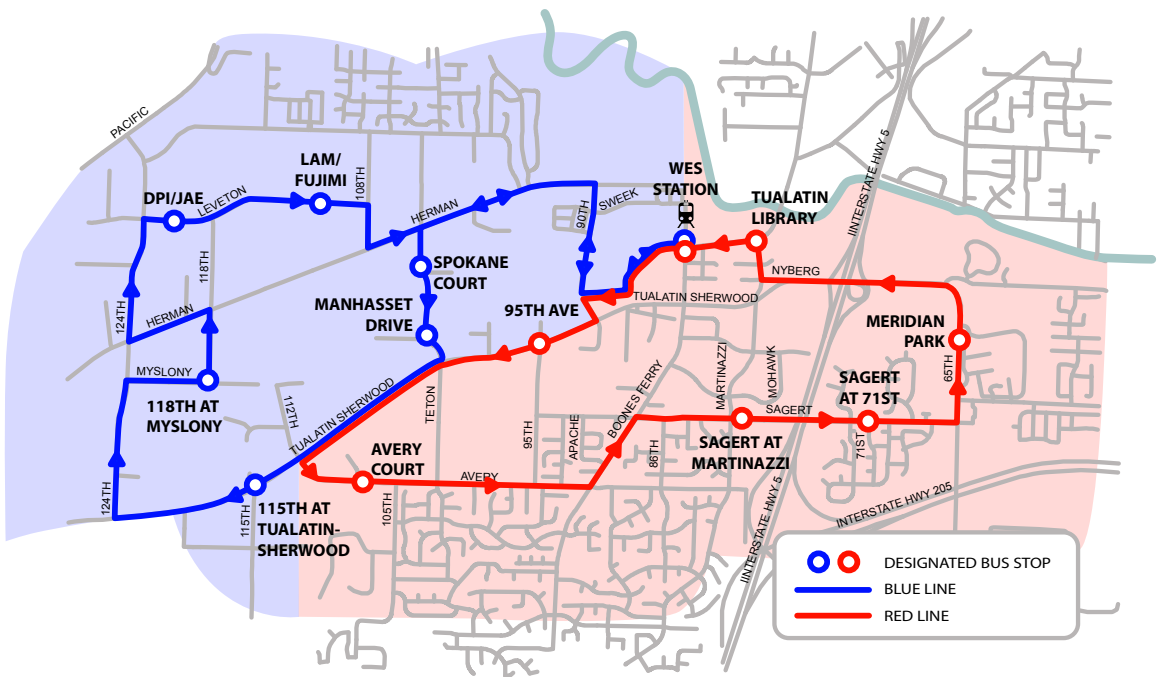
Architecture · Interiors · Engineering · Planning

P 503.224.9560 W mcknze.com C [vcard](#)

RiverEast Center
1515 SE Water Ave, Suite 100
Portland OR 97214

This email is confidential, may be legally privileged, and is intended solely for the addressee. If you are not the intended recipient, access is prohibited. As email can be altered, its integrity is not guaranteed.

APPENDIX D
**TRANSIT
INFORMATION**



BLUE LINE SCHEDULE

Southbound WES Arrival Time	Depart WES Station	Spokane Court	Manhasset Drive	115th at Tualatin-Sherwood	118th at Myslony	DPI/JAE	LAM/Fujimi	Arrive WES Station	Northbound WES Departs
---	5:32	5:37	5:38	5:42	5:45	5:49	5:50	5:55	
6:15	6:16	6:21	6:22	6:26	6:29	6:33	6:34	6:42	
6:45	6:46	6:51	6:52	6:56	6:59	7:03	7:04	7:12	
7:15	7:16	7:21	7:22	7:26	7:29	7:33	7:34	7:42	
7:45	7:46	7:51	7:52	7:56	7:59	8:03	8:04	8:12	
8:15	8:27	8:32	8:33	8:37	8:40	8:44	8:45	8:53	
8:45	8:57	9:02	9:03	9:07	9:10	9:14	9:15	9:23	
9:15	9:27	9:32	9:33	9:37	9:40	9:44	9:45	9:53	
	2:58	3:03	3:04	3:08	3:11	3:15	3:16	3:24	3:38
	3:28	3:33	3:34	3:38	3:41	3:45	3:46	3:54	4:08
	3:58	4:03	4:04	4:08	4:11	4:15	4:16	4:24	4:38
	4:28	4:33	4:34	4:38	4:41	4:45	4:46	4:54	5:08
	4:58	5:03	5:04	5:08	5:11	5:15	5:16	5:24	5:38
	5:39	5:44	5:45	5:49	5:52	5:56	5:57	6:05	6:08
	6:09	6:14	6:15	6:19	6:22	6:26	6:27	6:35	6:38
	6:39	6:44	6:45	6:49	6:52	6:56	6:57	7:05	7:08

\$No Fare Required

PM times in **BOLD**

RED LINE SCHEDULE

Southbound WES Arrival Time	Leave WES Station	95th Ave	Avery Court	Sagert at Martinazzi	Sagert St. at 71st Ave.	Meridian Park	Tualatin Library	Arrive WES Station	Northbound WES Departs
---	5:02	5:05	5:10	5:16	5:17	5:19	5:24	5:28	
---	5:32	5:35	5:40	5:46	5:47	5:49	5:54	5:58	
6:15	6:16	6:19	6:24	6:30	6:31	6:33	6:38	6:42	
6:45	6:46	6:49	6:54	7:00	7:01	7:03	7:08	7:12	
7:15	7:16	7:19	7:24	7:30	7:31	7:33	7:38	7:42	
7:45	7:46	7:49	7:54	8:00	8:01	8:03	8:08	8:12	
8:15	8:27	8:30	8:35	8:41	8:42	8:44	8:49	8:53	
8:45	8:57	9:00	9:05	9:11	9:12	9:14	9:19	9:23	
	2:58	3:01	3:06	3:12	3:13	3:15	3:20	3:24	3:38
	3:28	3:31	3:36	3:42	3:43	3:45	3:50	3:54	4:08
	3:58	4:01	4:06	4:12	4:13	4:15	4:20	4:24	4:38
	4:28	4:31	4:36	4:42	4:43	4:45	4:50	4:54	5:08
	4:58	5:01	5:06	5:12	5:13	5:15	5:20	5:24	5:38
	5:39	5:42	5:47	5:53	5:54	5:56	6:00	6:05	6:08
	6:09	6:12	6:17	6:23	6:24	6:26	6:30	6:35	6:38
	6:39	6:42	6:47	6:53	6:54	6:56	7:00	7:05	7:08

\$No Fare Required

PM times in **BOLD**

APPENDIX E
**TRAVEL DEMAND
MODEL PLOTS**

2010 Base, 0700-0859
Auto volumes



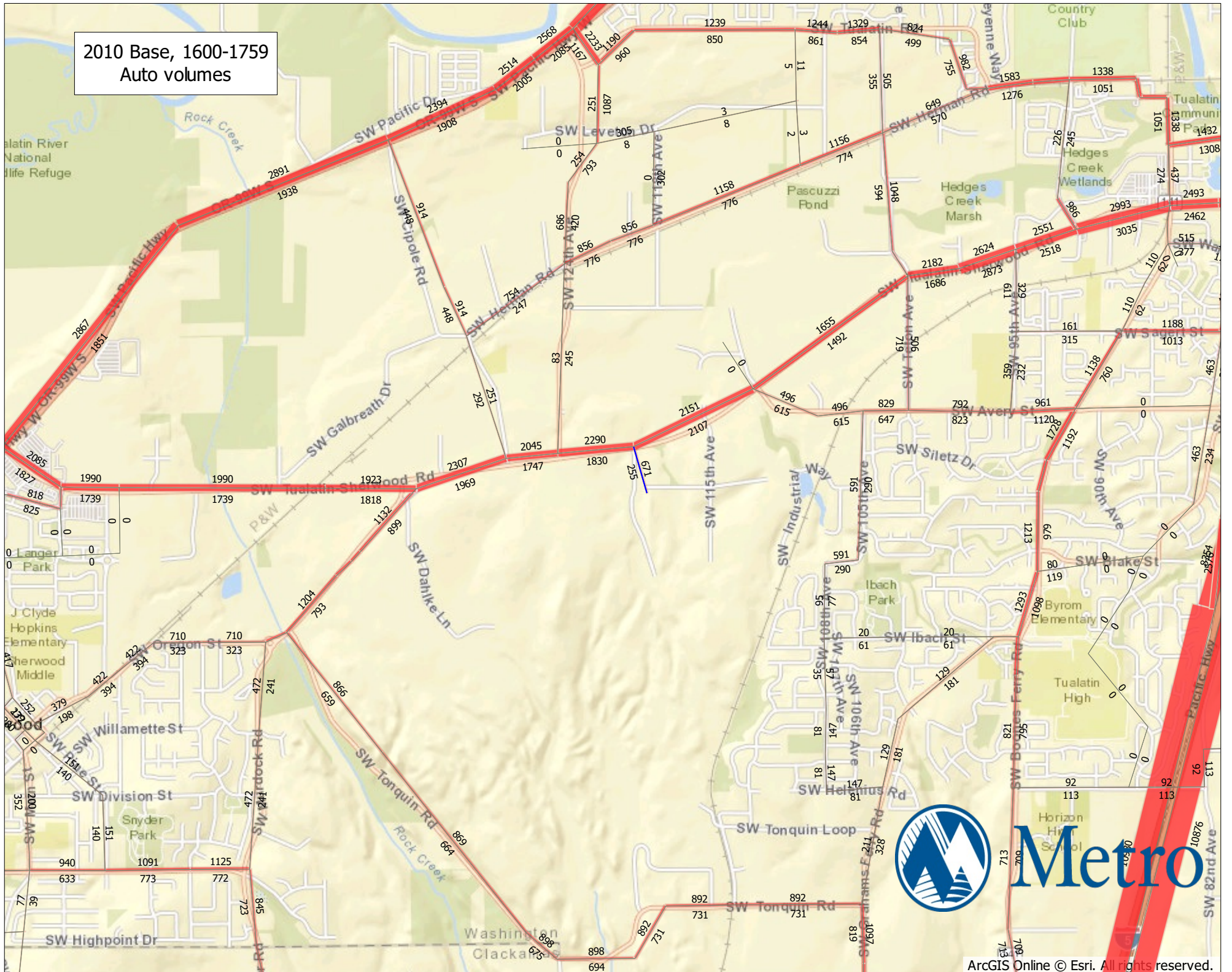
Metro

2010 Base, 1400-1559
Auto volumes



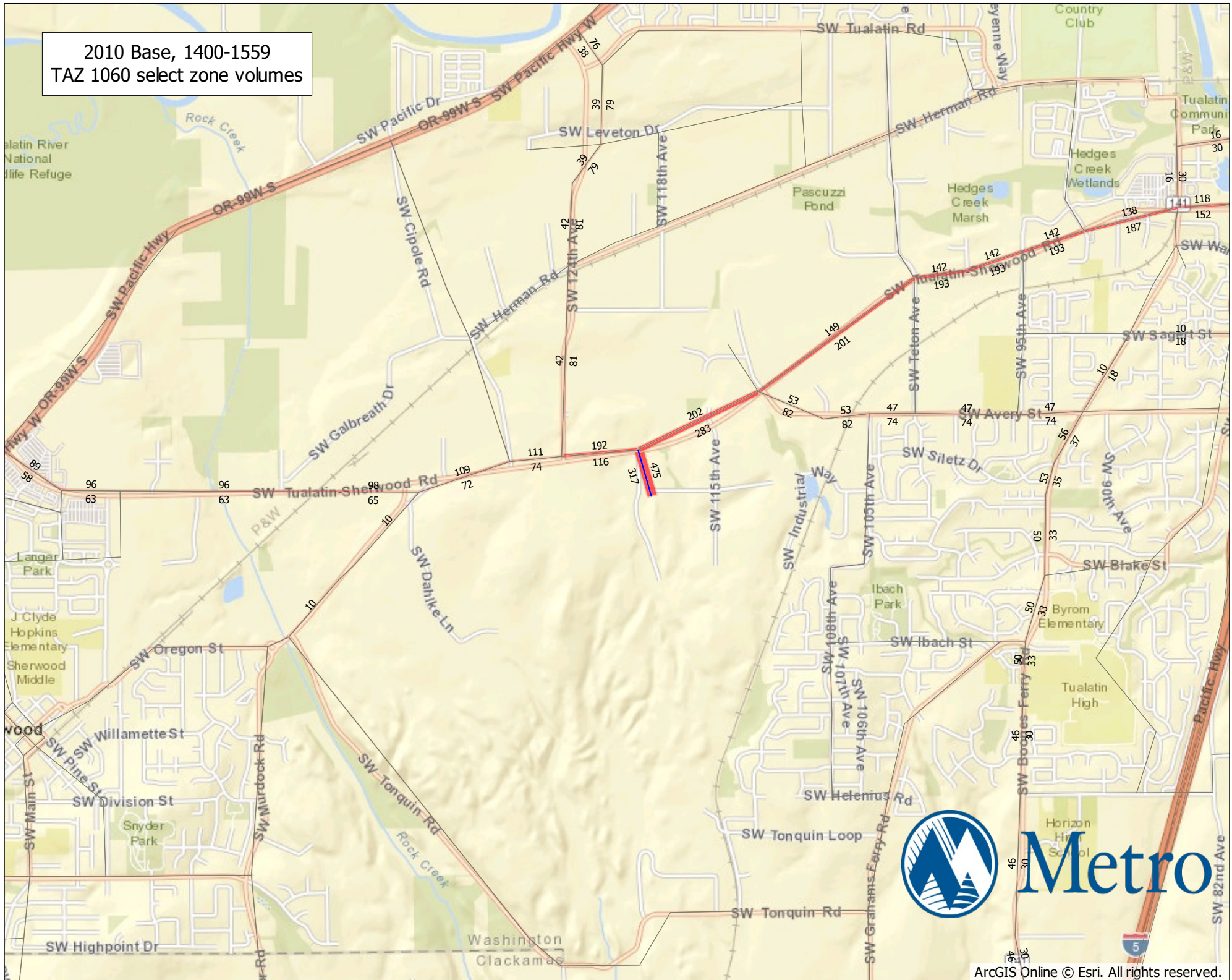
Metro

2010 Base, 1600-1759
Auto volumes



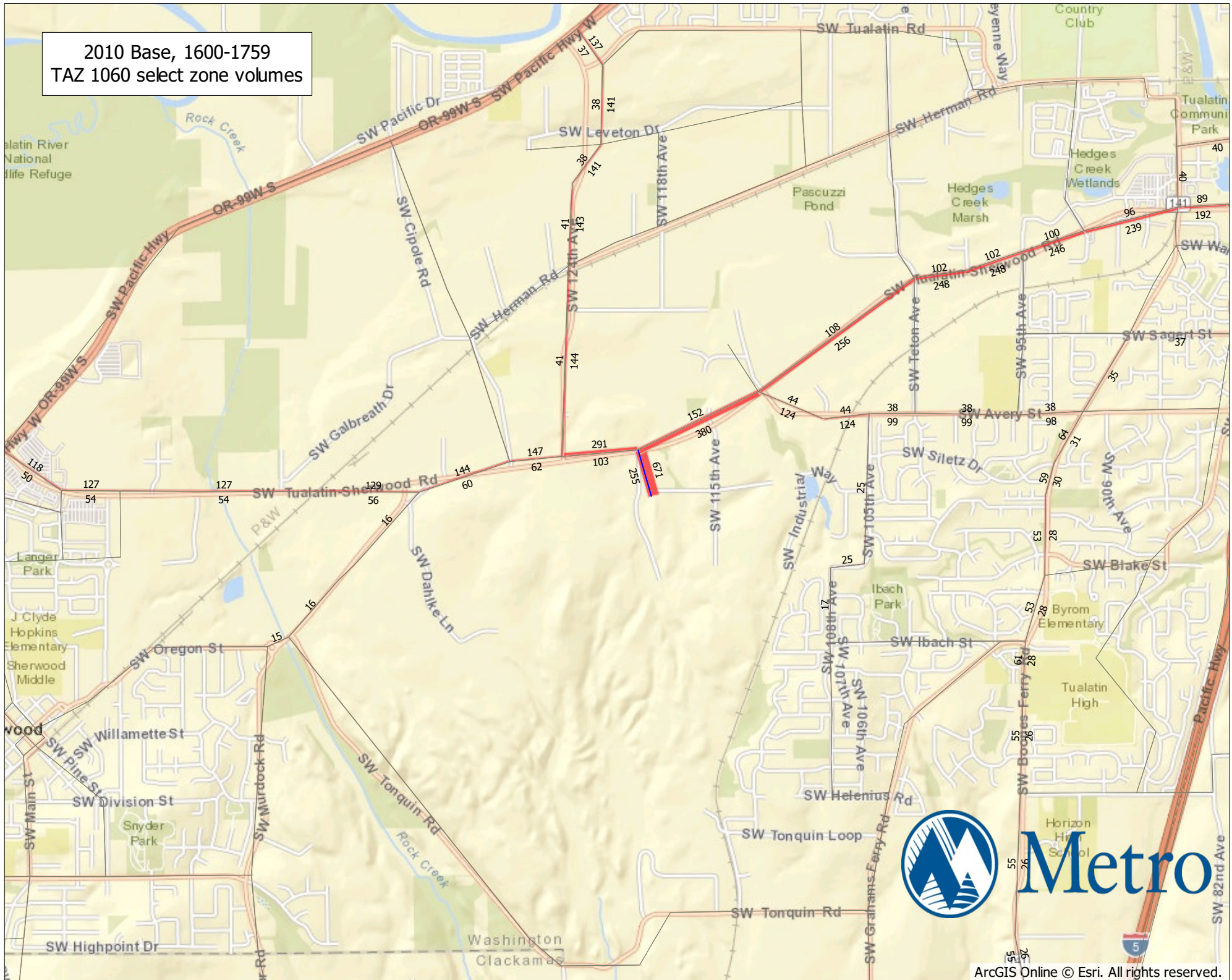
Metro

2010 Base, 1400-1559
TAZ 1060 select zone volumes



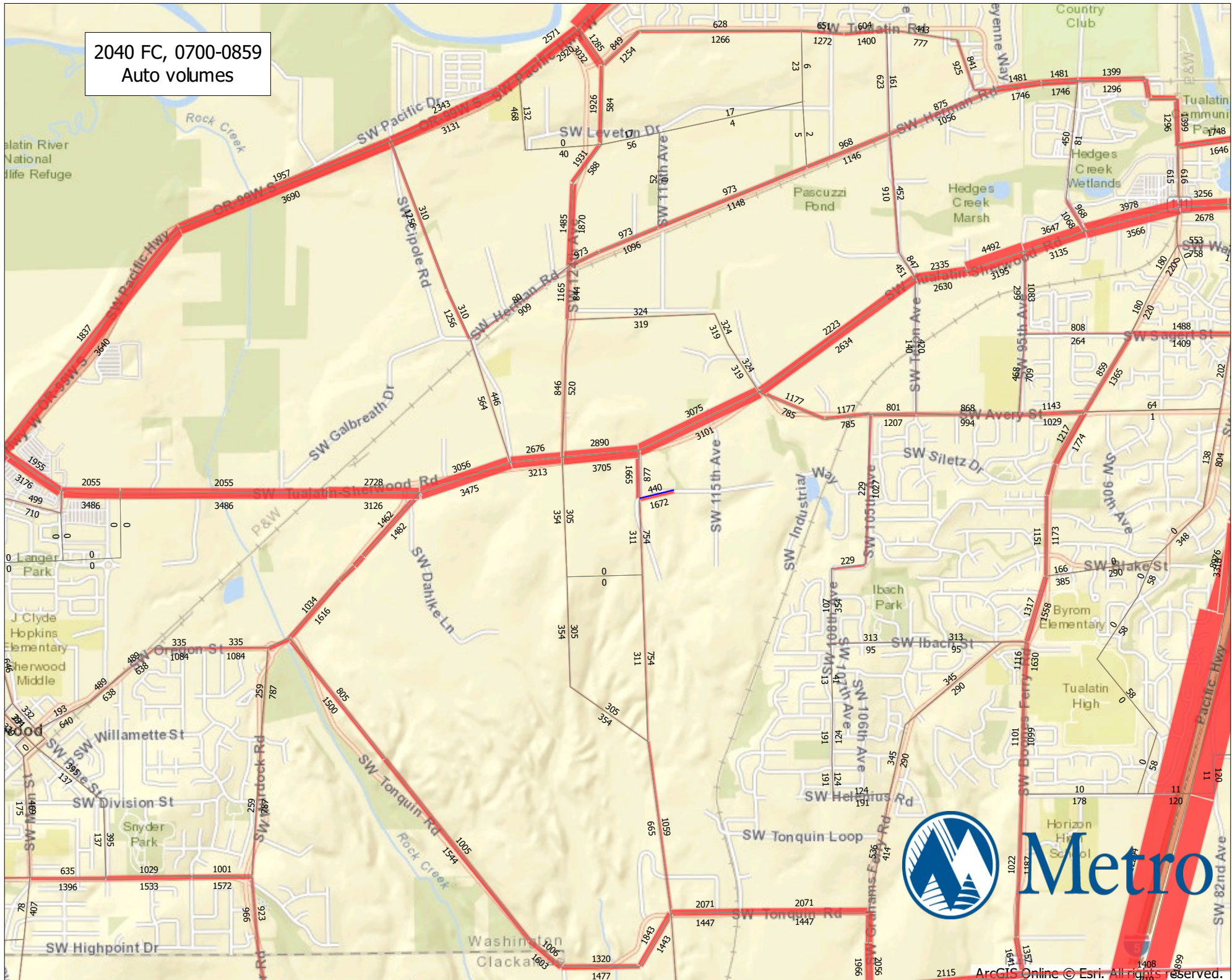
Metro

2010 Base, 1600-1759
TAZ 1060 select zone volumes



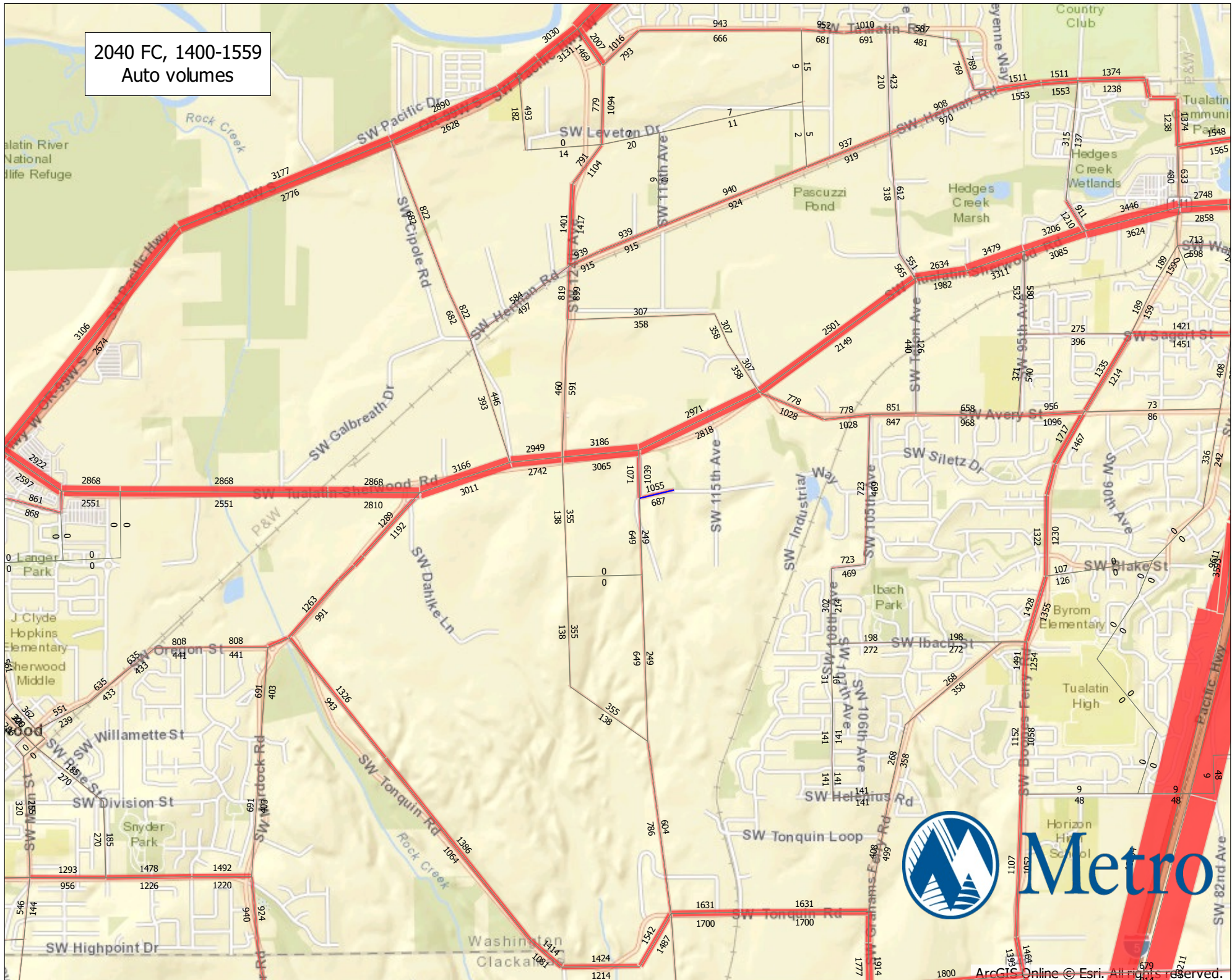
Metro

2040 FC, 0700-0859
Auto volumes



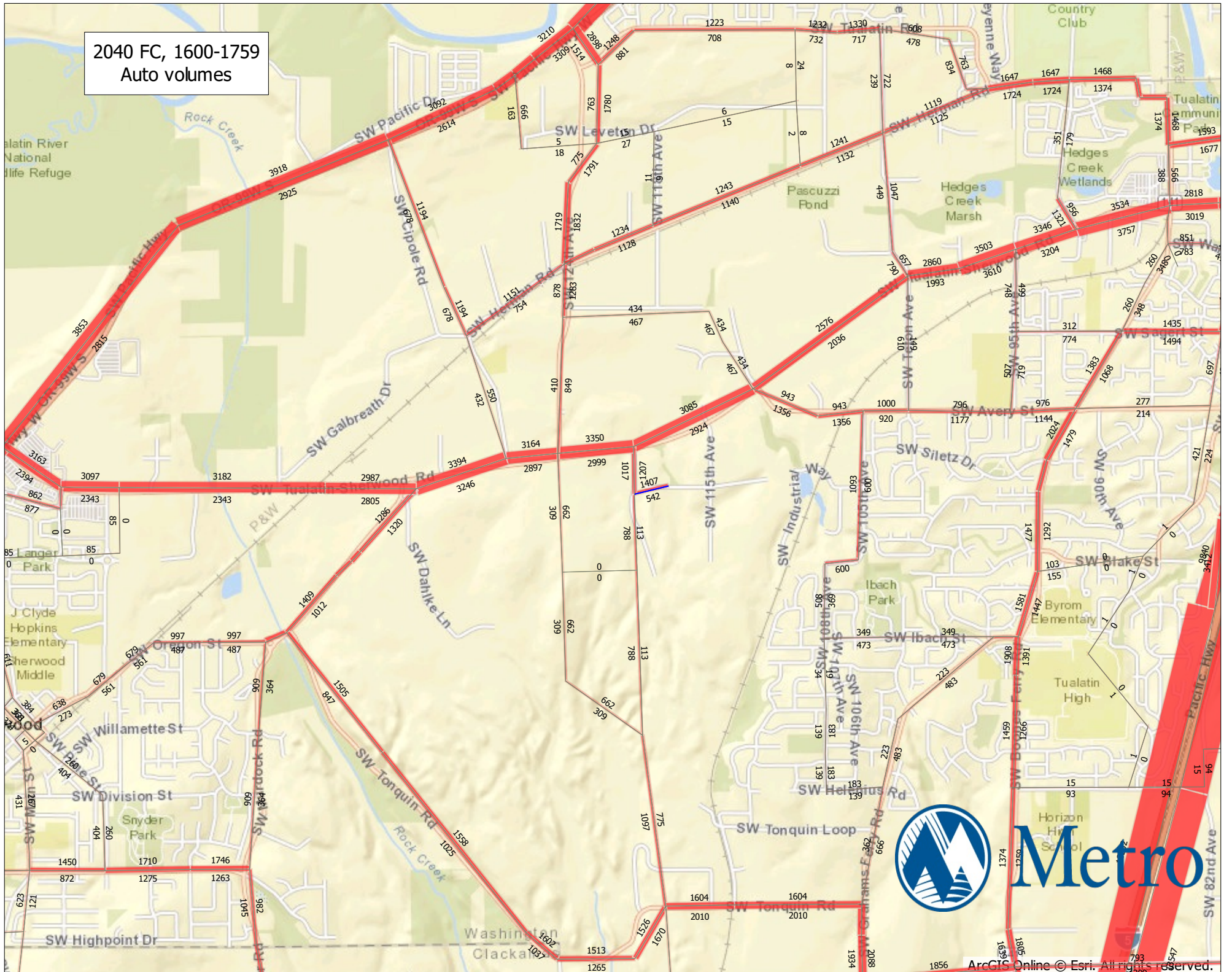
Metro

2040 FC, 1400-1559
Auto volumes



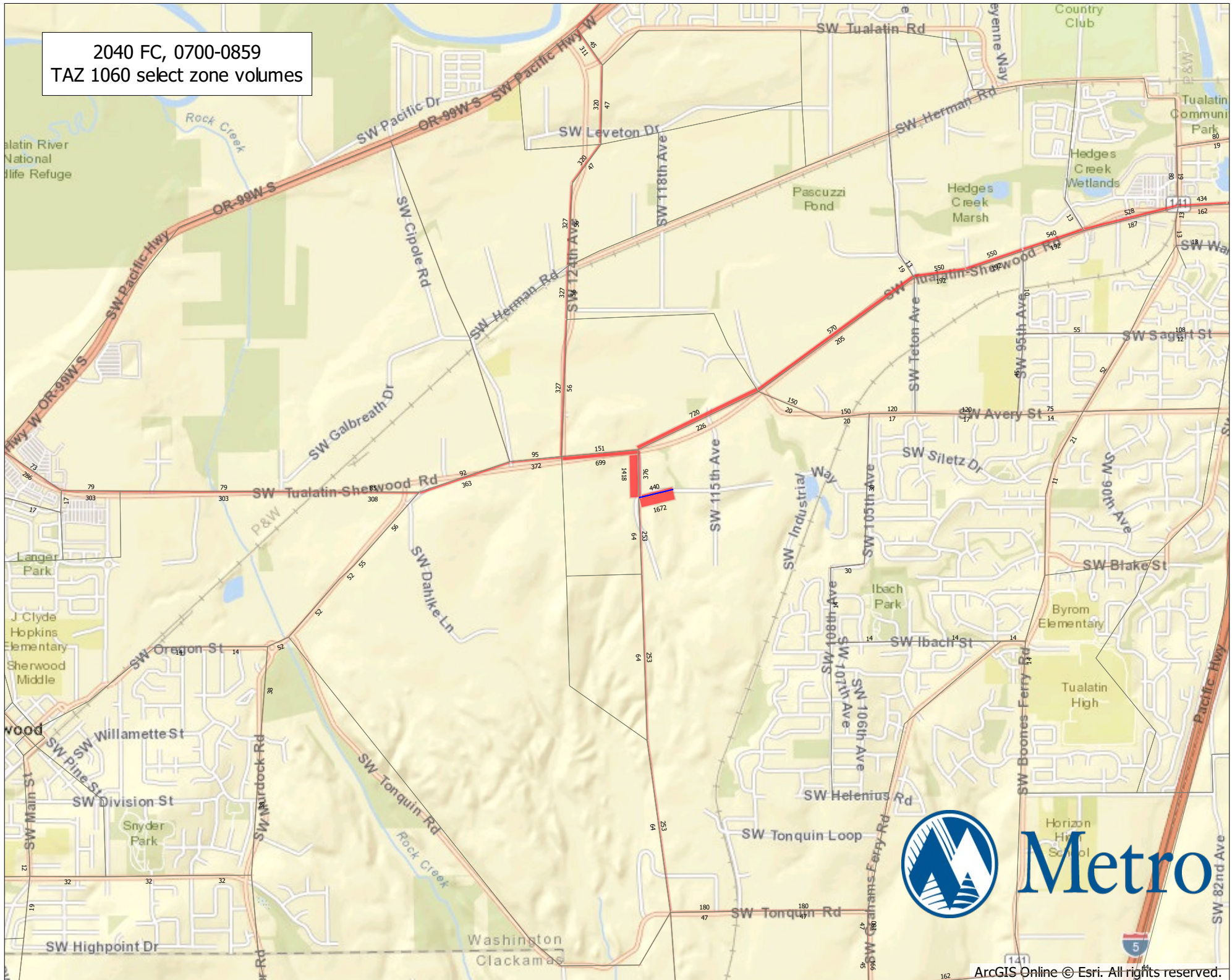
Metro

2040 FC, 1600-1759
Auto volumes



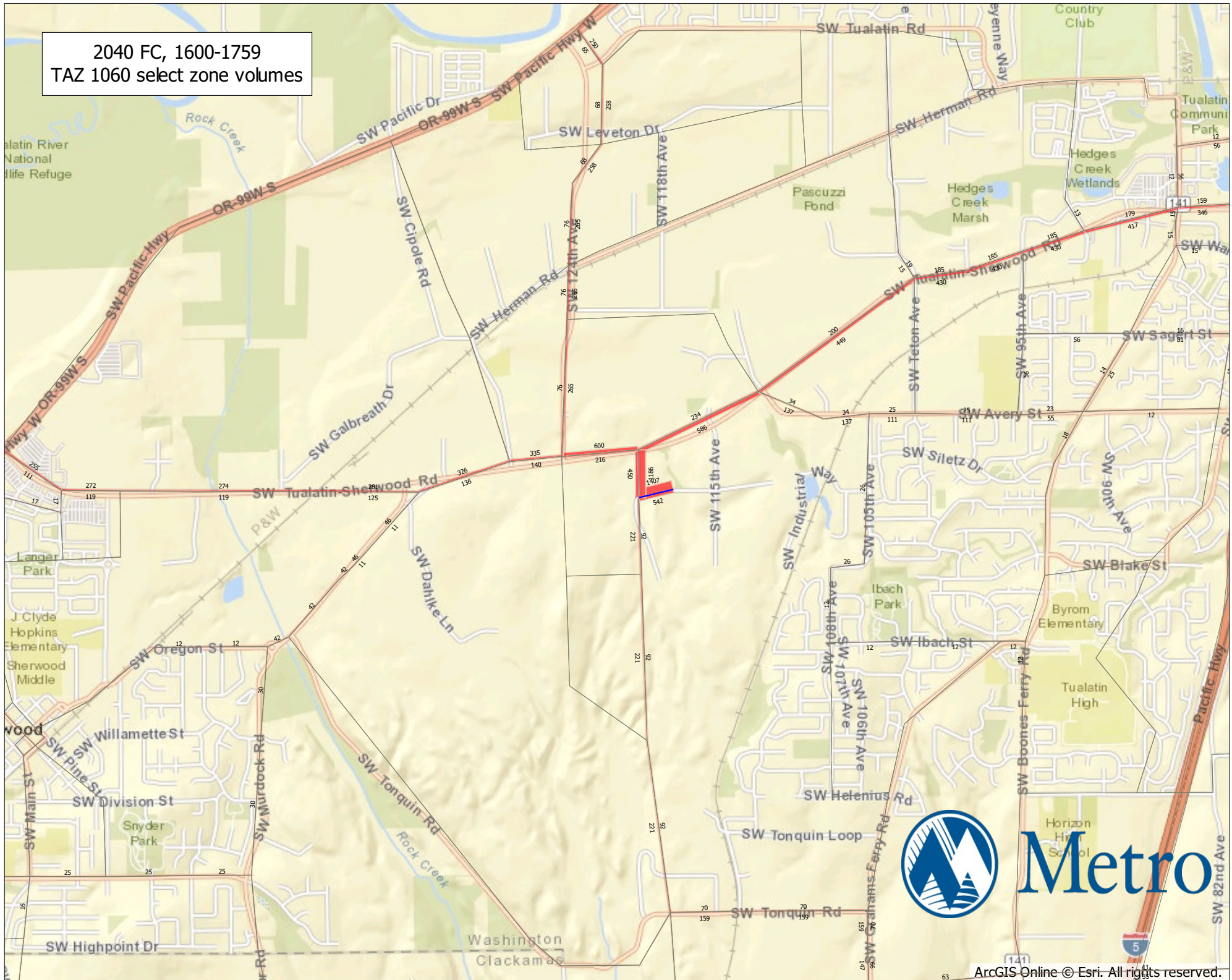
Metro

2040 FC, 0700-0859
TAZ 1060 select zone volumes



Metro

2040 FC, 1600-1759
TAZ 1060 select zone volumes



Metro

APPENDIX F
**SW 124TH AVENUE
EXTENSION TRAFFIC
REROUTES**

AM Peak Hour Calculations

1. 2040 Model 2-Hour Reroute Volumes to 2040 Model 1-Hour Reroute Volumes

$$NB = 1059 * 0.55 = 582$$

$$SB = 665 * 0.55 = 366$$

2. 2040 Model 1-Hour Reroute Volumes to 2017 Total Reroute (Note: assumes 2% annual growth per model)

$$NB = \frac{582}{(1 + 0.02 * (2040 - 2017))} = 399$$

$$SB = \frac{366}{(1 + 0.02 * (2040 - 2017))} = 251$$

3. 2017 Total Reroute Turns (Note: Based on Figures 1C and 1D)

$$NB = 16 + 28 + 48 + 8 + 41 + 24 = 165$$

$$SB = 15 + 27 + 17 + 8 + 43 + 9 = 119$$

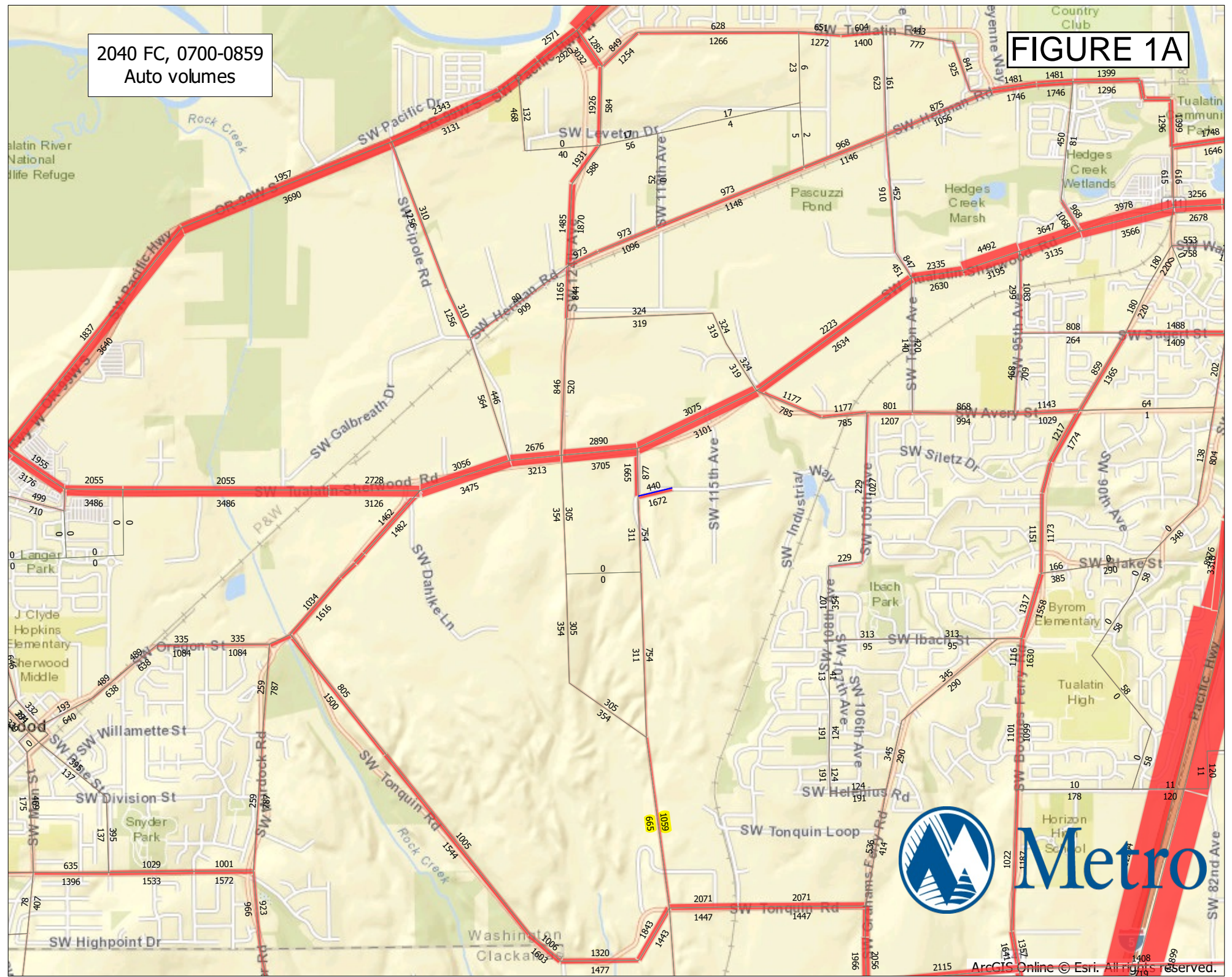
4. 2017 Total Reroute Throughs

$$NB = 399 - 165 = 234$$

$$SB = 251 - 119 = 132$$

2040 FC, 0700-0859
Auto volumes

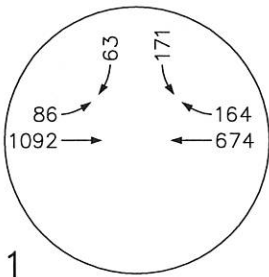
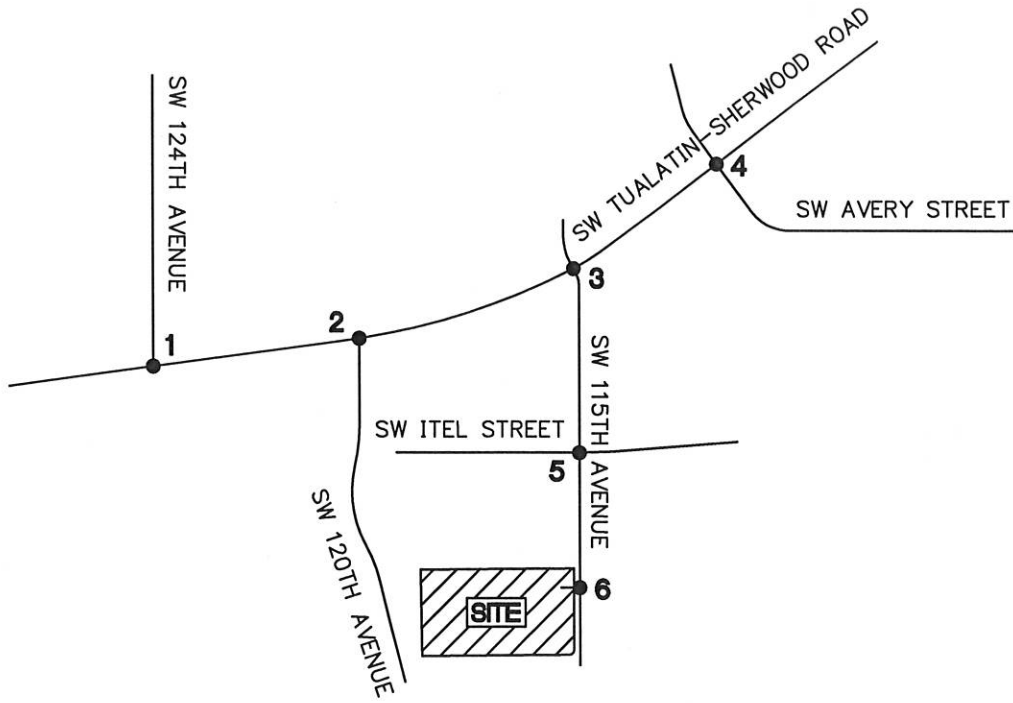
FIGURE 1A



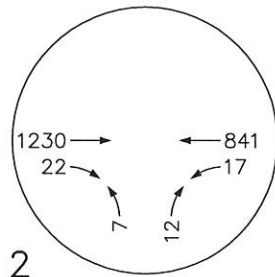
Metro



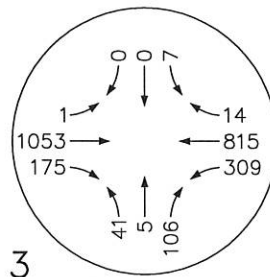
NOT TO SCALE



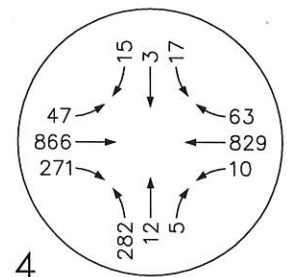
1



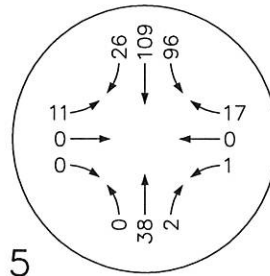
2



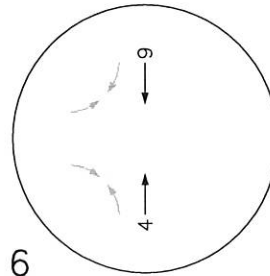
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

2017 PRE-DEVELOPMENT
 TRAFFIC VOLUMES -
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

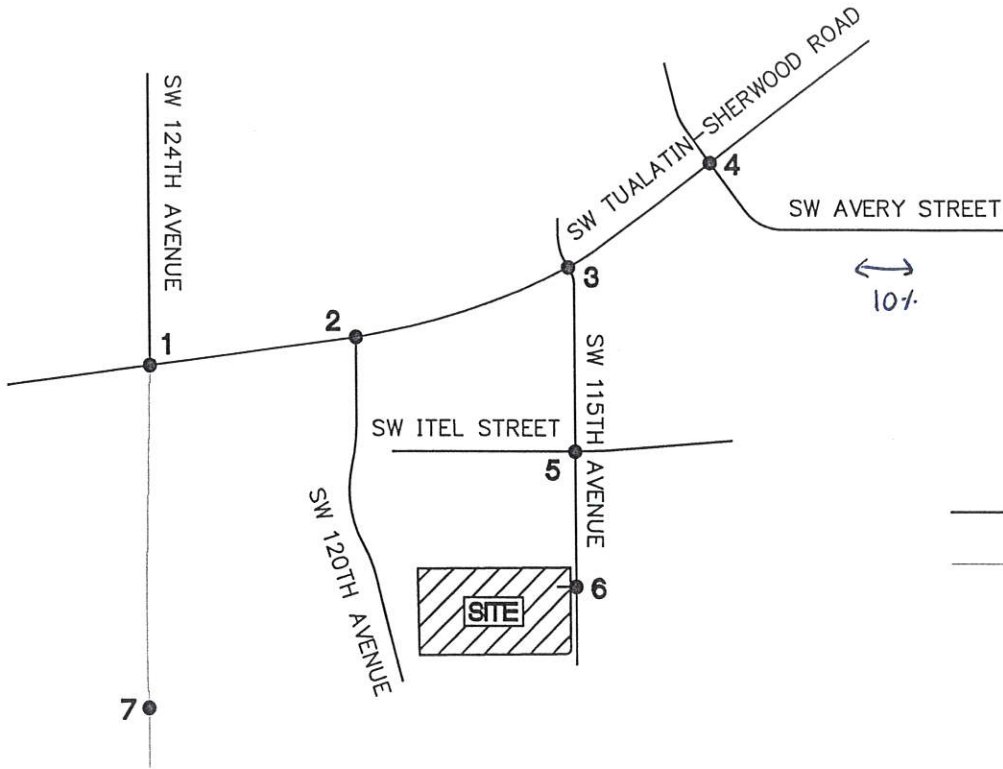
1B

© MACKENZIE 2016 ALL RIGHTS RESERVED

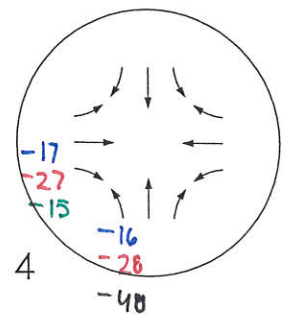
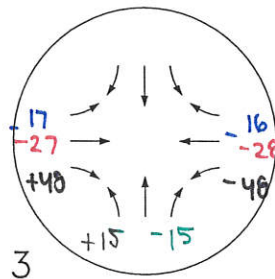
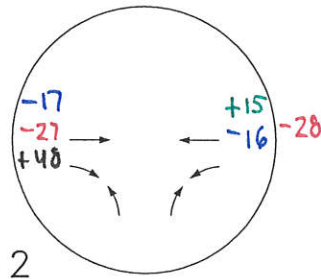
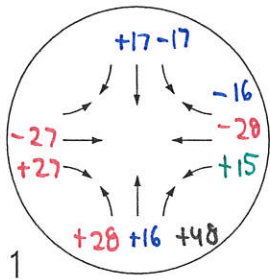
THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



NOT TO SCALE

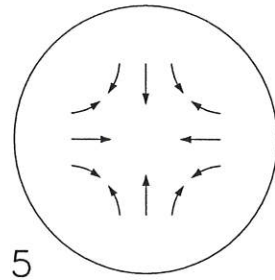


— Existing Network
 — Future Extension

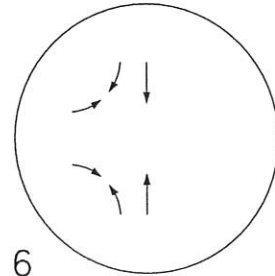
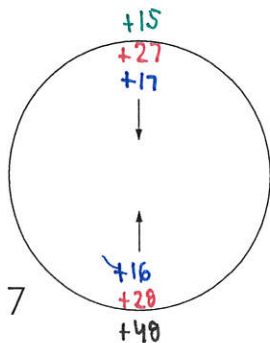


+59 ↓ ↑ +92

Pre-Development Reroutes
to/from Avery Street



-59 ↓ ↑ -92



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
2160026.01

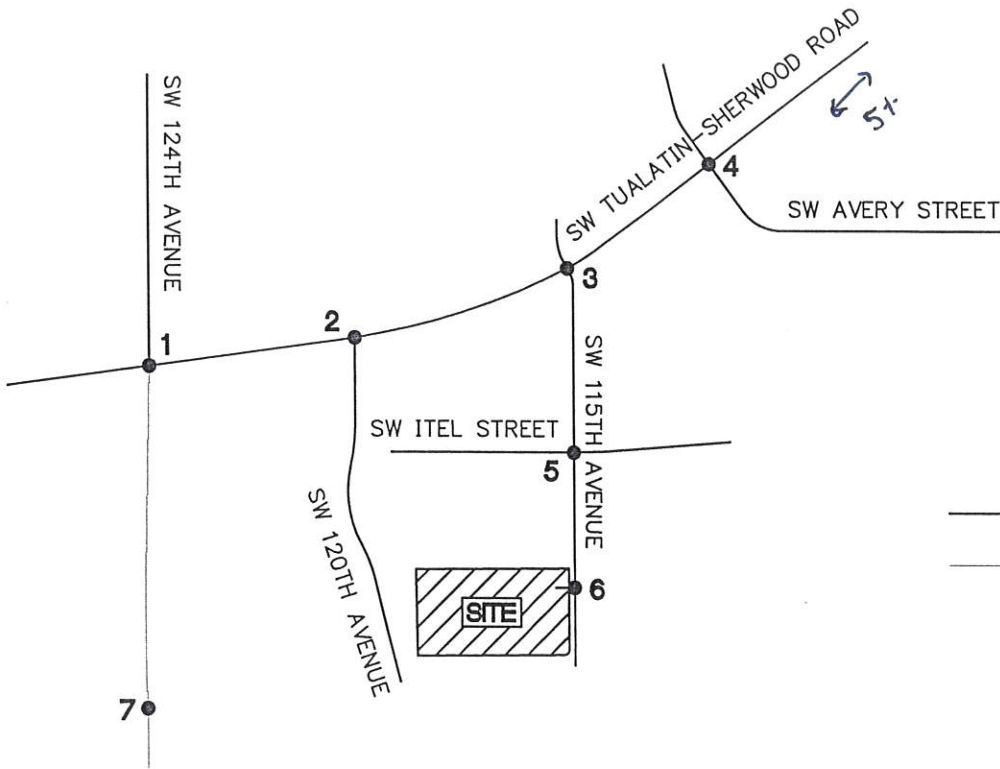
FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

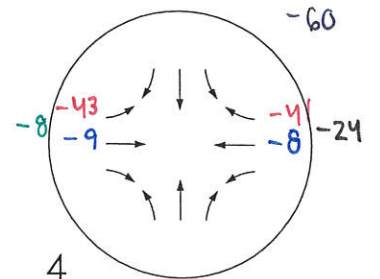
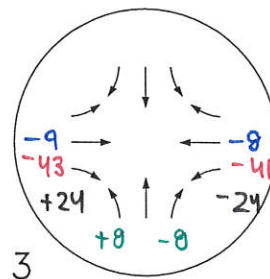
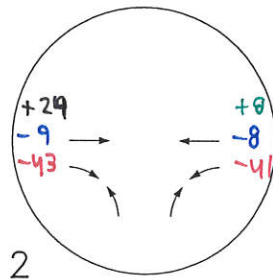
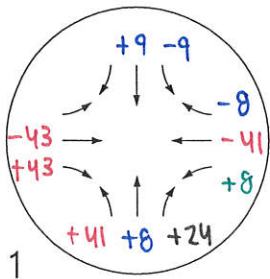
FIGURE
1C



NOT TO SCALE



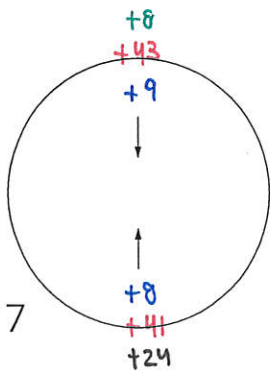
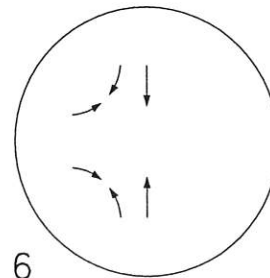
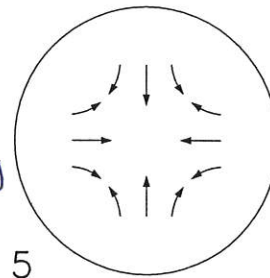
— Existing Network
 - - - Future Extension



-73
 ←
 →
 -60

+60 ↓ ↑ +73

Pre-Development Reroutes
 to/from Tualatin-Sherwood



Portland Vancouver Seattle
 503.224.9560 360.695.7879 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

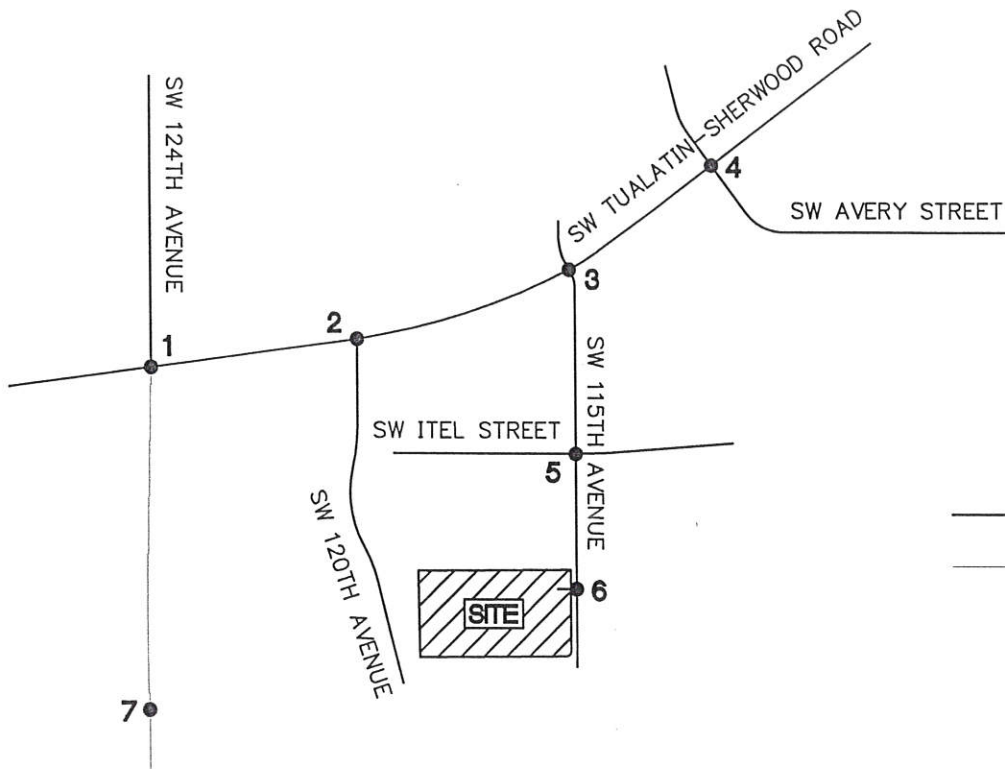
FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

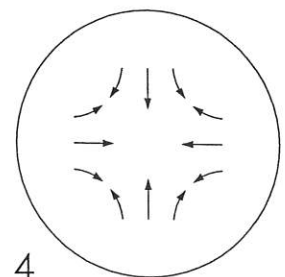
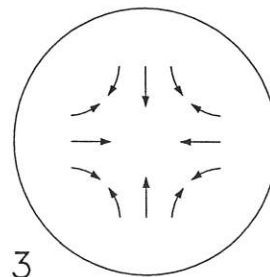
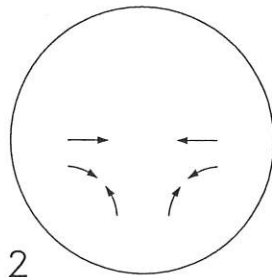
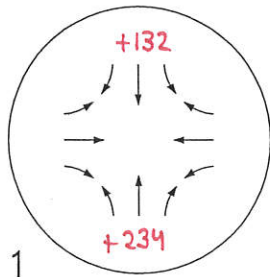
FIGURE
 1D



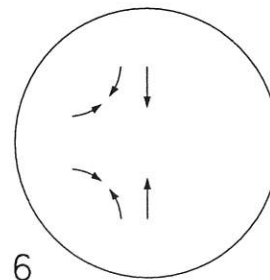
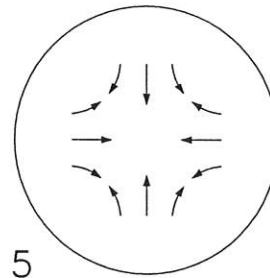
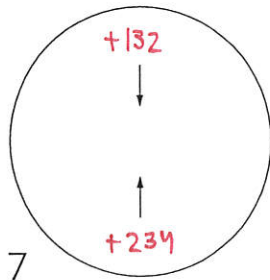
NOT TO SCALE



— Existing Network
 - - - Future Extension



Background NB/SB
 Throughs



Portland Vancouver Seattle
 503.224.9560 360.695.7879 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 AM PEAK HOUR

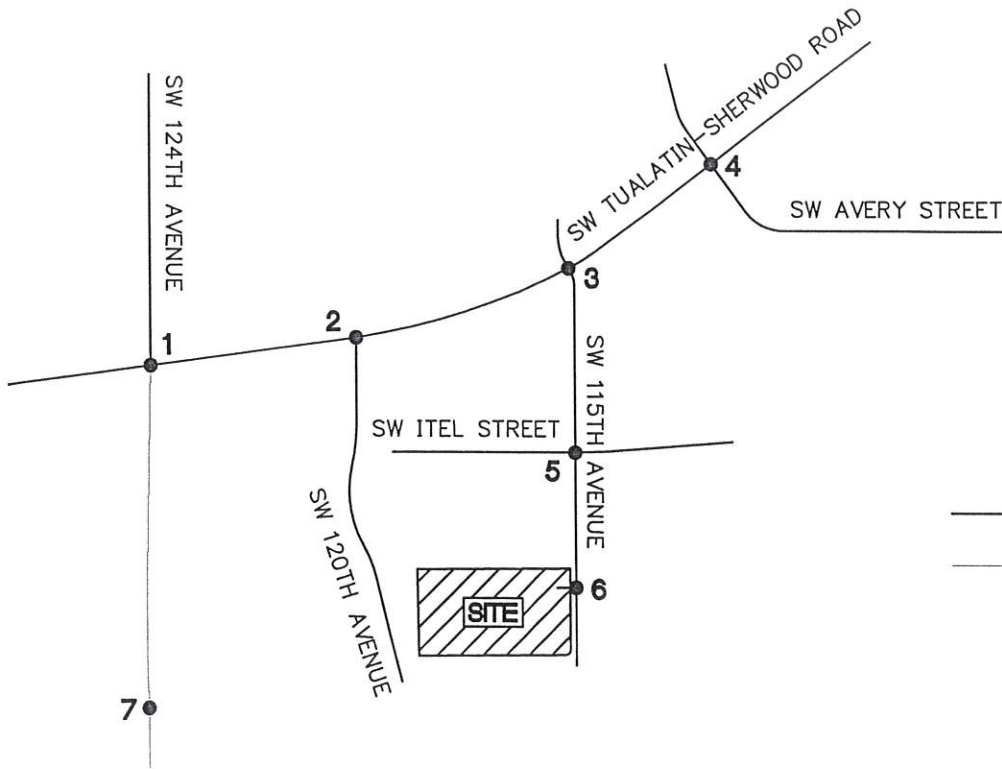
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

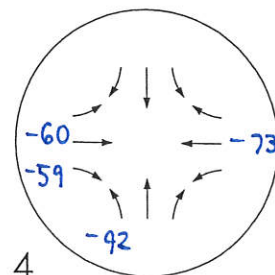
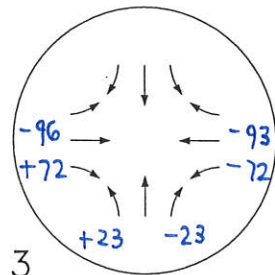
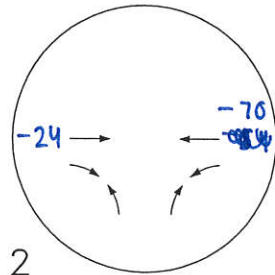
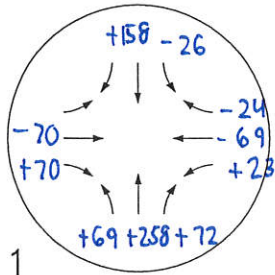
1E



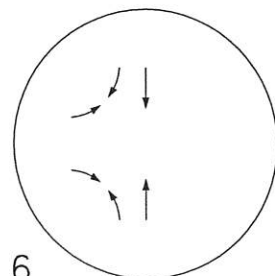
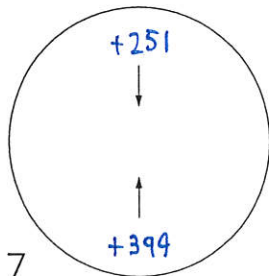
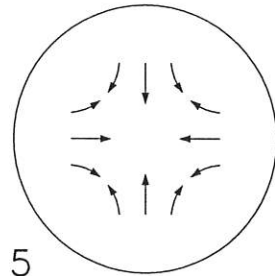
NOT TO SCALE



— Existing Network
 - - - Future Extension



Total Reroute volumes



Portland Vancouver Seattle
 503.224.9560 360.695.7879 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 AM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

1F

© MACKENZIE 2016 ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

Mid-Day Peak Hour Calculations

1. 2040 Model 2-Hour Reroute Volumes to 2040 Model 1-Hour Reroute Volumes

$$NB = 604 * 0.55 = 332$$

$$SB = 786 * 0.55 = 432$$

2. 2040 Model 1-Hour Reroute Volumes to 2017 Total Reroute (Note: assumes 2% annual growth per model)

$$NB = \frac{332}{(1 + 0.02 * (2040 - 2017))} = 227$$

$$SB = \frac{432}{(1 + 0.02 * (2040 - 2017))} = 296$$

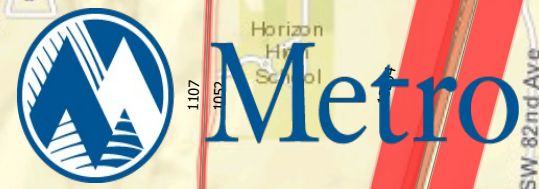
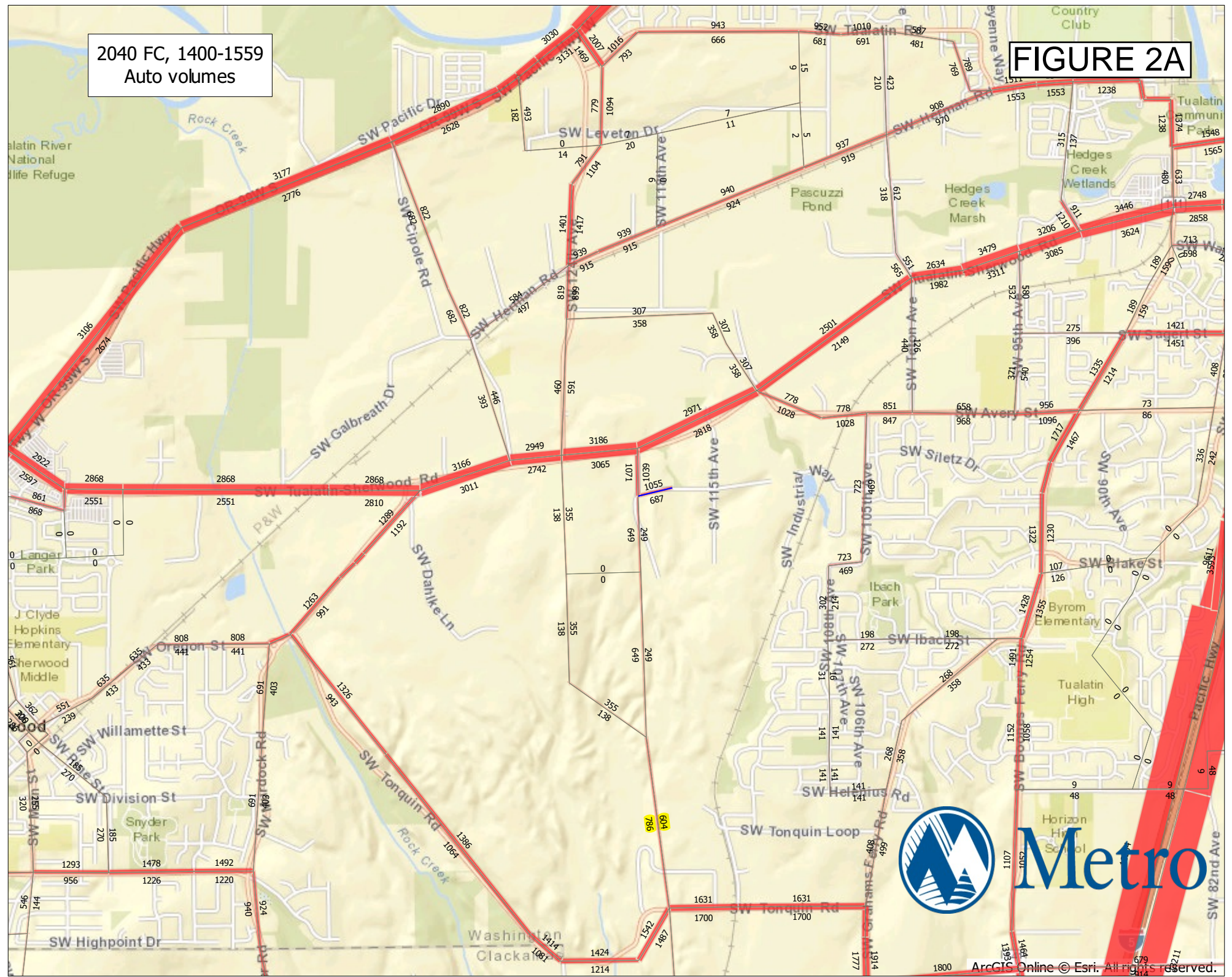
3. 2017 Through Reroutes at SW Tualatin-Sherwood Road/SW 115th Avenue

$$EB = -(Average AM and PM \% Reroute) * 958 = -101$$

$$WB = -(Average AM and PM \% Reroute) * 855 = -84$$

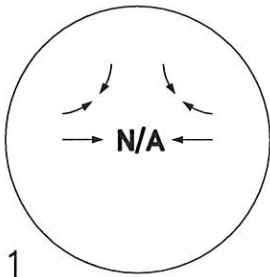
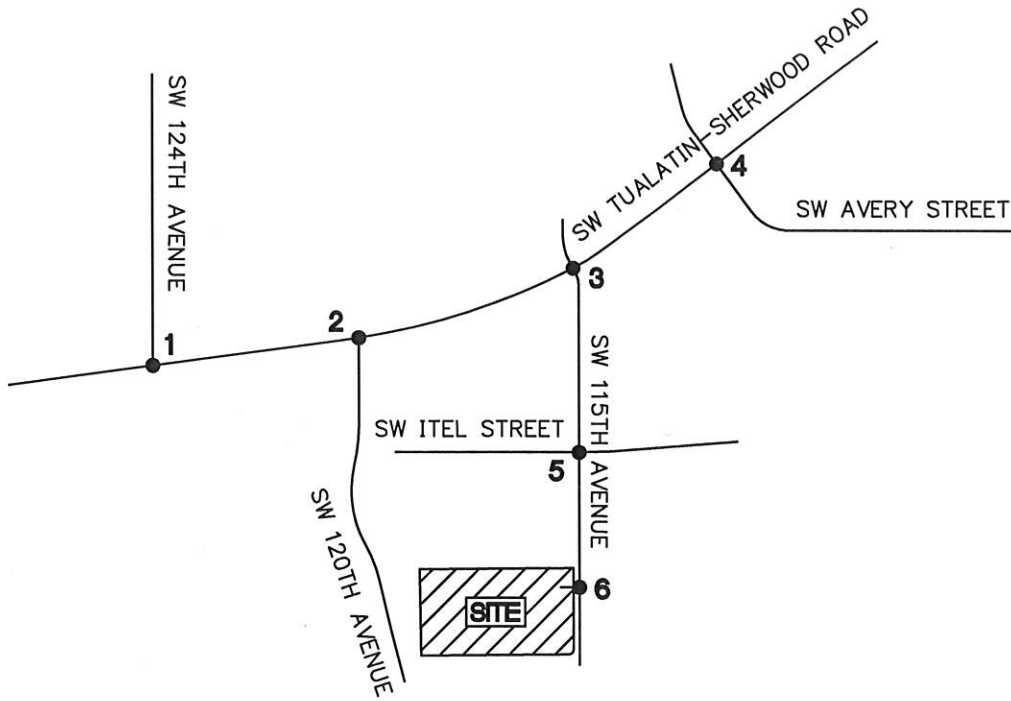
2040 FC, 1400-1559
Auto volumes

FIGURE 2A

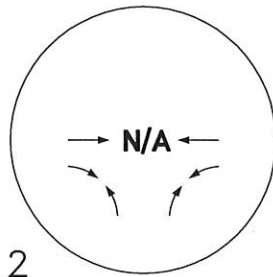




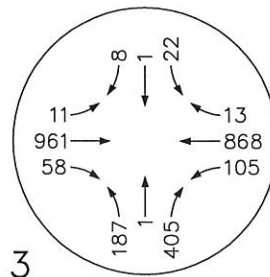
NOT TO SCALE



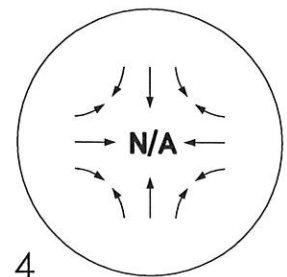
1



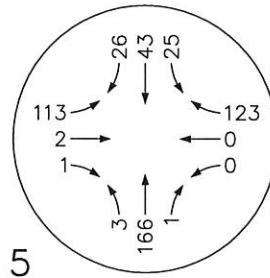
2



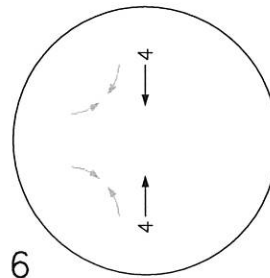
3



4



5



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

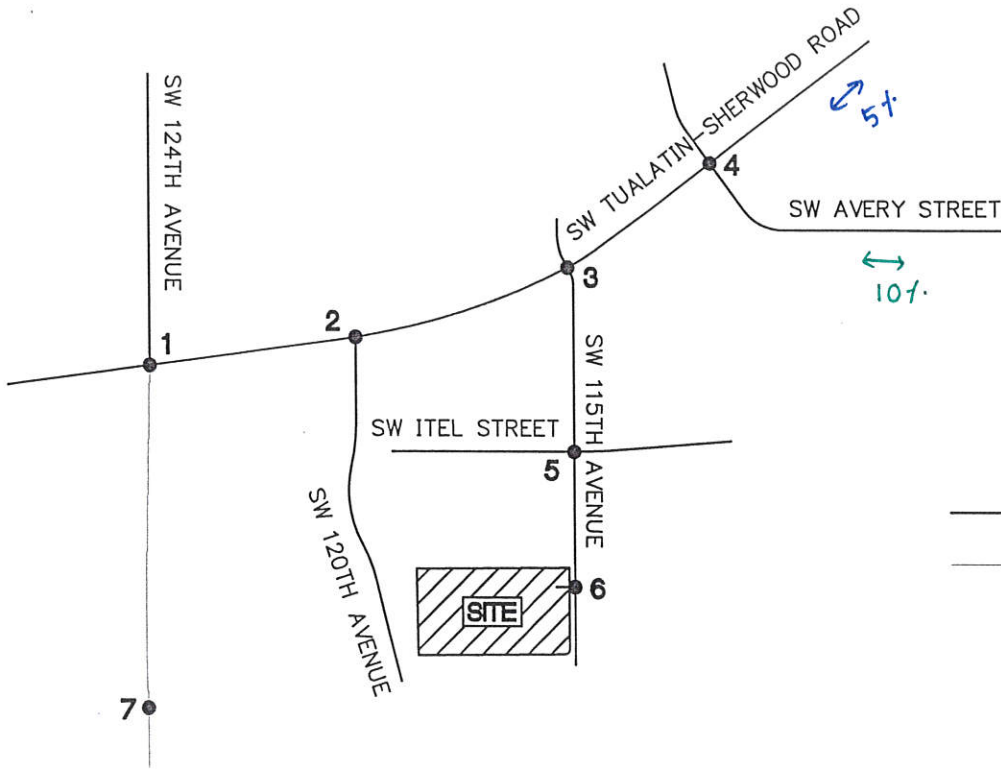
2017 PRE-DEVELOPMENT
 TRAFFIC VOLUMES -
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

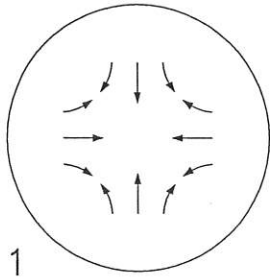
FIGURE
 2B



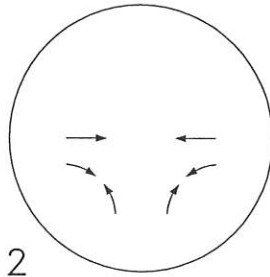
NOT TO SCALE



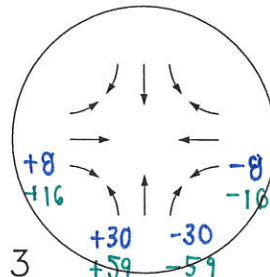
— Existing Network
 — Future Extension



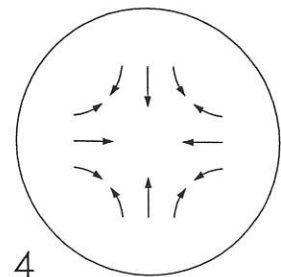
1



2

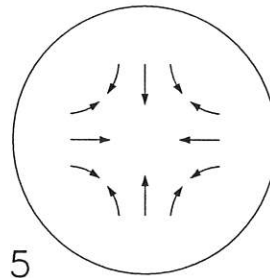


3

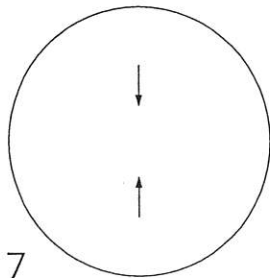


4

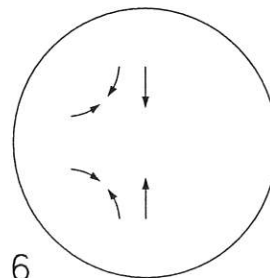
Pre-Development Reroutes
 to/From Avery and
 Tualatin - Sherwood



5



7



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017
 DRAWN BY: JTJ
 CHECKED BY: BTA
 JOB NO:
 2160026.01

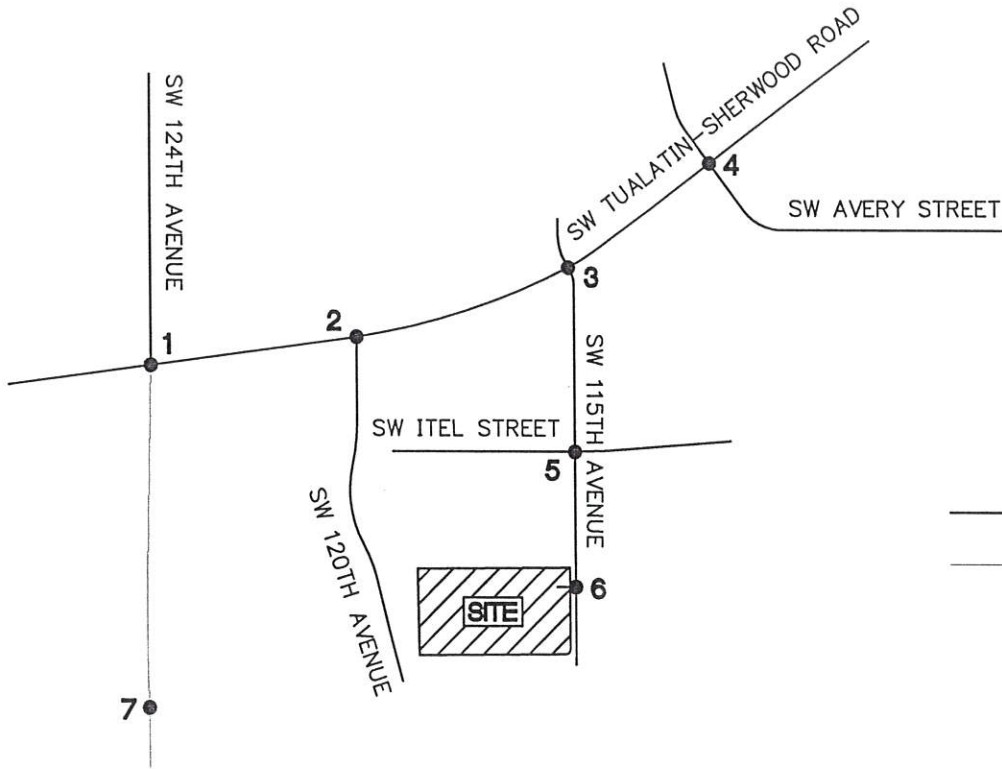
FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 MID-DAY PEAK HOUR
 MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 2C

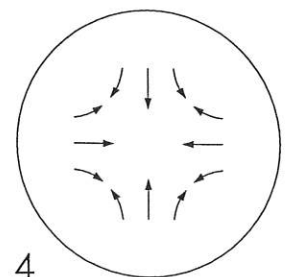
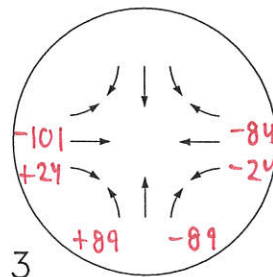
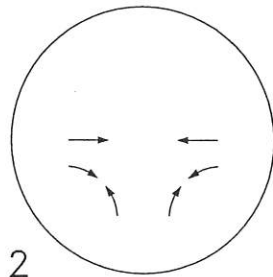
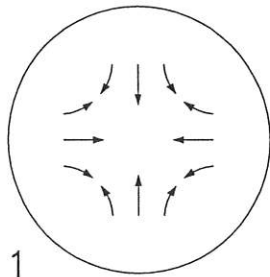
© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



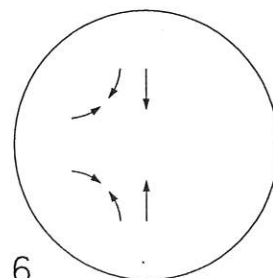
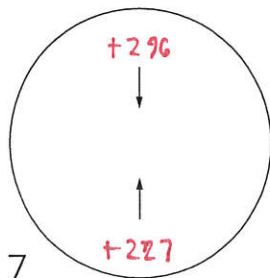
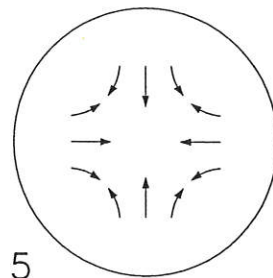
NOT TO SCALE



— Existing Network
 — Future Extension



Total Reroute Volumes



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 MID-DAY PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

2D

© MACKENZIE 2016 ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

PM Peak Hour Calculations

1. 2040 Model 2-Hour Reroute Volumes to 2040 Model 1-Hour Reroute Volumes

$$NB = 775 * 0.55 = 426$$

$$SB = 1097 * 0.55 = 603$$

2. 2040 Model 1-Hour Reroute Volumes to 2017 Total Reroute (Note: assumes 2% annual growth per model)

$$NB = \frac{426}{(1 + 0.02 * (2040 - 2017))} = 292$$

$$SB = \frac{603}{(1 + 0.02 * (2040 - 2017))} = 413$$

3. 2017 Total Reroute Turns (Note: Based on Figures 3C and 3D)

$$NB = 10 + 27 + 14 + 5 + 35 + 7 = 98$$

$$SB = 53 + 41 + 18 + 26 + 45 + 9 = 192$$

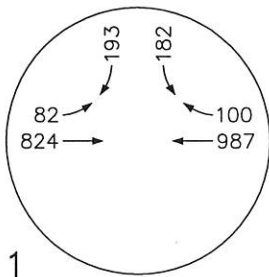
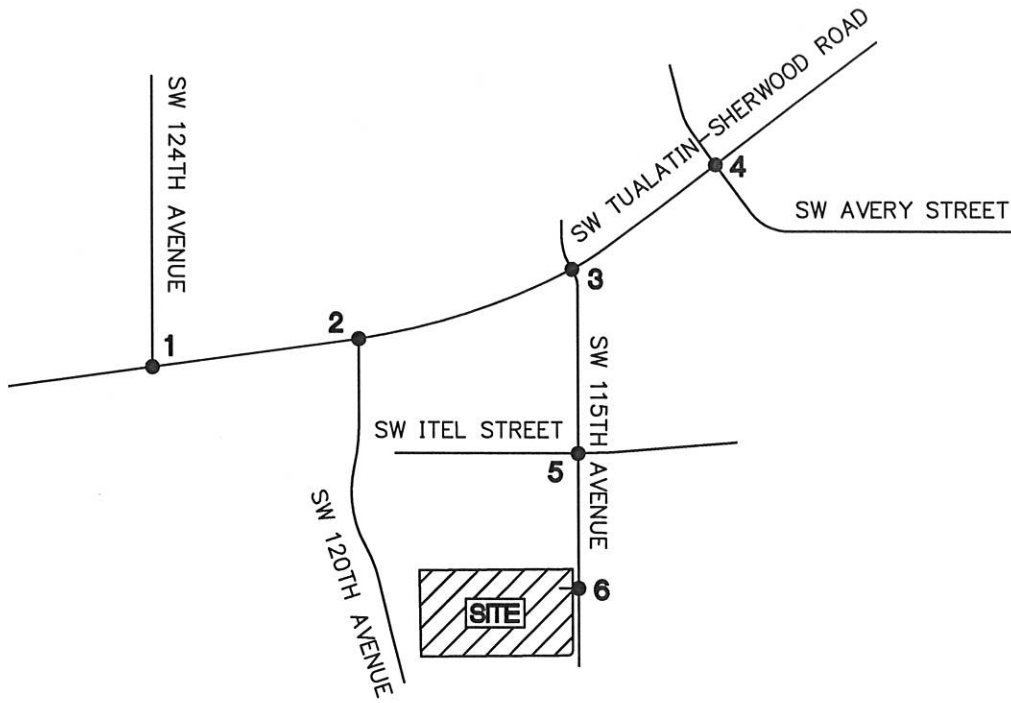
4. 2017 Total Reroute Throughs

$$NB = 292 - 98 = 194$$

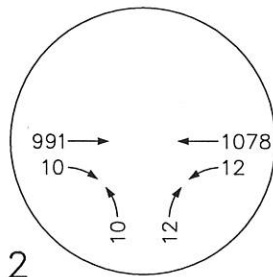
$$SB = 413 - 192 = 221$$



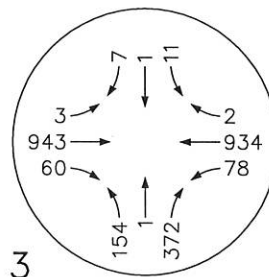
NOT TO SCALE



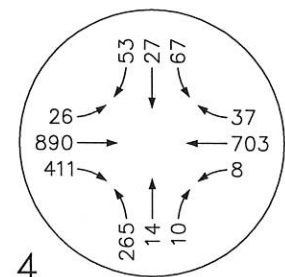
1



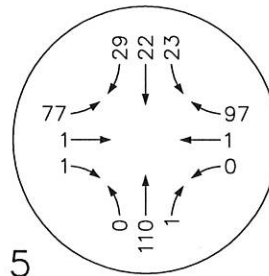
2



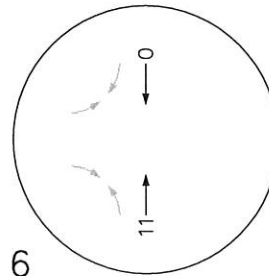
3



4



5



6



Portland Vancouver Seattle
 503.224.9560 360.695.7879 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

2017 PRE-DEVELOPMENT
 TRAFFIC VOLUMES -
 PM PEAK HOUR

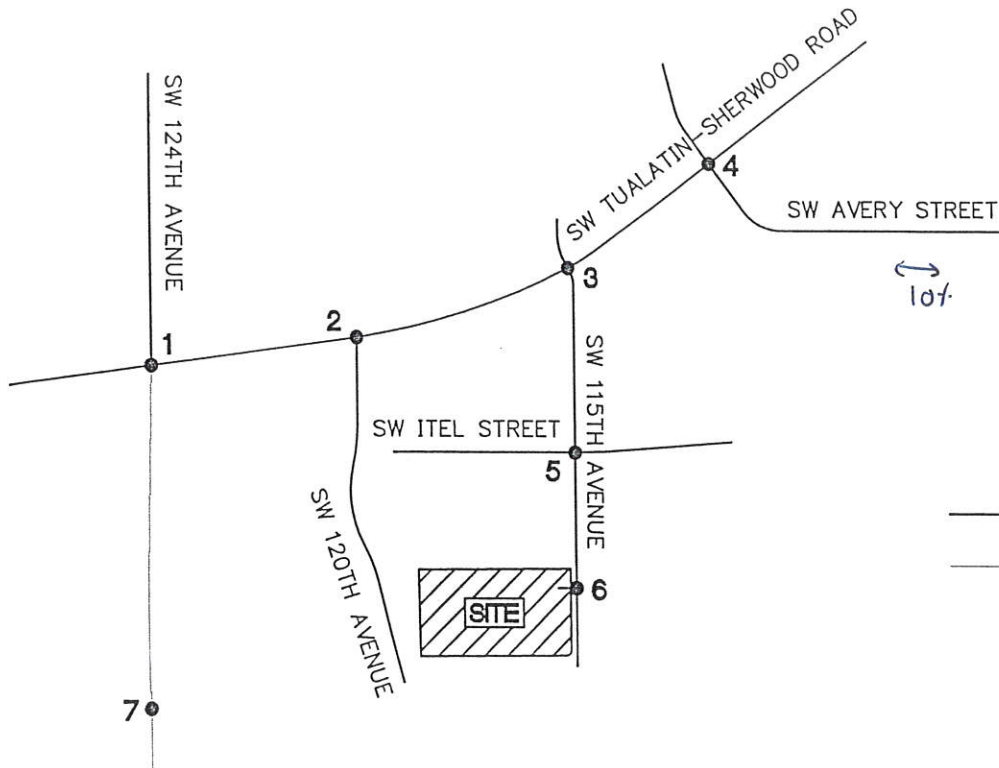
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 3B

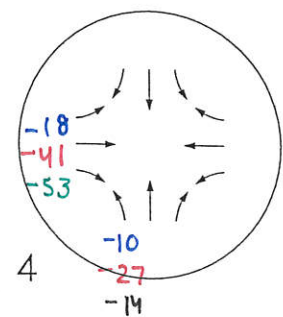
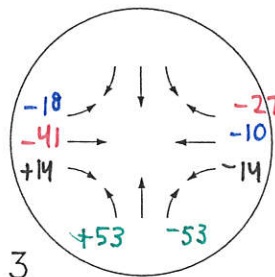
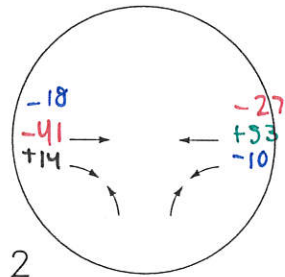
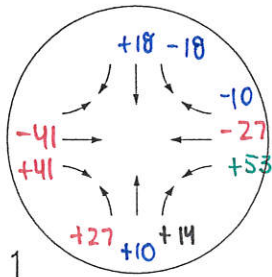
© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



NOT TO SCALE

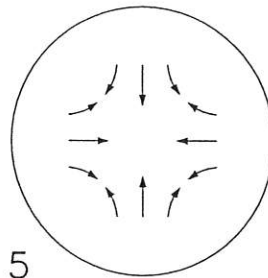


— Existing Network
 — Future Extension

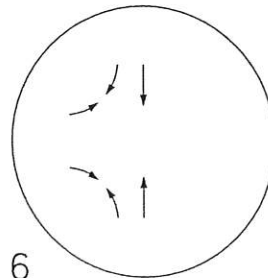
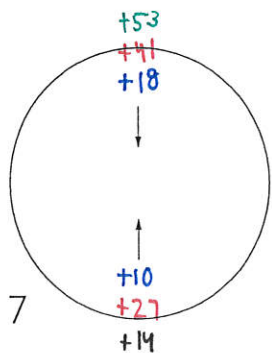


+112 ↓ ↑ +51

Pre-development Reroutes
to/from Avery Street



-112 ↓ ↑ -51



Portland Vancouver Seattle
 503.224.9560 360.695.7879 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

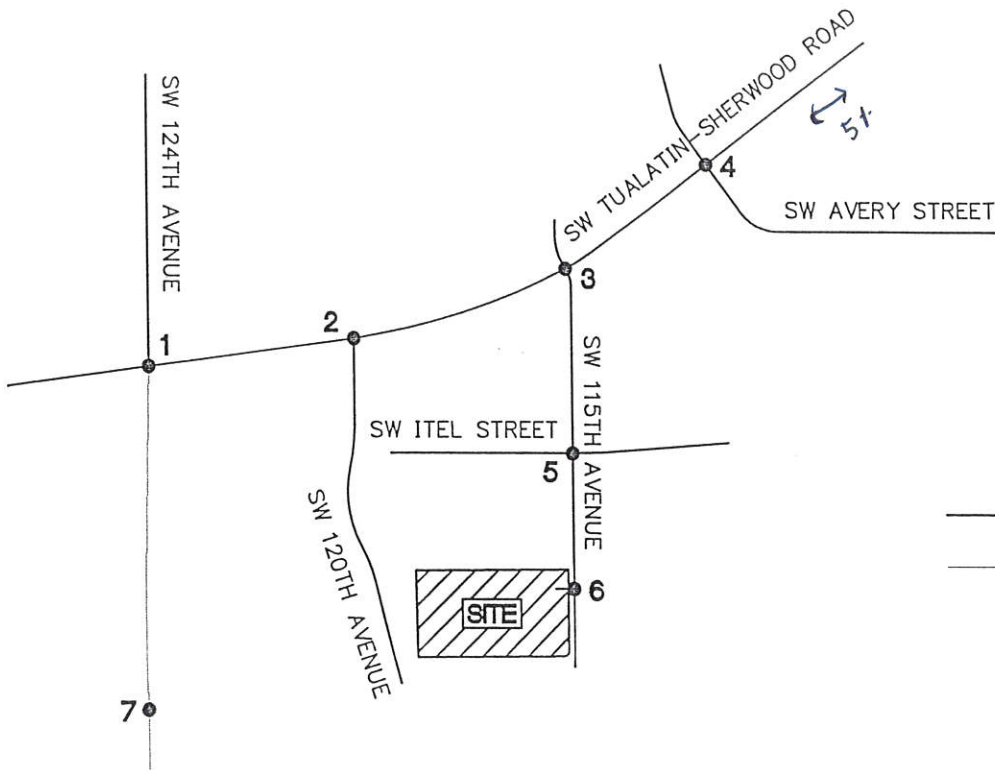
FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

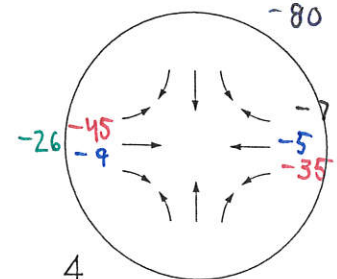
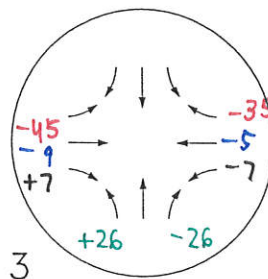
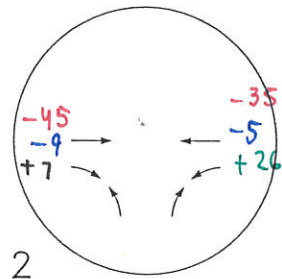
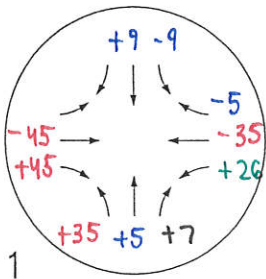
FIGURE
 3C



NOT TO SCALE

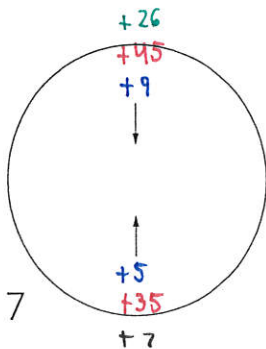
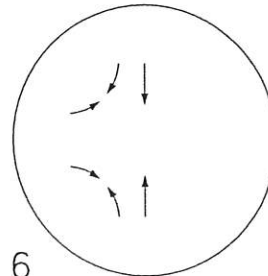
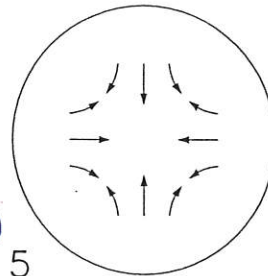


— Existing Network
 — Future Extension



+80 ↓ ↑ +47

Pre-Development Reroutes
 to/from Tualatin/Sherwood



Portland Vancouver Seattle
 503.224.9560 360.695.7879 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

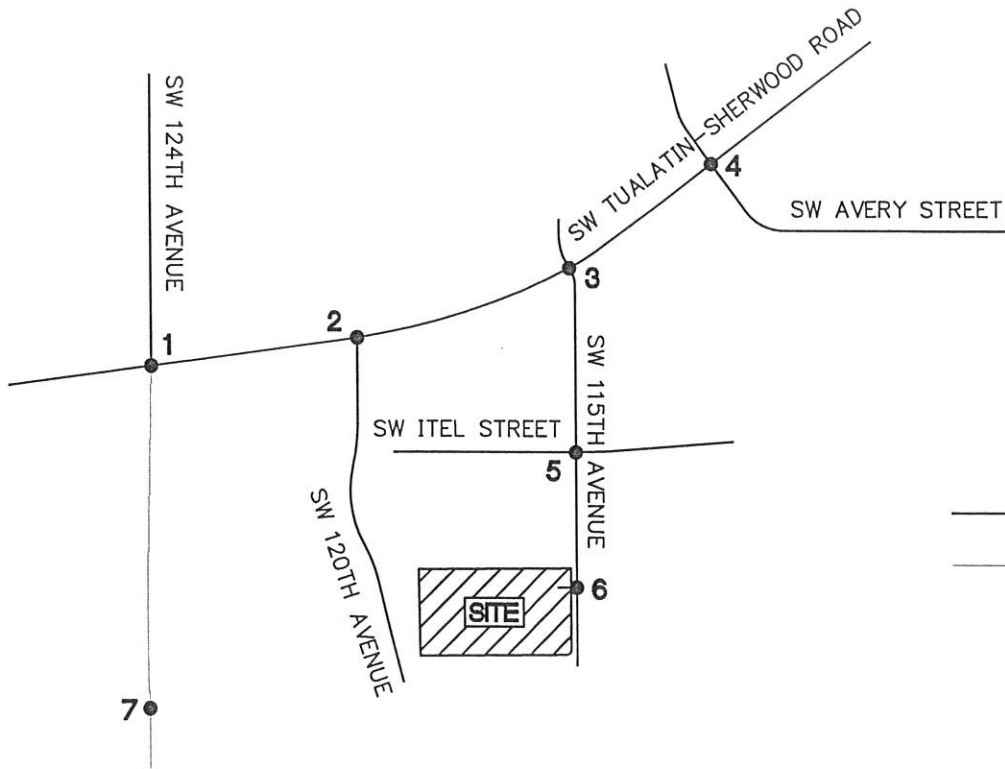
FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

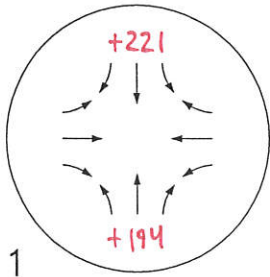
FIGURE
 3D



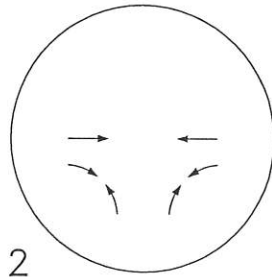
NOT TO SCALE



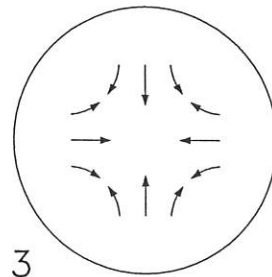
— Existing Network
 - - - Future Extension



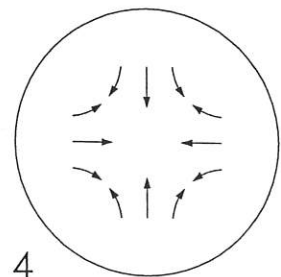
1



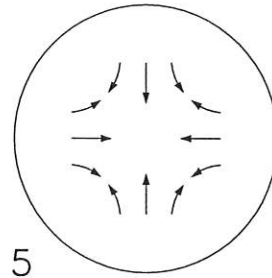
2



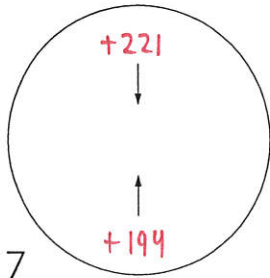
3



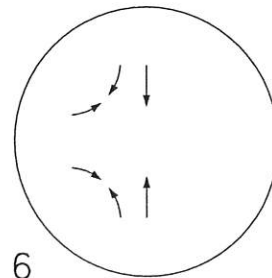
4



5



7



6



Portland Vancouver Seattle
 503.224.9560 360.695.7879 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 PM PEAK HOUR

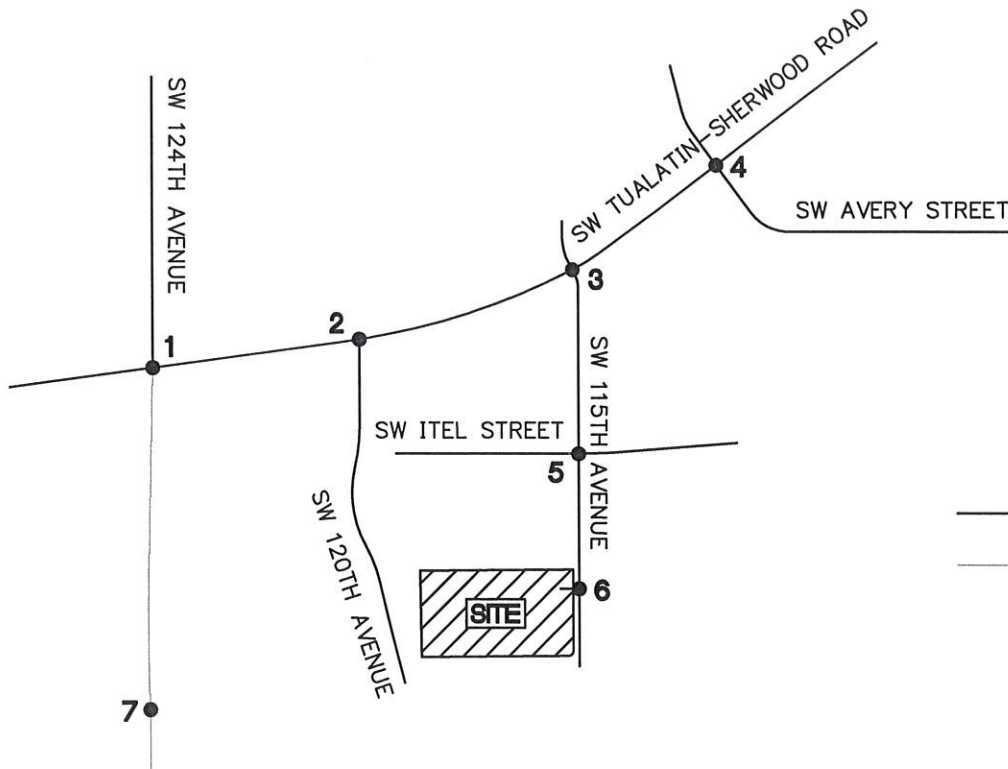
MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE
 3E

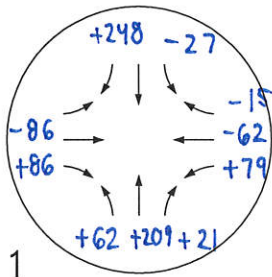
© MACKENZIE 2016 ALL RIGHTS RESERVED
 THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE
 USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION



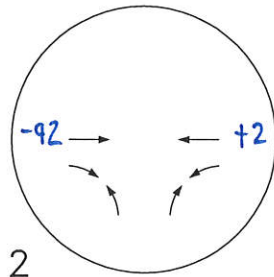
NOT TO SCALE



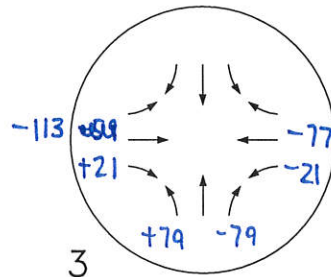
— Existing Network
 — Future Extension



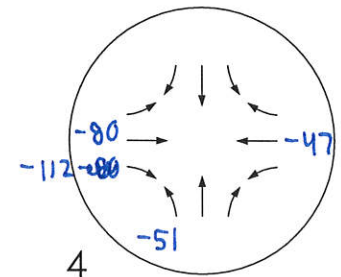
1



2

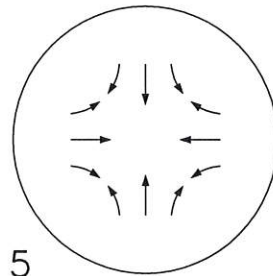


3

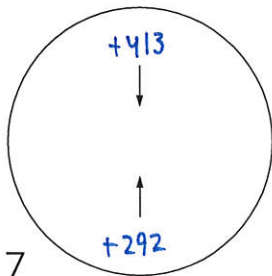


4

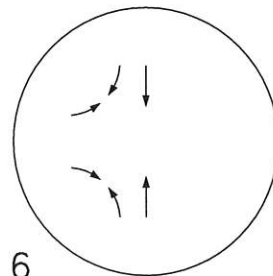
Total Reroute Volumes



5



7



6



Portland 503.224.9560
 Vancouver 360.695.7879
 Seattle 206.749.9993
 www.mcknze.com

Architecture • Interiors
 Planning • Engineering

MACKENZIE

DATE: 4.4.2017

DRAWN BY: JTJ

CHECKED BY: BTA

JOB NO:
 2160026.01

FUTURE NETWORK
 PRE-DEVELOPMENT REROUTES
 PM PEAK HOUR

MAJESTIC SW 115TH AVENUE
 TUALATIN, OREGON

FIGURE

3F

© MACKENZIE 2016 ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE PROPERTY OF MACKENZIE AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION

APPENDIX G
CRASH DATA

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION

ACTION CODE TRANSLATION LIST

ACTION	SHORT	LONG DESCRIPTION
CODE	DESCRIPTION	LONG DESCRIPTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NOT MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNTD FROM WRONG LANE
007	TO WRONG	TURNTD INTO WRONG LANE
008	ILLEG U	U-TURNTD ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PNNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYANCE
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OBJECT
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN OBJECT
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFPCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

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

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Rd & SW 124th Ave
 January 1, 2010 through December 31, 2014

SER#	INVEST	UNLOC?	S P E D	D R S W	DATE	FC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E LICNS X RES	PED LOC	ERROR	ACTN	EVENT	CAUSE	
														02 NONE 0 STOP PRVTE E W MTRCYCLE			01	DRVR	INJB	59 M	OR-Y OR<25	000		011 013 000 001	00 00	
														03 NONE 0 STOP PRVTE E W PSNGR CAR			01	DRVR	NONE	59 M	OR-Y OR<25	000		022 000	00 00	
00551	N N N N N				01/31/2012	16	SW TUALATIN-SHERWOOD SW 124TH AVE 1	INTER W 05	3-LEG 0	N		N CLD N DRY N DAY	S-1STOP REAR PDO	01 NONE 0 STRGHT PRVTE E W PSNGR CAR			01	DRVR	NONE	20 M	OR-Y OR<25	016,026		038	27 00 27	
														02 NONE 0 STOP PRVTE E W PSNGR CAR			01	DRVR	NONE	49 M	OR-Y OR<25	000		011 000	00 00	
03975	N N N				07/29/2011	16	SW TUALATIN-SHERWOOD SW 124TH AVE 1	STRGHT W 05	(NONE)	N		N CLR N DRY N DAY	S-1STOP REAR INJ	01 NONE 0 STRGHT PRVTE E W PSNGR CAR			01	DRVR	NONE	84 F	OR-Y OR<25	026		000 000	013 00 07	
														02 NONE 0 STOP PRVTE E W PSNGR CAR			01	DRVR	INJC	36 M	OTH-Y N-RES	000		011 013 000	00 00	
																	02	PSNG	INJC	10 M		000		000	00	
																	03	PSNG	INJC	04 F		000		000	00	
														03 NONE 0 STOP PRVTE E W PSNGR CAR			01	DRVR	INJC	51 M	OR-Y OR<25	000		022 000	00 00	
02396	N N N N N				05/20/2010	16	SW TUALATIN-SHERWOOD SW 124TH AVE 1	STRGHT W 05	(NONE)	N		N CLD N DRY N DAY	O-STRGHT SS-M INJ	01 NONE 0 STRGHT PRVTE W E PSNGR CAR			01	DRVR	NONE	40 M	OR-Y OR>25	052,080		028	32,05 00 32,05	
														02 NONE 0 STRGHT PRVTE E W PSNGR CAR			01	DRVR	INJB	43 M	OR-Y OR<25	000		000 000	00 00	
05223	N N N N N				09/25/2011	16	SW TUALATIN-SHERWOOD SW 124TH AVE 1	STRGHT W 05	(NONE)	N		N CLD N DRY N DAY	S-1STOP REAR INJ	01 NONE 0 STRGHT PRVTE E W MOTRHOME			01	DRVR	NONE	63 M	OR-Y OR>25	043,026		000	013 000	07 00 07
														02 NONE 0 STOP PRVTE E W PSNGR CAR			01	DRVR	INJC	41 F	OR-Y OR>25	000		011 013 000	00 00	

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

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Rd & SW 124th Ave
 January 1, 2010 through December 31, 2014

SER#	UNLOC?	P	E	R	S	W	DATE	FC	CITY STREET	RD CHAR	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	MOVE	P#	PRTC	INJ	A	S	PED	ERROR	ACTN	EVENT	CAUSE
INVEST	E L G H R	E A U C O	D C S L K	LAT/LONG	DISTNC	INTERSECTION	SEQ #	DIRECT	FIRST STREET	LOCTN	(#LANES)	TRAF-	RNDBT	SURF	COLL TYP	OWNER	FROM		TYPE	SVRTY	E	X	RES	LOC			
																			02	PSNG	INJC	13	F	000	000	00	
																			03	PSNG	INJC	10	M	000	000	00	
																			03	NONE	0	STOP					
																									022	013	00
																			01	DRVR	NONE	50	M	OR-Y	000	000	00
																			04	NONE	0	STOP					
																									022	00	
																			01	DRVR	NONE	27	F	OR-Y	000	000	00
																			02	PSNG	INJC	03	M	000	000	00	
04562	N N N						08/26/2011	16	SW TUALATIN-SHERWOOD	INTER	3-LEG	N		N CLR	S-1STOP	01	NONE	0	STRGHT							07	
NO RPT							Fri	11A	SW 124TH AVE	W		TRF SIGNAL	N DRY	REAR		PRVTE	W E									00	
No	45	22	9.91	-122	48	20.06			1	06	0		N DAY	PDO		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y	026	000	07	
																			02	NONE	0	STOP					
																										011	00
																			01	DRVR	NONE	00	M	OR-Y	000	000	00
05986	N N N N N						10/31/2012	16	SW TUALATIN-SHERWOOD	INTER	3-LEG	N		N CLD	S-1STOP	01	NONE	0	STRGHT							093	27
CITY							Wed	5P	SW 124TH AVE	W		TRF SIGNAL	N WET	REAR		PRVTE	W E									000	00
No	45	22	9.89	-122	48	20.06			1	06	0		N DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y	016,026	038	093	27
																			02	NONE	0	STOP					
																										011	00
																			01	DRVR	INJC	53	M	OR-Y	000	000	00
06404	N N N N N						11/05/2013	16	SW TUALATIN-SHERWOOD	INTER	3-LEG	N		N CLD	S-1STOP	01	NONE	0	STRGHT								27,32,07
CITY							Tue	8A	SW 124TH AVE	W		TRF SIGNAL	N WET	REAR		PRVTE	W E									000	00
No	45	22	9.72	-122	48	20.29			1	06	0		N DAY	INJ		PSNGR CAR		01	DRVR	INJC	26	F	OR-Y	016,052,026	038	27,32,07	
																			02	NONE	0	STOP					
																										011	00
																			01	DRVR	INJC	41	F	OR-Y	000	000	00
01274	N N N N N						03/04/2014	16	SW TUALATIN-SHERWOOD	INTER	3-LEG	N		N CLD	S-1STOP	01	NONE	0	STRGHT								07
CITY							Tue	4P	SW 124TH AVE	W		TRF SIGNAL	N DRY	REAR		PRVTE	W E									000	00
No	45	22	9.72	-122	48	20.30			1	06	0		N DAY	INJ		PSNGR CAR		01	DRVR	NONE	24	F	OTH-Y	043,026	000	07	
																			02	NONE	0	STOP					
																										011	00
																			01	DRVR	INJC	34	M	OR-Y	000	000	00

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

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Rd & SW 124th Ave
 January 1, 2010 through December 31, 2014

SER#	INVEST	UNLOC?	S P E D E L D C S L K	D R S W A U C O DATE	DATE	FC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E E X RES	S L I C N S LOC	PED ERROR	ACTN EVENT	CAUSE		
														02 NONE 0 STOP RENTL E W PSNGR CAR									011 000	00 00	
03000	N N N N N			06/11/2012	16		SW TUALATIN-SHERWOOD SW 124TH AVE 1	STRGHT W 07	(NONE)	Y UNKNOWN	N N N	CLD DRY DAY	S-1STOP REAR INJ	01 NONE 0 STRGHT PRVTE E W PSNGR CAR									013 000 000	07 00 07	
No	45 22	9.68	-122 48 22.41						(02)														043,026 000		
														02 NONE 0 STOP PRVTE E W PSNGR CAR									011 000	013 000	00 00
														03 NONE 0 STOP PRVTE E W PSNGR CAR									022 000	00 00	
02568	N N N			05/26/2010	16		SW TUALATIN-SHERWOOD SW 124TH AVE 1	STRGHT W 07	(NONE)	N UNKNOWN	N N N	CLR DRY DAY	S-1STOP REAR INJ	01 NONE 0 STRGHT PRVTE E W PSNGR CAR									000 038	07,27 00 07,27	
NO RPT	45 22	9.76	-122 48 21.45	Wed 4P	100				(02)														026,016 000		
No	45 22	9.76	-122 48 21.45											02 NONE 0 STOP PRVTE E W PSNGR CAR									011 000	00 00	
07140	N N N N N			12/17/2011	16		SW TUALATIN-SHERWOOD SW 124TH AVE 1	STRGHT W 07	(NONE)	N UNKNOWN	N N N	FOG DRY DLIT	S-1STOP REAR INJ	01 NONE 0 STRGHT PRVTE E W PSNGR CAR									000 038	07,27 00 07,27	
CITY	45 22	9.77	-122 48 21.42	Sat 5P	100				(02)														043,026,016 000		
No	45 22	9.77	-122 48 21.42											02 NONE 0 STOP PRVTE E W PSNGR CAR									011 000	013 000	00 00
														02 PSNG INJA 54 F									000 000	00 00	
														03 NONE 0 STOP PRVTE E W PSNGR CAR									022 000	00 00	
														01 DRVR NONE 29 M OR-Y OR<25									000 000	00 00	
														02 PSNG INJC 27 F									000 000	00 00	
00036	N N N N N			01/04/2012	16		SW TUALATIN-SHERWOOD SW 124TH AVE 1	STRGHT W 07	(NONE)	N NONE	N N N	CLR DRY DAY	S-1STOP REAR INJ	01 NONE 0 STRGHT PRVTE E W PSNGR CAR									000 000	07 00 07	
CITY	45 22	9.77	-122 48 21.42	Wed 10A	100				(02)														026 000		
No	45 22	9.77	-122 48 21.42											02 NONE 0 STOP PRVTE E W PSNGR CAR									011 000	00 00	
																							000 000	00 00	

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

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Rd & SW 124th Ave
 January 1, 2010 through December 31, 2014

SER#	INVEST	UNLOC?	S	D	P	R	S	W	E	A	U	C	O	DATE	FC	CITY STREET	RD CHAR	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	MOVE	A	S	PED	ERROR	ACTN	EVENT	CAUSE
			E	L	G	H	R	DAY/TIME		SECOND STREET	DIRECT	(MEDIAN)	LEGS	TRAF-	RNDBT	SURF	COLL TYP	OWNER	FROM												
			D	C	S	L	K	LAT/LONG	DISTNC	INTERSECTION SEQ #	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRVTY	V#	VEH TYPE	TO	P#	TYPE	SVRVTY	E	X	RES	LOC					

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

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Rd & SW 124th Ave
 January 1, 2010 through December 31, 2014

SER#	INVEST UNLOC?	S P E D	D R U C O	DATE	FC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTRL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE	
																										DATE
05675	N N N N N			10/05/2013	16	SW TUALATIN-SHERWOOD	STRGHT		N	N	CLR	S-STRGHT	01 NONE	0	STRGHT											27
CITY				Sat 11A	200	SW 124TH AVE	W	(NONE)	NONE	N	DRY	REAR	PRVTE	W E												00
No	45 22	9.39		-122 48 23.86		1	08			N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	47	M	OTH-Y N-RES		016,042	038		27
								(02)																		
													02 NONE	0	STRGHT											
													PRVTE	W E												00
													PSNGR CAR			01	DRVR	NONE	76	M	OR-Y OR<25		000	000		00
83590	N N N			09/28/2012	16	SW TUALATIN-SHERWOOD	STRGHT		Y	N	CLR	S-1STOP	01 NONE	0	STRGHT											07
NONE				Fri 2P	250	SW 124TH AVE	W	(NONE)	UNKNOWN	N	DRY	REAR	UNKN	W E												00
No	45 22	9.48		-122 48 24.61		1	08			N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	M	UNK UNK		026	000		07
								(02)																		
													02 NONE	0	STOP											
													PRVTE	W E												00
													PSNGR CAR			01	DRVR	NONE	51	M	OTH-Y N-RES		000	000	011 013	00
																										00
													03 NONE	0	STOP											
													PRVTE	W E												00
													PSNGR CAR			01	DRVR	NONE	27	M	OR-Y OR<25		000	000	022	00
04634	N N N			08/21/2013	16	SW TUALATIN-SHERWOOD	STRGHT		N	N	CLR	S-1STOP	01 NONE	0	STRGHT											07
CITY				Wed 3P	300	SW 124TH AVE	W	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	W E												00
No	45 22	9.33		-122 48 25.04		1	08			N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	18	F	OR-Y OR<25		043,026	000		07
								(02)																		
													02 NONE	0	STOP											
													PRVTE	W E												00
													PSNGR CAR			01	DRVR	INJB	33	M	OR-Y OR<25		000	000	011	00
06832	N N N			11/20/2012	16	SW TUALATIN-SHERWOOD	INTER	3-LEG	N	N	RAIN	S-1STOP	01 NONE	0	STRGHT											07
NONE				Tue 7P	0	SW 124TH AVE	CN		N	N	WET	REAR	UNKN	E W												00
No	45 22	9.89		-122 48 20.06		1	02	0		N	DLIT	INJ	PSNGR CAR			01	DRVR	NONE	42	F	OTH-Y N-RES		026	000		07
													02 NONE	0	STOP											
													PRVTE	E W												00
													PSNGR CAR			01	DRVR	INJC	54	F	OR-Y OR<25		000	000	011 013	00
																										00
													03 UNKN	0	STOP											
													UNKN	E W												00
													UNKNOWN			01	DRVR	NONE	00	M	UNK UNK		000	000	022	00
05845	N N N N N			10/26/2012	16	SW TUALATIN-SHERWOOD	INTER	3-LEG	N	N	CLD	S-1STOP	01 NONE	0	STRGHT											07
CITY				Fri 7A	0	SW 124TH AVE	CN		N	N	DRY	REAR	PRVTE	W E												00
No	45 22	9.89		-122 48 20.06		1	03	0		N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	71	M	OR-Y OR>25		043,026	000		07

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

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Rd & SW 115th Ave
 January 1, 2010 through December 31, 2014

SER#	S P	D R	S S	W O	DATE	FC	CITY STREET FIRST STREET	RD CHAR DIRECT	INT-TYP (MEDIAN)	INT-REL LEGS	OFF-RD TRAF- CONTL	WTHR RDNDBT SURF	CRASH TYP COLL TYP	SPCL USE TRLR QTY	MOVE FROM	A G	S E	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE	
INVEST UNLOC?	E D	A C	U S	R L	DAY/TIME LAT/LONG	DISTNC	SECOND STREET INTERSECTION SEQ #	LOCTN	(#LANES)			LIGHT	SVRTY	V#	VEH TYPE	P#	TYPE	SVRTY	E	X				
01999	Y	N	N	N	04/11/2013	16	SW TUALATIN-SHERWOOD	STRGHT	N	N	CLR	S-STRGHT	01	NONE	0	STRGHT								
CITY					Thu 4P 47		SW 115TH AVE	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	SW NE							000	00	
No	45	22	40.76		-122 46 54.32		1	05			N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	20	M	OR-Y	047,026	000	01,07
									(04)															
														02	NONE	0	STOP							
														PRVTE	SW NE							011	00	
														PSNGR CAR		01	DRVR	NONE	22	M	OR-Y	000	000	00
03645	N	N	N		07/13/2011	16	SW TUALATIN-SHERWOOD	STRGHT	N	N	CLR	S-1STOP	01	NONE	0	STRGHT								
NONE					Wed 4P 50		SW 115TH AVE	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	NE SW							000	00	
No	45	22	16.35		-122 47 43.00		1	06			N	DAY	INJ	PSNGR CAR		01	DRVR	NONE	65	F	OR-Y	016,026	038	27,07
									(02)															
														02	NONE	0	STOP							
														PRVTE	NE SW							011	00	
														PSNGR CAR		01	DRVR	INJC	34	F	OR-Y	000	000	00
05433	N	N	N	N	09/25/2013	16	SW TUALATIN-SHERWOOD	STRGHT	N	N	CLD	S-1STOP	01	NONE	0	STRGHT								
CITY					Wed 3P 83		SW 115TH AVE	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	SW NE							000	00	
No	45	22	16.51		-122 47 42.54		1	07			N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	57	M	OR-Y	016,026	038	27,07
									(02)															
														02	NONE	0	STOP							
														PRVTE	SW NE							011	00	
														PSNGR CAR		01	DRVR	NONE	61	M	OR-Y	000	000	00
01233	N	N	N	N	03/08/2013	16	SW TUALATIN-SHERWOOD	STRGHT	N	N	CLR	S-STRGHT	01	NONE	0	STRGHT								
CITY					Fri 2P 74		SW 115TH AVE	NE	(NONE)	NONE	N	DRY	SS-O	PRVTE	NE SW							000	00	
No	45	22	16.32		-122 47 43.00		1	08			N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	39	M	OR-Y	045	000	13
									(02)															
														02	NONE	0	STRGHT							
														PRVTE	NE SW							000	00	
														PSNGR CAR		01	DRVR	NONE	71	M	OR-Y	000	000	00
05268	N	N	N		10/03/2012	16	SW TUALATIN-SHERWOOD	STRGHT	Y	N	CLR	S-1STOP	01	NONE	0	STRGHT								
NONE					Wed 6P 150		SW 115TH AVE	NE	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	NE SW							000	00	
No	45	22	16.94		-122 47 41.58		1	08			N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	45	F	OR-Y	026	026	07
									(02)															
														02	NONE	0	STOP							
														PRVTE	NE SW							011	00	
														PSNGR CAR		01	DRVR	NONE	37	M	OR-Y	000	000	00
06976	N	N	N		12/09/2011	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	CLR	S-1STOP	01	UNKN	0	STRGHT								
NONE					Fri 11A 0		SW 115TH AVE	SE		TRF SIGNAL	N	DRY	REAR	UNKN	SW NE							000	00	
No	45	22	16.09		-122 47 43.62		1	06	0		N	DAY	PDO	UNKNOWN		01	DRVR	NONE	00	M	OR-Y	026	000	07

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

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Rd & SW Avery St / SW 112th Ave
 January 1, 2010 through December 31, 2014

SER#	INVEST	UNLOC?	S E D P E A U C O D C S L K	R S W D A U C O L K	DATE	FC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E E X RES	S L I C N S R E S	PED LOC ERROR	ACTN EVENT	CAUSE
														03 NONE 0 STOP PRVTE NE SW PSNGR CAR								022 013	00
																01	DRVR NONE	55 F OR-Y OR<25			000	000	00
														04 NONE 0 STOP PRVTE NE SW PSNGR CAR								022	00
																01	DRVR NONE	32 F OR-Y OR<25			000	000	00
03441			N	N	N	N	07/12/2010 16	SW TUALATIN-SHERWOOD	STRGHT	N		N CLR	S-1STOP	01 NONE 0 STRGHT PRVTE NE SW								000	32,27,07
CITY					Mon	11A	280	SW 112TH AVE	SW	(NONE)	UNKNOWN	N DRY	REAR									000	00
No			45	22	20.30	-122	47	35.08	1	0		N DAY	PDO	PSNGR CAR		01	DRVR NONE	34 M OR-Y OR<25			052,016,026	000	32,27,07
														02 NONE 0 STOP PRVTE NE SW TRUCK								011	00
																01	DRVR NONE	46 M OR-Y OR<25			000	000	00
06098			N	N	N	N	10/17/2014 16	SW TUALATIN-SHERWOOD	STRGHT	Y		N CLR	S-1STOP	01 NONE 0 STRGHT PRVTE SW NE								000	27,07
CITY					Fri	1P	200	SW 112TH AVE	SW	(NONE)	UNKNOWN	N DRY	REAR									000	00
No			45	22	20.57	-122	47	34.53	1	0		N DAY	INJ	PSNGR CAR		01	DRVR NONE	29 M OR-Y OR<25			016,043,026	038	27,07
														02 NONE 0 STOP PRVTE SW NE PSNGR CAR								011	00
																01	DRVR INJC	59 F OR-Y OR<25			000	000	00
05414			N	N	N	N	10/03/2011 16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N RAIN	O-1 L-TURN	01 NONE 0 TURN-L RENTL SW NW								000	02
CITY					Mon	6A	0	SW 112TH AVE	CN		TRF SIGNAL	N WET	TURN									000	00
No			45	22	21.92	-122	47	31.83	1	0		N DLIT	PDO	TRUCK		01	DRVR NONE	34 M OR-Y OR<25			004,028	000	02
														02 NONE 0 STRGHT PRVTE NE SW PSNGR CAR								000	00
																01	DRVR NONE	30 M OR-Y OR>25			000	000	00
01760			N	N	N	N	04/10/2013 16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N CLR	ANGL-OTH	01 NONE 0 TURN-L PRVTE NW NE								000	04
CITY					Wed	11A	0	SW 112TH AVE	CN		TRF SIGNAL	N DRY	TURN									000	00
No			45	22	21.91	-122	47	31.86	1	0		N DAY	PDO	PSNGR CAR		01	DRVR NONE	47 M OTH-Y OR>25			020	000	04
														02 NONE 0 STRGHT PRVTE SW NE PSNGR CAR								000	00
																01	DRVR NONE	31 M OR-Y OR<25			000	000	00
07909			N	N	N	N	12/29/2014 16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N CLR	ANGL-OTH	01 NONE 0 STRGHT PRVTE SW NE								000	093,055
CITY					Mon	11P	0	SW 112TH AVE	CN		TRF SIGNAL	N DRY	ANGL									000	00
No			45	22	21.91	-122	47	31.86	1	0		N DLIT	INJ	PSNGR CAR		01	DRVR NONE	44 M OR-Y OR<25			000	000	00

NORTH

Tuesday, January 07, 2014 15:35

Intersection Name	9 - 124th	Local ID	9	
Intersection Telephone Number				
System Name	56 - Tualatin-Sherwood Rd	System ID	56	
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
	2	0	2	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	2	0	2	phase 1-8
Ring 2 Phase	6	0	6	phase 1-8
Interval	2	0	2	0 = red, 1 = yellow, 2 = green
Power up Flash	0.0	0.0 - 25.5 seconds	First All Red	6.0 0.0 - 25.5 seconds

Soft Flash (next/2/2/5)

Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used		X		X	X	X		X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X		X	X	X		X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									

Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	0	0	0	0	0	0	4	0 = none, 1-8 = phase 1-8

Conditional Service, Five Section Head								
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)					
Phase	Mode	CS Max Time	X Omits Y		Anti-Trap		Yellow Blanking LT	
			X : Y		Trap Protected Phase	Next Phase	Phase	
Phase 1	0	0	6 : 1	0	1		< (5)	1
Phase 3	0	0	8 : 3	0	3		< (7)	3
Phase 5	0	0	2 : 5	0	5		< (1)	5
Phase 7	0	0	4 : 7	0	7		< (3)	7
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On			

Phase Times (next/2/2/2, next/2/2/9/5)								
	1	2	3	4	5	6	7	8
Movement		<i>EB</i>		<i>SB</i>	<i>EBL</i>	<i>WB</i>		<i>PED</i>
Minimum Green	0	10	0	5	5	10	0	5
Passage	0.0	3.5	0.0	1.5	1.5	3.5	0.0	0.0
Yellow	0.0	4.5	0.0	4.0	3.0	4.5	0.0	4.0
Red Clearance	0.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0
Max 1	0	75	0	25	20	75	0	20
Max 2	0	95	0	25	20	90	0	20
Walk	0	0	0	6	0	7	0	6
Ped Clear	0	0	0	12	0	23	0	12
Seconds Per Actuation	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0
Time Before Reduction	0	0	0	0	0	0	0	0
Time to Reduce	0	0	0	0	0	0	0	0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Variable Initial	0	25	0	0	0	25	0	0
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auto Max Limit	0	0	0	0	0	0	0	0
Inhibit Min Yellow								X = On
Red Decimal Off								X = On
Advance Walk	0	0	0	0	0	0	0	0
Other Controller Functions (next/2/2/9)								
Phase -->	1	2	3	4	5	6	7	8
Inhibit Simultaneous Gap Out								
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage						
Red Revert (+2 seconds)	3.0	0 - 25.5 sec						
Auto Ped Clear		X = On						
Flashing Don't Walk Into Yellow		X = On						
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec						
Ped Pushbutton	0	0 - 5 sec, 0 = disable						
Advance Flash Rate	0	0 = disable, 1 = 120 FPM						
Change Sequence		X = On (After a download with a power on - off cycle)						
Phase -->	1	2	3	4	5	6	7	8
Red Clear Extension Detector	0	0	0	0	0	0	0	0
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Local Detectors (next/2/2/4)

Detector Data

	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
Detector 1 - I1			1	1	0	0	0.0	0
Detector 2 - I9U			1	1	0	0	0.0	0
Detector 3 - I5			3	3	0	0	0.0	0
Detector 4 - I9L			3	3	0	0	0.0	0
Detector 5 - J1			5	5	0	0	0.0	0
Detector 6 - J9U			5	5	0	0	0.0	0
Detector 7 - J5			7	7	0	0	0.0	0
Detector 8 - J9L			7	7	0	0	0.0	0
Detector 9 - I2U			2	2	0	0	1.0	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	0	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	1.0	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	0	0.0	0
Detector 25 - J6L			8	8	0	0	0.0	0
Detector 26 - J7U			8	8	0	0	0.0	0
Detector 27 - J7L			0	8	0	0	0.0	0
Detector 28 - J8			8	0	0	0	0.0	0
Detector 29 -			0	0	0	0	0.0	0
Detector 30 -			0	0	0	0	0.0	0
Detector 31 -			0	0	0	0	0.0	0
Detector 32 -			0	0	0	0	0.0	0

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8 ; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 - 13

Detector Plans (next/2/2/4/5)

Loop Number									
Plan Detectors		0	0	0	0	0	0	0	0 - 32, 0 = none, 1 - 3 2 = detectors 1 - 32
Detector Plan 1	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 13
Detector Plan 2	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 13	
Detector Plan 3	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 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 counts -					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								Extension Green	Clearance		A - D 0 = none 1 = overlap 2 = 60 FPM 3 = Not ped 4=Comp. Ph. 5=Prevent. Ext. 6=Not Veh. 7=Adv. FF E - L 0 = no Overlap 1 = Overlap Green, Yellow, Red
		1	2	3	4	5	6	7	8		Yellow	Red	
Overlaps	A		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	B	SBL	0	0	0	0	1	0	0	0	0.0	3.0	1.0
	C		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	D		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	E		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	F		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	G		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	H		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	I		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	J		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	K		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	L		0	0	0	0	0	0	0	0	0.0	0.0	0.0

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

Ped Overlaps ->	A	B	C	D	E	F	G	H
Overlaps	A							
	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
1st Conditional Overlap	0	0	0	0	0	0	0	0
2nd Conditional Overlap	0	0	0	0	0	0	0	0
Advance Deactivation Delay	0	0	0	0	0	0	0	0

0 = disabled, 1 = enabled
0 = none, 1 - overlap E, 2 = overlap F, etc.
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	0	0	4	0
Even Omits Odd	0	0	1	0
Detector Switch Odd / Even	X	X	X	X
Red Transition	2.0	2.0	3.0	2.0
Red Extension	0.0	0.0	3.0	0.0
Return to GLTA	0	0	0	0

0 = off, 3 = 3 outputs, 4 = 4 outputs, 5 = 5 outputs
0 = off, 1 = on, 2 = on, place call across barrier
X = on, odd phase must be omitted
0.0 or 2.0 - 25.5 sec
0.0 - 25.5 sec
0 = off, 1 = max out, 2 = yellow lock

Flashing Yellow Left Turn Arrow (FYLTA) - Continued on last page

Service Plans (next/2/2/6)

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 1	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 2	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 3	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 4	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 5	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 6	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Service Plans Cont.

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 7	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 8	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Max Plans (next/2/2/7)

Phase -->		1	2	3	4	5	6	7	8	
Max Plan 1	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 2	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 3	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 4	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 5	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 6	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 7	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 8	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	2	0=add only, 1=dwel, 2=fastway
Late Ped	0	0 = off, 1 = on
Coord Walk Rest	0	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	1	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	0	0	0	0	0	0	0	0	
Auto Permissive Min Green	0	0	0	0	0	0	0	0	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
1 - AM	2	6	120	105	0	0	0	0
2 - Mid-Day/PM	2	6	110	94	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 - AM	0	94	0	26	12	82	0	26	5	5
2 - Mid-Day/PM	0	86	0	24	12	74	0	24	5	5
3 -	16	40	21	33	16	40	0	0	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	1	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	2	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	3	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	4	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	9	0	0	0	19	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	1	06:00	X	1				51					
2	1	09:30	X	2				52					
3	1	20:00	X	0				53					
4	2	09:30	X	2				54					
5	2	18:30	X	0				55					
6	3	09:30	X	2				56					
7	3	18:30	X	0				57					
8								58					
9								59					
10								60					
11								61					
12								62					
13								63					
14								64					
15								65					
16								66					
17								67					
18								68					
19								69					
20								70					
21								71					
22								72					
23								73					
24								74					
25								75					
26								76					
27								77					
28								78					
29								79					
30								80					
31								81					
32								82					
33								83					
34								84					
35								85					
36								86					
37								87					
38								88					
39								89					
40								90					
41								91					
42								92					
43								93					
44								94					
45								95					
46								96					
47								97					
48								98					
49								99					
50								100					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on

Day Program cont.

	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off
101						151					
102						152					
103						153					
104						154					
105						155					
106						156					
107						157					
108						158					
109						159					
110						160					
111						161					
112						162					
113						163					
114						164					
115						165					
116						166					
117						167					
118						168					
119						169					
120						170					
121						171					
122						172					
123						173					
124						174					
125						175					
126						176					
127						177					
128						178					
129						179					
130						180					
131						181					
132						182					
133						183					
134						184					
135						185					
136						186					
137						187					
138						188					
139						189					
140						190					
141						191					
142						192					
143						193					
144						194					
145						195					
146						196					
147						197					
148						198					
149						199					
150						200					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on

Circuit Overrides (next/2/4/4)

1 - Coord Line 1	CL1	TOD		51 - Ped Omit 3	PO3	TOD	
2 - Coord Line 2	CL2	TOD		52 - Ped Omit 4	PO4	TOD	
3 - Coord Line 4	CL4	TOD		53 - Ped Omit 5	PO5	TOD	
4 - Coord Line 8	CL8	TOD		54 - Ped Omit 6	PO6	TOD	
5 - Coord Line 16	C16	TOD		55 - Ped Omit 7	PO7	TOD	
6 - Coord Operation	CRD	TOD		56 - Ped Omit 8	PO8	TOD	
7 - Soft Flash	SFL	TOD		57 - Conditional Service	CVS	TOD	
8 - Enable System Relays	ESR	TOD		58 - Inhibit Simultaneous Gap Out	ISG	On	
9 - Call to Non Act 1	CN1	TOD		59 - Inhibit Hardwire	HWI	TOD	
10 - Call to Non Act 2	CN2	TOD		60 - Ped Override Mode	POM	On	
11 - Walk Rest Modifier	WRM	TOD		61 - Dual Entry	DLE	On	
12 - Min Recall	MIN	TOD		62 - Exclusive Ped	EPD	TOD	
13 - Max 2 Both Rings	MX2	TOD		63 - Call to Time Clock Mode	CTC	TOD	
14 - Coord Inhibit Max Ring 1, 2	IMT	TOD		64 - Dual Enhanced Ped	DEP	TOD	
15 - Enable Service Log	ESL	TOD		65 - Service Plan 1	SP1	TOD	
16 - Call to Free	CTF	TOD		66 - Service Plan 2	SP2	TOD	
17 - TOD Output 1	TO1	TOD		67 - Service Plan 3	SP3	TOD	
18 - TOD Output 2	TO2	TOD		68 - Service Plan 4	SP4	TOD	
19 - TOD Output 3	TO3	TOD		69 - Service Plan 5	SP5	TOD	
20 - TOD Output 4	TO4	TOD		70 - Service Plan 6	SP6	TOD	
21 - TOD Output 5	TO5	TOD		71 - Service Plan 7	SP7	TOD	
22 - TOD Output 6	TO6	TOD		72 - Service Plan 8	SP8	TOD	
23 - TOD Output 7	TO7	TOD		73 - Max Plan 1	MP1	TOD	
24 - TOD Output 8	TO8	TOD		74 - Max Plan 2	MP2	TOD	
25 - Vehicle Call Phase 1	VC1	TOD	On /	75 - Max Plan 3	MP3	TOD	On /
26 - Vehicle Call Phase 2	VC2	TOD	Off /	76 - Max Plan 4	MP4	TOD	Off /
27 - Vehicle Call Phase 3	VC3	TOD	TOD	77 - Max Plan 5	MP5	TOD	TOD
28 - Vehicle Call Phase 4	VC4	TOD		78 - Max Plan 6	MP6	TOD	
29 - Vehicle Call Phase 5	VC5	TOD		79 - Max Plan 7	MP7	TOD	
30 - Vehicle Call Phase 6	VC6	TOD		80 - Max Plan 8	MP8	TOD	
31 - Vehicle Call Phase 7	VC7	TOD		81 - Transit Priority Max Group 1	TG1	TOD	
32 - Vehicle Call Phase 8	VC8	TOD		82 - Transit Priority Max Group 2	TG2	TOD	
33 - Ped Call Phase 1	PC1	TOD		83 - Transit Priority Max Group 3	TG3	TOD	
34 - Ped Call Phase 2	PC2	TOD		84 - Transit Priority Max Group 4	TG4	TOD	
35 - Ped Call Phase 3	PC3	TOD		85 - Transit Priority Max Group 5	TG5	TOD	
36 - Ped Call Phase 4	PC4	TOD		86 - Transit Priority Max Group 6	TG6	TOD	
37 - Ped Call Phase 5	PC5	TOD		87 - Transit Priority Max Group 7	TG7	TOD	
38 - Ped Call Phase 6	PC6	TOD		88 - Transit Priority Max Group 8	TG8	TOD	
39 - Ped Call Phase 7	PC7	TOD		89 - Inhibit Volume Density 1	IV1	TOD	
40 - Ped Call Phase 8	PC8	TOD		90 - Inhibit Volume Density 2	IV2	TOD	
41 - Vehicle Omit 1	VO1	TOD		91 - Inhibit Volume Density 3	IV3	TOD	
42 - Vehicle Omit 2	VO2	TOD		92 - Inhibit Volume Density 4	IV4	TOD	
43 - Vehicle Omit 3	VO3	TOD		93 - Inhibit Volume Density 5	IV5	TOD	
44 - Vehicle Omit 4	VO4	TOD		94 - Inhibit Volume Density 6	IV6	TOD	
45 - Vehicle Omit 5	VO5	TOD		95 - Inhibit Volume Density 7	IV7	TOD	
46 - Vehicle Omit 6	VO6	TOD		96 - Inhibit Volume Density 8	IV8	TOD	
47 - Vehicle Omit 7	VO7	TOD		97 - Lag 1	LG1	TOD	
48 - Vehicle Omit 8	VO8	TOD		98 - Lag 3	LG3	TOD	
49 - Ped Omit 1	PO1	TOD		99 - Lag 5	LG5	TOD	
50 - Ped Omit 2	PO2	TOD		100 - Lag 7	LG7	TOD	

Circuit Overrides cont.

101 - Inhibit Overlap A	OLA	TOD		151 - Coord Hold 7	HD7	TOD	
102 - Inhibit Overlap B	OLB	TOD		152 - Coord Hold 8	HD8	TOD	
103 - Inhibit Overlap C	OLC	TOD		153 - PE Priority Return B	PRB	TOD	
104 - Inhibit Overlap D	OLD	TOD		154 - PE Priority Return C	PRC	TOD	
105 - Enable Schedule A Phone 1	AT1	TOD		155 - PE Priority Return D	PRD	TOD	
106 - Enable Schedule A Phone 2	AT2	TOD		156 - PE Priority Return E	PRE	TOD	
107 - Enable Schedule B Phone 1	BT1	TOD		157 - Platoon Inbound	PPI	TOD	
108 - Enable Schedule B Phone 2	BT2	TOD		158 - Platoon Outbound	PPO	TOD	
109 - Enable Schedule C Phone 1	CT1	TOD		159 - Platoon Spl 2	PS2	TOD	
110 - Enable Schedule C Phone 2	CT2	TOD		160 - Coord Walk Rest	CWR	TOD	
111 - Enable Volume to Call Phone 1	VT1	TOD		161 - Dynamic Phase Length Short Inhibit 1	SI1	TOD	
112 - Enable Volume to Call Phone 2	VT2	TOD		162 - Dynamic Phase Length Short Inhibit 2	SI2	TOD	
113 - Enable Volume Logging	EVL	On		163 - Dynamic Phase Length Short Inhibit 3	SI3	TOD	
114 - Enable MOE Logging	EML	On		164 - Dynamic Phase Length Short Inhibit 4	SI4	TOD	
115 - Detector Low Threshold Inhibit	DLI	TOD		165 - Dynamic Phase Length Short Inhibit 5	SI5	TOD	
116 - Detector Continue Presence Inhibit	DPI	TOD		166 - Dynamic Phase Length Short Inhibit 6	SI6	TOD	
117 - Inhibit Detector Based on Programming	IND	TOD		167 - Dynamic Phase Length Short Inhibit 7	SI7	TOD	
118 - Inhibit Detector Delay	IDD	TOD		168 - Dynamic Phase Length Short Inhibit 8	SI8	TOD	
119 - Inhibit Conditional Ped	ICP	TOD		169 - Coord Late Left Turn 1	CT1	TOD	
120 - Inhibit Transit Priority	ITP	TOD		170 - Coord Late Left Turn 3	CT3	TOD	
121 - Red Rest Ring 1,2	RRM	TOD		171 - Coord Late Left Turn 5	CT5	TOD	
122 - Not Used	N/U	TOD		172 - Coord Late Left Turn 7	CT7	TOD	
123 - Omit Red Clear Ring 1,2	ORC	TOD		173 - Dynamic Phase Length Enable A	DPA	TOD	
124 - Not Used	N/U	TOD		174 - Dynamic Phase Length Enable B	DPB	TOD	
125 - Ped Recycle Ring 1,2	PCY	TOD	On /	175 - Dynamic Phase Length Enable C	DPC	TOD	On /
126 - Not Used	N/U	TOD	Off /	176 - Dynamic Phase Length Enable D	DPD	TOD	TOD
127 - Enable MOE Log to Call Phone 1	MT1	TOD	TOD	177 - Proactive Plan Select Average	PSA	TOD	
128 - Enable MOE Log to Call Phone 2	MT2	TOD		178 - Proactive Plan Select Inbound	PSI	TOD	
129 - Transit Inhibit Short Time 1	IS1	TOD		179 - Proactive Plan Select Outbound	PSO	TOD	
130 - Transit Inhibit Short Time 2	IS2	TOD		180 - Split Variant Inbound	SVI	TOD	
131 - Transit Inhibit Short Time 3	IS3	TOD		181 - Split Variant Outbound	SVO	TOD	
132 - Transit Inhibit Short Time 4	IS4	TOD		182 - Disable Coord Walk Rest Ring 1	DW1	TOD	
133 - Transit Inhibit Short Time 5	IS5	TOD		183 - Disable Coord Walk Rest Ring 2	DW2	TOD	
134 - Transit Inhibit Short Time 6	IS6	TOD		184 - Proactive Plan Select New Look	NLK	TOD	
135 - Transit Inhibit Short Time 7	IS7	TOD		185 - Disable Red Clearance Extension	DRX	TOD	
136 - Transit Inhibit Short Time 8	IS8	TOD		186 - Detector Plan Line 1	DL1	TOD	
137 - Enable Transit Priority Logging	ETL	TOD		187 - Detector Plan Line 2	DL2	TOD	
138 - Disable Flashing Yellow Arrow 1	DF1	TOD		188 - Disable LRT 1 Vertical Flashing Bar	DV1	TOD	
139 - Disable Flashing Yellow Arrow 3	DF3	TOD		189 - Disable LRT 2 Vertical Flashing Bar	DV2	TOD	
140 - Disable Flashing Yellow Arrow 5	DF5	TOD		190 - Disable LRT 3 Vertical Flashing Bar	DV3	TOD	
141 - Disable Flashing Yellow Arrow 7	DF7	TOD		191 - Disable LRT 4 Vertical Flashing Bar	DV4	TOD	
142 - Disable Auto Max	DAM	TOD		192 - Datakey Enable	DKE	On	
143 - Disable Repeat Phase Service	DRS	TOD		193 - Dynamic Phase Reversal Enable 1	DR1	TOD	
144 - Coord End of Main Street	EMS	TOD		194 - Dynamic Phase Reversal Enable 3	DR3	TOD	
145 - Coord Hold 1	HD1	TOD		195 - Dynamic Phase Reversal Enable 5	DR5	TOD	
146 - Coord Hold 2	HD2	TOD		196 - Dynamic Phase Reversal Enable 7	DR7	TOD	
147 - Coord Hold 3	HD3	TOD		197 - Enable Coord Logging	ECL	On	
148 - Coord Hold 4	HD4	TOD		198 - Disable Gap FYLTA 1,3,5,7	DGF	TOD	
149 - Coord Hold 5	HD5	TOD		199 - Coordination Auto Walk	CAW	TOD	
150 - Coord Hold 6	HD6	TOD		200 - Enable Coordinated Auto Max	ECM	TOD	

Preemption Data (next/2/5)

Sequence (next/2/5/1 - 8)							Instructions
Sequences / Intervals	Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode	
1	1	0	25	0	1	0	
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
2	1	0	4	0	1	0	
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
3	1	0	6	0	1	0	
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
4	1	0		0	0	0	
	2	0		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
5	1	0		0	0	0	
	2	0		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	

0 - Service Phases
 1-9 = Special Interval 1-9
 10 - Preempt Sequence Allows FYLTA
 11 - Preempt Interval Disables FYLTA
 15 - Alternate Trap Protection
 90 - Go to all Red
 91 - Soft Flash On
 92 - Soft Flash Off
 93 - Enable Ped
 94 - Disable Peds
 95 - Priority Return
 96 - Enable Coordination with peds
 97 - Enable Coordination without peds
 98 - Return with NO Calls
 99 - Return with Vehicle Calls
 100 - jump to step in Interval Time
 101 - Use Interval Time as Resettable Gap
 Timer
 196 - Coord Re-synch with Peds
 197 - Coord Re-synch without Peds
 200 - Light Rail Train phase without Peds
 201 - Light Rail Train phase with Peds
 202 - Return to highest queue/delay phase (this uses the Dynamic Phase Length Back Detectors)
 216 - Light Rail Train Coord Re-synch with Peds
 217 - Light Rail Train Coord Re-synch without Peds

Phases Serviced - phases 1 - 8
 Interval Time - 0 - 255 sec or interval 1 - 10
 Hold on Input:
 0 = Do not hold
 1 = Hold
 2 = Ped Service to Rest in Walk

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		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		0	0		0
7	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		0	0		0
8	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		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	0	0	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	0.0	0.0	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	0.0 - 25.5 sec
	Overlap Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	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									
	B	X								X = inhibit
	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	
	Override Time	0	0	0	0	0	0	0	0	0 - 60 min
	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	0 - 100% of currently used max			
	B (max)	0	0	0	0	0	0	0	0					
	C (max)	0	0	0	0	0	0	0	0					
	D (max)	0	0	0	0	0	0	0	0					
	E (max)	0	0	0	0	0	0	0	0					
Ped Clear	0	0	0	0	0	0	0	0	0	0 - 100% of currently used ped clearance				
Queue Delay Recovery		0	0	0	0	0	0	0	0	0 - 255 sec.				
Special Intervals	1	0	0	0	0	0	0	0	0	0	0	0	0	0 = Dark 1 = green don't walk 2 = green walk 3 = green flashing don't walk 4 = yellow 5 = red 6 = flashing yellow WIG 7 = flashing yellow WAG 8 = flashing red WIG 9 = flashing red WAG 10 = walk only 11=flashing don't walk only
	2	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	0	
	6	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	
	8	0	0	0	0	0	0	0	0	0	0	0	0	
	9	0	0	0	0	0	0	0	0	0	0	0	0	
Light Rail Train (next/2/5/0/7)														
Light Rail Train -->		1	2	3	4									
Associated Preempt		0	0	0	0	0 = none, preempt 1 - 8								
Time to Green		0	0	0	0	0 - 255 sec								
Horizontal Bar Flash Time		0.0	0.0	0.0	0.0	0.0 - 25.5 sec								
Vertical Bar Flash Time		0.0	0.0	0.0	0.0	0.0 - 25.5 sec								
Min Duration		0	0	0	0	0 - 255 sec								

Communications Data (next/2/6)

1st Central Phone Number				2nd Central Phone Number			
Modem Setup String						Intersection Name	
Subnet Mask			0.0.0.0			T-Sherwood/124th	
IP (ethernet) Port			0				
Central Port			0				
System Mode			0				
System Port			1			Alternate System Port	
						0	
System ID		0		AB3418e Physical Address		0	
Local ID		0		AB3418e Group Address		0	
				IP Address		0.0.0.0	
				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			NIU	
						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	
Alarm 2			0			1	
Alarm 3			0			Manual Control Enable (MCE)	
Alarm 4			0			4	
Alarm 5			0			Emergency or Railroad Preempt	
Not Used			0			1	
Not Used			0			Not Used	
Not Used			0			0	
Not Used			0			Cycle Failure	
Power On / Off			1			2	
Checksum Failure			4			2	
Video / Detector Failure			4			Coordination Failure	
Master to Local Comm Lost			0			2	
						3	
						Keyboard use / Data Changed	
						3	
						Coord Running / Free	
						2	
						Cabinet Door	
						3	
						Extended Ped Pushbutton	
						0	
						Monitor Status	
						4	

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 circuit							

Transit Priority Alternate Force Off Plans

Current Coord Plan	1	2	3	4	5	6	7	8	
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	0 = none
Current Coord Plan	9	10	11	12	13	14	15	16	17 - 32 = coord plan 17 - 32
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	

Group Timing

Phase -->		1	2	3	4	5	6	7	8	
Group 1	Max Times	0	0	0	0	0	0	0	0	0 - 255 sec 0 would time the normal function time
	Walk Times	0	0	0	0	0	0	0	0	
Group 2	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 3	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 4	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 5	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 6	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 7	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 8	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	

Truck Priority (next/2/7/9)

Truck Priority-->	1	2	3	4	
Associated Transit Priority	0	0	0	0	0 = none 1 - 8 = transit priority 1 - 8
Leading Detector	0	0	0	0	0 = none, 1 - 32 = detector 1 - 32
Trailing Detector	0	0	0	0	
Stop Bar Distance	0	0	0	0	0 - 999 feet
Trap Distance	0	0	0	0	0.0 - 99.9 feet
Minimum Speed	0	0	0	0	0 - 100 mph
Minimum Length	0	0	0	0	0 - 255 feet
Downhill Grade	0	0	0	0	0 - 20 %
Uphill Grade	0	0	0	0	
Undersized Vehicle					X = Enabled

Change I/O X = On (After a download with a power on - off cycle)

Inputs (Non Default I/O is offset to the right) (next/2/8/1)											
C1-39	101	VD9	C1-55	15	VD5	C1-67	22	PED2	C11-15	254	N/U
C1-40	113	VD19	C1-56	11	VD1	C1-68	26	PED6	C11-16	254	N/U
C1-41	106	VD14	C1-57	17	VD7	C1-69	24	PED4	C11-17	254	N/U
C1-42	118	VD24	C1-58	13	VD3	C1-70	28	PED8	C11-18	254	N/U
C1-43	102	VD10	C1-59	16	VD6	C1-71	151	PE1	C11-19	254	N/U
C1-44	114	VD20	C1-60	12	VD2	C1-72	152	PE2	C11-20	254	N/U
C1-45	107	VD15	C1-61	18	VD8	C1-73	153	PE3	C11-21	254	N/U
C1-46	161	VD25	C1-62	14	VD4	C1-74	154	PE4	C11-22	254	N/U
C1-47	105	VD13	C11-10	254	N/U	C1-75	254	N/U	C11-23	254	N/U
C1-48	117	VD23	C11-11	254	N/U	C1-76	104	VD12	C11-24	254	N/U
C1-49	112	VD18	C11-12	254	N/U	C1-77	116	VD22	C11-25	254	N/U
C1-50	164	VD28	C11-13	254	N/U	C1-78	111	VD17	C11-26	254	N/U
C1-51	199	PEDI	C1-63	103	VD11	C1-79	163	VD27	C11-27	254	N/U
C1-52	155	PE5	C1-64	115	VD21	C1-80	82	IADV	C11-28	254	N/U
C1-53	85	MCE	C1-65	108	VD16	C1-81	137	MONS	C11-29	254	N/U
C1-54	254	N/U	C1-66	162	VD26	C1-82	62	ST1	C11-30	254	N/U

Outputs (Non Default I/O is offset to the right) (next/2/8/2)											
C1-2	44	4DWK	C1-19	48	8DWK	C1-35	131	TO1	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	133	TO3	C1-94	106	OLBR
C1-5	24	4YEL	C1-22	28	8YEL	C1-38	134	TO4	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	23	3YEL	C1-25	27	7YEL	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	21	1YEL	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			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
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			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
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			
128			
129			
130			
131			
132			
133			
134			
135			
136			
137			
138			
139			
140			
141			
142			
143			
144			
145			
146			
147			
148			
149			
150			
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			
181			
182			
183			
184			
185			
186			
187			
188			
189			
190			
191			
192			
193			
194			
195			
196			
197			
198			
199			
200			
201			
202			
203			
204			
205			
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	20	0	0 = disable, 1 - 64 detectors	
	Min Delay	0.0	0.0	4.0	0.0	0 - 255 sec	
	Detector Gap	0	0	255	0	0 - 25.5 sec	
	Max Delay	0	0	3	0	0 - 255 sec	
	Not Ped	0	0	4	0	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

Preemption - Continued

Railroad Communications (IEEE 1570) (next/2/5/0/8)

	ATC	Wayside	
Railroad Number	0	0	0 - 999, represents railroad
Railroad Line Number	0	0	0 - 999, represents railroad line
Group Number	0	0	0 - 999, represents physical group of equipment
Subnode Number	0	0	0 - 99, subnode within physical group of equipment
Device Number	0	0	0 - 99, device within physical group of equipment
Associated Preempt	0		0 - 8
Communication Port	0		0 - 4

Reports - Continued

Reports - Service Delay Modes (next/2/6/0)

Phase -->	1	2	3	4	5	6	7	8	
Mode	0	0	0	0	0	0	0	0	0 = disable, 1 = enable, 2 = Ped, 3 = Veh/Ped
Ped Overlap -->	A	B	C	D	E	F	G	H	
Mode	0	0	0	0	0	0	0	0	0 = disable, 1 = enable

NORTH

Tuesday, January 07, 2014 15:51

Intersection Name	<i>10 - 115th</i>	Local ID	<i>10</i>
Intersection Telephone Number			
System Name	<i>56 - Tualatin-Sherwood Rd</i>	System ID	<i>56</i>
Controller Type	<i>Voyage - C1-C11</i>		
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	<i>****</i>	0 = disabled, or 1000-9999
Sequence	<i>7</i>	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
	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>
	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	<i>1</i>	<i>0</i>	<i>1</i>	phase 1-8
Ring 2 Phase	<i>5</i>	<i>0</i>	<i>5</i>	phase 1-8
Interval	<i>0</i>	<i>0</i>	<i>0</i>	0 = red, 1 = yellow, 2 = green
Power up Flash	<i>0.0</i>	0.0 - 25.5 seconds	First All Red	<i>6.0</i> 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				
	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>	<i>3</i>	<i>4</i>	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X		X	X	X		X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									

Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	0	8	8	0	0	4	4	0 = none, 1-8 = phase 1-8

Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
Phase	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
			X : Y		Trap Protected Phase	Next Phase	Phase		
Phase 1	0	0	6 : 1	0	1		< (5)	1	
Phase 3	0	0	8 : 3	0	3		< (7)	3	
Phase 5	0	0	2 : 5	0	5		< (1)	5	
Phase 7	0	0	4 : 7	0	7		< (3)	7	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)								
	1	2	3	4	5	6	7	8
Movement	<i>WBL</i>	<i>EB</i>	<i>NBL</i>	<i>SB</i>	<i>EBL</i>	<i>WB</i>	<i>SBL</i>	<i>NB</i>
Minimum Green	5	10	5	5	5	10	5	5
Passage	1.5	3.5	1.5	1.5	1.5	3.5	1.5	1.5
Yellow	3.0	4.5	3.0	3.5	3.0	4.5	3.0	3.5
Red Clearance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max 1	15	80	20	20	15	80	20	25
Max 2	15	95	20	20	15	95	20	25
Walk	0	5	0	6	0	5	0	5
Ped Clear	0	19	0	21	0	15	0	16
Seconds Per Actuation	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
Time Before Reduction	0	25	0	0	0	25	0	0
Time to Reduce	0	20	0	0	0	20	0	0
Minimum Gap	0.0	3.1	0.0	0.0	0.0	3.0	0.0	0.0
Max Variable Initial	0	25	0	0	0	25	0	0
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auto Max Limit	0	0	0	0	0	0	0	0
Inhibit Min Yellow								X = On
Red Decimal Off								X = On
Advance Walk	0	0	0	0	0	0	0	0
Other Controller Functions (next/2/2/9)								
Phase -->	1	2	3	4	5	6	7	8
Inhibit Simultaneous Gap Out	X		X	X	X		X	X
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage						
Red Revert (+2 seconds)	3.0	0 - 25.5 sec						
Auto Ped Clear		X = On						
Flashing Don't Walk Into Yellow		X = On						
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec						
Ped Pushbutton	0	0 - 5 sec, 0 = disable						
Advance Flash Rate	0	0 = disable, 1 = 120 FPM						
Change Sequence		X = On (After a download with a power on - off cycle)						
Phase -->	1	2	3	4	5	6	7	8
Red Clear Extension Detector	0	0	0	0	0	0	0	0
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Local Detectors (next/2/2/4)

Detector Data

	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
Detector 1 - I1			1	1	0	0	1.0	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	1.0	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	2.0	0
Detector 10 - I2L			2	2	0	0	2.0	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	0	0.0	0
Detector 15 - I6L			4	4	0	0	0.0	0
Detector 16 - I7U			4	4	0	5	0.0	11
Detector 17 - I7L			0	4	0	5	0.0	11
Detector 18 - I8			4	0	0	0	0.0	0
Detector 19 - J2U			6	6	0	0	2.0	0
Detector 20 - J2L			6	6	0	0	2.0	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	0	0.0	0
Detector 25 - J6L			8	8	0	0	0.0	0
Detector 26 - J7U			8	8	0	5	1.0	11
Detector 27 - J7L			0	8	0	5	1.0	11
Detector 28 - J8			8	0	0	0	0.0	0
Detector 29 -			0	0	0	0	0.0	0
Detector 30 -			0	0	0	0	0.0	0
Detector 31 -			0	0	0	0	0.0	0
Detector 32 -			0	0	0	0	0.0	0

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8 ; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 - 13

Detector Plans (next/2/2/4/5)

Loop Number									
Plan Detectors		0	0	0	0	0	0	0	0 - 32, 0 = none, 1 - 3 2 = detectors 1 - 32
Detector Plan 1	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 13
Detector Plan 2	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 13	
Detector Plan 3	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 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 - J2U		0	0	0	Detector 41 -	0	0			
Detector 10 - J2L		0	0	0	Detector 42 -	0	0			
Detector 11 - J3U		0	0	0	Detector 43 -	0	0			
Detector 12 - J3L		0	0	0	Detector 44 -	0	0			
Detector 13 - J4		0	0	0	Detector 45 -	0	0			
Detector 14 - J6U		0	0	0	Detector 46 -	0	0			
Detector 15 - J6L		0	0	0	Detector 47 -	0	0			
Detector 16 - J7U		0	0	0	Detector 48 -	0	0			
Detector 17 - J7L		0	0	0	Detector 49 -	0	0			
Detector 18 - J8		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 counts -					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								Extension Green	Clearance		A - D 0 = none 1 = overlap 2 = 60 FPM 3 = Not ped 4=Comp. Ph. 5=Prevent. Ext. 6=Not Veh. 7=Adv. FF
			1	2	3	4	5	6	7	8		Yellow	Red	
Overlaps	A		0	0	0	0	0	0	0	0	0.0	0.0	0.0	E - L 0 = no Overlap 1 = Overlap Green, Yellow, Red
	B		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	C		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	D		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	E		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	F		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	G		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	H		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	I		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	J		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	K		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
L		0	0	0	0	0	0	0	0	0.0	0.0	0.0		

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

Ped Overlaps ->		A	B	C	D	E	F	G	H
Overlaps	A								
	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	Phase, Ped Recall: X = on Walk, Ped Clear: 0 - 255 seconds
	B									0	0	
	C									0	0	
	D									0	0	
	E									0	0	
	F									0	0	
	G									0	0	
	H									0	0	

Flashing Yellow Left Turn Arrow (FYLTA) (next/2/2/8/6)

Phase Pairs -->		1 - 2	3 - 4	5 - 6	7 - 8	
Enable		4	0	4	0	0 = off, 3 = 3 outputs, 4 = 4 outputs, 5 = 5 outputs
Even Omits Odd		1	0	1	0	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	2.0	3.0	2.0	0.0 or 2.0 - 25.5 sec
Red Extension		3.0	0.0	3.0	0.0	0.0 - 25.5 sec
Return to GLTA		0	0	0	0	0 = off, 1 = max out, 2 = yellow lock

Flashing Yellow Left Turn Arrow (FYLTA) - Continued on last page

Service Plans (next/2/2/6)

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 1	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 2	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 3	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 4	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 5	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 6	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Service Plans Cont.

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 7	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 8	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Max Plans (next/2/2/7)

Phase -->		1	2	3	4	5	6	7	8	
Max Plan 1	Normal Max	15	80	20	20	15	80	20	20	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	15	65	20	20	15	65	20	25	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	15	65	20	20	15	65	20	25	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 4	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 5	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 6	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 7	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 8	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	2	0=add only, 1=dwel, 2=fastway
Late Ped	0	0 = off, 1 = on
Coord Walk Rest	0	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	1	0=start of main street, 1=end of main street, 2=by TOD circuit 144

	Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service		0	0	0	0	0	0	0	0	
Auto Permissive Min Green		0	0	0	0	0	0	0	0	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan
	Ring 1	Ring 2						
1 - AM	2	6	140	129	0	0	0	1
2 - Mid-Day/Weekend	2	6	120	103	0	0	0	2
3 - PM	2	6	120	4	0	0	0	3
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 - AM	12	84	12	32	12	84	12	32	10	10
2 - Mid-Day/Weekend	12	64	12	32	12	64	12	32	10	10
3 - PM	12	64	12	32	12	64	12	32	10	10
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	1	98	LG3	100	LG7	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
2	2	98	LG3	100	LG7	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
3	3	98	LG3	100	LG7	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	10	0	0	0	20	0	0	0 = none, 1-32 = detector 1-32
Lane Factor	0	0	0	0	0	0	0	0	0 = none, 1.0 - 5.0
Check Out Detector	0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Coord Delta Force Off	Set A	0	0	0	0	0	0	0	0 - 255 sec
	Set B	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	
Free Delta Max	Set A	0	0	0	0	0	0	0	
	Set B	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	

Platoon Progression (next/2/3/4/5)				
Entry Local Only			Master Local Only	
Platoon Max	0	0 - 255 sec	Smoothing Factor	0.0 0.0 - 1.0
Min Platoon Green	0	0 - 255 sec		
Entry Detector Gap	0.0	0.0 - 25.5		
Min Platoon Cycle	0	0 - 255 sec		

Inbound			Outbound		
Only for Entry Inbound Local or Master Local			Only for Entry Outbound Local or Master Local		
Entry IB Local also Last OB Local	0	0 - 50	Entry OB Local also Last IB Local	0	0 - 50
Speed	0	0 - 55 mph	Speed	0	0 - 55 mph
Distance from Entry Local	0	0 - 65000 feet	Distance from Entry Local	0	0 - 65000 feet

Entry Local Only			Entry Local Only		
Distance from Entry Local Detector	0	0 - 999 feet	Distance from Entry Local Detector	0	0 - 999 feet
Entry Local Detector	0	0 - 32	Entry Local Detector	0	0 - 32
Master Local			Master Local		
Master Mid - System Critical Detectors	0	0 - 16	Master Mid - System Critical Detectors	0	0 - 16

Force Off Percents													
Inbound							Outbound						
	1	3	4	5	7	8		1	3	4	5	7	8
Split 1	0	0	0	0	0	0	Split 1	0	0	0	0	0	0
Split 2	0	0	0	0	0	0	Split 2	0	0	0	0	0	0
0 - 100 %							0 - 100 %						

Time of Day Data (next/2/4)

Day Program (next/2/4/1)													
	Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On/Off
1	1	06:00	X	1				51					
2	1	09:30	X	2				52					
3	1	14:30	X	3				53					
4	1	20:00	X	0				54					
5	2	09:30	X	2				55					
6	2	18:30	X	0				56					
7	3	09:30	X	2				57					
8	3	18:30	X	0				58					
9								59					
10								60					
11								61					
12								62					
13								63					
14								64					
15								65					
16								66					
17								67					
18								68					
19								69					
20								70					
21								71					
22								72					
23								73					
24								74					
25								75					
26								76					
27								77					
28								78					
29								79					
30								80					
31								81					
32								82					
33								83					
34								84					
35								85					
36								86					
37								87					
38								88					
39								89					
40								90					
41								91					
42								92					
43								93					
44								94					
45								95					
46								96					
47								97					
48								98					
49								99					
50								100					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on

Day Program cont.

	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off
101						151					
102						152					
103						153					
104						154					
105						155					
106						156					
107						157					
108						158					
109						159					
110						160					
111						161					
112						162					
113						163					
114						164					
115						165					
116						166					
117						167					
118						168					
119						169					
120						170					
121						171					
122						172					
123						173					
124						174					
125						175					
126						176					
127						177					
128						178					
129						179					
130						180					
131						181					
132						182					
133						183					
134						184					
135						185					
136						186					
137						187					
138						188					
139						189					
140						190					
141						191					
142						192					
143						193					
144						194					
145						195					
146						196					
147						197					
148						198					
149						199					
150						200					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on

Circuit Overrides (next/2/4/4)

1 - Coord Line 1	CL1	TOD		51 - Ped Omit 3	PO3	TOD	
2 - Coord Line 2	CL2	TOD		52 - Ped Omit 4	PO4	TOD	
3 - Coord Line 4	CL4	TOD		53 - Ped Omit 5	PO5	TOD	
4 - Coord Line 8	CL8	TOD		54 - Ped Omit 6	PO6	TOD	
5 - Coord Line 16	C16	TOD		55 - Ped Omit 7	PO7	TOD	
6 - Coord Operation	CRD	TOD		56 - Ped Omit 8	PO8	TOD	
7 - Soft Flash	SFL	TOD		57 - Conditional Service	CVS	TOD	
8 - Enable System Relays	ESR	TOD		58 - Inhibit Simultaneous Gap Out	ISG	On	
9 - Call to Non Act 1	CN1	TOD		59 - Inhibit Hardwire	HWI	TOD	
10 - Call to Non Act 2	CN2	TOD		60 - Ped Override Mode	POM	On	
11 - Walk Rest Modifier	WRM	TOD		61 - Dual Entry	DLE	On	
12 - Min Recall	MIN	TOD		62 - Exclusive Ped	EPD	TOD	
13 - Max 2 Both Rings	MX2	TOD		63 - Call to Time Clock Mode	CTC	TOD	
14 - Coord Inhibit Max Ring 1, 2	IMT	TOD		64 - Dual Enhanced Ped	DEP	TOD	
15 - Enable Service Log	ESL	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 /	175 - Dynamic Phase Length Enable C	DPC	TOD	On /
126 - Not Used	N/U	TOD	Off /	176 - Dynamic Phase Length Enable D	DPD	TOD	TOD
127 - Enable MOE Log to Call Phone 1	MT1	TOD	TOD	177 - Proactive Plan Select Average	PSA	TOD	
128 - Enable MOE Log to Call Phone 2	MT2	TOD		178 - Proactive Plan Select Inbound	PSI	TOD	
129 - Transit Inhibit Short Time 1	IS1	TOD		179 - Proactive Plan Select Outbound	PSO	TOD	
130 - Transit Inhibit Short Time 2	IS2	TOD		180 - Split Variant Inbound	SVI	TOD	
131 - Transit Inhibit Short Time 3	IS3	TOD		181 - Split Variant Outbound	SVO	TOD	
132 - Transit Inhibit Short Time 4	IS4	TOD		182 - Disable Coord Walk Rest Ring 1	DW1	TOD	
133 - Transit Inhibit Short Time 5	IS5	TOD		183 - Disable Coord Walk Rest Ring 2	DW2	TOD	
134 - Transit Inhibit Short Time 6	IS6	TOD		184 - Proactive Plan Select New Look	NLK	TOD	
135 - Transit Inhibit Short Time 7	IS7	TOD		185 - Disable Red Clearance Extension	DRX	TOD	
136 - Transit Inhibit Short Time 8	IS8	TOD		186 - Detector Plan Line 1	DL1	TOD	
137 - Enable Transit Priority Logging	ETL	TOD		187 - Detector Plan Line 2	DL2	TOD	
138 - Disable Flashing Yellow Arrow 1	DF1	TOD		188 - Disable LRT 1 Vertical Flashing Bar	DV1	TOD	
139 - Disable Flashing Yellow Arrow 3	DF3	TOD		189 - Disable LRT 2 Vertical Flashing Bar	DV2	TOD	
140 - Disable Flashing Yellow Arrow 5	DF5	TOD		190 - Disable LRT 3 Vertical Flashing Bar	DV3	TOD	
141 - Disable Flashing Yellow Arrow 7	DF7	TOD		191 - Disable LRT 4 Vertical Flashing Bar	DV4	TOD	
142 - Disable Auto Max	DAM	TOD		192 - Datakey Enable	DKE	On	
143 - Disable Repeat Phase Service	DRS	TOD		193 - Dynamic Phase Reversal Enable 1	DR1	TOD	
144 - Coord End of Main Street	EMS	TOD		194 - Dynamic Phase Reversal Enable 3	DR3	TOD	
145 - Coord Hold 1	HD1	TOD		195 - Dynamic Phase Reversal Enable 5	DR5	TOD	
146 - Coord Hold 2	HD2	TOD		196 - Dynamic Phase Reversal Enable 7	DR7	TOD	
147 - Coord Hold 3	HD3	TOD		197 - Enable Coord Logging	ECL	On	
148 - Coord Hold 4	HD4	TOD		198 - Disable Gap FYLTA 1,3,5,7	DGF	TOD	
149 - Coord Hold 5	HD5	TOD		199 - Coordination Auto Walk	CAW	TOD	
150 - Coord Hold 6	HD6	TOD		200 - Enable Coordinated Auto Max	ECM	TOD	

Preemption Data (next/2/5)

Sequence (next/2/5/1 - 8)							Instructions
Sequences / Intervals	Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode	
1	1	0	25	0	1	0	0 - Service Phases 1-9 = Special Interval 1-9 10 - Preempt Sequence Allows FYLTA 11 - Preempt Interval Disables FYLTA 15 - Alternate Trap Protection 90 - Go to all Red 91 - Soft Flash On 92 - Soft Flash Off 93 - Enable Ped 94 - Disable Peds 95 - Priority Return 96 - Enable Coordination with peds 97 - Enable Coordination without peds 98 - Return with NO Calls 99 - Return with Vehicle Calls 100 - jump to step in Interval Time 101 - Use Interval Time as Resettable Gap Timer
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
2	1	0	47	0	1	0	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
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
3	1	0	16	0	1	0	
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
4	1	0	38	0	1	0	Phases Serviced - phases 1 - 8 Interval Time - 0 - 255 sec or interval 1 - 10 Hold on Input: 0 = Do not hold 1 = Hold 2 = Ped Service to Rest in Walk
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
5	1	0		0	0	0	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
	2	0		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	

Sequence cont.							
Sequences / Intervals	Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode	
6	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		0	0		0
7	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		0	0		0
8	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		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	0	0	0	0	0 = lowest, - 8 = highest
Min Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Walk	0.1	0.1	0.1	0.1	0.0	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	time
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 - 20
	Exit Coord Plan Time	0	0	0	0	0	0	0	0 - 60 min
	Exit to Max Plan	0	0	0	0	0	0	0	0 - 8
	Exit Free Time	0	0	0	0	0	0	0	0 - 60 min
	Override Time	0	0	0	0	0	0	0	
	Fail Time	0	0	0	0	0	0	0	
	Exit Mode Time	0	0	0	0	0	0	0	

Priority Return and Special Intervals (next/2/5/0/6, next/2/5/9)														
Phase / Overlap -->		1	2	3	4	5	6	7	8	A	B	C	D	
Priority Return	Enable	0	0 = disabled, 1 = enabled, 2 = enabled, skip preemption phases on exit											
	A (max)	0	0	0	0	0	0	0	0	0	0 - 100% of currently used max			
	B (max)	0	0	0	0	0	0	0	0					
	C (max)	0	0	0	0	0	0	0	0					
	D (max)	0	0	0	0	0	0	0	0					
	E (max)	0	0	0	0	0	0	0	0					
Ped Clear	0	0	0	0	0	0	0	0	0	0 - 100% of currently used ped clearance				
Queue Delay Recovery		0	0	0	0	0	0	0	0	0 - 255 sec.				
Special Intervals	1	0	0	0	0	0	0	0	0	0	0	0	0	0 = Dark 1 = green don't walk 2 = green walk 3 = green flashing don't walk 4 = yellow 5 = red 6 = flashing yellow WIG 7 = flashing yellow WAG 8 = flashing red WIG 9 = flashing red WAG 10 = walk only 11=flashing don't walk only
	2	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	0	
	6	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	
	8	0	0	0	0	0	0	0	0	0	0	0	0	
	9	0	0	0	0	0	0	0	0	0	0	0	0	
Light Rail Train (next/2/5/0/7)														
Light Rail Train -->		1	2	3	4									
Associated Preempt		0	0	0	0	0 = none, preempt 1 - 8								
Time to Green		0	0	0	0	0 - 255 sec								
Horizontal Bar Flash Time		0.0	0.0	0.0	0.0	0.0 - 25.5 sec								
Vertical Bar Flash Time		0.0	0.0	0.0	0.0	0.0 - 25.5 sec								
Min Duration		0	0	0	0	0 - 255 sec								

Communications Data (next/2/6)

1st Central Phone Number				2nd Central Phone Number			
Modem Setup String						Intersection Name	
Subnet Mask			0.0.0.0			T-Sherwood_115th	
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		NU		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	
Alarm 2		0				1	
Alarm 3		0				Manual Control Enable (MCE)	
Alarm 4		0				4	
Alarm 5		0				Emergency or Railroad Preempt	
Not Used		0				1	
Not Used		0				Not Used	
Not Used		0				0	
Not Used		0				Cycle Failure	
Power On / Off		1				2	
Checksum Failure		4				Coordination Failure	
Video / Detector Failure		4				2	
Master to Local Comm Lost		0				Keyboard use / Data Changed	
						3	
						Coord Running / Free	
						2	
						Cabinet Door	
						3	
						Extended Ped Pushbutton	
						0	
						Monitor Status	
						4	

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 circuit							

Transit Priority Alternate Force Off Plans

Current Coord Plan	1	2	3	4	5	6	7	8	
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	0 = none
Current Coord Plan	9	10	11	12	13	14	15	16	17 - 32 = coord plan 17 - 32
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	

Group Timing

Phase -->		1	2	3	4	5	6	7	8	
Group 1	Max Times	0	0	0	0	0	0	0	0	0 - 255 sec 0 would time the normal function time
	Walk Times	0	0	0	0	0	0	0	0	
Group 2	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 3	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 4	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 5	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 6	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 7	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 8	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	

Truck Priority (next/2/7/9)

Truck Priority-->	1	2	3	4	
Associated Transit Priority	0	0	0	0	0 = none 1 - 8 = transit priority 1 - 8
Leading Detector	0	0	0	0	0 = none, 1 - 32 = detector 1 - 32
Trailing Detector	0	0	0	0	
Stop Bar Distance	0	0	0	0	0 - 999 feet
Trap Distance	0	0	0	0	0.0 - 99.9 feet
Minimum Speed	0	0	0	0	0 - 100 mph
Minimum Length	0	0	0	0	0 - 255 feet
Downhill Grade	0	0	0	0	0 - 20 %
Uphill Grade	0	0	0	0	
Undersized Vehicle					X = Enabled

Change I/O

X = On (After a download with a power on - off cycle)

Inputs (Non Default I/O is offset to the right) (next/2/8/1)											
C1-39	101	VD9	C1-55	15	VD5	C1-67	22	PED2	C11-15	254	N/U
C1-40	113	VD19	C1-56	11	VD1	C1-68	26	PED6	C11-16	254	N/U
C1-41	106	VD14	C1-57	17	VD7	C1-69	24	PED4	C11-17	254	N/U
C1-42	118	VD24	C1-58	13	VD3	C1-70	28	PED8	C11-18	254	N/U
C1-43	102	VD10	C1-59	16	VD6	C1-71	151	PE1	C11-19	254	N/U
C1-44	114	VD20	C1-60	12	VD2	C1-72	152	PE2	C11-20	254	N/U
C1-45	107	VD15	C1-61	18	VD8	C1-73	153	PE3	C11-21	254	N/U
C1-46	161	VD25	C1-62	14	VD4	C1-74	154	PE4	C11-22	254	N/U
C1-47	105	VD13	C11-10	254	N/U	C1-75	254	N/U	C11-23	254	N/U
C1-48	117	VD23	C11-11	254	N/U	C1-76	104	VD12	C11-24	254	N/U
C1-49	112	VD18	C11-12	254	N/U	C1-77	116	VD22	C11-25	254	N/U
C1-50	164	VD28	C11-13	254	N/U	C1-78	111	VD17	C11-26	254	N/U
C1-51	199	PEDI	C1-63	103	VD11	C1-79	163	VD27	C11-27	254	N/U
C1-52	155	PE5	C1-64	115	VD21	C1-80	82	IADV	C11-28	254	N/U
C1-53	85	MCE	C1-65	108	VD16	C1-81	137	MONS	C11-29	254	N/U
C1-54	254	N/U	C1-66	162	VD26	C1-82	62	ST1	C11-30	254	N/U

Outputs (Non Default I/O is offset to the right) (next/2/8/2)											
C1-2	44	4DWK	C1-19	48	8DWK	C1-35	215	FYA1	C1-91	41	1DWK
C1-3	64	4WLK	C1-20	68	8WLK	C1-36	217	FYA5	C1-93	61	1WLK
C1-4	14	4RED	C1-21	18	8RED	C1-37	133	TO3	C1-94	106	OLBR
C1-5	24	4YEL	C1-22	28	8YEL	C1-38	134	TO4	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	23	3YEL	C1-25	27	7YEL	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			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
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			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
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			
128			
129			
130			
131			
132			
133			
134			
135			
136			
137			
138			
139			
140			
141			
142			
143			
144			
145			
146			
147			
148			
149			
150			
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			
181			
182			
183			
184			
185			
186			
187			
188			
189			
190			
191			
192			
193			
194			
195			
196			
197			
198			
199			
200			
201			
202			
203			
204			
205			
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		9	0	19	0	0 = disable, 1 - 64 detectors
	Min Delay		3.5	0.0	3.5	0.0	0 - 255 sec
	Detector Gap		255	0	255	0	0 - 25.5 sec
	Max Delay		3	0	3	0	0 - 255 sec
	Not Ped		4	0	4	0	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

Preemption - Continued

Railroad Communications (IEEE 1570) (next/2/5/0/8)

	ATC	Wayside	
Railroad Number	0	0	0 - 999, represents railroad
Railroad Line Number	0	0	0 - 999, represents railroad line
Group Number	0	0	0 - 999, represents physical group of equipment
Subnode Number	0	0	0 - 99, subnode within physical group of equipment
Device Number	0	0	0 - 99, device within physical group of equipment
Associated Preempt	0		0 - 8
Communication Port	0		0 - 4

Reports - Continued

Reports - Service Delay Modes (next/2/6/0)

Phase -->	1	2	3	4	5	6	7	8	
Mode	0	0	0	0	0	0	0	0	0 = disable, 1 = enable, 2 = Ped, 3 = Veh/Ped
Ped Overlap -->	A	B	C	D	E	F	G	H	
Mode	0	0	0	0	0	0	0	0	0 = disable, 1 = enable

NORTH

Tuesday, January 07, 2014 15:51

Intersection Name	11 - 112th_Avery	Local ID	11	
Intersection Telephone Number				
System Name	56 - Tualatin-Sherwood Rd	System ID	56	
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
	2	2	2	2
	0 = no reversal, 1 = reversal, 2 = by coord plan or clock			

Initialization and Flash (next/2/2/5)

	Initialization	Flash Entry	Flash Exit	
Ring 1 Phase	1	0	1	phase 1-8
Ring 2 Phase	5	0	5	phase 1-8
Interval	0	0	0	0 = red, 1 = yellow, 2 = green
Power up Flash	0.0	0.0 - 25.5 seconds	First All Red	6.0 0.0 - 25.5 seconds

Soft Flash (next/2/2/5)

Phase	1	2	3	4	5	6	7	8	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	4	3	4	3	4	3	4					
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	same as phase
	3	4	3	4	3	4	3	4	3	4	3	4	
Internal Logic Output	1	2	3	4	5	6	7	8	9	10	11	12	0 = normal, 1 = dark, 2 = flash WIG
	0	0	0	0	0	0	0	0	0	0	0	0	

Per Phase Functions (next/2/2/3, next/2/2/1)									
	1	2	3	4	5	6	7	8	
Phases Used	X	X	X	X	X	X	X	X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									X = on
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit	X		X	X	X		X	X	
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									
Dual Entry (next/2/2/9/3)									
Mode	1	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61							
Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	0	8	8	0	0	4	4	0 = none, 1-8 = phase 1-8
Conditional Service, Five Section Head									
Conditional Service (next/2/2/9/3)			5 Section Head Logic (next/2/2/9/4)						
Phase	Mode	CS Max Time	X Omits Y		Anti-Trap			Yellow Blanking LT	
			X : Y		Trap Protected Phase	Next Phase	Phase		
Phase 1	0	0	6 : 1	0	1		< (5)	1	
Phase 3	0	0	8 : 3	0	3		< (7)	3	
Phase 5	0	0	2 : 5	0	5		< (1)	5	
Phase 7	0	0	4 : 7	0	7		< (3)	7	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			0=off, 1=side call, 2=no side call		X = On				

Phase Times (next/2/2/2, next/2/2/9/5)								
	1	2	3	4	5	6	7	8
Movement	<i>WBL</i>	<i>EB</i>	<i>NBL</i>	<i>SB</i>	<i>EBL</i>	<i>WB</i>	<i>SBL</i>	<i>NB</i>
Minimum Green	5	10	5	5	5	10	5	5
Passage	1.5	4.0	1.5	1.5	1.5	4.0	1.5	1.5
Yellow	3.0	4.5	3.0	4.0	3.0	4.5	3.0	4.0
Red Clearance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Max 1	15	70	25	15	15	70	15	15
Max 2	15	75	30	20	15	75	15	25
Walk	0	6	0	5	0	6	0	5
Ped Clear	0	14	0	19	0	15	0	19
Seconds Per Actuation	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
Time Before Reduction	0	15	0	0	0	15	0	0
Time to Reduce	0	20	0	0	0	20	0	0
Minimum Gap	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0
Max Variable Initial	0	25	0	0	0	25	0	0
Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auto Max Limit	0	0	0	0	0	0	0	0
Inhibit Min Yellow								X = On
Red Decimal Off								X = On
Advance Walk	0	0	0	0	0	0	0	0
Other Controller Functions (next/2/2/9)								
Phase -->	1	2	3	4	5	6	7	8
Inhibit Simultaneous Gap Out	X		X	X	X		X	X
Last Car Passage	2	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage						
Red Revert (+2 seconds)	3.0	0 - 25.5 sec						
Auto Ped Clear		X = On						
Flashing Don't Walk Into Yellow		X = On						
Soft Recall / Red Rest Delay	0.0	0 - 25.5 sec						
Ped Pushbutton	0	0 - 5 sec, 0 = disable						
Advance Flash Rate	0	0 = disable, 1 = 120 FPM						
Change Sequence		X = On (After a download with a power on - off cycle)						
Phase -->	1	2	3	4	5	6	7	8
Red Clear Extension Detector	0	0	0	0	0	0	0	0
Red Clear Extension Red Time	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Local Detectors (next/2/2/4)

Detector Data

	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
Detector 1 - I1			1	1	0	0	0.0	0
Detector 2 - I9U			1	1	0	0	0.0	0
Detector 3 - I5			3	3	0	0	0.0	0
Detector 4 - I9L			3	3	0	0	0.0	0
Detector 5 - J1			5	5	0	0	0.0	0
Detector 6 - J9U			5	5	0	0	0.0	0
Detector 7 - J5			7	7	0	0	0.0	0
Detector 8 - J9L			7	7	0	0	0.0	0
Detector 9 - I2U			2	2	0	0	0.0	0
Detector 10 - I2L			2	2	0	0	2.0	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	11
Detector 15 - I6L			4	4	0	5	0.0	11
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	2.0	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	11
Detector 25 - J6L			8	8	0	0	0.0	0
Detector 26 - J7U			8	8	0	0	0.0	0
Detector 27 - J7L			0	8	0	0	0.0	0
Detector 28 - J8			8	0	0	0	0.0	0
Detector 29 -			0	0	0	0	0.0	0
Detector 30 -			0	0	0	0	0.0	0
Detector 31 -			0	0	0	0	0.0	0
Detector 32 -			0	0	0	0	0.0	0

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8 ; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 - 13

Detector Plans (next/2/2/4/5)

Loop Number									
Plan Detectors		0	0	0	0	0	0	0	0 - 32, 0 = none, 1 - 3 2 = detectors 1 - 32
Detector Plan 1	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 13
Detector Plan 2	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 13	
Detector Plan 3	Call Phase	0	0	0	0	0	0	0	0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	0	0	0	0	0	0	0	
	Switch Phase	0	0	0	0	0	0	0	
	Delay Time	0	0	0	0	0	0	0	0 - 255 sec
	Stretch/Disconnect Time	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 - 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 counts -					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								Extension Green	Clearance		A - D 0 = none 1 = overlap 2 = 60 FPM 3 = Not ped 4=Comp. Ph. 5=Prevent. Ext. 6=Not Veh. 7=Adv. FF E - L 0 = no Overlap 1 = Overlap Green, Yellow, Red
			1	2	3	4	5	6	7	8		Yellow	Red	
Overlaps	A		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	B		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	C		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	D		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	E		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	F		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	G		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	H		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	I		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	J		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
	K		0	0	0	0	0	0	0	0	0.0	0.0	0.0	
L		0	0	0	0	0	0	0	0	0.0	0.0	0.0		
Not Ped - Ped Overlaps (next/2/2/8/5)														
Ped Overlaps ->		A	B	C	D	E	F	G	H					
Overlaps	A									X = Nor Ped Ped Overlap				
	B													
	C													
	D													
Advance Warning (next/2/2/8/3)														
					E	F	G	H	I	J	K	L		
Enable					0	0	0	0	0	0	0	0	0 = disabled, 1 = enabled	
1st Conditional Overlap					0	0	0	0	0	0	0	0	0 = none, 1 - overlap E, 2 = overlap F, etc.	
2nd Conditional Overlap					0	0	0	0	0	0	0	0		
Advance Deactivation Delay					0	0	0	0	0	0	0	0	0 - 99 seconds	
Ped Overlaps (next/2/2/8/5)														
Phase -->		1	2	3	4	5	6	7	8	Walk	Ped Clear	Ped Recall		
Ped Overlap	A									0	0		Phase, Ped Recall: X = on	
	B									0	0			
	C									0	0			
	D									0	0			
	E									0	0		Walk, Ped Clear: 0 - 255 seconds	
	F									0	0			
	G									0	0			
	H									0	0			
Flashing Yellow Left Turn Arrow (FYLTA) (next/2/2/8/6)														
Phase Pairs -->			1 - 2	3 - 4	5 - 6	7 - 8								
Enable			4	0	4	0	0 = off, 3 = 3 outputs, 4 = 4 outputs, 5 = 5 outputs							
Even Omits Odd			1	0	1	0	0 = off, 1 = on, 2 = on, place call across barrier							
Detector Switch Odd / Even			X	X	X	X	X = on, odd phase must be omitted							
Red Transition			3.0	3.0	3.0	3.0	0.0 or 2.0 - 25.5 sec							
Red Extension			3.0	3.0	3.0	3.0	0.0 - 25.5 sec							
Return to GLTA			0	0	0	0	0 = off, 1 = max out, 2 = yellow lock							
Flashing Yellow Left Turn Arrow (FYLTA) - Continued on last page														

Service Plans (next/2/2/6)

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 1	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 2	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 3	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 4	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 5	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	
Service Plan 6	Call Mode	0	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Service Plans Cont.

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 7	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Phase -->		1	2	3	4	5	6	7	8		
Service Plan 8	Call Mode	0	0	0	0	0	0	0	0		
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest										
	Minimum Green	0	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0	0 - 255 sec.
Pedestrian Clearance	0	0	0	0	0	0	0	0	0	0 - 255 sec.	

Max Plans (next/2/2/7)

Phase -->		1	2	3	4	5	6	7	8	
Max Plan 1	Normal Max	15	70	35	15	15	70	15	15	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	15	60	20	15	15	60	15	15	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	15	60	25	15	15	60	15	15	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 4	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 5	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 6	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 7	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 8	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	33	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	33	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	2	0=add only, 1=dwel, 2=fastway
Late Ped	0	0 = off, 1 = on
Coord Walk Rest	0	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	0	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	1	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	1	2	3	4	5	6	7	8	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	0	0	0	0	0	0	0	0	
Auto Permissive Min Green	0	0	0	0	0	0	0	0	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	Coordination Phases		Cycle Length	Offset Time	Min Cycle Length Dwell Time	Permissive	Service Plan	Max Plan	
	Ring 1	Ring 2							
1 - AM	2	6	140	0	0	0	0	1	
2 - Mid-Day/Weekend	2	6	120	0	0	0	0	2	
3 - PM	2	6	120	0	0	0	0	3	
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 - AM	12	72	27	29	12	72	12	44	10	10
2 - Mid-Day/Weekend	12	64	15	29	12	64	12	32	7	7
3 - PM	12	59	20	29	12	59	15	34	7	7
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	1	98	LG3	100	LG7	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
2	2	98	LG3	100	LG7	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
3	3	98	LG3	100	LG7	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	10	0	0	0	20	0	0	0 = none, 1-32 = detector 1-32
Lane Factor	0	0	0	0	0	0	0	0	0 = none, 1.0 - 5.0
Check Out Detector	0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Coord Delta Force Off	Set A	0	0	0	0	0	0	0	0 - 255 sec
	Set B	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	
Free Delta Max	Set A	0	0	0	0	0	0	0	
	Set B	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	

Platoon Progression (next/2/3/4/5)			
Entry Local Only		Master Local Only	
Platoon Max	0 0 - 255 sec	Smoothing Factor	0.0 0.0 - 1.0
Min Platoon Green	0 0 - 255 sec		
Entry Detector Gap	0.0 0.0 - 25.5		
Min Platoon Cycle	0 0 - 255 sec		

Inbound			Outbound		
Only for Entry Inbound Local or Master Local			Only for Entry Outbound Local or Master Local		
Entry IB Local also Last OB Local	0	0 - 50	Entry OB Local also Last IB Local	0	0 - 50
Speed	0	0 - 55 mph	Speed	0	0 - 55 mph
Distance from Entry Local	0	0 - 65000 feet	Distance from Entry Local	0	0 - 65000 feet

Entry Local Only			Entry Local Only		
Distance from Entry Local Detector	0	0 - 999 feet	Distance from Entry Local Detector	0	0 - 999 feet
Entry Local Detector	0	0 - 32	Entry Local Detector	0	0 - 32
Master Local			Master Local		
Master Mid - System Critical Detectors	0	0 0 - 16	Master Mid - System Critical Detectors	0	0 0 - 16

Force Off Percents													
Inbound							Outbound						
	1	3	4	5	7	8		1	3	4	5	7	8
Split 1	0	0	0	0	0	0	Split 1	0	0	0	0	0	0
Split 2	0	0	0	0	0	0	Split 2	0	0	0	0	0	0
0 - 100 %							0 - 100 %						

Time of Day Data (next/2/4)

Day Program (next/2/4/1)													
	Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On/Off
1	1	06:00	X	1				51					
2	1	09:30	X	2				52					
3	1	14:30	X	3				53					
4	1	20:00	X	0				54					
5	2	09:30	X	2				55					
6	2	18:30	X	0				56					
7	3	09:30	X	2				57					
8	3	18:30	X	0				58					
9								59					
10								60					
11								61					
12								62					
13								63					
14								64					
15								65					
16								66					
17								67					
18								68					
19								69					
20								70					
21								71					
22								72					
23								73					
24								74					
25								75					
26								76					
27								77					
28								78					
29								79					
30								80					
31								81					
32								82					
33								83					
34								84					
35								85					
36								86					
37								87					
38								88					
39								89					
40								90					
41								91					
42								92					
43								93					
44								94					
45								95					
46								96					
47								97					
48								98					
49								99					
50								100					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on

Day Program cont.

	Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit	State On / Off
101						151					
102						152					
103						153					
104						154					
105						155					
106						156					
107						157					
108						158					
109						159					
110						160					
111						161					
112						162					
113						163					
114						164					
115						165					
116						166					
117						167					
118						168					
119						169					
120						170					
121						171					
122						172					
123						173					
124						174					
125						175					
126						176					
127						177					
128						178					
129						179					
130						180					
131						181					
132						182					
133						183					
134						184					
135						185					
136						186					
137						187					
138						188					
139						189					
140						190					
141						191					
142						192					
143						193					
144						194					
145						195					
146						196					
147						197					
148						198					
149						199					
150						200					
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196	X = on

Circuit Overrides (next/2/4/4)

1 - Coord Line 1	CL1	TOD		51 - Ped Omit 3	PO3	TOD	
2 - Coord Line 2	CL2	TOD		52 - Ped Omit 4	PO4	TOD	
3 - Coord Line 4	CL4	TOD		53 - Ped Omit 5	PO5	TOD	
4 - Coord Line 8	CL8	TOD		54 - Ped Omit 6	PO6	TOD	
5 - Coord Line 16	C16	TOD		55 - Ped Omit 7	PO7	TOD	
6 - Coord Operation	CRD	TOD		56 - Ped Omit 8	PO8	TOD	
7 - Soft Flash	SFL	TOD		57 - Conditional Service	CVS	TOD	
8 - Enable System Relays	ESR	TOD		58 - Inhibit Simultaneous Gap Out	ISG	On	
9 - Call to Non Act 1	CN1	TOD		59 - Inhibit Hardwire	HWI	TOD	
10 - Call to Non Act 2	CN2	TOD		60 - Ped Override Mode	POM	On	
11 - Walk Rest Modifier	WRM	TOD		61 - Dual Entry	DLE	On	
12 - Min Recall	MIN	TOD		62 - Exclusive Ped	EPD	TOD	
13 - Max 2 Both Rings	MX2	TOD		63 - Call to Time Clock Mode	CTC	TOD	
14 - Coord Inhibit Max Ring 1, 2	IMT	TOD		64 - Dual Enhanced Ped	DEP	TOD	
15 - Enable Service Log	ESL	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)							Instructions
Sequences / Intervals	Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode	
1	1	0	25	0	1	0	0 - Service Phases 1-9 = Special Interval 1-9 10 - Preempt Sequence Allows FYLTA 11 - Preempt Interval Disables FYLTA 15 - Alternate Trap Protection 90 - Go to all Red 91 - Soft Flash On 92 - Soft Flash Off 93 - Enable Ped 94 - Disable Peds 95 - Priority Return 96 - Enable Coordination with peds 97 - Enable Coordination without peds 98 - Return with NO Calls 99 - Return with Vehicle Calls 100 - jump to step in Interval Time 101 - Use Interval Time as Resettable Gap
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
2	1	0	47	0	1	0	101 - Use Interval Time as Resettable Gap Timer 196 - Coord Re-synch with Peds 197 - Coord Re-synch without Peds 200 - Light Rail Train phase without Peds 201 - Light Rail Train phase with Peds 202 - Return to highest queue/delay phase (this uses the Dynamic Phase Length Back Detectors) 216 - Light Rail Train Coord Re-synch with Peds 217 - Light Rail Train Coord Re-synch without Peds
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
3	1	0	16	0	1	0	
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
4	1	0	38	0	1	0	Phases Serviced - phases 1 - 8 Interval Time - 0 - 255 sec or interval 1 - 10 Hold on Input: 0 = Do not hold 1 = Hold 2 = Ped Service to Rest in Walk
	2	98		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	
5	1	0		0	0	0	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
	2	0		0	0	0	
	3	0		0	0	0	
	4	0		0	0	0	
	5	0		0	0	0	
	6	0		0	0	0	
	7	0		0	0	0	
	8	0		0	0	0	
	9	0		0	0	0	
	10	0		0	0	0	

Sequence cont.							
Sequences / Intervals	Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode	
6	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		0	0		0
7	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		0	0		0
8	1	0		0	0		0
	2	0		0	0		0
	3	0		0	0		0
	4	0		0	0		0
	5	0		0	0		0
	6	0		0	0		0
	7	0		0	0		0
	8	0		0	0		0
	9	0		0	0		0
	10	0		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	0	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	0.0	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	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	0.0
	Delay to Preempt	0	0	0	0	0	0	0	0	0
	Delay Ped Omit	0	0	0	0	0	0	0	0	0 - 255 sec
	Delay Phase Omit	0	0	0	0	0	0	0	0	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	0 - 100% of currently used max			
	B (max)	0	0	0	0	0	0	0	0					
	C (max)	0	0	0	0	0	0	0	0					
	D (max)	0	0	0	0	0	0	0	0					
	E (max)	0	0	0	0	0	0	0	0					
	Ped Clear	0	0	0	0	0	0	0	0	0	0 - 100% of currently used ped clearance			
Queue Delay Recovery	0	0	0	0	0	0	0	0	0	0 - 255 sec.				
Special Intervals	1	0	0	0	0	0	0	0	0	0	0	0	0	0 = Dark 1 = green don't walk 2 = green walk 3 = green flashing don't walk 4 = yellow 5 = red 6 = flashing yellow WIG 7 = flashing yellow WAG 8 = flashing red WIG 9 = flashing red WAG 10 = walk only 11=flashing don't walk only
	2	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	0	
	6	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	
	8	0	0	0	0	0	0	0	0	0	0	0	0	
	9	0	0	0	0	0	0	0	0	0	0	0	0	
Light Rail Train (next/2/5/0/7)														
Light Rail Train -->		1	2	3	4									
Associated Preempt		0	0	0	0	0 = none, preempt 1 - 8								
Time to Green		0	0	0	0	0 - 255 sec								
Horizontal Bar Flash Time		0.0	0.0	0.0	0.0	0.0 - 25.5 sec								
Vertical Bar Flash Time		0.0	0.0	0.0	0.0									
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	
Subnet Mask			0.0.0.0			T-Sherwood_Avery	
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		<i>Suggested Use - FSK</i>			
Port 2 (Slot A2 Lower)	0	1		<i>Suggested Use - Not Used</i>			
Port 3 (Slot A1 Upper)	0	0		<i>Suggested Use - Modem to Central</i>			
Port 4 (Slot A1 Lower or C50S)	2	NIU		<i>Suggested Use - RS232 to Laptop</i>			
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	0 = none 1 = schedule A 2 = schedule B 3 = schedule C 4 = schedule R			Soft Flash	1	0 = none 1 = schedule A 2 = schedule B 3 = schedule C 4 = schedule R
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				Cycle Failure	2	
Not Used	0				Coordination Failure	2	
Not Used	0				Keyboard use / Data Changed	3	
Not Used	0				Coord Running / Free	2	
Power On / Off	1				Cabinet Door	3	
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 circuit							

Transit Priority Alternate Force Off Plans

Current Coord Plan	1	2	3	4	5	6	7	8	
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	0 = none
Current Coord Plan	9	10	11	12	13	14	15	16	17 - 32 = coord plan 17 - 32
Alternate TP Force Off Plan	0	0	0	0	0	0	0	0	

Group Timing

Phase -->		1	2	3	4	5	6	7	8	
Group 1	Max Times	0	0	0	0	0	0	0	0	0 - 255 sec 0 would time the normal function time
	Walk Times	0	0	0	0	0	0	0	0	
Group 2	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 3	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 4	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 5	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 6	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 7	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	
Group 8	Max Times	0	0	0	0	0	0	0	0	
	Walk Times	0	0	0	0	0	0	0	0	

Truck Priority (next/2/7/9)

Truck Priority-->	1	2	3	4	
Associated Transit Priority	0	0	0	0	0 = none 1 - 8 = transit priority 1 - 8
Leading Detector	0	0	0	0	0 = none, 1 - 32 = detector 1 - 32
Trailing Detector	0	0	0	0	
Stop Bar Distance	0	0	0	0	0 - 999 feet
Trap Distance	0	0	0	0	0.0 - 99.9 feet
Minimum Speed	0	0	0	0	0 - 100 mph
Minimum Length	0	0	0	0	0 - 255 feet
Downhill Grade	0	0	0	0	0 - 20 %
Uphill Grade	0	0	0	0	
Undersized Vehicle					X = Enabled

Change I/O X = On (After a download with a power on - off cycle)

Inputs (Non Default I/O is offset to the right) (next/2/8/1)											
C1-39	101	VD9	C1-55	15	VD5	C1-67	22	PED2	C11-15	254	N/U
C1-40	113	VD19	C1-56	11	VD1	C1-68	26	PED6	C11-16	254	N/U
C1-41	106	VD14	C1-57	17	VD7	C1-69	24	PED4	C11-17	254	N/U
C1-42	118	VD24	C1-58	13	VD3	C1-70	28	PED8	C11-18	254	N/U
C1-43	102	VD10	C1-59	16	VD6	C1-71	151	PE1	C11-19	254	N/U
C1-44	114	VD20	C1-60	12	VD2	C1-72	152	PE2	C11-20	254	N/U
C1-45	107	VD15	C1-61	18	VD8	C1-73	153	PE3	C11-21	254	N/U
C1-46	161	VD25	C1-62	14	VD4	C1-74	154	PE4	C11-22	254	N/U
C1-47	105	VD13	C11-10	254	N/U	C1-75	254	N/U	C11-23	254	N/U
C1-48	117	VD23	C11-11	254	N/U	C1-76	104	VD12	C11-24	254	N/U
C1-49	112	VD18	C11-12	254	N/U	C1-77	116	VD22	C11-25	254	N/U
C1-50	164	VD28	C11-13	254	N/U	C1-78	111	VD17	C11-26	254	N/U
C1-51	199	PEDI	C1-63	103	VD11	C1-79	163	VD27	C11-27	254	N/U
C1-52	155	PE5	C1-64	115	VD21	C1-80	82	IADV	C11-28	254	N/U
C1-53	85	MCE	C1-65	108	VD16	C1-81	137	MONS	C11-29	254	N/U
C1-54	254	N/U	C1-66	162	VD26	C1-82	62	ST1	C11-30	254	N/U

Outputs (Non Default I/O is offset to the right) (next/2/8/2)											
C1-2	44	4DWK	C1-19	48	8DWK	C1-35	215	FYA1	C1-91	41	1DWK
C1-3	64	4WLK	C1-20	68	8WLK	C1-36	217	FYA5	C1-93	61	1WLK
C1-4	14	4RED	C1-21	18	8RED	C1-37	133	TO3	C1-94	106	OLBR
C1-5	24	4YEL	C1-22	28	8YEL	C1-38	134	TO4	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	23	3YEL	C1-25	27	7YEL	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			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
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			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
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			
128			
129			
130			
131			
132			
133			
134			
135			
136			
137			
138			
139			
140			
141			
142			
143			
144			
145			
146			
147			
148			
149			
150			
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			
181			
182			
183			
184			
185			
186			
187			
188			
189			
190			
191			
192			
193			
194			
195			
196			
197			
198			
199			
200			
201			
202			
203			
204			
205			
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	10	0	20	0	0 = disable, 1 - 64 detectors	
	Min Delay	3.5	0.0	3.5	0.0	0 - 255 sec	
	Detector Gap	255	0	255	0	0 - 25.5 sec	
	Max Delay	3	0	3	0	0 - 255 sec	
	Not Ped	4	0	4	0	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

Preemption - Continued

Railroad Communications (IEEE 1570) (next/2/5/0/8)

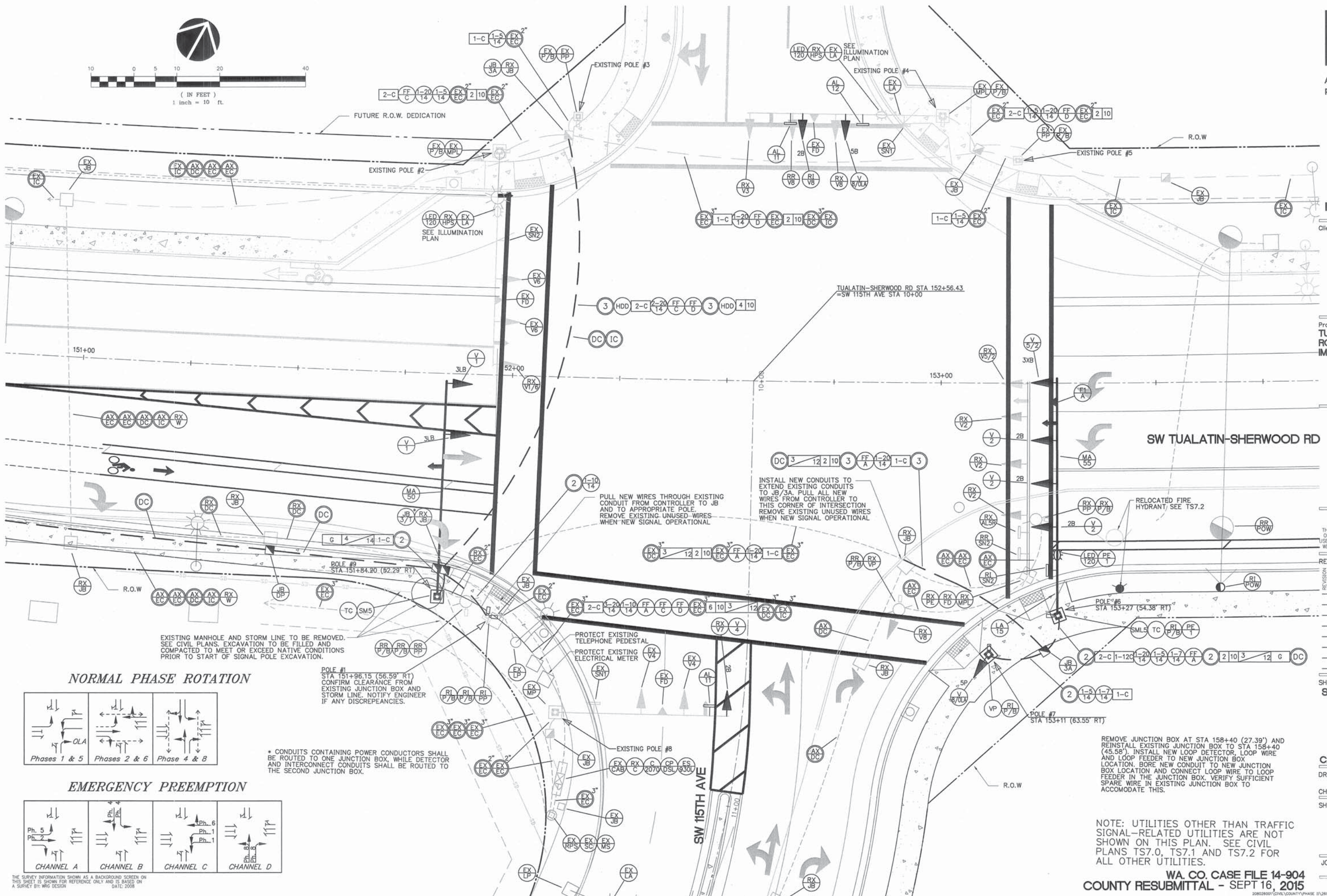
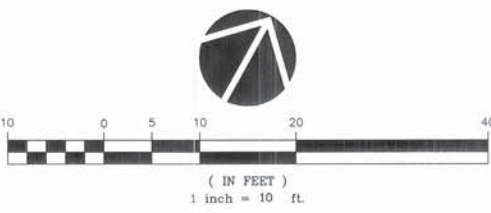
	ATC	Wayside	
Railroad Number	0	0	0 - 999, represents railroad
Railroad Line Number	0	0	0 - 999, represents railroad line
Group Number	0	0	0 - 999, represents physical group of equipment
Subnode Number	0	0	0 - 99, subnode within physical group of equipment
Device Number	0	0	0 - 99, device within physical group of equipment
Associated Preempt	0		0 - 8
Communication Port	0		0 - 4

Reports - Continued

Reports - Service Delay Modes (next/2/6/0)

Phase -->	1	2	3	4	5	6	7	8	
Mode	0	0	0	0	0	0	0	0	0 = disable, 1 = enable, 2 = Ped, 3 = Veh/Ped
Ped Overlap -->	A	B	C	D	E	F	G	H	
Mode	0	0	0	0	0	0	0	0	0 = disable, 1 = enable

APPENDIX I
**FUTURE
IMPROVEMENTS**



EXISTING MANHOLE AND STORM LINE TO BE REMOVED. SEE CIVIL PLANS. EXCAVATION TO BE FILLED AND COMPACTED TO MEET OR EXCEED NATIVE CONDITIONS PRIOR TO START OF SIGNAL POLE EXCAVATION.

POLE #9
STA 151+84.20 (52.29' RT)
CONFIRM CLEARANCE FROM EXISTING JUNCTION BOX AND STORM LINE. NOTIFY ENGINEER IF ANY DISCREPANCIES.

* CONDUITS CONTAINING POWER CONDUCTORS SHALL BE ROUTED TO ONE JUNCTION BOX, WHILE DETECTOR AND INTERCONNECT CONDUITS SHALL BE ROUTED TO THE SECOND JUNCTION BOX.

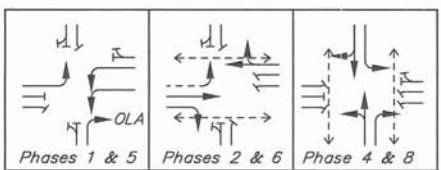
PULL NEW WIRES THROUGH EXISTING CONDUIT FROM CONTROLLER TO JB AND TO APPROPRIATE POLE. REMOVE EXISTING UNUSED WIRES WHEN NEW SIGNAL OPERATIONAL.

INSTALL NEW CONDUITS TO EXTEND EXISTING CONDUITS TO JB/3A. PULL ALL NEW WIRES FROM CONTROLLER TO THIS CORNER OF INTERSECTION. REMOVE EXISTING UNUSED WIRES WHEN NEW SIGNAL OPERATIONAL.

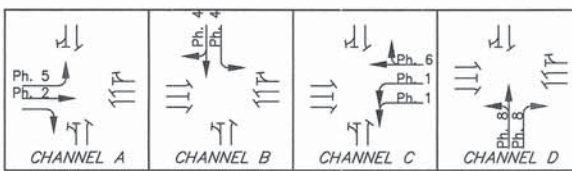
REMOVE JUNCTION BOX AT STA 158+40 (27.39') AND REINSTALL EXISTING JUNCTION BOX TO STA 158+40 (45.58'). INSTALL NEW LOOP DETECTOR, LOOP WIRE AND LOOP FEEDER TO NEW JUNCTION BOX LOCATION. BORE NEW CONDUIT TO NEW JUNCTION BOX LOCATION AND CONNECT LOOP WIRE TO LOOP FEEDER IN THE JUNCTION BOX. VERIFY SUFFICIENT SPARE WIRE IN EXISTING JUNCTION BOX TO ACCOMMODATE THIS.

NOTE: UTILITIES OTHER THAN TRAFFIC SIGNAL-RELATED UTILITIES ARE NOT SHOWN ON THIS PLAN. SEE CIVIL PLANS TS7.0, TS7.1 AND TS7.2 FOR ALL OTHER UTILITIES.

NORMAL PHASE ROTATION



EMERGENCY PREEMPTION



THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY WRG DESIGN DATE: 2008

REVISIONS:

REVISION NO.	REVISIONS	REVISION DELTA	CLOSING DATE

SHEET TITLE:
SIGNING AND STRIPING PLAN

STA 147+00 TO STA 153+25

CASE FILE # 14-904

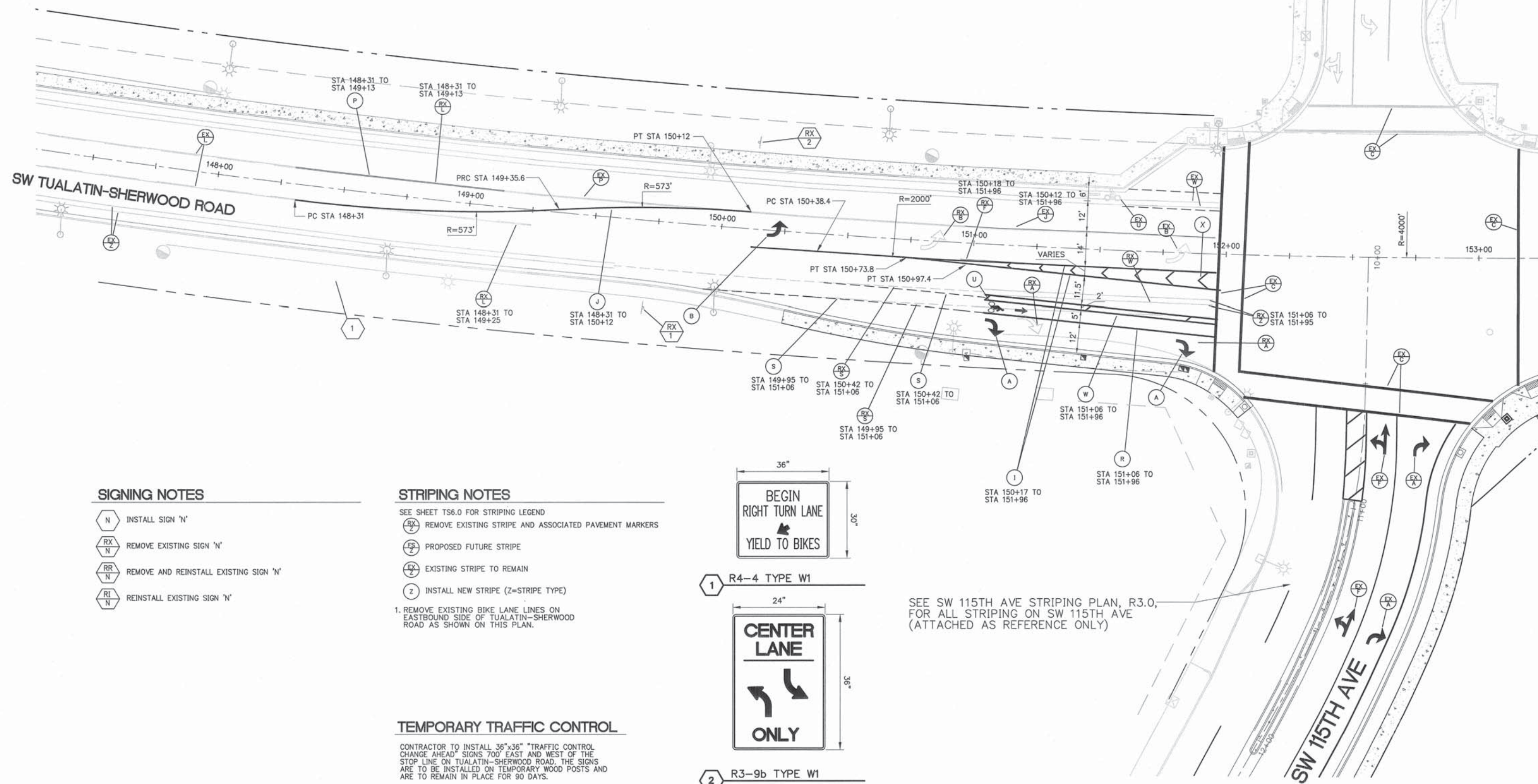
DRAWN BY: BMR

CHECKED BY: RJH

SHEET:

TS5.0

JOB NO. 2080260.01



SIGNING NOTES

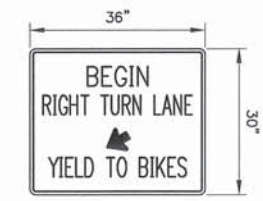
- INSTALL SIGN 'N'
- REMOVE EXISTING SIGN 'N'
- REMOVE AND REINSTALL EXISTING SIGN 'N'
- REINSTALL EXISTING SIGN 'N'

STRIPING NOTES

- SEE SHEET TS6.0 FOR STRIPING LEGEND
- REMOVE EXISTING STRIPE AND ASSOCIATED PAVEMENT MARKERS
 - PROPOSED FUTURE STRIPE
 - EXISTING STRIPE TO REMAIN
 - INSTALL NEW STRIPE (Z=STRIPE TYPE)
1. REMOVE EXISTING BIKE LANE LINES ON EASTBOUND SIDE OF TUALATIN-SHERWOOD ROAD AS SHOWN ON THIS PLAN.

TEMPORARY TRAFFIC CONTROL

CONTRACTOR TO INSTALL 36"x36" "TRAFFIC CONTROL CHANGE AHEAD" SIGNS 700' EAST AND WEST OF THE STOP LINE ON TUALATIN-SHERWOOD ROAD. THE SIGNS ARE TO BE INSTALLED ON TEMPORARY WOOD POSTS AND ARE TO REMAIN IN PLACE FOR 90 DAYS.



R4-4 TYPE W1



R3-9b TYPE W1

SEE SW 115TH AVE STRIPING PLAN, R3.0, FOR ALL STRIPING ON SW 115TH AVE (ATTACHED AS REFERENCE ONLY)

MATCH LINE STA 153+25 - SEE SHEET TS5.1

REVISIONS:

REVISION	REVISION	REVISION
DATE	DESCRIPTION	CLOSING DATE

SHEET TITLE:
**SIGNING AND
STRIPING PLAN**

**STA 153+25 TO
END**

CASE FILE # 14-904

DRAWN BY: BMR

CHECKED BY: RJH

SHEET:

TS5.1

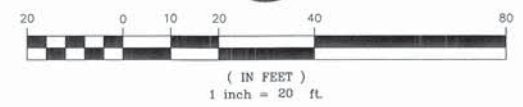
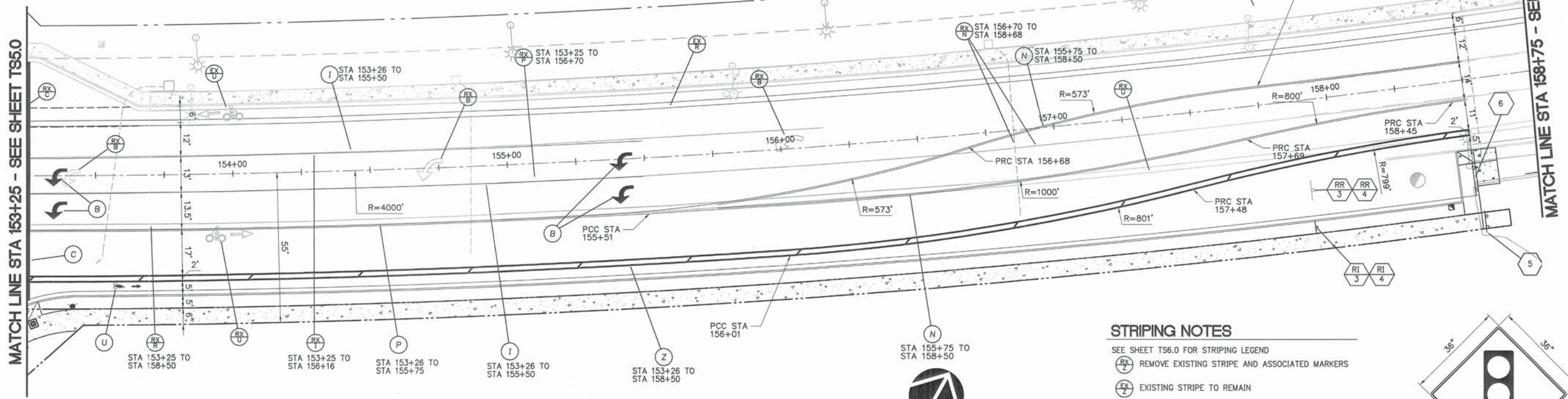
JOB NO. **2080260.01**

SIGN TABLE

POST #	STATION (OFFSET)* (SW TUALATIN-SHERWOOD RD)	SUPPORT TYPE STEEL "TELESPAR" SQUARE TUBE	SIGN MATERIAL	SIGN TYPE	LENGTH OF SIGN SUPPORT**	REMARKS
2	157+75 (33.5' LT)	X	ALUMINUM	***	13.0'	MOUNT SIGN N=2
3	157+91 (47.8' RT)	(EXIST)	(EXIST)	***	(EXIST)	MOUNT SIGN N=3

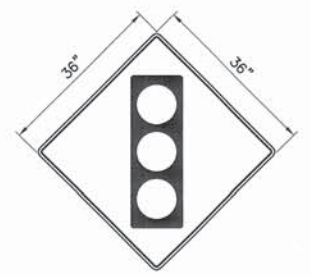
*OFFSET GIVEN TO CENTER OF POLE
**LENGTH OF SIGN SUPPORT INCLUDES 3' IN GROUND
***SEE SIGN LEGEND ON SHEET R-12 FOR NEW SIGN TYPE

SW TUALATIN-SHERWOOD RD



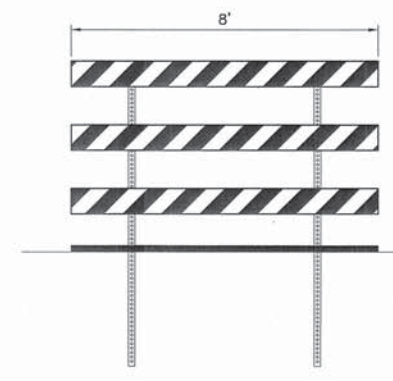
STRIPING NOTES

- SEE SHEET TS6.0 FOR STRIPING LEGEND
- (RX) REMOVE EXISTING STRIPE AND ASSOCIATED MARKERS
 - (EX) EXISTING STRIPE TO REMAIN
 - (Z) INSTALL NEW STRIPE (Z=STRIPE TYPE)
1. REMOVE EXISTING CROSSWALK ACROSS SOUTH AND WEST LEGS OF INTERSECTION.

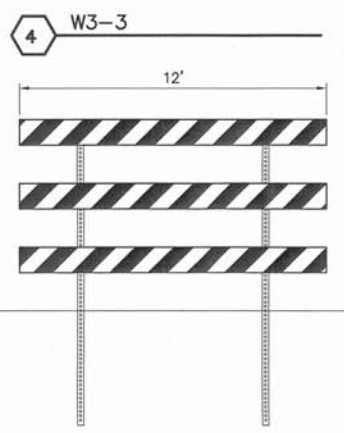
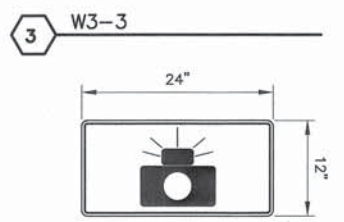


SIGNING NOTES

- (N) INSTALL SIGN 'N'
- (RR) REMOVE AND REINSTALL EXISTING SIGN 'N'
- (RI) REINSTALL EXISTING SIGN 'N'



5 SIDEWALK BARRICADE
SEE DETAIL 6030/TS8.0



6 STREET BARRICADE
SEE DETAIL 6020/TS8.0

REVISIONS:

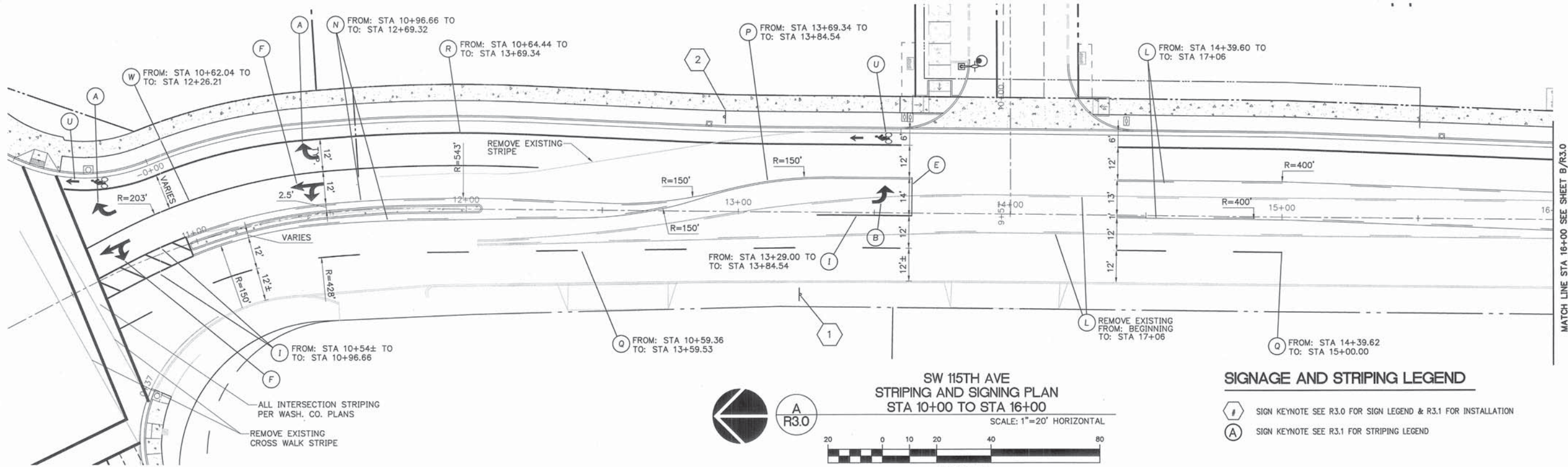
REVISION	DELTA	THIS SHEET	REVISION	DELTA	CLOSING DATE

SHEET TITLE:
SW 115TH AVE
SIGNING AND
STRIPING PLAN
STA 10+00 TO
STA 17+06

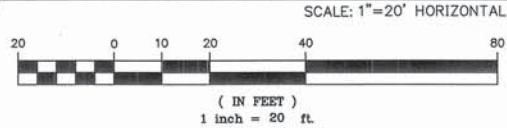
CASE FILE # 14-904
 DRAWN BY: RLF
 CHECKED BY: RLF
 SHEET:

R3.0

JOB NO. **2080260.01**



A
 R3.0

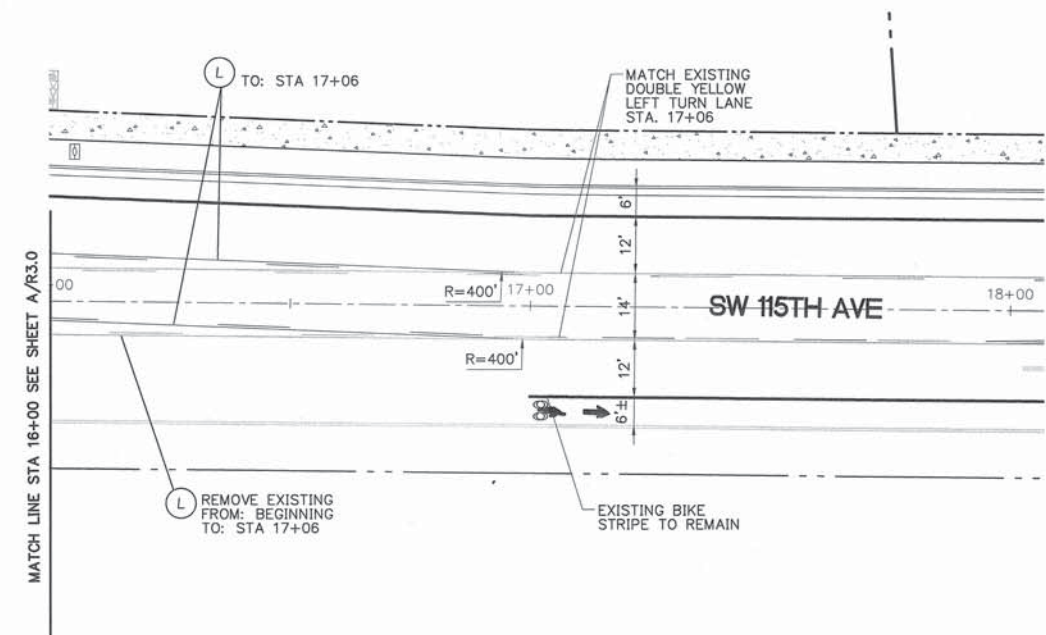


SIGNAGE AND STRIPING LEGEND

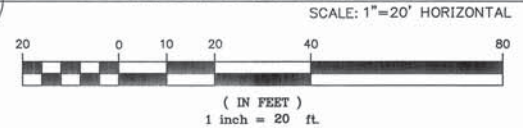
- ⬡ SIGN KEYNOTE SEE R3.0 FOR SIGN LEGEND & R3.1 FOR INSTALLATION
- Ⓐ SIGN KEYNOTE SEE R3.1 FOR STRIPING LEGEND

STRIPING NOTE

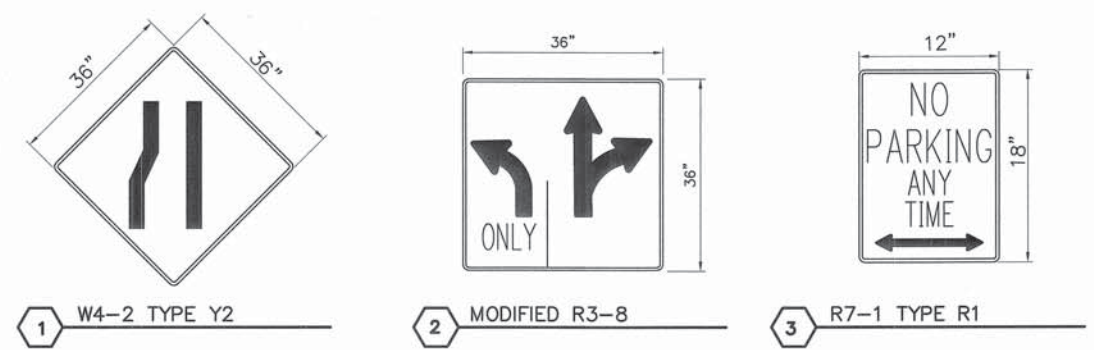
- ALL STRIPING IN CITY R.O.W. SHALL COMPLY WITH SECTION 317 OF THE PUBLIC WORKS CODE.
- COORD. "NO PARKING" SIGNS WITH CITY INSPECTOR (2 MIN. REQUIRED)



B
 R3.0



PERMANENT SIGN LEGEND



STRIPING DETAILS LEGEND
 SEE SHEET R3.1

MATCH LINE STA 16+00 SEE SHEET B/R3.0

MATCH LINE STA 16+00 SEE SHEET A/R3.0

APPENDIX J
**OPERATIONS
CALCULATIONS**

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	949	643	162	168	62
Future Volume (vph)	85	949	643	162	168	62
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
Frbp, 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	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	1759	1652		1626	1392
Flt Permitted	0.25	1.00	1.00		0.95	1.00
Satd. Flow (perm)	430	1759	1652		1626	1392
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	87	968	656	165	171	63
RTOR Reduction (vph)	0	0	7	0	0	53
Lane Group Flow (vph)	87	968	814	0	171	10
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	9%	8%	11%	14%	11%	16%
Turn Type	pm+pt	NA	NA		Perm	pm+ov
Protected Phases	5	2	6			5
Permitted Phases	2				4	4
Actuated Green, G (s)	94.8	94.8	85.6		14.7	19.9
Effective Green, g (s)	94.8	96.3	87.1		15.7	19.9
Actuated g/C Ratio	0.79	0.80	0.73		0.13	0.17
Clearance Time (s)	4.0	5.5	5.5		5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5		1.5	3.5
Lane Grp Cap (vph)	392	1411	1199		212	230
v/s Ratio Prot	0.01	c0.55	0.49			0.00
v/s Ratio Perm	0.17				c0.11	0.01
v/c Ratio	0.22	0.69	0.68		0.81	0.05
Uniform Delay, d1	6.5	5.2	8.9		50.7	42.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	2.7	3.1		18.7	0.1
Delay (s)	6.8	7.9	12.0		69.3	42.2
Level of Service	A	A	B		E	D
Approach Delay (s)		7.8	12.0		62.0	
Approach LOS		A	B		E	

Intersection Summary

HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	1087	20	17	808	7	12
Future Volume (Veh/h)	1087	20	17	808	7	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1109	20	17	824	7	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1129			1109
vC1, stage 1 conf vol						1109
vC2, stage 2 conf vol						858
vCu, unblocked vol			1129			1109
tC, single (s)			4.4			6.8
tC, 2 stage (s)						6.3
tF (s)			2.5			3.8
p0 queue free %			97			94
cM capacity (veh/h)			530			199
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1109	20	17	824	19	
Volume Left	0	0	17	0	7	
Volume Right	0	20	0	0	12	
cSH	1700	1700	530	1700	189	
Volume to Capacity	0.65	0.01	0.03	0.48	0.10	
Queue Length 95th (ft)	0	0	2	0	8	
Control Delay (s)	0.0	0.0	12.0	0.0	26.2	
Lane LOS			B			D
Approach Delay (s)	0.0		0.2		26.2	
Approach LOS						D
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			68.0%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1015	70	116	799	14	24	5	74	7	0	0
Future Volume (vph)	1	1015	70	116	799	14	24	5	74	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	0.99	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	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95		
Satd. Flow (prot)	1805	1776	1318	3019	1708			1348	1137	1583		
Flt Permitted	0.29	1.00	1.00	0.95	1.00			0.76	1.00	0.74		
Satd. Flow (perm)	560	1776	1318	3019	1708			1069	1137	1229		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	1046	72	120	824	14	25	5	76	7	0	0
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	66	0	0	0
Lane Group Flow (vph)	1	1046	60	120	838	0	0	30	10	7	0	0
Confl. Peds. (#/hr)								1				1
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	7%	21%	16%	11%	7%	38%	20%	42%	14%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm		
Protected Phases	5	2		1	6			8	1			4
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	107.9	107.9	107.9	12.0	118.9			6.1	18.1	6.1		
Effective Green, g (s)	107.9	109.4	109.4	12.0	120.4			6.6	18.1	6.6		
Actuated g/C Ratio	0.77	0.78	0.78	0.09	0.86			0.05	0.13	0.05		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5		
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5		
Lane Grp Cap (vph)	440	1387	1029	258	1468			50	179	57		
v/s Ratio Prot	0.00	c0.59		0.04	c0.49				0.00			
v/s Ratio Perm	0.00		0.05					c0.03	0.00	0.01		
v/c Ratio	0.00	0.75	0.06	0.47	0.57			0.60	0.05	0.12		
Uniform Delay, d1	4.7	8.1	3.5	60.9	2.7			65.4	53.4	63.9		
Progression Factor	1.00	1.00	1.00	1.09	1.82			1.00	1.00	1.00		
Incremental Delay, d2	0.0	3.8	0.1	1.7	1.2			18.9	0.2	1.1		
Delay (s)	4.7	12.0	3.6	68.4	6.1			84.3	53.7	65.1		
Level of Service	A	B	A	E	A			F	D	E		
Approach Delay (s)		11.4			13.9			62.3			65.1	
Approach LOS		B			B			E			E	

Intersection Summary

HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	823	267	10	629	30	278	6	5	10	1	11
Future Volume (vph)	24	823	267	10	629	30	278	6	5	10	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1712	1529	1504	1667	1568	1736	1770		1504	1404	
Flt Permitted	0.29	1.00	1.00	0.17	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	502	1712	1529	276	1667	1568	1736	1770		1504	1404	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	26	876	284	11	669	32	296	6	5	11	1	12
RTOR Reduction (vph)	0	0	35	0	0	12	0	4	0	0	12	0
Lane Group Flow (vph)	26	876	249	11	669	20	296	7	0	11	1	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	11%	4%	20%	14%	3%	4%	0%	0%	20%	0%	18%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	91.5	88.5	117.0	89.5	87.5	87.5	28.5	24.4		6.6	2.5	
Effective Green, g (s)	91.5	89.5	119.0	89.5	88.5	88.5	28.5	25.9		6.6	4.0	
Actuated g/C Ratio	0.65	0.64	0.85	0.64	0.63	0.63	0.20	0.18		0.05	0.03	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	353	1094	1299	193	1053	991	353	327		70	40	
v/s Ratio Prot	c0.00	c0.51	0.04	0.00	0.40		c0.17	0.00		0.01	c0.00	
v/s Ratio Perm	0.05		0.12	0.04		0.01						
v/c Ratio	0.07	0.80	0.19	0.06	0.64	0.02	0.84	0.02		0.16	0.03	
Uniform Delay, d1	11.2	18.7	1.9	15.7	15.8	9.6	53.5	46.7		64.0	66.1	
Progression Factor	1.29	1.09	2.09	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	4.7	0.1	0.0	2.9	0.0	16.2	0.0		1.2	0.4	
Delay (s)	14.5	25.0	4.0	15.8	18.8	9.6	69.7	46.7		65.3	66.5	
Level of Service	B	C	A	B	B	A	E	D		E	E	
Approach Delay (s)		19.8			18.3			68.9			66.0	
Approach LOS		B			B			E			E	





















Intersection Summary		
HCM 2000 Control Delay	26.6	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) 16.0
Intersection Capacity Utilization	72.5%	ICU Level of Service C
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	9	0	0	1	0	1	0	23	2	7	22	13
Future Volume (vph)	9	0	0	1	0	1	0	23	2	7	22	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
Hourly flow rate (vph)	11	0	0	1	0	1	0	28	2	9	27	16
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	11	0	1	1	0	30	9	43				
Volume Left (vph)	11	0	1	0	0	0	9	0				
Volume Right (vph)	0	0	0	1	0	2	0	16				
Hadj (s)	1.45	0.00	2.20	1.00	0.00	0.62	1.23	0.17				
Departure Headway (s)	6.2	4.7	6.9	5.7	4.6	5.2	5.8	4.7				
Degree Utilization, x	0.02	0.00	0.00	0.00	0.00	0.04	0.01	0.06				
Capacity (veh/h)	573	760	505	611	791	680	608	746				
Control Delay (s)	8.1	6.5	8.7	7.5	6.4	7.2	7.7	6.8				
Approach Delay (s)	8.1		8.1		7.2		7.0					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.2									
Level of Service			A									
Intersection Capacity Utilization			20.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4	9	0
Future Volume (Veh/h)	0	0	0	4	9	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	0	0	5	11	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage veh						
2 2						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16	11	11			
vC1, stage 1 conf vol	11					
vC2, stage 2 conf vol	5					
vCu, unblocked vol	16	11	11			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	991	1076	1621			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	5	11		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.00	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay						
0.0						
Intersection Capacity Utilization						
7.1% ICU Level of Service						
A						
Analysis Period (min)						
15						

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	86	1092	674	164	171	63
Future Volume (vph)	86	1092	674	164	171	63
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
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	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	1759	1654		1626	1392
Flt Permitted	0.23	1.00	1.00		0.95	1.00
Satd. Flow (perm)	400	1759	1654		1626	1392
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	88	1114	688	167	174	64
RTOR Reduction (vph)	0	0	7	0	0	53
Lane Group Flow (vph)	88	1114	848	0	174	11
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	9%	8%	11%	14%	11%	16%
Turn Type	pm+pt	NA	NA		Perm	pm+ov
Protected Phases	5	2	6			5
Permitted Phases	2				4	4
Actuated Green, G (s)	94.6	94.6	85.4		14.9	20.1
Effective Green, g (s)	94.6	96.1	86.9		15.9	20.1
Actuated g/C Ratio	0.79	0.80	0.72		0.13	0.17
Clearance Time (s)	4.0	5.5	5.5		5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5		1.5	3.5
Lane Grp Cap (vph)	369	1408	1197		215	233
v/s Ratio Prot	0.01	c0.63	0.51			0.00
v/s Ratio Perm	0.18				c0.11	0.01
v/c Ratio	0.24	0.79	0.71		0.81	0.05
Uniform Delay, d1	7.2	6.5	9.4		50.6	41.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	4.6	3.6		18.7	0.1
Delay (s)	7.6	11.1	12.9		69.3	42.0
Level of Service	A	B	B		E	D
Approach Delay (s)		10.9	12.9		61.9	
Approach LOS		B	B		E	

Intersection Summary

HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	1230	22	17	841	7	12
Future Volume (Veh/h)	1230	22	17	841	7	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1255	22	17	858	7	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1277		2147	1255
vC1, stage 1 conf vol					1255	
vC2, stage 2 conf vol					892	
vCu, unblocked vol			1277		2147	1255
tC, single (s)			4.4		7.3	6.8
tC, 2 stage (s)					6.3	
tF (s)			2.5		4.3	3.8
p0 queue free %			96		95	93
cM capacity (veh/h)			462		150	160
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1255	22	17	858	19	
Volume Left	0	0	17	0	7	
Volume Right	0	22	0	0	12	
cSH	1700	1700	462	1700	156	
Volume to Capacity	0.74	0.01	0.04	0.50	0.12	
Queue Length 95th (ft)	0	0	3	0	10	
Control Delay (s)	0.0	0.0	13.1	0.0	31.2	
Lane LOS			B			D
Approach Delay (s)	0.0		0.3		31.2	
Approach LOS						D
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			75.6%	ICU Level of Service	D	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1053	175	309	815	14	41	5	106	7	0	0
Future Volume (vph)	1	1053	175	309	815	14	41	5	106	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	0.99	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	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95		
Satd. Flow (prot)	1805	1776	1317	3019	1708			1333	1137	1583		
Flt Permitted	0.27	1.00	1.00	0.95	1.00			0.75	1.00	0.73		
Satd. Flow (perm)	519	1776	1317	3019	1708			1042	1137	1211		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	1086	180	319	840	14	42	5	109	7	0	0
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	86	0	0	0
Lane Group Flow (vph)	1	1086	163	319	854	0	0	47	23	7	0	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	7%	21%	16%	11%	7%	38%	20%	42%	14%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	96.0	96.0	96.0	21.4	116.4			8.6	30.0	8.6		
Effective Green, g (s)	96.0	97.5	97.5	21.4	117.9			9.1	30.0	9.1		
Actuated g/C Ratio	0.69	0.70	0.70	0.15	0.84			0.06	0.21	0.06		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5		
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5		
Lane Grp Cap (vph)	365	1236	917	461	1438			67	276	78		
v/s Ratio Prot	0.00	c0.61		c0.11	0.50				0.01			
v/s Ratio Perm	0.00		0.12					c0.05	0.01	0.01		
v/c Ratio	0.00	0.88	0.18	0.69	0.59			0.70	0.08	0.09		
Uniform Delay, d1	8.3	16.6	7.4	56.2	3.5			64.1	44.0	61.6		
Progression Factor	1.00	1.00	1.00	1.11	2.00			1.00	1.00	1.00		
Incremental Delay, d2	0.0	9.0	0.4	2.8	1.0			29.1	0.2	0.6		
Delay (s)	8.3	25.7	7.8	65.2	8.0			93.2	44.2	62.1		
Level of Service	A	C	A	E	A			F	D	E		
Approach Delay (s)		23.1			23.6			59.0			62.1	
Approach LOS		C			C			E			E	

Intersection Summary

HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	866	271	10	829	63	282	12	5	17	3	15
Future Volume (vph)	47	866	271	10	829	63	282	12	5	17	3	15
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1712	1529	1504	1667	1568	1736	1821		1504	1441	
Flt Permitted	0.14	1.00	1.00	0.14	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	254	1712	1529	223	1667	1568	1736	1821		1504	1441	
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)	50	921	288	11	882	67	300	13	5	18	3	16
RTOR Reduction (vph)	0	0	36	0	0	26	0	4	0	0	15	0
Lane Group Flow (vph)	50	921	252	11	882	41	300	14	0	18	4	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	11%	4%	20%	14%	3%	4%	0%	0%	20%	0%	18%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	91.0	86.9	115.8	86.8	84.8	84.8	28.9	19.4		13.2	3.7	
Effective Green, g (s)	91.0	87.9	117.8	86.8	85.8	85.8	28.9	20.9		13.2	5.2	
Actuated g/C Ratio	0.65	0.63	0.84	0.62	0.61	0.61	0.21	0.15		0.09	0.04	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	206	1074	1286	156	1021	960	358	271		141	53	
v/s Ratio Prot	c0.01	c0.54	0.04	0.00	0.53		c0.17	0.01		0.01	c0.00	
v/s Ratio Perm	0.15		0.12	0.04		0.03						
v/c Ratio	0.24	0.86	0.20	0.07	0.86	0.04	0.84	0.05		0.13	0.07	
Uniform Delay, d1	18.5	21.0	2.1	18.6	22.3	10.8	53.3	51.0		58.1	65.1	
Progression Factor	1.48	1.46	2.52	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	5.9	0.1	0.1	9.7	0.1	16.0	0.1		0.5	0.6	
Delay (s)	27.5	36.6	5.4	18.7	32.0	10.9	69.3	51.1		58.6	65.7	
Level of Service	C	D	A	B	C	B	E	D		E	E	
Approach Delay (s)		29.1			30.3			68.2			62.3	
Approach LOS		C			C			E			E	





















Intersection Summary		
HCM 2000 Control Delay	34.9	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) 16.0
Intersection Capacity Utilization	75.0%	ICU Level of Service D
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	11	0	0	1	0	17	0	38	2	96	109	26
Future Volume (vph)	11	0	0	1	0	17	0	38	2	96	109	26
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
Hourly flow rate (vph)	14	0	0	1	0	21	0	47	2	119	135	32
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	14	0	1	21	0	49	119	167				
Volume Left (vph)	14	0	1	0	0	0	119	0				
Volume Right (vph)	0	0	0	21	0	2	0	32				
Hadj (s)	1.45	0.00	2.20	1.00	0.00	0.61	1.23	0.39				
Departure Headway (s)	6.9	5.4	7.6	6.4	4.9	5.5	5.9	5.1				
Degree Utilization, x	0.03	0.00	0.00	0.04	0.00	0.07	0.19	0.23				
Capacity (veh/h)	494	635	449	532	739	639	598	700				
Control Delay (s)	8.9	7.2	9.4	8.5	6.7	7.7	9.1	8.4				
Approach Delay (s)	8.9		8.5		7.7		8.7					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			8.6									
Level of Service			A									
Intersection Capacity Utilization			26.8%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4	9	0
Future Volume (Veh/h)	0	0	0	4	9	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	0	0	5	11	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL	TWLTL		
Median storage (veh)			2	2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	16	11	11			
vC1, stage 1 conf vol	11					
vC2, stage 2 conf vol	5					
vCu, unblocked vol	16	11	11			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	991	1076	1621			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	5	11		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.00	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			7.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	86	1124	678	167	194	63
Future Volume (vph)	86	1124	678	167	194	63
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
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	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1656	1759	1653		1626	1392
Flt Permitted	0.22	1.00	1.00		0.95	1.00
Satd. Flow (perm)	385	1759	1653		1626	1392
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	88	1147	692	170	198	64
RTOR Reduction (vph)	0	0	7	0	0	53
Lane Group Flow (vph)	88	1147	855	0	198	11
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	9%	8%	11%	14%	11%	16%
Turn Type	pm+pt	NA	NA		Perm	pm+ov
Protected Phases	5	2	6			5
Permitted Phases	2				4	4
Actuated Green, G (s)	93.4	93.4	84.3		16.1	21.2
Effective Green, g (s)	93.4	94.9	85.8		17.1	21.2
Actuated g/C Ratio	0.78	0.79	0.71		0.14	0.18
Clearance Time (s)	4.0	5.5	5.5		5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5		1.5	3.5
Lane Grp Cap (vph)	353	1391	1181		231	245
v/s Ratio Prot	0.01	c0.65	0.52			0.00
v/s Ratio Perm	0.18				c0.12	0.01
v/c Ratio	0.25	0.82	0.72		0.86	0.05
Uniform Delay, d1	7.9	7.5	10.1		50.3	41.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	5.7	3.9		24.7	0.1
Delay (s)	8.4	13.2	14.0		74.9	41.1
Level of Service	A	B	B		E	D
Approach Delay (s)		12.9	14.0		66.7	
Approach LOS		B	B		E	

Intersection Summary

HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	1285	22	17	848	7	12
Future Volume (Veh/h)	1285	22	17	848	7	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1311	22	17	865	7	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1333			2210 1311
vC1, stage 1 conf vol						1311
vC2, stage 2 conf vol						899
vCu, unblocked vol			1333			2210 1311
tC, single (s)			4.4			7.3 6.8
tC, 2 stage (s)						6.3
tF (s)			2.5			4.3 3.8
p0 queue free %			96			95 92
cM capacity (veh/h)			439			142 148
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1311	22	17	865	19	
Volume Left	0	0	17	0	7	
Volume Right	0	22	0	0	12	
cSH	1700	1700	439	1700	145	
Volume to Capacity	0.77	0.01	0.04	0.51	0.13	
Queue Length 95th (ft)	0	0	3	0	11	
Control Delay (s)	0.0	0.0	13.5	0.0	33.4	
Lane LOS	B			D		
Approach Delay (s)	0.0		0.3		33.4	
Approach LOS				D		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			78.5%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1053	230	413	815	14	48	5	121	7	0	0
Future Volume (vph)	1	1053	230	413	815	14	48	5	121	7	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	0.99	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	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95		
Satd. Flow (prot)	1805	1776	1317	3019	1708			1330	1137	1583		
Flt Permitted	0.27	1.00	1.00	0.95	1.00			0.75	1.00	0.72		
Satd. Flow (perm)	518	1776	1317	3019	1708			1036	1137	1193		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	1086	237	426	840	14	49	5	125	7	0	0
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	95	0	0	0
Lane Group Flow (vph)	1	1086	213	426	854	0	0	54	30	7	0	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	7%	21%	16%	11%	7%	38%	20%	42%	14%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	92.6	92.6	92.6	25.5	117.1			7.9	33.4	7.9		
Effective Green, g (s)	92.6	94.1	94.1	25.5	118.6			8.4	33.4	8.4		
Actuated g/C Ratio	0.66	0.67	0.67	0.18	0.85			0.06	0.24	0.06		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5		
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5		
Lane Grp Cap (vph)	351	1193	885	549	1446			62	303	71		
v/s Ratio Prot	0.00	c0.61		c0.14	0.50				0.02			
v/s Ratio Perm	0.00		0.16					c0.05	0.01	0.01		
v/c Ratio	0.00	0.91	0.24	0.78	0.59			0.87	0.10	0.10		
Uniform Delay, d1	9.4	19.4	9.0	54.5	3.3			65.3	41.6	62.2		
Progression Factor	1.00	1.00	1.00	1.13	1.95			1.00	1.00	1.00		
Incremental Delay, d2	0.0	11.8	0.6	3.2	0.7			71.4	0.2	0.7		
Delay (s)	9.4	31.2	9.6	64.7	7.1			136.6	41.8	62.9		
Level of Service	A	C	A	E	A			F	D	E		
Approach Delay (s)		27.3			26.3			70.4			62.9	
Approach LOS		C			C			E			E	

Intersection Summary

HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	877	275	10	909	63	306	12	5	17	3	15
Future Volume (vph)	47	877	275	10	909	63	306	12	5	17	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1712	1530	1504	1667	1568	1736	1821		1504	1441	
Flt Permitted	0.08	1.00	1.00	0.12	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	136	1712	1530	185	1667	1568	1736	1821		1504	1441	
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)	50	933	293	11	967	67	326	13	5	18	3	16
RTOR Reduction (vph)	0	0	36	0	0	27	0	4	0	0	15	0
Lane Group Flow (vph)	50	933	257	11	967	40	326	14	0	18	4	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	11%	4%	20%	14%	3%	4%	0%	0%	20%	0%	18%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	88.3	84.3	115.8	84.3	82.3	82.3	31.5	22.8		12.4	3.7	
Effective Green, g (s)	88.3	85.3	117.8	84.3	83.3	83.3	31.5	24.3		12.4	5.2	
Actuated g/C Ratio	0.63	0.61	0.84	0.60	0.59	0.59	0.22	0.17		0.09	0.04	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	129	1043	1287	130	991	932	390	316		133	53	
v/s Ratio Prot	c0.01	0.55	0.05	0.00	c0.58		c0.19	0.01		0.01	c0.00	
v/s Ratio Perm	0.23		0.12	0.05		0.03						
v/c Ratio	0.39	0.89	0.20	0.08	0.98	0.04	0.84	0.04		0.14	0.07	
Uniform Delay, d1	25.6	23.5	2.1	21.2	27.4	11.8	51.8	48.2		58.9	65.1	
Progression Factor	1.50	1.46	2.48	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	7.7	0.1	0.1	23.3	0.1	14.7	0.1		0.5	0.6	
Delay (s)	38.9	42.0	5.3	21.3	50.7	11.9	66.5	48.2		59.4	65.7	
Level of Service	D	D	A	C	D	B	E	D		E	E	
Approach Delay (s)		33.5			47.9			65.5			62.6	
Approach LOS		C			D			E			E	





















Intersection Summary		
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio	0.88	
Actuated Cycle Length (s)	140.0	Sum of lost time (s) 16.0
Intersection Capacity Utilization	78.5%	ICU Level of Service D
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	11	0	0	1	0	17	0	60	2	96	268	26
Future Volume (vph)	11	0	0	1	0	17	0	60	2	96	268	26
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
Hourly flow rate (vph)	14	0	0	1	0	21	0	74	2	119	331	32
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	14	0	1	21	0	76	119	363				
Volume Left (vph)	14	0	1	0	0	0	119	0				
Volume Right (vph)	0	0	0	21	0	2	0	32				
Hadj (s)	1.45	0.00	2.20	1.00	0.00	0.61	1.23	0.51				
Departure Headway (s)	7.4	6.0	8.2	7.0	5.1	5.7	5.9	5.2				
Degree Utilization, x	0.03	0.00	0.00	0.04	0.00	0.12	0.20	0.53				
Capacity (veh/h)	450	566	412	482	708	615	594	683				
Control Delay (s)	9.5	7.8	10.0	9.0	6.9	8.3	9.2	12.6				
Approach Delay (s)	9.5		9.1		8.3		11.8					
Approach LOS	A		A		A		B					
Intersection Summary												
Delay			11.2									
Level of Service			B									
Intersection Capacity Utilization			30.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	0	0	4	9	159
Future Volume (Veh/h)	22	0	0	4	9	159
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	28	0	0	5	11	199
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage (veh)			2	2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116	110	210			
vC1, stage 1 conf vol	110					
vC2, stage 2 conf vol	5					
vCu, unblocked vol	116	110	210			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	896	948	1373			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	28	0	5	210		
Volume Left	28	0	0	0		
Volume Right	0	0	0	199		
cSH	896	1700	1700	1700		
Volume to Capacity	0.03	0.00	0.00	0.12		
Queue Length 95th (ft)	2	0	0	0		
Control Delay (s)	9.1	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	9.1	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			21.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	920	172	23	544	140	130	258	72	145	158	63
Future Volume (vph)	86	920	172	23	544	140	130	258	72	145	158	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0		4.0	4.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1759	1583	1770	1712	1401	1770	1802		1626	1863	1392
Flt Permitted	0.31	1.00	1.00	0.08	1.00	1.00	0.46	1.00		0.16	1.00	1.00
Satd. Flow (perm)	537	1759	1583	155	1712	1401	857	1802		268	1863	1392
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)	88	939	176	23	555	143	133	263	73	148	161	64
RTOR Reduction (vph)	0	0	57	0	0	51	0	7	0	0	0	48
Lane Group Flow (vph)	88	939	119	23	555	92	133	329	0	148	161	16
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	9%	8%	2%	2%	11%	14%	2%	2%	2%	11%	2%	16%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	85.3	79.8	91.4	79.6	77.2	86.8	39.8	28.2		36.3	26.7	32.2
Effective Green, g (s)	85.3	81.3	94.4	80.6	78.7	89.8	40.8	29.2		38.3	27.7	34.2
Actuated g/C Ratio	0.61	0.58	0.67	0.58	0.56	0.64	0.29	0.21		0.27	0.20	0.24
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	371	1021	1067	122	962	898	328	375		176	368	340
v/s Ratio Prot	c0.01	c0.53	0.01	0.00	0.32	0.01	0.03	c0.18		c0.06	0.09	0.00
v/s Ratio Perm	0.14		0.06	0.10		0.06	0.08			0.17		0.01
v/c Ratio	0.24	0.92	0.11	0.19	0.58	0.10	0.41	0.88		0.84	0.44	0.05
Uniform Delay, d1	14.0	26.4	8.0	25.0	19.9	9.6	38.3	53.7		42.3	49.3	40.4
Progression Factor	1.00	1.00	1.00	0.85	0.94	2.06	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	14.4	0.1	0.2	2.3	0.1	1.0	20.3		29.3	1.0	0.1
Delay (s)	14.4	40.8	8.1	21.5	20.9	19.9	39.3	74.0		71.6	50.3	40.5
Level of Service	B	D	A	C	C	B	D	E		E	D	D
Approach Delay (s)		34.1			20.7			64.1			57.1	
Approach LOS		C			C			E			E	

Intersection Summary		
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio	0.89	
Actuated Cycle Length (s)	140.0	Sum of lost time (s) 16.0
Intersection Capacity Utilization	91.1%	ICU Level of Service F
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	1104	22	17	710	7	12
Future Volume (Veh/h)	1104	22	17	710	7	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1127	22	17	724	7	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1149			1885 1127
vC1, stage 1 conf vol						1127
vC2, stage 2 conf vol						758
vCu, unblocked vol			1149			1885 1127
tC, single (s)			4.4			7.3 6.8
tC, 2 stage (s)						6.3
tF (s)			2.5			4.3 3.8
p0 queue free %			97			96 94
cM capacity (veh/h)			520			180 193
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1127	22	17	724	19	
Volume Left	0	0	17	0	7	
Volume Right	0	22	0	0	12	
cSH	1700	1700	520	1700	188	
Volume to Capacity	0.66	0.01	0.03	0.43	0.10	
Queue Length 95th (ft)	0	0	3	0	8	
Control Delay (s)	0.0	0.0	12.2	0.0	26.3	
Lane LOS			B			D
Approach Delay (s)	0.0		0.3		26.3	
Approach LOS						D
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			68.9%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	855	247	237	661	14	64	5	83	7	0	0
Future Volume (vph)	1	855	247	237	661	14	64	5	83	7	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	0.99	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	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95		
Satd. Flow (prot)	1805	1776	1317	3019	1707			1325	1137	1583		
Flt Permitted	0.33	1.00	1.00	0.95	1.00			0.74	1.00	0.64		
Satd. Flow (perm)	631	1776	1317	3019	1707			1027	1137	1071		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	881	255	244	681	14	66	5	86	7	0	0
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	68	0	0	0
Lane Group Flow (vph)	1	881	229	244	695	0	0	71	18	7	0	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	7%	21%	16%	11%	7%	38%	20%	42%	14%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	96.0	96.0	96.0	17.7	112.7			12.3	30.0	12.3		
Effective Green, g (s)	96.0	97.5	97.5	17.7	114.2			12.8	30.0	12.8		
Actuated g/C Ratio	0.69	0.70	0.70	0.13	0.82			0.09	0.21	0.09		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5		
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5		
Lane Grp Cap (vph)	441	1236	917	381	1392			93	276	97		
v/s Ratio Prot	0.00	c0.50		c0.08	0.41				0.01			
v/s Ratio Perm	0.00		0.17					c0.07	0.01	0.01		
v/c Ratio	0.00	0.71	0.25	0.64	0.50			0.76	0.07	0.07		
Uniform Delay, d1	7.9	12.8	7.8	58.1	4.0			62.1	43.8	58.2		
Progression Factor	0.83	0.97	0.79	1.09	1.98			1.00	1.00	1.00		
Incremental Delay, d2	0.0	1.6	0.3	3.5	1.0			31.1	0.2	0.4		
Delay (s)	6.6	14.0	6.5	67.0	8.9			93.2	44.0	58.5		
Level of Service	A	B	A	E	A			F	D	E		
Approach Delay (s)		12.3			24.0			66.3			58.5	
Approach LOS		B			C			E			E	

Intersection Summary

HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	704	212	10	695	63	190	12	5	17	3	15
Future Volume (vph)	47	704	212	10	695	63	190	12	5	17	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1712	1527	1504	1667	1568	1736	1821		1504	1441	
Flt Permitted	0.27	1.00	1.00	0.28	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	474	1712	1527	449	1667	1568	1736	1821		1504	1441	
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)	50	749	226	11	739	67	202	13	5	18	3	16
RTOR Reduction (vph)	0	0	35	0	0	21	0	4	0	0	15	0
Lane Group Flow (vph)	50	749	191	11	739	46	202	14	0	18	4	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	11%	4%	20%	14%	3%	4%	0%	0%	20%	0%	18%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	100.1	96.1	116.3	96.1	94.1	94.1	20.2	14.5		8.9	3.2	
Effective Green, g (s)	100.1	97.1	118.3	96.1	95.1	95.1	20.2	16.0		8.9	4.7	
Actuated g/C Ratio	0.71	0.69	0.84	0.69	0.68	0.68	0.14	0.11		0.06	0.03	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	373	1187	1290	323	1132	1065	250	208		95	48	
v/s Ratio Prot	c0.00	0.44	0.02	0.00	c0.44		c0.12	c0.01		0.01	0.00	
v/s Ratio Perm	0.09		0.10	0.02		0.03						
v/c Ratio	0.13	0.63	0.15	0.03	0.65	0.04	0.81	0.07		0.19	0.07	
Uniform Delay, d1	9.1	11.7	1.9	9.0	12.9	7.4	58.0	55.3		62.1	65.5	
Progression Factor	1.64	1.61	4.52	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.0	0.1	0.0	2.9	0.1	17.6	0.2		1.1	0.8	
Delay (s)	14.9	20.8	8.7	9.1	15.9	7.5	75.6	55.5		63.3	66.3	
Level of Service	B	C	A	A	B	A	E	E		E	E	
Approach Delay (s)		17.9			15.1			74.0			64.8	
Approach LOS		B			B			E			E	





















Intersection Summary		
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.64	
Actuated Cycle Length (s)	140.0	Sum of lost time (s) 16.0
Intersection Capacity Utilization	63.3%	ICU Level of Service B
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	11	0	0	1	0	17	0	38	2	96	109	26
Future Volume (vph)	11	0	0	1	0	17	0	38	2	96	109	26
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
Hourly flow rate (vph)	14	0	0	1	0	21	0	47	2	119	135	32
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	14	0	1	21	0	49	119	167				
Volume Left (vph)	14	0	1	0	0	0	119	0				
Volume Right (vph)	0	0	0	21	0	2	0	32				
Hadj (s)	1.45	0.00	2.20	1.00	0.00	0.61	1.23	0.39				
Departure Headway (s)	6.9	5.4	7.6	6.4	4.9	5.5	5.9	5.1				
Degree Utilization, x	0.03	0.00	0.00	0.04	0.00	0.07	0.19	0.23				
Capacity (veh/h)	494	635	449	532	739	639	598	700				
Control Delay (s)	8.9	7.2	9.4	8.5	6.7	7.7	9.1	8.4				
Approach Delay (s)	8.9		8.5		7.7		8.7					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			8.6									
Level of Service			A									
Intersection Capacity Utilization			26.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017














Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4	9	0
Future Volume (Veh/h)	0	0	0	4	9	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	0	0	5	11	0
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	16	11	11			
vC1, stage 1 conf vol	11					
vC2, stage 2 conf vol	5					
vCu, unblocked vol	16	11	11			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	991	1076	1621			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	5	11		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.00	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	7.1%		ICU Level of Service	A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

7: SW 124th Avenue & SW Blake Street

04/06/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	460	0	0	353
Future Volume (Veh/h)	0	0	460	0	0	353
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	500	0	0	384
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	884	500			500	
vC1, stage 1 conf vol	500					
vC2, stage 2 conf vol	384					
vCu, unblocked vol	884	500			500	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	521	571			1064	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	500	0	0	384	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.29	0.00	0.00	0.23	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			28.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	952	172	27	548	143	130	258	96	168	158	63
Future Volume (vph)	86	952	172	27	548	143	130	258	96	168	158	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0		4.0	4.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1759	1583	1770	1712	1402	1770	1787		1626	1863	1392
Flt Permitted	0.29	1.00	1.00	0.05	1.00	1.00	0.53	1.00		0.13	1.00	1.00
Satd. Flow (perm)	499	1759	1583	101	1712	1402	993	1787		227	1863	1392
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)	88	971	176	28	559	146	133	263	98	171	161	64
RTOR Reduction (vph)	0	0	63	0	0	54	0	10	0	0	0	46
Lane Group Flow (vph)	88	971	113	28	559	92	133	351	0	171	161	18
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	9%	8%	2%	2%	11%	14%	2%	2%	2%	11%	2%	16%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	81.2	75.7	87.1	75.5	73.1	84.9	41.5	30.1		42.8	31.0	36.5
Effective Green, g (s)	81.2	77.2	90.1	76.5	74.6	87.9	42.5	31.1		44.8	32.0	38.5
Actuated g/C Ratio	0.58	0.55	0.64	0.55	0.53	0.63	0.30	0.22		0.32	0.23	0.28
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	334	969	1018	89	912	880	367	396		200	425	382
v/s Ratio Prot	c0.01	c0.55	0.01	0.01	0.33	0.01	0.03	c0.20		c0.08	0.09	0.00
v/s Ratio Perm	0.14		0.06	0.16		0.06	0.08			0.19		0.01
v/c Ratio	0.26	1.00	0.11	0.31	0.61	0.10	0.36	0.89		0.85	0.38	0.05
Uniform Delay, d1	16.2	31.4	9.6	31.1	22.7	10.4	36.8	52.7		38.7	45.6	37.3
Progression Factor	1.00	1.00	1.00	0.90	0.90	1.30	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	29.4	0.1	0.7	2.7	0.1	0.7	20.8		28.7	0.7	0.1
Delay (s)	16.7	60.8	9.6	28.5	23.1	13.5	37.6	73.6		67.5	46.3	37.3
Level of Service	B	E	A	C	C	B	D	E		E	D	D
Approach Delay (s)		50.4			21.4			63.9			54.0	
Approach LOS		D			C			E			D	

Intersection Summary		
HCM 2000 Control Delay	45.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.94	D
Actuated Cycle Length (s)	140.0	Sum of lost time (s)
Intersection Capacity Utilization	95.5%	16.0
Analysis Period (min)	15	ICU Level of Service
		F

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	1183	22	17	721	7	12
Future Volume (Veh/h)	1183	22	17	721	7	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1207	22	17	736	7	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1229			1977 1207
vC1, stage 1 conf vol						1207
vC2, stage 2 conf vol						770
vCu, unblocked vol			1229			1977 1207
tC, single (s)			4.4			7.3 6.8
tC, 2 stage (s)						6.3
tF (s)			2.5			4.3 3.8
p0 queue free %			96			96 93
cM capacity (veh/h)			483			165 172
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1207	22	17	736	19	
Volume Left	0	0	17	0	7	
Volume Right	0	22	0	0	12	
cSH	1700	1700	483	1700	170	
Volume to Capacity	0.71	0.01	0.04	0.43	0.11	
Queue Length 95th (ft)	0	0	3	0	9	
Control Delay (s)	0.0	0.0	12.7	0.0	28.9	
Lane LOS	B			D		
Approach Delay (s)	0.0		0.3		28.9	
Approach LOS				D		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			73.1%	ICU Level of Service	D	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	855	326	371	661	14	75	5	94	7	0	0
Future Volume (vph)	1	855	326	371	661	14	75	5	94	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	0.99	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	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95		
Satd. Flow (prot)	1805	1776	1317	3019	1707			1322	1137	1583		
Flt Permitted	0.32	1.00	1.00	0.95	1.00			0.74	1.00	0.61		
Satd. Flow (perm)	608	1776	1317	3019	1707			1023	1137	1016		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	881	336	382	681	14	77	5	97	7	0	0
RTOR Reduction (vph)	0	0	40	0	0	0	0	0	71	0	0	0
Lane Group Flow (vph)	1	881	296	382	695	0	0	82	26	7	0	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	7%	21%	16%	11%	7%	38%	20%	42%	14%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	88.0	88.0	88.0	23.7	110.7			14.3	38.0	14.3		
Effective Green, g (s)	88.0	89.5	89.5	23.7	112.2			14.8	38.0	14.8		
Actuated g/C Ratio	0.63	0.64	0.64	0.17	0.80			0.11	0.27	0.11		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5		
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5		
Lane Grp Cap (vph)	390	1135	841	511	1368			108	341	107		
v/s Ratio Prot	0.00	c0.50		c0.13	0.41				0.01			
v/s Ratio Perm	0.00		0.22					c0.08	0.01	0.01		
v/c Ratio	0.00	0.78	0.35	0.75	0.51			0.76	0.08	0.07		
Uniform Delay, d1	10.8	18.1	11.8	55.3	4.7			60.9	38.0	56.4		
Progression Factor	1.14	1.12	1.06	1.07	1.74			1.00	1.00	1.00		
Incremental Delay, d2	0.0	1.9	0.4	4.9	1.0			26.6	0.2	0.3		
Delay (s)	12.3	22.2	12.9	64.1	9.1			87.5	38.1	56.7		
Level of Service	B	C	B	E	A			F	D	E		
Approach Delay (s)		19.6			28.6			60.7			56.7	
Approach LOS		B			C			E			E	

Intersection Summary

HCM 2000 Control Delay	26.6	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	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	713	214	10	759	63	206	12	5	17	3	15
Future Volume (vph)	47	713	214	10	759	63	206	12	5	17	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1712	1527	1504	1667	1568	1736	1821		1504	1441	
Flt Permitted	0.23	1.00	1.00	0.27	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	400	1712	1527	432	1667	1568	1736	1821		1504	1441	
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)	50	759	228	11	807	67	219	13	5	18	3	16
RTOR Reduction (vph)	0	0	35	0	0	22	0	4	0	0	15	0
Lane Group Flow (vph)	50	759	193	11	807	45	219	14	0	18	4	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	11%	4%	20%	14%	3%	4%	0%	0%	20%	0%	18%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	98.8	94.8	116.3	94.8	92.8	92.8	21.5	15.6		9.1	3.2	
Effective Green, g (s)	98.8	95.8	118.3	94.8	93.8	93.8	21.5	17.1		9.1	4.7	
Actuated g/C Ratio	0.71	0.68	0.84	0.68	0.67	0.67	0.15	0.12		0.06	0.03	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	318	1171	1290	307	1116	1050	266	222		97	48	
v/s Ratio Prot	c0.00	0.44	0.02	0.00	c0.48		c0.13	c0.01		0.01	0.00	
v/s Ratio Perm	0.11		0.10	0.02		0.03						
v/c Ratio	0.16	0.65	0.15	0.04	0.72	0.04	0.82	0.06		0.19	0.07	
Uniform Delay, d1	11.0	12.5	1.9	9.8	14.8	7.8	57.4	54.4		61.9	65.5	
Progression Factor	1.74	1.82	5.08	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.1	0.0	0.0	4.1	0.1	18.7	0.1		1.1	0.8	
Delay (s)	19.2	24.9	9.8	9.8	18.9	7.9	76.1	54.5		63.0	66.3	
Level of Service	B	C	A	A	B	A	E	D		E	E	
Approach Delay (s)		21.3			17.9			74.5			64.7	
Approach LOS		C			B			E			E	






















Intersection Summary		
HCM 2000 Control Delay	26.4	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) 16.0
Intersection Capacity Utilization	65.1%	ICU Level of Service C
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	11	0	0	1	0	17	0	60	2	96	268	26
Future Volume (vph)	11	0	0	1	0	17	0	60	2	96	268	26
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
Hourly flow rate (vph)	14	0	0	1	0	21	0	74	2	119	331	32
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	14	0	1	21	0	76	119	363				
Volume Left (vph)	14	0	1	0	0	0	119	0				
Volume Right (vph)	0	0	0	21	0	2	0	32				
Hadj (s)	1.45	0.00	2.20	1.00	0.00	0.61	1.23	0.51				
Departure Headway (s)	7.4	6.0	8.2	7.0	5.1	5.7	5.9	5.2				
Degree Utilization, x	0.03	0.00	0.00	0.04	0.00	0.12	0.20	0.53				
Capacity (veh/h)	450	566	412	482	708	615	594	683				
Control Delay (s)	9.5	7.8	10.0	9.0	6.9	8.3	9.2	12.6				
Approach Delay (s)	9.5		9.1		8.3		11.8					
Approach LOS	A		A		A		B					
Intersection Summary												
Delay			11.2									
Level of Service			B									
Intersection Capacity Utilization			30.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017














Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	0	0	4	9	159
Future Volume (Veh/h)	22	0	0	4	9	159
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	28	0	0	5	11	199
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	116	110	210			
vC1, stage 1 conf vol	110					
vC2, stage 2 conf vol	5					
vCu, unblocked vol	116	110	210			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	896	948	1373			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	28	0	5	210		
Volume Left	28	0	0	0		
Volume Right	0	0	0	199		
cSH	896	1700	1700	1700		
Volume to Capacity	0.03	0.00	0.00	0.12		
Queue Length 95th (ft)	2	0	0	0		
Control Delay (s)	9.1	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	9.1	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			21.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: SW 124th Avenue & SW Blake Street

04/06/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	484	0	0	357
Future Volume (Veh/h)	0	0	484	0	0	357
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	526	0	0	388
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	914	526			526	
vC1, stage 1 conf vol	526					
vC2, stage 2 conf vol	388					
vCu, unblocked vol	914	526			526	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	509	552			1041	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	526	0	0	388	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.31	0.00	0.00	0.23	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			29.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	920	172	5	544	140	130	258	5	145	158	63
Future Volume (vph)	86	920	172	5	544	140	130	258	5	145	158	63
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1759	1583	1770	1712	1402	1770	1858		1626	1863	1392
Flt Permitted	0.32	1.00	1.00	0.12	1.00	1.00	0.53	1.00		0.16	1.00	1.00
Satd. Flow (perm)	550	1759	1583	214	1712	1402	990	1858		279	1863	1392
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)	88	939	176	5	555	143	133	263	5	148	161	64
RTOR Reduction (vph)	0	0	54	0	0	45	0	1	0	0	0	50
Lane Group Flow (vph)	88	939	122	5	555	98	133	267	0	148	161	14
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	9%	8%	2%	2%	11%	14%	2%	2%	2%	11%	2%	16%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	89.2	84.0	94.3	80.9	80.1	92.7	32.9	22.6		38.0	25.4	30.6
Effective Green, g (s)	89.2	85.5	97.3	81.9	81.6	95.7	33.9	23.6		40.0	26.4	30.6
Actuated g/C Ratio	0.64	0.61	0.69	0.59	0.58	0.68	0.24	0.17		0.29	0.19	0.22
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	391	1074	1100	139	997	958	299	313		210	351	304
v/s Ratio Prot	c0.01	c0.53	0.01	0.00	0.32	0.01	0.03	c0.14		c0.07	0.09	0.00
v/s Ratio Perm	0.13		0.07	0.02		0.06	0.07			0.13		0.01
v/c Ratio	0.23	0.87	0.11	0.04	0.56	0.10	0.44	0.85		0.70	0.46	0.05
Uniform Delay, d1	12.4	22.8	7.1	21.7	18.0	7.5	43.5	56.5		40.8	50.5	43.2
Progression Factor	1.00	1.00	1.00	1.11	1.12	2.09	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	9.9	0.1	0.0	2.0	0.1	1.2	20.0		10.6	1.1	0.1
Delay (s)	12.8	32.7	7.1	24.1	22.2	15.8	44.8	76.6		51.4	51.6	43.3
Level of Service	B	C	A	C	C	B	D	E		D	D	D
Approach Delay (s)		27.5			20.9			66.0			50.1	
Approach LOS		C			C			E			D	

Intersection Summary

HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	1032	22	17	687	7	12
Future Volume (Veh/h)	1032	22	17	687	7	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1053	22	17	701	7	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1075		1788	1053
vC1, stage 1 conf vol					1053	
vC2, stage 2 conf vol					735	
vCu, unblocked vol			1075		1788	1053
tC, single (s)			4.4		7.3	6.8
tC, 2 stage (s)					6.3	
tF (s)			2.5		4.3	3.8
p0 queue free %			97		96	94
cM capacity (veh/h)			557		195	215
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1053	22	17	701	19	
Volume Left	0	0	17	0	7	
Volume Right	0	22	0	0	12	
cSH	1700	1700	557	1700	208	
Volume to Capacity	0.62	0.01	0.03	0.41	0.09	
Queue Length 95th (ft)	0	0	2	0	7	
Control Delay (s)	0.0	0.0	11.7	0.0	24.1	
Lane LOS	B			C		
Approach Delay (s)	0.0		0.3		24.1	
Approach LOS				C		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			65.1%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	855	175	237	661	14	41	5	83	7	0	0
Future Volume (vph)	1	855	175	237	661	14	41	5	83	7	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	0.99	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	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95		
Satd. Flow (prot)	1805	1776	1317	3019	1707			1333	1137	1583		
Flt Permitted	0.34	1.00	1.00	0.95	1.00			0.75	1.00	0.73		
Satd. Flow (perm)	649	1776	1317	3019	1707			1042	1137	1211		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	881	180	244	681	14	42	5	86	7	0	0
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	69	0	0	0
Lane Group Flow (vph)	1	881	161	244	695	0	0	47	17	7	0	0
Confl. Peds. (#/hr)								1				1
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	7%	21%	16%	11%	7%	38%	20%	42%	14%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	98.9	98.9	98.9	17.7	115.6			9.4	27.1	9.4		
Effective Green, g (s)	98.9	100.4	100.4	17.7	117.1			9.9	27.1	9.9		
Actuated g/C Ratio	0.71	0.72	0.72	0.13	0.84			0.07	0.19	0.07		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5		
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5		
Lane Grp Cap (vph)	466	1273	944	381	1427			73	252	85		
v/s Ratio Prot	0.00	c0.50		c0.08	0.41				0.01			
v/s Ratio Perm	0.00		0.12					c0.05	0.01	0.01		
v/c Ratio	0.00	0.69	0.17	0.64	0.49			0.64	0.07	0.08		
Uniform Delay, d1	6.8	11.1	6.4	58.1	3.2			63.3	46.1	60.8		
Progression Factor	0.96	0.98	0.78	1.11	2.18			1.00	1.00	1.00		
Incremental Delay, d2	0.0	1.8	0.2	3.5	0.9			18.5	0.2	0.5		
Delay (s)	6.5	12.6	5.2	68.1	7.8			81.9	46.3	61.3		
Level of Service	A	B	A	E	A			F	D	E		
Approach Delay (s)		11.3			23.5			58.9			61.3	
Approach LOS		B			C			E			E	

Intersection Summary

HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	704	211	10	695	63	179	12	5	17	3	15
Future Volume (vph)	47	704	211	10	695	63	179	12	5	17	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1712	1527	1504	1667	1568	1736	1821		1504	1441	
Flt Permitted	0.27	1.00	1.00	0.29	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	478	1712	1527	452	1667	1568	1736	1821		1504	1441	
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)	50	749	224	11	739	67	190	13	5	18	3	16
RTOR Reduction (vph)	0	0	35	0	0	21	0	4	0	0	15	0
Lane Group Flow (vph)	50	749	189	11	739	46	190	14	0	18	4	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	11%	4%	20%	14%	3%	4%	0%	0%	20%	0%	18%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	100.6	96.6	116.2	96.6	94.6	94.6	19.6	14.0		8.9	3.3	
Effective Green, g (s)	100.6	97.6	118.2	96.6	95.6	95.6	19.6	15.5		8.9	4.8	
Actuated g/C Ratio	0.72	0.70	0.84	0.69	0.68	0.68	0.14	0.11		0.06	0.03	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	377	1193	1289	326	1138	1070	243	201		95	49	
v/s Ratio Prot	c0.00	0.44	0.02	0.00	c0.44		c0.11	c0.01		0.01	0.00	
v/s Ratio Perm	0.09		0.10	0.02		0.03						
v/c Ratio	0.13	0.63	0.15	0.03	0.65	0.04	0.78	0.07		0.19	0.07	
Uniform Delay, d1	8.8	11.4	1.9	8.8	12.7	7.3	58.1	55.8		62.1	65.4	
Progression Factor	1.60	1.48	3.95	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.0	0.1	0.0	2.9	0.1	15.4	0.2		1.1	0.7	
Delay (s)	14.2	18.9	7.7	8.8	15.5	7.3	73.6	55.9		63.3	66.2	
Level of Service	B	B	A	A	B	A	E	E		E	E	
Approach Delay (s)		16.2			14.8			72.0			64.8	
Approach LOS		B			B			E			E	





















Intersection Summary		
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.63	
Actuated Cycle Length (s)	140.0	Sum of lost time (s) 16.0
Intersection Capacity Utilization	62.7%	ICU Level of Service B
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW IteI Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	10	0	1	4	0	14	2	72	23	79	103	24
Future Volume (vph)	10	0	1	4	0	14	2	72	23	79	103	24
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
Hourly flow rate (vph)	12	0	1	5	0	17	2	89	28	98	127	30
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	12	1	5	17	2	117	98	157				
Volume Left (vph)	12	0	5	0	2	0	98	0				
Volume Right (vph)	0	1	0	17	0	28	0	30				
Hadj (s)	1.45	-0.70	2.20	1.00	0.50	0.69	1.23	0.39				
Departure Headway (s)	6.9	4.8	7.7	6.5	5.3	5.5	5.9	5.1				
Degree Utilization, x	0.02	0.00	0.01	0.03	0.00	0.18	0.16	0.22				
Capacity (veh/h)	489	699	444	525	657	637	593	693				
Control Delay (s)	8.9	6.6	9.6	8.5	7.2	8.5	8.9	8.4				
Approach Delay (s)	8.7		8.7		8.5		8.6					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			8.6									
Level of Service			A									
Intersection Capacity Utilization			25.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	89	32	0
Future Volume (Veh/h)	0	0	0	89	32	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	0	0	111	40	0
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	151	40	40			
vC1, stage 1 conf vol	40					
vC2, stage 2 conf vol	111					
vCu, unblocked vol	151	40	40			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	886	1037	1583			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	111	40		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.07	0.02		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	8.4%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

7: SW 124th Avenue & SW Blake Street

04/06/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	23	0	388	72	0	330
Future Volume (Veh/h)	23	0	388	72	0	330
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	0	422	78	0	359
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	781	422			500	
vC1, stage 1 conf vol	422					
vC2, stage 2 conf vol	359					
vCu, unblocked vol	781	422			500	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	562	632			1064	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	25	422	78	0	359	
Volume Left	25	0	0	0	0	
Volume Right	0	0	78	0	0	
cSH	562	1700	1700	1700	1700	
Volume to Capacity	0.04	0.25	0.05	0.00	0.21	
Queue Length 95th (ft)	3	0	0	0	0	
Control Delay (s)	11.7	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	11.7	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			31.3%	ICU Level of Service	A	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

1: SW 124th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	944	180	5	547	142	131	259	5	160	166	63
Future Volume (vph)	86	944	180	5	547	142	131	259	5	160	166	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.5	4.0	3.5	4.5	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1759	1583	1770	1712	1402	1770	1858		1626	1863	1392
Flt Permitted	0.30	1.00	1.00	0.09	1.00	1.00	0.58	1.00		0.16	1.00	1.00
Satd. Flow (perm)	531	1759	1583	161	1712	1402	1074	1858		276	1863	1392
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)	88	963	184	5	558	145	134	264	5	163	169	64
RTOR Reduction (vph)	0	0	59	0	0	47	0	1	0	0	0	49
Lane Group Flow (vph)	88	963	125	5	558	98	134	268	0	163	169	15
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	9%	8%	2%	2%	11%	14%	2%	2%	2%	11%	2%	16%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	87.6	82.3	91.8	78.9	78.1	92.0	32.5	23.0		41.8	27.9	33.4
Effective Green, g (s)	87.6	83.8	94.8	78.9	79.6	95.0	32.5	24.0		42.9	28.9	33.4
Actuated g/C Ratio	0.63	0.60	0.68	0.56	0.57	0.68	0.23	0.17		0.31	0.21	0.24
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	376	1052	1071	99	973	951	296	318		228	384	332
v/s Ratio Prot	c0.01	c0.55	0.01	0.00	0.33	0.01	0.03	c0.14		c0.08	0.09	0.00
v/s Ratio Perm	0.14		0.07	0.03		0.06	0.07			0.14		0.01
v/c Ratio	0.23	0.92	0.12	0.05	0.57	0.10	0.45	0.84		0.71	0.44	0.05
Uniform Delay, d1	13.3	25.0	7.9	24.9	19.3	7.8	44.7	56.2		39.2	48.5	41.0
Progression Factor	1.00	1.00	1.00	0.95	1.13	2.57	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	13.6	0.1	0.1	2.2	0.1	1.3	18.4		10.5	1.0	0.1
Delay (s)	13.7	38.6	8.0	23.7	24.1	20.1	46.0	74.6		49.7	49.4	41.1
Level of Service	B	D	A	C	C	C	D	E		D	D	D
Approach Delay (s)		32.3			23.3			65.1			48.2	
Approach LOS		C			C			E			D	

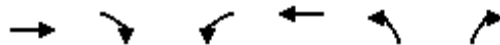
Intersection Summary		
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.88	D
Actuated Cycle Length (s)	140.0	Sum of lost time (s)
Intersection Capacity Utilization	89.6%	17.0
Analysis Period (min)	15	ICU Level of Service
		E

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	1071	22	17	692	7	12
Future Volume (Veh/h)	1071	22	17	692	7	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1093	22	17	706	7	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1115		1833	1093
vC1, stage 1 conf vol					1093	
vC2, stage 2 conf vol					740	
vCu, unblocked vol			1115		1833	1093
tC, single (s)			4.4		7.3	6.8
tC, 2 stage (s)					6.3	
tF (s)			2.5		4.3	3.8
p0 queue free %			97		96	94
cM capacity (veh/h)			537		188	203
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1093	22	17	706	19	
Volume Left	0	0	17	0	7	
Volume Right	0	22	0	0	12	
cSH	1700	1700	537	1700	197	
Volume to Capacity	0.64	0.01	0.03	0.42	0.10	
Queue Length 95th (ft)	0	0	2	0	8	
Control Delay (s)	0.0	0.0	11.9	0.0	25.2	
Lane LOS	B			D		
Approach Delay (s)	0.0		0.3		25.2	
Approach LOS				D		
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			67.2%	ICU Level of Service	C	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	855	214	317	661	14	46	5	94	7	0	0
Future Volume (vph)	1	855	214	317	661	14	46	5	94	7	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00		
Frbp, ped/bikes	1.00	1.00	0.99	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	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95		
Satd. Flow (prot)	1805	1776	1317	3019	1707			1331	1137	1583		
Flt Permitted	0.34	1.00	1.00	0.95	1.00			0.75	1.00	0.72		
Satd. Flow (perm)	645	1776	1317	3019	1707			1038	1137	1205		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1	881	221	327	681	14	47	5	97	7	0	0
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	76	0	0	0
Lane Group Flow (vph)	1	881	197	327	695	0	0	52	21	7	0	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	0%	7%	21%	16%	11%	7%	38%	20%	42%	14%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	95.1	95.1	95.1	21.6	115.7			9.3	30.9	9.3		
Effective Green, g (s)	95.1	96.6	96.6	21.6	117.2			9.8	30.9	9.8		
Actuated g/C Ratio	0.68	0.69	0.69	0.15	0.84			0.07	0.22	0.07		
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5		
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5		
Lane Grp Cap (vph)	446	1225	908	465	1429			72	283	84		
v/s Ratio Prot	0.00	c0.50		c0.11	0.41				0.01			
v/s Ratio Perm	0.00		0.15					c0.05	0.01	0.01		
v/c Ratio	0.00	0.72	0.22	0.70	0.49			0.72	0.08	0.08		
Uniform Delay, d1	7.9	13.4	7.9	56.2	3.1			63.8	43.2	60.9		
Progression Factor	1.07	1.03	0.84	1.12	2.06			1.00	1.00	1.00		
Incremental Delay, d2	0.0	1.9	0.3	4.0	0.8			30.7	0.2	0.5		
Delay (s)	8.5	15.7	6.9	67.0	7.3			94.5	43.4	61.4		
Level of Service	A	B	A	E	A			F	D	E		
Approach Delay (s)		13.9			26.4			61.2			61.4	
Approach LOS		B			C			E			E	

Intersection Summary

HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	713	213	10	759	63	195	12	5	17	3	15
Future Volume (vph)	47	713	213	10	759	63	195	12	5	17	3	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1712	1527	1504	1667	1568	1736	1821		1504	1441	
Flt Permitted	0.23	1.00	1.00	0.28	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	408	1712	1527	439	1667	1568	1736	1821		1504	1441	
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)	50	759	227	11	807	67	207	13	5	18	3	16
RTOR Reduction (vph)	0	0	35	0	0	22	0	4	0	0	15	0
Lane Group Flow (vph)	50	759	192	11	807	45	207	14	0	18	4	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	8%	11%	4%	20%	14%	3%	4%	0%	0%	20%	0%	18%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	99.8	95.8	116.3	95.8	93.8	93.8	20.5	14.9		8.8	3.2	
Effective Green, g (s)	99.8	96.8	118.3	95.8	94.8	94.8	20.5	16.4		8.8	4.7	
Actuated g/C Ratio	0.71	0.69	0.84	0.68	0.68	0.68	0.15	0.12		0.06	0.03	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	326	1183	1290	315	1128	1061	254	213		94	48	
v/s Ratio Prot	c0.00	0.44	0.02	0.00	c0.48		c0.12	c0.01		0.01	0.00	
v/s Ratio Perm	0.10		0.10	0.02		0.03						
v/c Ratio	0.15	0.64	0.15	0.03	0.72	0.04	0.81	0.06		0.19	0.07	
Uniform Delay, d1	10.5	12.0	1.9	9.3	14.2	7.5	57.9	55.0		62.2	65.5	
Progression Factor	1.63	1.49	4.21	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	2.1	0.1	0.0	3.9	0.1	18.3	0.1		1.2	0.8	
Delay (s)	17.1	20.0	8.1	9.3	18.0	7.6	76.2	55.1		63.4	66.3	
Level of Service	B	B	A	A	B	A	E	E		E	E	
Approach Delay (s)		17.3			17.1			74.5			64.9	
Approach LOS		B			B			E			E	





















Intersection Summary		
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.69	
Actuated Cycle Length (s)	140.0	Sum of lost time (s) 16.0
Intersection Capacity Utilization	64.5%	ICU Level of Service C
Analysis Period (min)	15	

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	10	0	1	4	0	14	2	88	23	79	222	24
Future Volume (vph)	10	0	1	4	0	14	2	88	23	79	222	24
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
Hourly flow rate (vph)	12	0	1	5	0	17	2	109	28	98	274	30
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	12	1	5	17	2	137	98	304				
Volume Left (vph)	12	0	5	0	2	0	98	0				
Volume Right (vph)	0	1	0	17	0	28	0	30				
Hadj (s)	1.45	-0.70	2.20	1.00	0.50	0.68	1.23	0.50				
Departure Headway (s)	7.3	5.2	8.1	6.9	5.5	5.7	6.0	5.2				
Degree Utilization, x	0.02	0.00	0.01	0.03	0.00	0.22	0.16	0.44				
Capacity (veh/h)	459	635	418	490	638	622	590	678				
Control Delay (s)	9.3	7.0	10.0	8.9	7.3	9.0	8.9	11.1				
Approach Delay (s)	9.1		9.1		9.0		10.6					
Approach LOS	A		A		A		B					
Intersection Summary												
Delay			10.1									
Level of Service			B									
Intersection Capacity Utilization			27.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	16	6	40	89	32	119
Future Volume (Veh/h)	16	6	40	89	32	119
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	20	8	50	111	40	149
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	326	114	189			
vC1, stage 1 conf vol	114					
vC2, stage 2 conf vol	211					
vCu, unblocked vol	326	114	189			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	96			
cM capacity (veh/h)	755	943	1397			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	28	50	111	189		
Volume Left	20	50	0	0		
Volume Right	8	0	0	149		
cSH	801	1397	1700	1700		
Volume to Capacity	0.03	0.04	0.07	0.11		
Queue Length 95th (ft)	3	3	0	0		
Control Delay (s)	9.7	7.7	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s)	9.7	2.4		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			26.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: SW 124th Avenue & SW Blake Street

04/06/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵		↑	↱	↵	↱
Traffic Volume (veh/h)	27	2	388	96	16	330
Future Volume (Veh/h)	27	2	388	96	16	330
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	2	422	104	17	359
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	815	422			526	
vC1, stage 1 conf vol	422					
vC2, stage 2 conf vol	393					
vCu, unblocked vol	815	422			526	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			98	
cM capacity (veh/h)	545	632			1041	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	31	422	104	17	359	
Volume Left	29	0	0	17	0	
Volume Right	2	0	104	0	0	
cSH	549	1700	1700	1041	1700	
Volume to Capacity	0.06	0.25	0.06	0.02	0.21	
Queue Length 95th (ft)	4	0	0	1	0	
Control Delay (s)	11.9	0.0	0.0	8.5	0.0	
Lane LOS	B			A		
Approach Delay (s)	11.9	0.0		0.4		
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			31.3%		ICU Level of Service	A
Analysis Period (min)			15			

APPENDIX J.2

MID-DAY PEAK HOUR

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	936	35	64	834	13	61	1	176	22	1	8
Future Volume (vph)	11	936	35	64	834	13	61	1	176	22	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1656	1759	1436	3335	1783			1648	1583	1719	1350	
Flt Permitted	0.23	1.00	1.00	0.95	1.00			0.72	1.00	0.71	1.00	
Satd. Flow (perm)	396	1759	1436	3335	1783			1250	1583	1280	1350	
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)	12	996	37	68	887	14	65	1	187	23	1	9
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	91	0	8	0
Lane Group Flow (vph)	12	996	27	68	901	0	0	66	96	23	2	0
Confl. Bikes (#/hr)			3			1						
Heavy Vehicles (%)	9%	8%	11%	5%	6%	23%	10%	0%	2%	5%	100%	13%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	85.2	85.2	85.2	9.3	92.5			11.5	20.8	11.5	11.5	
Effective Green, g (s)	85.2	86.7	86.7	9.3	94.0			12.0	20.8	12.0	12.0	
Actuated g/C Ratio	0.71	0.72	0.72	0.08	0.78			0.10	0.17	0.10	0.10	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	302	1270	1037	258	1396			125	327	128	135	
v/s Ratio Prot	0.00	c0.57		0.02	c0.51				0.02		0.00	
v/s Ratio Perm	0.03		0.02					c0.05	0.04	0.02		
v/c Ratio	0.04	0.78	0.03	0.26	0.65			0.53	0.29	0.18	0.01	
Uniform Delay, d1	8.0	10.7	4.7	52.1	5.7			51.3	43.2	49.5	48.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	4.9	0.0	0.9	2.3			4.5	0.9	0.8	0.0	
Delay (s)	8.0	15.6	4.8	53.1	8.0			55.9	44.1	50.3	48.7	
Level of Service	A	B	A	D	A			E	D	D	D	
Approach Delay (s)		15.1			11.2			47.1			49.8	
Approach LOS		B			B			D			D	

Intersection Summary

HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	97	2	1	0	0	12	3	56	1	4	23	24
Future Volume (vph)	97	2	1	0	0	12	3	56	1	4	23	24
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	129	3	1	0	0	16	4	75	1	5	31	32

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	129	4	0	16	4	76	5	63
Volume Left (vph)	129	0	0	0	4	0	5	0
Volume Right (vph)	0	1	0	16	0	1	0	32
Hadj (s)	0.55	-0.17	0.00	-0.56	1.06	0.05	0.50	-0.25
Departure Headway (s)	5.4	4.7	5.0	4.4	6.0	5.0	5.5	4.7
Degree Utilization, x	0.19	0.01	0.00	0.02	0.01	0.11	0.01	0.08
Capacity (veh/h)	638	737	713	775	575	690	628	728
Control Delay (s)	8.5	6.5	6.8	6.3	7.9	7.4	7.3	7.0
Approach Delay (s)	8.5		6.3		7.4		7.0	
Approach LOS	A		A		A		A	

Intersection Summary	
Delay	7.7
Level of Service	A
Intersection Capacity Utilization	23.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4	4	0
Future Volume (Veh/h)	0	0	0	4	4	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Hourly flow rate (vph)	0	0	0	9	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage veh						
2 2						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	18	9	9			
vC1, stage 1 conf vol	9					
vC2, stage 2 conf vol	9					
vCu, unblocked vol	18	9	9			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	990	1079	1624			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	9	9		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.01	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	7.1%		ICU Level of Service		A	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	961	58	105	868	13	187	1	405	22	1	8
Future Volume (vph)	11	961	58	105	868	13	187	1	405	22	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1656	1759	1436	3335	1784			1646	1583	1719	1350	
Flt Permitted	0.14	1.00	1.00	0.95	1.00			0.72	1.00	0.41	1.00	
Satd. Flow (perm)	237	1759	1436	3335	1784			1245	1583	749	1350	
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)	12	1022	62	112	923	14	199	1	431	23	1	9
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	74	0	7	0
Lane Group Flow (vph)	12	1022	38	112	937	0	0	200	357	23	3	0
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	9%	8%	11%	5%	6%	23%	10%	0%	2%	5%	100%	13%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	72.7	72.7	72.7	10.4	81.1			22.9	33.3	22.9	22.9	
Effective Green, g (s)	72.7	74.2	74.2	10.4	82.6			23.4	33.3	23.4	23.4	
Actuated g/C Ratio	0.61	0.62	0.62	0.09	0.69			0.19	0.28	0.19	0.19	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	167	1087	887	289	1227			242	492	146	263	
v/s Ratio Prot	0.00	c0.58		0.03	c0.53				0.06		0.00	
v/s Ratio Perm	0.04		0.03					c0.16	0.16	0.03		
v/c Ratio	0.07	0.94	0.04	0.39	0.76			0.83	0.72	0.16	0.01	
Uniform Delay, d1	16.4	20.9	9.0	51.8	12.3			46.4	39.2	40.1	39.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	16.2	0.1	1.5	4.5			20.5	6.0	0.6	0.0	
Delay (s)	16.5	37.1	9.1	53.3	16.8			66.9	45.2	40.7	39.0	
Level of Service	B	D	A	D	B			E	D	D	D	
Approach Delay (s)		35.3			20.7			52.0			40.2	
Approach LOS		D			C			D			D	

Intersection Summary






















HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	113	2	1	0	0	123	3	166	1	25	43	26
Future Volume (vph)	113	2	1	0	0	123	3	166	1	25	43	26
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	151	3	1	0	0	164	4	221	1	33	57	35
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	151	4	0	164	4	222	33	92				
Volume Left (vph)	151	0	0	0	4	0	33	0				
Volume Right (vph)	0	1	0	164	0	1	0	35				
Hadj (s)	0.55	-0.17	0.00	-0.56	1.06	0.04	0.50	-0.15				
Departure Headway (s)	6.2	5.5	5.7	5.1	6.6	5.6	6.2	5.5				
Degree Utilization, x	0.26	0.01	0.00	0.23	0.01	0.35	0.06	0.14				
Capacity (veh/h)	544	612	607	659	514	611	540	604				
Control Delay (s)	10.2	7.3	7.5	8.4	8.5	10.3	8.4	8.3				
Approach Delay (s)	10.1		8.4		10.3		8.3					
Approach LOS	B		A		B		A					
Intersection Summary												
Delay			9.4									
Level of Service			A									
Intersection Capacity Utilization			41.4%	ICU Level of Service				A				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4	4	0
Future Volume (Veh/h)	0	0	0	4	4	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Hourly flow rate (vph)	0	0	0	9	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage (veh)			2	2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	18	9	9			
vC1, stage 1 conf vol	9					
vC2, stage 2 conf vol	9					
vCu, unblocked vol	18	9	9			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	990	1079	1624			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	9	9		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.01	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			7.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	961	68	123	868	13	247	1	517	22	1	8
Future Volume (vph)	11	961	68	123	868	13	247	1	517	22	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1656	1759	1436	3335	1784			1646	1583	1719	1350	
Flt Permitted	0.10	1.00	1.00	0.95	1.00			0.72	1.00	0.35	1.00	
Satd. Flow (perm)	171	1759	1436	3335	1784			1244	1583	626	1350	
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)	12	1022	72	131	923	14	263	1	550	23	1	9
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	70	0	7	0
Lane Group Flow (vph)	12	1022	45	131	937	0	0	264	480	23	3	0
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	9%	8%	11%	5%	6%	23%	10%	0%	2%	5%	100%	13%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	68.0	68.0	68.0	10.4	76.4			27.6	38.0	27.6	27.6	
Effective Green, g (s)	68.0	69.5	69.5	10.4	77.9			28.1	38.0	28.1	28.1	
Actuated g/C Ratio	0.57	0.58	0.58	0.09	0.65			0.23	0.32	0.23	0.23	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	121	1018	831	289	1158			291	554	146	316	
v/s Ratio Prot	0.00	c0.58		0.04	c0.53				c0.08		0.00	
v/s Ratio Perm	0.05		0.03					0.21	0.23	0.04		
v/c Ratio	0.10	1.00	0.05	0.45	0.81			0.91	0.87	0.16	0.01	
Uniform Delay, d1	20.2	25.2	11.0	52.1	15.6			44.7	38.6	36.5	35.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	29.2	0.1	1.9	6.1			30.2	14.1	0.6	0.0	
Delay (s)	20.4	54.4	11.1	54.0	21.7			74.9	52.7	37.1	35.3	
Level of Service	C	D	B	D	C			E	D	D	D	
Approach Delay (s)		51.2			25.7			59.9			36.6	
Approach LOS		D			C			E			D	

Intersection Summary

HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	113	2	1	0	0	123	3	338	1	25	71	26
Future Volume (vph)	113	2	1	0	0	123	3	338	1	25	71	26
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	151	3	1	0	0	164	4	451	1	33	95	35

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	151	4	0	164	4	452	33	130
Volume Left (vph)	151	0	0	0	4	0	33	0
Volume Right (vph)	0	1	0	164	0	1	0	35
Hadj (s)	0.55	-0.17	0.00	-0.56	1.06	0.04	0.50	-0.06
Departure Headway (s)	7.1	6.4	6.5	6.0	6.9	5.8	6.7	6.2
Degree Utilization, x	0.30	0.01	0.00	0.27	0.01	0.73	0.06	0.22
Capacity (veh/h)	466	510	516	547	504	598	498	544
Control Delay (s)	11.9	8.2	8.3	10.0	8.7	21.9	9.0	9.7
Approach Delay (s)	11.8		10.0		21.7		9.6	
Approach LOS	B		A		C		A	

Intersection Summary	
Delay	15.9
Level of Service	C
Intersection Capacity Utilization	45.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	172	0	0	4	4	28
Future Volume (Veh/h)	172	0	0	4	4	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Hourly flow rate (vph)	391	0	0	9	9	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage veh						
2 2						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	50	41	73			
vC1, stage 1 conf vol	41					
vC2, stage 2 conf vol	9					
vCu, unblocked vol	50	41	73			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	100	100			
cM capacity (veh/h)	961	1036	1540			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	391	0	9	73		
Volume Left	391	0	0	0		
Volume Right	0	0	0	64		
cSH	961	1700	1700	1700		
Volume to Capacity	0.41	0.00	0.01	0.04		
Queue Length 95th (ft)	50	0	0	0		
Control Delay (s)	11.3	0.0	0.0	0.0		
Lane LOS	B					
Approach Delay (s)	11.3	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			9.3			
Intersection Capacity Utilization			20.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	774	82	81	706	13	276	1	316	22	1	8
Future Volume (vph)	11	774	82	81	706	13	276	1	316	22	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1656	1759	1436	3335	1782			1646	1583	1719	1350	
Flt Permitted	0.18	1.00	1.00	0.95	1.00			0.72	1.00	0.33	1.00	
Satd. Flow (perm)	308	1759	1436	3335	1782			1244	1583	596	1350	
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)	12	823	87	86	751	14	294	1	336	23	1	9
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	97	0	7	0
Lane Group Flow (vph)	12	823	58	86	765	0	0	295	239	23	3	0
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	9%	8%	11%	5%	6%	23%	10%	0%	2%	5%	100%	13%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	65.0	65.0	65.0	10.4	73.4			30.6	41.0	30.6	30.6	
Effective Green, g (s)	65.0	66.5	66.5	10.4	74.9			31.1	41.0	31.1	31.1	
Actuated g/C Ratio	0.54	0.55	0.55	0.09	0.62			0.26	0.34	0.26	0.26	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5			1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	189	974	795	289	1112			322	593	154	349	
v/s Ratio Prot	0.00	c0.47		0.03	c0.43				0.03		0.00	
v/s Ratio Perm	0.03		0.04					c0.24	0.12	0.04		
v/c Ratio	0.06	0.84	0.07	0.30	0.69			0.92	0.40	0.15	0.01	
Uniform Delay, d1	17.4	22.4	12.4	51.4	14.8			43.2	30.2	34.3	33.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	8.9	0.2	0.2	3.5			29.0	0.2	0.2	0.0	
Delay (s)	17.5	31.4	12.6	51.6	18.3			72.1	30.3	34.4	33.0	
Level of Service	B	C	B	D	B			E	C	C	C	
Approach Delay (s)		29.4			21.7			49.9			34.0	
Approach LOS		C			C			D			C	





















Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	113	2	1	0	0	123	3	166	1	25	43	26
Future Volume (vph)	113	2	1	0	0	123	3	166	1	25	43	26
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	151	3	1	0	0	164	4	221	1	33	57	35
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	151	4	0	164	4	222	33	92				
Volume Left (vph)	151	0	0	0	4	0	33	0				
Volume Right (vph)	0	1	0	164	0	1	0	35				
Hadj (s)	0.55	-0.17	0.00	-0.56	1.06	0.04	0.50	-0.15				
Departure Headway (s)	6.2	5.5	5.7	5.1	6.6	5.6	6.2	5.5				
Degree Utilization, x	0.26	0.01	0.00	0.23	0.01	0.35	0.06	0.14				
Capacity (veh/h)	544	612	607	659	514	611	540	604				
Control Delay (s)	10.2	7.3	7.5	8.4	8.5	10.3	8.4	8.3				
Approach Delay (s)	10.1		8.4		10.3		8.3					
Approach LOS	B		A		B		A					
Intersection Summary												
Delay			9.4									
Level of Service			A									
Intersection Capacity Utilization			41.4%	ICU Level of Service				A				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4	4	0
Future Volume (Veh/h)	0	0	0	4	4	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Hourly flow rate (vph)	0	0	0	9	9	0
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	18	9	9			
vC1, stage 1 conf vol	9					
vC2, stage 2 conf vol	9					
vCu, unblocked vol	18	9	9			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	990	1079	1624			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	9	9		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.01	0.01		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	7.1%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	774	96	95	706	13	362	1	402	22	1	8
Future Volume (vph)	11	774	96	95	706	13	362	1	402	22	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1656	1759	1436	3335	1782			1646	1583	1719	1350	
Flt Permitted	0.11	1.00	1.00	0.95	1.00			0.72	1.00	0.30	1.00	
Satd. Flow (perm)	190	1759	1436	3335	1782			1244	1583	536	1350	
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)	12	823	102	101	751	14	385	1	428	23	1	9
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	69	0	6	0
Lane Group Flow (vph)	12	823	70	101	765	0	0	386	359	23	4	0
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	9%	8%	11%	5%	6%	23%	10%	0%	2%	5%	100%	13%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	58.4	58.4	58.4	8.0	64.4			39.6	47.6	39.6	39.6	
Effective Green, g (s)	58.4	59.9	59.9	8.0	65.9			40.1	47.6	40.1	40.1	
Actuated g/C Ratio	0.49	0.50	0.50	0.07	0.55			0.33	0.40	0.33	0.33	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5			1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	116	878	716	222	978			415	680	179	451	
v/s Ratio Prot	0.00	c0.47		0.03	c0.43				0.04		0.00	
v/s Ratio Perm	0.05		0.05					c0.31	0.19	0.04		
v/c Ratio	0.10	0.94	0.10	0.45	0.78			0.93	0.53	0.13	0.01	
Uniform Delay, d1	22.7	28.3	15.8	53.9	21.4			38.6	27.6	27.8	26.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	18.5	0.3	0.5	6.2			27.1	0.3	0.1	0.0	
Delay (s)	22.9	46.8	16.1	54.4	27.6			65.7	28.0	27.9	26.7	
Level of Service	C	D	B	D	C			E	C	C	C	
Approach Delay (s)		43.2			30.7			45.9			27.5	
Approach LOS		D			C			D			C	

Intersection Summary

HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	113	2	1	0	0	123	3	338	1	25	71	26
Future Volume (vph)	113	2	1	0	0	123	3	338	1	25	71	26
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	151	3	1	0	0	164	4	451	1	33	95	35

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	151	4	0	164	4	452	33	130
Volume Left (vph)	151	0	0	0	4	0	33	0
Volume Right (vph)	0	1	0	164	0	1	0	35
Hadj (s)	0.55	-0.17	0.00	-0.56	1.06	0.04	0.50	-0.06
Departure Headway (s)	7.1	6.4	6.5	6.0	6.9	5.8	6.7	6.2
Degree Utilization, x	0.30	0.01	0.00	0.27	0.01	0.73	0.06	0.22
Capacity (veh/h)	466	510	516	547	504	598	498	544
Control Delay (s)	11.9	8.2	8.3	10.0	8.7	21.9	9.0	9.7
Approach Delay (s)	11.8		10.0		21.7		9.6	
Approach LOS	B		A		C		A	

Intersection Summary

Delay	15.9
Level of Service	C
Intersection Capacity Utilization	45.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	172	0	0	4	4	28
Future Volume (Veh/h)	172	0	0	4	4	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Hourly flow rate (vph)	391	0	0	9	9	64
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	50	41	73			
vC1, stage 1 conf vol	41					
vC2, stage 2 conf vol	9					
vCu, unblocked vol	50	41	73			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	100	100			
cM capacity (veh/h)	961	1036	1540			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	391	0	9	73		
Volume Left	391	0	0	0		
Volume Right	0	0	0	64		
cSH	961	1700	1700	1700		
Volume to Capacity	0.41	0.00	0.01	0.04		
Queue Length 95th (ft)	50	0	0	0		
Control Delay (s)	11.3	0.0	0.0	0.0		
Lane LOS	B					
Approach Delay (s)	11.3	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			9.3			
Intersection Capacity Utilization			20.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	774	58	81	706	13	187	1	316	22	1	8
Future Volume (vph)	11	774	58	81	706	13	187	1	316	22	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1656	1759	1436	3335	1782			1646	1583	1719	1350	
Flt Permitted	0.23	1.00	1.00	0.95	1.00			0.72	1.00	0.39	1.00	
Satd. Flow (perm)	408	1759	1436	3335	1782			1245	1583	707	1350	
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)	12	823	62	86	751	14	199	1	336	23	1	9
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	118	0	7	0
Lane Group Flow (vph)	12	823	38	86	765	0	0	200	218	23	3	0
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	9%	8%	11%	5%	6%	23%	10%	0%	2%	5%	100%	13%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	72.0	72.0	72.0	12.8	82.8			21.2	34.0	21.2	21.2	
Effective Green, g (s)	72.0	73.5	73.5	12.8	84.3			21.7	34.0	21.7	21.7	
Actuated g/C Ratio	0.60	0.61	0.61	0.11	0.70			0.18	0.28	0.18	0.18	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5			1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	265	1077	879	355	1251			225	501	127	244	
v/s Ratio Prot	0.00	c0.47		0.03	c0.43				0.05		0.00	
v/s Ratio Perm	0.03		0.03					c0.16	0.09	0.03		
v/c Ratio	0.05	0.76	0.04	0.24	0.61			0.89	0.43	0.18	0.01	
Uniform Delay, d1	12.6	16.9	9.3	49.2	9.3			48.0	35.1	41.6	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	5.2	0.1	0.1	2.2			31.0	0.2	0.3	0.0	
Delay (s)	12.7	22.1	9.3	49.3	11.5			79.0	35.4	41.9	40.3	
Level of Service	B	C	A	D	B			E	D	D	D	
Approach Delay (s)		21.1			15.4			51.6			41.4	
Approach LOS		C			B			D			D	

Intersection Summary






















HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	98	2	18	24	0	102	7	146	5	21	64	23
Future Volume (vph)	98	2	18	24	0	102	7	146	5	21	64	23
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	131	3	24	32	0	136	9	195	7	28	85	31
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	131	27	32	136	9	202	28	116				
Volume Left (vph)	131	0	32	0	9	0	28	0				
Volume Right (vph)	0	24	0	136	0	7	0	31				
Hadj (s)	0.55	-0.62	0.50	-0.56	1.06	0.07	0.50	-0.06				
Departure Headway (s)	6.2	5.0	6.2	5.1	6.6	5.6	6.1	5.6				
Degree Utilization, x	0.23	0.04	0.05	0.19	0.02	0.31	0.05	0.18				
Capacity (veh/h)	548	668	548	663	519	612	553	611				
Control Delay (s)	9.8	7.0	8.3	8.1	8.5	10.0	8.2	8.6				
Approach Delay (s)	9.3		8.1		9.9		8.5					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			9.0									
Level of Service			A									
Intersection Capacity Utilization			35.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	28	106	0
Future Volume (Veh/h)	0	0	0	28	106	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Hourly flow rate (vph)	0	0	0	64	241	0
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	305	241	241			
vC1, stage 1 conf vol	241					
vC2, stage 2 conf vol	64					
vCu, unblocked vol	305	241	241			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	773	803	1337			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	64	241		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.04	0.14		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			9.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	774	66	95	706	13	230	1	402	22	1	8
Future Volume (vph)	11	774	66	95	706	13	230	1	402	22	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1656	1759	1436	3335	1782			1646	1583	1719	1350	
Flt Permitted	0.20	1.00	1.00	0.95	1.00			0.72	1.00	0.35	1.00	
Satd. Flow (perm)	351	1759	1436	3335	1782			1245	1583	631	1350	
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)	12	823	70	101	751	14	245	1	428	23	1	9
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	100	0	7	0
Lane Group Flow (vph)	12	823	42	101	765	0	0	246	328	23	3	0
Confl. Bikes (#/hr)			2			2						
Heavy Vehicles (%)	9%	8%	11%	5%	6%	23%	10%	0%	2%	5%	100%	13%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	65.2	65.2	65.2	15.6	78.8			25.2	40.8	25.2	25.2	
Effective Green, g (s)	65.2	66.7	66.7	15.6	80.3			25.7	40.8	25.7	25.7	
Actuated g/C Ratio	0.54	0.56	0.56	0.13	0.67			0.21	0.34	0.21	0.21	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5			1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	212	977	798	433	1192			266	590	135	289	
v/s Ratio Prot	0.00	c0.47		0.03	c0.43				0.07		0.00	
v/s Ratio Perm	0.03		0.03					c0.20	0.13	0.04		
v/c Ratio	0.06	0.84	0.05	0.23	0.64			0.92	0.56	0.17	0.01	
Uniform Delay, d1	16.3	22.3	12.2	46.8	11.5			46.2	32.2	38.5	37.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	8.8	0.1	0.1	2.7			35.0	0.6	0.2	0.0	
Delay (s)	16.3	31.0	12.3	46.9	14.2			81.2	32.9	38.7	37.1	
Level of Service	B	C	B	D	B			F	C	D	D	
Approach Delay (s)		29.4			18.0			50.5			38.2	
Approach LOS		C			B			D			D	

Intersection Summary





















HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	98	2	18	24	0	102	7	275	5	21	86	23
Future Volume (vph)	98	2	18	24	0	102	7	275	5	21	86	23
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	131	3	24	32	0	136	9	367	7	28	115	31
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	131	27	32	136	9	374	28	146				
Volume Left (vph)	131	0	32	0	9	0	28	0				
Volume Right (vph)	0	24	0	136	0	7	0	31				
Hadj (s)	0.55	-0.62	0.50	-0.56	1.06	0.05	0.50	-0.01				
Departure Headway (s)	6.8	5.7	6.8	5.7	6.8	5.7	6.5	5.9				
Degree Utilization, x	0.25	0.04	0.06	0.22	0.02	0.60	0.05	0.24				
Capacity (veh/h)	490	582	489	578	511	610	525	572				
Control Delay (s)	10.9	7.7	9.0	9.1	8.7	15.7	8.6	9.6				
Approach Delay (s)	10.3		9.1		15.5		9.5					
Approach LOS	B		A		C		A					
Intersection Summary												
Delay			12.2									
Level of Service			B									
Intersection Capacity Utilization			37.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	129	43	6	28	106	22
Future Volume (Veh/h)	129	43	6	28	106	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.44	0.44	0.44	0.44	0.44	0.44
Hourly flow rate (vph)	293	98	14	64	241	50
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	358	266	291			
vC1, stage 1 conf vol	266					
vC2, stage 2 conf vol	92					
vCu, unblocked vol	358	266	291			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	61	87	99			
cM capacity (veh/h)	744	778	1282			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	391	14	64	291		
Volume Left	293	14	0	0		
Volume Right	98	0	0	50		
cSH	752	1282	1700	1700		
Volume to Capacity	0.52	0.01	0.04	0.17		
Queue Length 95th (ft)	76	1	0	0		
Control Delay (s)	14.8	7.8	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	14.8	1.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			7.8			
Intersection Capacity Utilization			24.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	81	787	840	99	179	190
Future Volume (vph)	81	787	840	99	179	190
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)	1687	1827	1795		1770	1568
Flt Permitted	0.15	1.00	1.00		0.95	1.00
Satd. Flow (perm)	275	1827	1795		1770	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	85	828	884	104	188	200
RTOR Reduction (vph)	0	0	3	0	0	156
Lane Group Flow (vph)	85	828	985	0	188	44
Confl. Peds. (#/hr)	2			2		
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	7%	4%	4%	6%	2%	3%
Turn Type	pm+pt	NA	NA		Perm	pm+ov
Protected Phases	5	2	6			5
Permitted Phases	2				4	4
Actuated Green, G (s)	85.5	85.5	76.1		14.0	19.4
Effective Green, g (s)	85.5	87.0	77.6		15.0	19.4
Actuated g/C Ratio	0.78	0.79	0.71		0.14	0.18
Clearance Time (s)	4.0	5.5	5.5		5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5		1.5	3.5
Lane Grp Cap (vph)	283	1444	1266		241	276
v/s Ratio Prot	0.01	c0.45	c0.55			0.01
v/s Ratio Perm	0.22				c0.11	0.02
v/c Ratio	0.30	0.57	0.78		0.78	0.16
Uniform Delay, d1	11.3	4.4	10.6		45.9	38.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	1.7	4.8		13.9	0.3
Delay (s)	12.0	6.1	15.3		59.8	38.7
Level of Service	B	A	B		E	D
Approach Delay (s)		6.6	15.3		49.0	
Approach LOS		A	B		D	

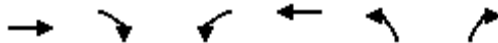
Intersection Summary

HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑	↑	↑	↑	↑	↑	
Traffic Volume (veh/h)	952	10	12	931	9	11	
Future Volume (Veh/h)	952	10	12	931	9	11	
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)	992	10	13	970	9	11	
Pedestrians						1	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						4.0	
Percent Blockage						0	
Right turn flare (veh)							
Median type	TWLTL			None			
Median storage (veh)	2						
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume			1003			1989	993
vC1, stage 1 conf vol						993	
vC2, stage 2 conf vol						996	
vCu, unblocked vol			1003			1989	993
tC, single (s)			4.5			6.7	6.3
tC, 2 stage (s)						5.7	
tF (s)			2.6			3.8	3.4
p0 queue free %			98			96	96
cM capacity (veh/h)			555			220	289
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1		
Volume Total	992	10	13	970	20		
Volume Left	0	0	13	0	9		
Volume Right	0	10	0	0	11		
cSH	1700	1700	555	1700	253		
Volume to Capacity	0.58	0.01	0.02	0.57	0.08		
Queue Length 95th (ft)	0	0	2	0	6		
Control Delay (s)	0.0	0.0	11.6	0.0	20.5		
Lane LOS	B			C			
Approach Delay (s)	0.0		0.2		20.5		
Approach LOS						C	
Intersection Summary							
Average Delay			0.3				
Intersection Capacity Utilization			60.9%	ICU Level of Service		B	
Analysis Period (min)	15						

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↖			↑	↗	↖	↗	
Traffic Volume (vph)	3	921	41	44	898	2	43	1	168	11	1	7
Future Volume (vph)	3	921	41	44	898	2	43	1	168	11	1	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1845	1562	3335	1826			1800	1568	1805	1612	
Flt Permitted	0.23	1.00	1.00	0.95	1.00			0.73	1.00	0.73	1.00	
Satd. Flow (perm)	446	1845	1562	3335	1826			1369	1568	1381	1612	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	969	43	46	945	2	45	1	177	12	1	7
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	100	0	7	0
Lane Group Flow (vph)	3	969	32	46	947	0	0	46	77	12	1	0
Confl. Peds. (#/hr)	2					2	3					3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	0%	3%	2%	5%	4%	0%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	88.8	88.8	88.8	10.2	98.0			7.0	17.2	7.0	7.0	
Effective Green, g (s)	88.8	90.3	90.3	10.2	99.5			7.5	17.2	7.5	7.5	
Actuated g/C Ratio	0.74	0.75	0.75	0.08	0.83			0.06	0.14	0.06	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	341	1388	1175	283	1514			85	277	86	100	
v/s Ratio Prot	0.00	c0.53		0.01	c0.52				0.02		0.00	
v/s Ratio Perm	0.01		0.02					c0.03	0.03	0.01		
v/c Ratio	0.01	0.70	0.03	0.16	0.63			0.54	0.28	0.14	0.01	
Uniform Delay, d1	6.2	7.7	3.8	50.9	3.6			54.6	45.9	53.2	52.8	
Progression Factor	1.00	1.00	1.00	0.89	0.43			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	2.9	0.0	0.3	1.5			7.6	0.9	0.9	0.1	
Delay (s)	6.2	10.7	3.8	45.8	3.0			62.2	46.8	54.1	52.9	
Level of Service	A	B	A	D	A			E	D	D	D	
Approach Delay (s)		10.4			5.0			50.0			53.6	
Approach LOS		B			A			D			D	

Intersection Summary

HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	678	405	8	660	26	261	11	10	37	22	30
Future Volume (vph)	19	678	405	8	660	26	261	11	10	37	22	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1827	1573	1444	1810	1578	1787	1665		1626	1667	
Flt Permitted	0.23	1.00	1.00	0.23	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	395	1827	1573	351	1810	1578	1787	1665		1626	1667	
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)	21	737	440	9	717	28	284	12	11	40	24	33
RTOR Reduction (vph)	0	0	83	0	0	12	0	10	0	0	31	0
Lane Group Flow (vph)	21	737	358	9	717	16	284	13	0	40	26	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	11%	4%	1%	25%	5%	0%	1%	9%	0%	11%	0%	7%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	72.7	70.7	95.5	70.7	69.7	69.7	24.8	7.7		22.1	5.0	
Effective Green, g (s)	72.7	71.7	97.5	70.7	70.7	70.7	24.8	9.2		22.1	6.5	
Actuated g/C Ratio	0.61	0.60	0.81	0.59	0.59	0.59	0.21	0.08		0.18	0.05	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	259	1091	1278	215	1066	929	369	127		299	90	
v/s Ratio Prot	c0.00	c0.40	0.06	0.00	0.40		c0.16	0.01		0.02	c0.02	
v/s Ratio Perm	0.05		0.17	0.02		0.01						
v/c Ratio	0.08	0.68	0.28	0.04	0.67	0.02	0.77	0.10		0.13	0.29	
Uniform Delay, d1	13.1	16.3	2.7	13.5	16.8	10.2	44.9	51.6		40.9	54.5	
Progression Factor	0.70	0.72	0.71	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.6	0.1	0.0	3.4	0.0	9.6	0.4		0.2	2.1	
Delay (s)	9.2	14.3	2.1	13.5	20.2	10.3	54.5	52.0		41.2	56.6	
Level of Service	A	B	A	B	C	B	D	D		D	E	
Approach Delay (s)		9.7			19.7			54.3			50.2	
Approach LOS		A			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.67	C
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	63.9%	16.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		B

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	62	1	1	0	1	4	0	18	1	6	5	27
Future Volume (vph)	62	1	1	0	1	4	0	18	1	6	5	27
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	85	1	1	0	1	5	0	25	1	8	7	37
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	85	2	0	6	0	26	8	44				
Volume Left (vph)	85	0	0	0	0	0	8	0				
Volume Right (vph)	0	1	0	5	0	1	0	37				
Hadj (s)	0.50	-0.35	0.00	0.05	0.00	0.32	0.50	-0.53				
Departure Headway (s)	5.2	4.3	4.8	4.8	4.8	5.1	5.3	4.2				
Degree Utilization, x	0.12	0.00	0.00	0.01	0.00	0.04	0.01	0.05				
Capacity (veh/h)	681	805	753	725	747	683	659	822				
Control Delay (s)	7.7	6.2	6.6	6.7	6.6	7.1	7.1	6.3				
Approach Delay (s)	7.7		6.7		7.1		6.4					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.2									
Level of Service			A									
Intersection Capacity Utilization			23.4%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	11	0	0
Future Volume (Veh/h)	0	0	0	11	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	0	0	0	17	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage (veh)			2	2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	17	0	0			
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	17					
vCu, unblocked vol	17	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	987	1091	1636			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	17	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.01	0.00		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			7.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	82	824	987	100	182	193
Future Volume (vph)	82	824	987	100	182	193
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)	1687	1827	1799		1770	1568
Flt Permitted	0.08	1.00	1.00		0.95	1.00
Satd. Flow (perm)	133	1827	1799		1770	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	867	1039	105	192	203
RTOR Reduction (vph)	0	0	3	0	0	112
Lane Group Flow (vph)	86	867	1141	0	192	91
Confl. Peds. (#/hr)	2			2		
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	7%	4%	4%	6%	2%	3%
Turn Type	pm+pt	NA	NA		Perm	pm+ov
Protected Phases	5	2	6			5
Permitted Phases	2				4	4
Actuated Green, G (s)	85.3	85.3	75.8		14.2	19.7
Effective Green, g (s)	85.3	86.8	77.3		15.2	19.7
Actuated g/C Ratio	0.78	0.79	0.70		0.14	0.18
Clearance Time (s)	4.0	5.5	5.5		5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5		1.5	3.5
Lane Grp Cap (vph)	180	1441	1264		244	280
v/s Ratio Prot	0.02	c0.47	c0.63			0.02
v/s Ratio Perm	0.34				c0.11	0.04
v/c Ratio	0.48	0.60	0.90		0.79	0.32
Uniform Delay, d1	21.0	4.7	13.3		45.8	39.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	1.9	10.6		14.2	0.8
Delay (s)	23.4	6.5	23.9		60.1	40.1
Level of Service	C	A	C		E	D
Approach Delay (s)		8.0	23.9		49.8	
Approach LOS		A	C		D	

Intersection Summary

HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	
Traffic Volume (veh/h)	991	10	12	1078	10	12
Future Volume (Veh/h)	991	10	12	1078	10	12
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)	1032	10	13	1123	10	13
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1043			2182 1033
vC1, stage 1 conf vol						1033
vC2, stage 2 conf vol						1149
vCu, unblocked vol			1043			2182 1033
tC, single (s)			4.5			6.7 6.3
tC, 2 stage (s)						5.7
tF (s)			2.6			3.8 3.4
p0 queue free %			98			95 95
cM capacity (veh/h)			535			192 273
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1032	10	13	1123	23	
Volume Left	0	0	13	0	10	
Volume Right	0	10	0	0	13	
cSH	1700	1700	535	1700	231	
Volume to Capacity	0.61	0.01	0.02	0.66	0.10	
Queue Length 95th (ft)	0	0	2	0	8	
Control Delay (s)	0.0	0.0	11.9	0.0	22.3	
Lane LOS	B			C		
Approach Delay (s)	0.0		0.1		22.3	
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			67.6%	ICU Level of Service	C	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	943	60	78	934	2	154	1	372	11	1	7
Future Volume (vph)	3	943	60	78	934	2	154	1	372	11	1	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1845	1562	3335	1826			1798	1568	1805	1612	
Flt Permitted	0.14	1.00	1.00	0.95	1.00			0.72	1.00	0.44	1.00	
Satd. Flow (perm)	272	1845	1562	3335	1826			1363	1568	844	1612	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	993	63	82	983	2	162	1	392	12	1	7
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	81	0	6	0
Lane Group Flow (vph)	3	993	39	82	985	0	0	163	311	12	2	0
Confl. Peds. (#/hr)	2					2	3					3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	0%	3%	2%	5%	4%	0%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	73.5	73.5	73.5	14.1	86.6			18.4	32.5	18.4	18.4	
Effective Green, g (s)	73.5	75.0	75.0	14.1	88.1			18.9	32.5	18.9	18.9	
Actuated g/C Ratio	0.61	0.62	0.62	0.12	0.73			0.16	0.27	0.16	0.16	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	179	1153	976	391	1340			214	476	132	253	
v/s Ratio Prot	0.00	c0.54		0.02	c0.54				0.08		0.00	
v/s Ratio Perm	0.01		0.03					c0.12	0.12	0.01		
v/c Ratio	0.02	0.86	0.04	0.21	0.74			0.76	0.65	0.09	0.01	
Uniform Delay, d1	15.2	18.3	8.7	47.9	9.2			48.4	38.8	43.2	42.6	
Progression Factor	1.00	1.00	1.00	0.90	0.60			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	8.5	0.1	0.3	2.5			15.2	3.9	0.4	0.0	
Delay (s)	15.3	26.8	8.7	43.5	8.0			63.6	42.7	43.6	42.7	
Level of Service	B	C	A	D	A			E	D	D	D	
Approach Delay (s)		25.7			10.7			48.8			43.2	
Approach LOS		C			B			D			D	

Intersection Summary

HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	890	411	8	703	37	265	14	10	67	27	53
Future Volume (vph)	26	890	411	8	703	37	265	14	10	67	27	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1827	1573	1444	1810	1578	1787	1674		1626	1634	
Flt Permitted	0.19	1.00	1.00	0.08	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	324	1827	1573	126	1810	1578	1787	1674		1626	1634	
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)	28	967	447	9	764	40	288	15	11	73	29	58
RTOR Reduction (vph)	0	0	77	0	0	17	0	10	0	0	55	0
Lane Group Flow (vph)	28	967	370	9	764	23	288	16	0	73	32	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	11%	4%	1%	25%	5%	0%	1%	9%	0%	11%	0%	7%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	73.3	70.3	94.8	69.3	68.3	68.3	24.5	10.2		20.0	5.7	
Effective Green, g (s)	73.3	71.3	96.8	69.3	69.3	69.3	24.5	11.7		20.0	7.2	
Actuated g/C Ratio	0.61	0.59	0.81	0.58	0.58	0.58	0.20	0.10		0.17	0.06	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	230	1085	1268	83	1045	911	364	163		271	98	
v/s Ratio Prot	c0.00	c0.53	0.06	0.00	0.42		c0.16	0.01		0.04	c0.02	
v/s Ratio Perm	0.07		0.17	0.06		0.01						
v/c Ratio	0.12	0.89	0.29	0.11	0.73	0.03	0.79	0.10		0.27	0.33	
Uniform Delay, d1	14.5	21.0	2.9	21.4	18.5	10.9	45.3	49.3		43.6	54.1	
Progression Factor	0.84	0.73	0.46	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	7.2	0.1	0.2	4.5	0.1	11.5	0.3		0.6	2.3	
Delay (s)	12.3	22.7	1.4	21.6	23.1	10.9	56.8	49.7		44.3	56.4	
Level of Service	B	C	A	C	C	B	E	D		D	E	
Approach Delay (s)		15.9			22.4			56.2			50.9	
Approach LOS		B			C			E			D	





















Intersection Summary

HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	77	1	1	0	1	97	0	110	1	23	22	29
Future Volume (vph)	77	1	1	0	1	97	0	110	1	23	22	29
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	105	1	1	0	1	133	0	151	1	32	30	40
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	105	2	0	134	0	152	32	70				
Volume Left (vph)	105	0	0	0	0	0	32	0				
Volume Right (vph)	0	1	0	133	0	1	0	40				
Hadj (s)	0.50	-0.35	0.00	-0.26	0.00	0.29	0.50	-0.25				
Departure Headway (s)	5.9	5.0	5.3	5.1	5.3	5.6	5.8	5.1				
Degree Utilization, x	0.17	0.00	0.00	0.19	0.00	0.24	0.05	0.10				
Capacity (veh/h)	580	676	648	671	657	616	580	666				
Control Delay (s)	8.9	6.8	7.1	8.1	7.1	9.1	8.0	7.4				
Approach Delay (s)	8.8		8.1		9.1		7.6					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			8.4									
Level of Service			A									
Intersection Capacity Utilization			26.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	11	0	0
Future Volume (Veh/h)	0	0	0	11	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	0	0	0	17	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage veh						
2 2						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	17	0	0			
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	17					
vCu, unblocked vol	17	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	987	1091	1636			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	17	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.01	0.00		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	7.1%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	82	828	1017	123	185	193
Future Volume (vph)	82	828	1017	123	185	193
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)	1687	1827	1794		1770	1568
Flt Permitted	0.05	1.00	1.00		0.95	1.00
Satd. Flow (perm)	89	1827	1794		1770	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	872	1071	129	195	203
RTOR Reduction (vph)	0	0	4	0	0	105
Lane Group Flow (vph)	86	872	1196	0	195	98
Confl. Peds. (#/hr)	2			2		
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	7%	4%	4%	6%	2%	3%
Turn Type	pm+pt	NA	NA		Perm	pm+ov
Protected Phases	5	2	6			5
Permitted Phases	2				4	4
Actuated Green, G (s)	85.2	85.2	75.7		14.3	19.8
Effective Green, g (s)	85.2	86.7	77.2		15.3	19.8
Actuated g/C Ratio	0.77	0.79	0.70		0.14	0.18
Clearance Time (s)	4.0	5.5	5.5		5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5		1.5	3.5
Lane Grp Cap (vph)	148	1440	1259		246	282
v/s Ratio Prot	0.03	c0.48	c0.67			0.02
v/s Ratio Perm	0.42				c0.11	0.05
v/c Ratio	0.58	0.61	0.95		0.79	0.35
Uniform Delay, d1	26.5	4.7	14.7		45.8	39.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	6.1	1.9	16.0		15.0	0.9
Delay (s)	32.6	6.6	30.6		60.8	40.3
Level of Service	C	A	C		E	D
Approach Delay (s)		9.0	30.6		50.3	
Approach LOS		A	C		D	

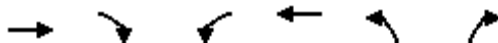
Intersection Summary

HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	
Traffic Volume (veh/h)	998	10	12	1131	10	12
Future Volume (Veh/h)	998	10	12	1131	10	12
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)	1040	10	13	1178	10	13
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1051			2245 1041
vC1, stage 1 conf vol						1041
vC2, stage 2 conf vol						1204
vCu, unblocked vol			1051			2245 1041
tC, single (s)			4.5			6.7 6.3
tC, 2 stage (s)						5.7
tF (s)			2.6			3.8 3.4
p0 queue free %			98			95 95
cM capacity (veh/h)			531			184 270
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	1040	10	13	1178	23	
Volume Left	0	0	13	0	10	
Volume Right	0	10	0	0	13	
cSH	1700	1700	531	1700	224	
Volume to Capacity	0.61	0.01	0.02	0.69	0.10	
Queue Length 95th (ft)	0	0	2	0	8	
Control Delay (s)	0.0	0.0	12.0	0.0	22.9	
Lane LOS	B			C		
Approach Delay (s)	0.0		0.1		22.9	
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			70.4%		ICU Level of Service	C
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↖			↑	↗	↖	↗	
Traffic Volume (vph)	3	943	67	91	934	2	207	1	469	11	1	7
Future Volume (vph)	3	943	67	91	934	2	207	1	469	11	1	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1845	1562	3335	1826			1798	1568	1805	1612	
Flt Permitted	0.10	1.00	1.00	0.95	1.00			0.72	1.00	0.37	1.00	
Satd. Flow (perm)	197	1845	1562	3335	1826			1363	1568	707	1612	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	993	71	96	983	2	218	1	494	12	1	7
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	75	0	6	0
Lane Group Flow (vph)	3	993	44	96	985	0	0	219	419	12	2	0
Confl. Peds. (#/hr)	2					2	3					3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	0%	3%	2%	5%	4%	0%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	67.6	67.6	67.6	15.5	82.1			22.9	38.4	22.9	22.9	
Effective Green, g (s)	67.6	69.1	69.1	15.5	83.6			23.4	38.4	23.4	23.4	
Actuated g/C Ratio	0.56	0.58	0.58	0.13	0.70			0.19	0.32	0.19	0.19	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	124	1062	899	430	1272			265	554	137	314	
v/s Ratio Prot	0.00	c0.54		0.03	c0.54				0.10		0.00	
v/s Ratio Perm	0.01		0.03					c0.16	0.17	0.02		
v/c Ratio	0.02	0.94	0.05	0.22	0.77			0.83	0.76	0.09	0.01	
Uniform Delay, d1	19.6	23.4	11.1	46.9	12.0			46.4	36.6	39.6	38.9	
Progression Factor	1.00	1.00	1.00	0.91	0.61			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	15.8	0.1	0.3	3.0			19.0	6.5	0.3	0.0	
Delay (s)	19.6	39.2	11.2	42.8	10.3			65.4	43.1	39.9	39.0	
Level of Service	B	D	B	D	B			E	D	D	D	
Approach Delay (s)		37.3			13.2			50.0			39.5	
Approach LOS		D			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↗		↖	↗	
Traffic Volume (vph)	26	965	433	8	713	37	268	14	10	67	27	53
Future Volume (vph)	26	965	433	8	713	37	268	14	10	67	27	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	3.0	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1827	1573	1444	1810	1578	1787	1674		1626	1634	
Flt Permitted	0.20	1.00	1.00	0.06	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	336	1827	1573	86	1810	1578	1787	1674		1626	1634	
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)	28	1049	471	9	775	40	291	15	11	73	29	58
RTOR Reduction (vph)	0	0	74	0	0	16	0	10	0	0	55	0
Lane Group Flow (vph)	28	1049	397	9	775	24	291	16	0	73	32	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	11%	4%	1%	25%	5%	0%	1%	9%	0%	11%	0%	7%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	75.4	72.4	94.9	71.4	70.4	70.4	22.5	10.4		17.7	5.6	
Effective Green, g (s)	75.4	73.4	96.9	71.4	71.4	71.4	22.5	11.9		17.7	7.1	
Actuated g/C Ratio	0.63	0.61	0.81	0.60	0.60	0.60	0.19	0.10		0.15	0.06	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	3.5	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	243	1117	1270	62	1076	938	335	166		239	96	
v/s Ratio Prot	c0.00	c0.57	0.06	0.00	0.43		c0.16	0.01		0.04	c0.02	
v/s Ratio Perm	0.07		0.19	0.08		0.02						
v/c Ratio	0.12	0.94	0.31	0.15	0.72	0.03	0.87	0.10		0.31	0.34	
Uniform Delay, d1	13.5	21.3	3.0	24.5	17.2	10.0	47.3	49.2		45.7	54.2	
Progression Factor	0.86	0.77	0.70	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	9.5	0.1	0.4	4.2	0.0	20.9	0.3		0.9	2.5	
Delay (s)	11.6	25.9	2.2	24.9	21.4	10.0	68.2	49.5		46.5	56.7	
Level of Service	B	C	A	C	C	B	E	D		D	E	
Approach Delay (s)		18.4			20.9			66.7			52.0	
Approach LOS		B			C			E			D	






















Intersection Summary

HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	77	1	1	0	1	97	0	260	1	23	42	29
Future Volume (vph)	77	1	1	0	1	97	0	260	1	23	42	29
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	105	1	1	0	1	133	0	356	1	32	58	40
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	105	2	0	134	0	357	32	98				
Volume Left (vph)	105	0	0	0	0	0	32	0				
Volume Right (vph)	0	1	0	133	0	1	0	40				
Hadj (s)	0.50	-0.35	0.00	-0.26	0.00	0.29	0.50	-0.08				
Departure Headway (s)	6.6	5.8	6.1	5.8	5.4	5.7	6.2	5.6				
Degree Utilization, x	0.19	0.00	0.00	0.22	0.00	0.57	0.06	0.15				
Capacity (veh/h)	500	566	555	568	647	613	541	598				
Control Delay (s)	10.0	7.6	7.9	9.2	7.2	14.7	8.4	8.5				
Approach Delay (s)	10.0		9.2		14.7		8.5					
Approach LOS	A		A		B		A					
Intersection Summary												
Delay			11.9									
Level of Service			B									
Intersection Capacity Utilization			37.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	150	0	0	11	0	20
Future Volume (Veh/h)	150	0	0	11	0	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	231	0	0	17	0	31
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
TWLTL TWLTL						
Median storage (veh)			2	2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	32	16	31			
vC1, stage 1 conf vol	16					
vC2, stage 2 conf vol	17					
vCu, unblocked vol	32	16	31			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	100	100			
cM capacity (veh/h)	979	1070	1595			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	231	0	17	31		
Volume Left	231	0	0	0		
Volume Right	0	0	0	31		
cSH	979	1700	1700	1700		
Volume to Capacity	0.24	0.00	0.01	0.02		
Queue Length 95th (ft)	23	0	0	0		
Control Delay (s)	9.8	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	9.8	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			8.1			
Intersection Capacity Utilization			19.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	664	160	79	832	85	155	209	21	155	248	193
Future Volume (vph)	82	664	160	79	832	85	155	209	21	155	248	193
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1687	1827	1583	1736	1863	1504	1770	1837		1770	1863	1568
Flt Permitted	0.11	1.00	1.00	0.23	1.00	1.00	0.21	1.00		0.26	1.00	1.00
Satd. Flow (perm)	204	1827	1583	427	1863	1504	384	1837		488	1863	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	699	168	83	876	89	163	220	22	163	261	203
RTOR Reduction (vph)	0	0	55	0	0	30	0	3	0	0	0	121
Lane Group Flow (vph)	86	699	113	83	876	59	163	239	0	163	261	82
Confl. Peds. (#/hr)	2						2					
Confl. Bikes (#/hr)							1					
Heavy Vehicles (%)	7%	4%	2%	4%	2%	6%	2%	2%	2%	2%	2%	3%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	72.7	67.6	77.7	71.8	67.4	76.5	29.0	18.9		27.5	18.4	23.5
Effective Green, g (s)	72.7	69.1	80.7	72.8	68.9	79.5	30.0	19.9		29.5	19.4	23.5
Actuated g/C Ratio	0.61	0.58	0.67	0.61	0.57	0.66	0.25	0.17		0.25	0.16	0.20
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	186	1052	1064	312	1069	996	218	304		227	301	307
v/s Ratio Prot	c0.02	0.38	0.01	0.01	c0.47	0.01	c0.07	0.13		0.06	c0.14	0.01
v/s Ratio Perm	0.26		0.06	0.15		0.03	0.12			0.12		0.04
v/c Ratio	0.46	0.66	0.11	0.27	0.82	0.06	0.75	0.79		0.72	0.87	0.27
Uniform Delay, d1	19.5	17.5	6.9	13.5	20.5	7.1	38.1	48.0		38.2	49.0	41.0
Progression Factor	1.00	1.00	1.00	1.09	0.96	2.15	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	3.3	0.1	0.1	5.7	0.0	13.5	12.8		10.7	22.6	0.6
Delay (s)	21.7	20.8	7.0	14.8	25.4	15.4	51.5	60.8		48.9	71.6	41.5
Level of Service	C	C	A	B	C	B	D	E		D	E	D
Approach Delay (s)		18.4			23.7			57.1			55.9	
Approach LOS		B			C			E			E	

Intersection Summary

HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis 2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (veh/h)	825	10	12	987	10	12
Future Volume (Veh/h)	825	10	12	987	10	12
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)	859	10	13	1028	10	13
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			870			1914 860
vC1, stage 1 conf vol						860
vC2, stage 2 conf vol						1054
vCu, unblocked vol			870			1914 860
tC, single (s)			4.5			6.7 6.3
tC, 2 stage (s)						5.7
tF (s)			2.6			3.8 3.4
p0 queue free %			98			96 96
cM capacity (veh/h)			629			227 345
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	859	10	13	1028	23	
Volume Left	0	0	13	0	10	
Volume Right	0	10	0	0	13	
cSH	1700	1700	629	1700	282	
Volume to Capacity	0.51	0.01	0.02	0.60	0.08	
Queue Length 95th (ft)	0	0	2	0	7	
Control Delay (s)	0.0	0.0	10.8	0.0	18.9	
Lane LOS	B			C		
Approach Delay (s)	0.0		0.1		18.9	
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			62.8%	ICU Level of Service	B	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	756	81	57	764	2	233	1	293	11	1	7
Future Volume (vph)	3	756	81	57	764	2	233	1	293	11	1	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1845	1562	3335	1826			1798	1568	1805	1612	
Flt Permitted	0.18	1.00	1.00	0.95	1.00			0.72	1.00	0.36	1.00	
Satd. Flow (perm)	351	1845	1562	3335	1826			1362	1568	682	1612	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	796	85	60	804	2	245	1	308	12	1	7
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	85	0	5	0
Lane Group Flow (vph)	3	796	57	60	806	0	0	246	223	12	3	0
Confl. Peds. (#/hr)	2					2	3					3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	0%	3%	2%	5%	4%	0%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	66.6	66.6	66.6	13.4	79.0			26.0	39.4	26.0	26.0	
Effective Green, g (s)	66.6	68.1	68.1	13.4	80.5			26.5	39.4	26.5	26.5	
Actuated g/C Ratio	0.55	0.57	0.57	0.11	0.67			0.22	0.33	0.22	0.22	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	206	1047	886	372	1224			300	567	150	355	
v/s Ratio Prot	0.00	c0.43		0.02	c0.44				0.04		0.00	
v/s Ratio Perm	0.01		0.04					c0.18	0.10	0.02		
v/c Ratio	0.01	0.76	0.06	0.16	0.66			0.82	0.39	0.08	0.01	
Uniform Delay, d1	16.2	19.7	11.7	48.2	11.6			44.5	31.1	37.1	36.5	
Progression Factor	1.54	1.18	1.89	0.85	0.59			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	4.0	0.1	0.3	2.3			16.3	0.8	0.3	0.0	
Delay (s)	24.9	27.4	22.2	41.1	9.1			60.8	31.9	37.4	36.5	
Level of Service	C	C	C	D	A			E	C	D	D	
Approach Delay (s)		26.9			11.3			44.7			37.0	
Approach LOS		C			B			D			D	

Intersection Summary

HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017
























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	736	299	8	563	37	214	14	10	67	27	53
Future Volume (vph)	26	736	299	8	563	37	214	14	10	67	27	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1827	1563	1444	1810	1578	1787	1674		1626	1634	
Flt Permitted	0.30	1.00	1.00	0.21	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	519	1827	1563	320	1810	1578	1787	1674		1626	1634	
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)	28	800	325	9	612	40	233	15	11	73	29	58
RTOR Reduction (vph)	0	0	73	0	0	16	0	10	0	0	54	0
Lane Group Flow (vph)	28	800	252	9	612	24	233	16	0	73	33	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	11%	4%	1%	25%	5%	0%	1%	9%	0%	11%	0%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	76.4	73.4	73.4	72.4	71.4	71.4	21.0	8.6		18.5	6.1	
Effective Green, g (s)	76.4	74.4	74.4	72.4	72.4	72.4	21.0	10.1		18.5	7.6	
Actuated g/C Ratio	0.64	0.62	0.62	0.60	0.60	0.60	0.18	0.08		0.15	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	4.0	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	358	1132	969	202	1092	952	312	140		250	103	
v/s Ratio Prot	c0.00	c0.44		0.00	0.34		c0.13	0.01		0.04	c0.02	
v/s Ratio Perm	0.05		0.16	0.03		0.02						
v/c Ratio	0.08	0.71	0.26	0.04	0.56	0.03	0.75	0.11		0.29	0.32	
Uniform Delay, d1	10.2	15.4	10.3	13.3	14.3	9.6	47.0	50.8		44.9	53.7	
Progression Factor	0.57	0.61	0.22	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.9	0.5	0.0	2.1	0.0	9.7	0.4		0.8	2.1	
Delay (s)	5.8	12.3	2.7	13.3	16.3	9.6	56.6	51.2		45.7	55.8	
Level of Service	A	B	A	B	B	A	E	D		D	E	
Approach Delay (s)		9.4			15.9			56.1			51.2	
Approach LOS		A			B			E			D	

Intersection Summary		
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.68	B
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	64.4%	16.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		C

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	77	1	1	0	1	97	0	110	1	23	22	29
Future Volume (vph)	77	1	1	0	1	97	0	110	1	23	22	29
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	105	1	1	0	1	133	0	151	1	32	30	40
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	105	2	0	134	0	152	32	70				
Volume Left (vph)	105	0	0	0	0	0	32	0				
Volume Right (vph)	0	1	0	133	0	1	0	40				
Hadj (s)	0.50	-0.35	0.00	-0.26	0.00	0.29	0.50	-0.25				
Departure Headway (s)	5.9	5.0	5.3	5.1	5.3	5.6	5.8	5.1				
Degree Utilization, x	0.17	0.00	0.00	0.19	0.00	0.24	0.05	0.10				
Capacity (veh/h)	580	676	648	671	657	616	580	666				
Control Delay (s)	8.9	6.8	7.1	8.1	7.1	9.1	8.0	7.4				
Approach Delay (s)	8.8		8.1		9.1		7.6					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			8.4									
Level of Service			A									
Intersection Capacity Utilization			26.9%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	11	0	0
Future Volume (Veh/h)	0	0	0	11	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	0	0	0	17	0	0
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	17	0	0			
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	17					
vCu, unblocked vol	17	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	987	1091	1636			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	17	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.01	0.00		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	7.1%		ICU Level of Service	A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

24: SW 124th Avenue & SW Blake Street

04/06/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑	↗	↙	↗
Traffic Volume (veh/h)	0	0	385	0	0	487
Future Volume (Veh/h)	0	0	385	0	0	487
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	418	0	0	529
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	947	418			418	
vC1, stage 1 conf vol	418					
vC2, stage 2 conf vol	529					
vCu, unblocked vol	947	418			418	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	499	635			1141	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	418	0	0	529	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.25	0.00	0.00	0.31	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			29.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	668	160	101	862	108	155	209	24	158	248	193
Future Volume (vph)	82	668	160	101	862	108	155	209	24	158	248	193
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1687	1827	1583	1736	1863	1504	1770	1834		1770	1863	1568
Flt Permitted	0.10	1.00	1.00	0.22	1.00	1.00	0.21	1.00		0.25	1.00	1.00
Satd. Flow (perm)	177	1827	1583	406	1863	1504	386	1834		467	1863	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	703	168	106	907	114	163	220	25	166	261	203
RTOR Reduction (vph)	0	0	57	0	0	38	0	3	0	0	0	113
Lane Group Flow (vph)	86	703	111	106	907	76	163	242	0	166	261	90
Confl. Peds. (#/hr)	2					2						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	7%	4%	2%	4%	2%	6%	2%	2%	2%	2%	2%	3%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	71.9	66.8	76.5	73.4	67.8	76.6	28.5	18.8		27.2	18.4	23.5
Effective Green, g (s)	71.9	68.3	79.5	74.4	69.3	79.6	29.5	19.8		29.2	19.4	23.5
Actuated g/C Ratio	0.60	0.57	0.66	0.62	0.58	0.66	0.25	0.17		0.24	0.16	0.20
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	170	1039	1048	319	1075	997	212	302		220	301	307
v/s Ratio Prot	c0.02	0.38	0.01	0.02	c0.49	0.01	c0.07	0.13		0.06	c0.14	0.01
v/s Ratio Perm	0.28		0.06	0.19		0.04	0.12			0.12		0.04
v/c Ratio	0.51	0.68	0.11	0.33	0.84	0.08	0.77	0.80		0.75	0.87	0.29
Uniform Delay, d1	20.7	18.1	7.4	13.7	20.9	7.2	38.5	48.2		38.5	49.0	41.2
Progression Factor	1.00	1.00	1.00	1.08	0.93	2.12	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	3.5	0.1	0.2	6.1	0.0	15.8	14.4		14.1	22.6	0.6
Delay (s)	23.5	21.7	7.4	14.9	25.4	15.2	54.2	62.6		52.6	71.6	41.8
Level of Service	C	C	A	B	C	B	D	E		D	E	D
Approach Delay (s)		19.3			23.4			59.3			57.0	
Approach LOS		B			C			E			E	

Intersection Summary

HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017

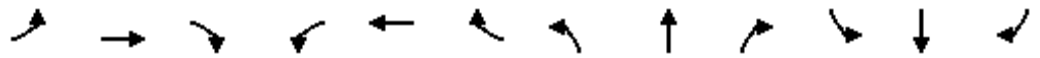


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	835	10	12	1062	10	12
Future Volume (Veh/h)	835	10	12	1062	10	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	870	10	13	1106	10	13
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			881			2003
vC1, stage 1 conf vol						871
vC2, stage 2 conf vol						1132
vCu, unblocked vol			881			2003
tC, single (s)			4.5			6.7
tC, 2 stage (s)						5.7
tF (s)			2.6			3.8
p0 queue free %			98			95
cM capacity (veh/h)			622			212
						340
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	870	10	13	1106	23	
Volume Left	0	0	13	0	10	
Volume Right	0	10	0	0	13	
cSH	1700	1700	622	1700	269	
Volume to Capacity	0.51	0.01	0.02	0.65	0.09	
Queue Length 95th (ft)	0	0	2	0	7	
Control Delay (s)	0.0	0.0	10.9	0.0	19.6	
Lane LOS	B			C		
Approach Delay (s)	0.0		0.1		19.6	
Approach LOS						C
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			66.7%	ICU Level of Service	C	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	756	91	67	764	2	308	1	368	11	1	7
Future Volume (vph)	3	756	91	67	764	2	308	1	368	11	1	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1845	1562	3335	1826			1798	1568	1805	1612	
Flt Permitted	0.13	1.00	1.00	0.95	1.00			0.72	1.00	0.30	1.00	
Satd. Flow (perm)	253	1845	1562	3335	1826			1362	1568	565	1612	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	796	96	71	804	2	324	1	387	12	1	7
RTOR Reduction (vph)	0	0	32	0	0	0	0	0	78	0	5	0
Lane Group Flow (vph)	3	796	64	71	806	0	0	325	309	12	3	0
Confl. Peds. (#/hr)	2					2	3					3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	0%	3%	2%	5%	4%	0%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	59.3	59.3	59.3	14.8	73.1			31.9	46.7	31.9	31.9	
Effective Green, g (s)	59.3	60.8	60.8	14.8	74.6			32.4	46.7	32.4	32.4	
Actuated g/C Ratio	0.49	0.51	0.51	0.12	0.62			0.27	0.39	0.27	0.27	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	137	934	791	411	1135			367	662	152	435	
v/s Ratio Prot	0.00	c0.43		0.02	c0.44				0.06		0.00	
v/s Ratio Perm	0.01		0.04					c0.24	0.14	0.02		
v/c Ratio	0.02	0.85	0.08	0.17	0.71			0.89	0.47	0.08	0.01	
Uniform Delay, d1	21.0	25.7	15.2	47.1	15.4			42.0	27.4	32.7	32.0	
Progression Factor	1.47	1.06	1.64	0.85	0.63			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	7.3	0.1	0.3	3.1			22.0	0.9	0.3	0.0	
Delay (s)	30.9	34.5	25.1	40.2	12.8			64.0	28.3	32.9	32.0	
Level of Service	C	C	C	D	B			E	C	C	C	
Approach Delay (s)		33.5			15.0			44.6			32.6	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	796	314	8	571	37	216	14	10	67	27	53
Future Volume (vph)	26	796	314	8	571	37	216	14	10	67	27	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1827	1563	1444	1810	1578	1787	1674		1626	1634	
Flt Permitted	0.30	1.00	1.00	0.17	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	511	1827	1563	263	1810	1578	1787	1674		1626	1634	
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)	28	865	341	9	621	40	235	15	11	73	29	58
RTOR Reduction (vph)	0	0	70	0	0	16	0	10	0	0	54	0
Lane Group Flow (vph)	28	865	271	9	621	24	235	16	0	73	33	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	11%	4%	1%	25%	5%	0%	1%	9%	0%	11%	0%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	76.7	73.7	73.7	72.7	71.7	71.7	20.7	8.6		18.2	6.1	
Effective Green, g (s)	76.7	74.7	74.7	72.7	72.7	72.7	20.7	10.1		18.2	7.6	
Actuated g/C Ratio	0.64	0.62	0.62	0.61	0.61	0.61	0.17	0.08		0.15	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	4.0	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	354	1137	972	169	1096	956	308	140		246	103	
v/s Ratio Prot	c0.00	c0.47		0.00	0.34		c0.13	0.01		0.04	c0.02	
v/s Ratio Perm	0.05		0.17	0.03		0.02						
v/c Ratio	0.08	0.76	0.28	0.05	0.57	0.03	0.76	0.11		0.30	0.32	
Uniform Delay, d1	10.1	16.2	10.3	14.7	14.2	9.5	47.3	50.8		45.2	53.7	
Progression Factor	0.70	0.64	0.40	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	3.5	0.5	0.0	2.1	0.0	11.0	0.4		0.8	2.1	
Delay (s)	7.1	13.9	4.6	14.7	16.3	9.5	58.3	51.2		46.0	55.8	
Level of Service	A	B	A	B	B	A	E	D		D	E	
Approach Delay (s)		11.1			15.9			57.6			51.3	
Approach LOS		B			B			E			D	






















Intersection Summary

HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	77	1	1	0	1	97	0	260	1	23	42	29
Future Volume (vph)	77	1	1	0	1	97	0	260	1	23	42	29
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	105	1	1	0	1	133	0	356	1	32	58	40
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	105	2	0	134	0	357	32	98				
Volume Left (vph)	105	0	0	0	0	0	32	0				
Volume Right (vph)	0	1	0	133	0	1	0	40				
Hadj (s)	0.50	-0.35	0.00	-0.26	0.00	0.29	0.50	-0.08				
Departure Headway (s)	6.6	5.8	6.1	5.8	5.4	5.7	6.2	5.6				
Degree Utilization, x	0.19	0.00	0.00	0.22	0.00	0.57	0.06	0.15				
Capacity (veh/h)	500	566	555	568	647	613	541	598				
Control Delay (s)	10.0	7.6	7.9	9.2	7.2	14.7	8.4	8.5				
Approach Delay (s)	10.0		9.2		14.7		8.5					
Approach LOS	A		A		B		A					
Intersection Summary												
Delay			11.9									
Level of Service			B									
Intersection Capacity Utilization			37.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017














Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	150	0	0	11	0	20
Future Volume (Veh/h)	150	0	0	11	0	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	231	0	0	17	0	31
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	32	16	31			
vC1, stage 1 conf vol	16					
vC2, stage 2 conf vol	17					
vCu, unblocked vol	32	16	31			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	100	100			
cM capacity (veh/h)	979	1070	1595			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	231	0	17	31		
Volume Left	231	0	0	0		
Volume Right	0	0	0	31		
cSH	979	1700	1700	1700		
Volume to Capacity	0.24	0.00	0.01	0.02		
Queue Length 95th (ft)	23	0	0	0		
Control Delay (s)	9.8	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	9.8	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			8.1			
Intersection Capacity Utilization			19.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

24: SW 124th Avenue & SW Blake Street

04/06/2017

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	388	0	0	509
Future Volume (Veh/h)	0	0	388	0	0	509
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	422	0	0	553
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	975	422			422	
vC1, stage 1 conf vol	422					
vC2, stage 2 conf vol	553					
vCu, unblocked vol	975	422			422	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	489	632			1137	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	0	422	0	0	553	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.25	0.00	0.00	0.33	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	30.5%		ICU Level of Service		A	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	664	160	5	832	85	155	209	5	155	248	193
Future Volume (vph)	82	664	160	5	832	85	155	209	5	155	248	193
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1687	1827	1583	1736	1863	1504	1770	1857		1770	1863	1568
Flt Permitted	0.10	1.00	1.00	0.26	1.00	1.00	0.20	1.00		0.35	1.00	1.00
Satd. Flow (perm)	178	1827	1583	479	1863	1504	370	1857		651	1863	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	699	168	5	876	89	163	220	5	163	261	203
RTOR Reduction (vph)	0	0	51	0	0	31	0	1	0	0	0	113
Lane Group Flow (vph)	86	699	117	5	876	58	163	224	0	163	261	90
Confl. Peds. (#/hr)	2						2					
Confl. Bikes (#/hr)							1					
Heavy Vehicles (%)	7%	4%	2%	4%	2%	6%	2%	2%	2%	2%	2%	3%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	75.2	70.1	80.3	67.1	66.3	74.8	30.8	20.6		27.9	19.4	24.5
Effective Green, g (s)	75.2	71.6	83.3	68.1	67.8	77.8	31.8	21.6		29.9	20.4	24.5
Actuated g/C Ratio	0.63	0.60	0.69	0.57	0.56	0.65	0.27	0.18		0.25	0.17	0.20
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	175	1090	1098	285	1052	975	222	334		250	316	320
v/s Ratio Prot	c0.02	0.38	0.01	0.00	c0.47	0.00	c0.07	0.12		0.05	c0.14	0.01
v/s Ratio Perm	0.29		0.06	0.01		0.03	0.13			0.11		0.05
v/c Ratio	0.49	0.64	0.11	0.02	0.83	0.06	0.73	0.67		0.65	0.83	0.28
Uniform Delay, d1	20.6	15.8	6.1	13.5	21.4	7.7	36.7	45.9		37.6	48.1	40.3
Progression Factor	1.00	1.00	1.00	1.29	1.04	2.33	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	2.9	0.1	0.0	6.6	0.0	12.2	5.4		6.2	16.4	0.6
Delay (s)	23.2	18.7	6.1	17.3	28.8	18.0	48.9	51.3		43.9	64.5	40.9
Level of Service	C	B	A	B	C	B	D	D		D	E	D
Approach Delay (s)		16.9			27.7			50.3			51.5	
Approach LOS		B			C			D			D	

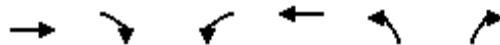
Intersection Summary

HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	804	10	12	908	10	12
Future Volume (Veh/h)	804	10	12	908	10	12
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)	838	10	13	946	10	13
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			849		1811	839
vC1, stage 1 conf vol					839	
vC2, stage 2 conf vol					972	
vCu, unblocked vol			849		1811	839
tC, single (s)			4.5		6.7	6.3
tC, 2 stage (s)					5.7	
tF (s)			2.6		3.8	3.4
p0 queue free %			98		96	96
cM capacity (veh/h)			641		245	355
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	838	10	13	946	23	
Volume Left	0	0	13	0	10	
Volume Right	0	10	0	0	13	
cSH	1700	1700	641	1700	297	
Volume to Capacity	0.49	0.01	0.02	0.56	0.08	
Queue Length 95th (ft)	0	0	2	0	6	
Control Delay (s)	0.0	0.0	10.7	0.0	18.1	
Lane LOS	B			C		
Approach Delay (s)	0.0		0.1		18.1	
Approach LOS					C	
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			58.6%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	756	60	57	764	2	154	1	293	11	1	7
Future Volume (vph)	3	756	60	57	764	2	154	1	293	11	1	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1845	1562	3335	1826			1798	1568	1805	1612	
Flt Permitted	0.23	1.00	1.00	0.95	1.00			0.72	1.00	0.44	1.00	
Satd. Flow (perm)	443	1845	1562	3335	1826			1363	1568	838	1612	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	796	63	60	804	2	162	1	308	12	1	7
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	122	0	6	0
Lane Group Flow (vph)	3	796	39	60	806	0	0	163	186	12	2	0
Confl. Peds. (#/hr)	2					2	3					3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	0%	3%	2%	5%	4%	0%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	73.4	73.4	73.4	14.4	86.8			18.2	32.6	18.2	18.2	
Effective Green, g (s)	73.4	74.9	74.9	14.4	88.3			18.7	32.6	18.7	18.7	
Actuated g/C Ratio	0.61	0.62	0.62	0.12	0.74			0.16	0.27	0.16	0.16	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	282	1151	974	400	1343			212	478	130	251	
v/s Ratio Prot	0.00	c0.43		0.02	c0.44				0.05		0.00	
v/s Ratio Perm	0.01		0.03					c0.12	0.07	0.01		
v/c Ratio	0.01	0.69	0.04	0.15	0.60			0.77	0.39	0.09	0.01	
Uniform Delay, d1	11.8	14.9	8.7	47.3	7.5			48.6	35.6	43.4	42.8	
Progression Factor	1.30	0.98	1.68	0.84	0.56			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	2.8	0.1	0.2	1.6			15.8	0.9	0.4	0.0	
Delay (s)	15.4	17.4	14.7	40.2	5.8			64.4	36.5	43.7	42.8	
Level of Service	B	B	B	D	A			E	D	D	D	
Approach Delay (s)		17.2			8.2			46.1			43.4	
Approach LOS		B			A			D			D	

Intersection Summary

HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	736	299	8	563	37	214	14	10	67	27	53
Future Volume (vph)	26	736	299	8	563	37	214	14	10	67	27	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1827	1563	1444	1810	1578	1787	1674		1626	1634	
Flt Permitted	0.30	1.00	1.00	0.21	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	519	1827	1563	320	1810	1578	1787	1674		1626	1634	
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)	28	800	325	9	612	40	233	15	11	73	29	58
RTOR Reduction (vph)	0	0	70	0	0	16	0	10	0	0	54	0
Lane Group Flow (vph)	28	800	255	9	612	24	233	16	0	73	33	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	11%	4%	1%	25%	5%	0%	1%	9%	0%	11%	0%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	76.4	73.4	73.4	72.4	71.4	71.4	21.0	8.5		18.6	6.1	
Effective Green, g (s)	76.4	74.4	74.4	72.4	72.4	72.4	21.0	10.0		18.6	7.6	
Actuated g/C Ratio	0.64	0.62	0.62	0.60	0.60	0.60	0.18	0.08		0.16	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	4.0	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	358	1132	969	202	1092	952	312	139		252	103	
v/s Ratio Prot	c0.00	c0.44		0.00	0.34		c0.13	0.01		0.04	c0.02	
v/s Ratio Perm	0.05		0.16	0.03		0.02						
v/c Ratio	0.08	0.71	0.26	0.04	0.56	0.03	0.75	0.11		0.29	0.32	
Uniform Delay, d1	10.2	15.4	10.4	13.3	14.3	9.6	47.0	50.9		44.9	53.7	
Progression Factor	0.59	0.68	0.33	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	3.0	0.5	0.0	2.1	0.0	9.7	0.4		0.8	2.1	
Delay (s)	6.1	13.5	4.0	13.3	16.3	9.6	56.6	51.3		45.6	55.8	
Level of Service	A	B	A	B	B	A	E	D		D	E	
Approach Delay (s)		10.6			15.9			56.1			51.2	
Approach LOS		B			B			E			D	

Intersection Summary

HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	→		↰	→		↰	→		↰	→	
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	68	1	12	21	1	80	4	97	5	19	57	25
Future Volume (vph)	68	1	12	21	1	80	4	97	5	19	57	25
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	93	1	16	29	1	110	5	133	7	26	78	34

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	93	17	29	111	5	140	26	112
Volume Left (vph)	93	0	29	0	5	0	26	0
Volume Right (vph)	0	16	0	110	0	7	0	34
Hadj (s)	0.50	-0.66	0.50	-0.26	0.50	0.32	0.50	0.02
Departure Headway (s)	5.9	4.7	5.9	5.1	5.8	5.6	5.8	5.3
Degree Utilization, x	0.15	0.02	0.05	0.16	0.01	0.22	0.04	0.17
Capacity (veh/h)	576	711	578	665	591	612	587	642
Control Delay (s)	8.8	6.7	8.0	7.9	7.7	9.0	7.9	8.2
Approach Delay (s)	8.4		7.9		9.0		8.1	
Approach LOS	A		A		A		A	

Intersection Summary		
Delay		8.4
Level of Service		A
Intersection Capacity Utilization	26.2%	ICU Level of Service
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	30	95	0
Future Volume (Veh/h)	0	0	0	30	95	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	0	0	0	46	146	0
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	192	146	146			
vC1, stage 1 conf vol	146					
vC2, stage 2 conf vol	46					
vCu, unblocked vol	192	146	146			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	854	906	1448			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	0	0	46	146		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.03	0.09		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay	0.0					
Intersection Capacity Utilization	8.8%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

24: SW 124th Avenue & SW Blake Street

04/06/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑	↘	↙	↘
Traffic Volume (veh/h)	79	0	364	21	0	408
Future Volume (Veh/h)	79	0	364	21	0	408
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	0	396	23	0	443
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	839	396			419	
vC1, stage 1 conf vol	396					
vC2, stage 2 conf vol	443					
vCu, unblocked vol	839	396			419	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	100			100	
cM capacity (veh/h)	540	653			1140	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	86	396	23	0	443	
Volume Left	86	0	0	0	0	
Volume Right	0	0	23	0	0	
cSH	540	1700	1700	1700	1700	
Volume to Capacity	0.16	0.23	0.01	0.00	0.26	
Queue Length 95th (ft)	14	0	0	0	0	
Control Delay (s)	12.9	0.0	0.0	0.0	0.0	
Lane LOS	B					
Approach Delay (s)	12.9	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			33.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

1: Tualatin-Sherwood Road & SW 124th Avenue

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	667	161	5	854	100	163	217	5	157	249	193
Future Volume (vph)	82	667	161	5	854	100	163	217	5	157	249	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.0	4.0	4.0	3.5	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1687	1827	1583	1736	1863	1504	1770	1857		1770	1863	1568
Flt Permitted	0.09	1.00	1.00	0.27	1.00	1.00	0.21	1.00		0.28	1.00	1.00
Satd. Flow (perm)	167	1827	1583	486	1863	1504	386	1857		522	1863	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	86	702	169	5	899	105	172	228	5	165	262	203
RTOR Reduction (vph)	0	0	50	0	0	35	0	1	0	0	0	113
Lane Group Flow (vph)	86	702	119	5	899	70	172	232	0	165	262	90
Confl. Peds. (#/hr)	2					2						
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	7%	4%	2%	4%	2%	6%	2%	2%	2%	2%	2%	3%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases	2		2	6		6	8			4		4
Actuated Green, G (s)	76.2	71.1	81.2	68.1	67.3	76.6	28.9	18.8		27.8	18.5	23.6
Effective Green, g (s)	76.2	72.6	84.2	69.1	68.8	79.6	29.9	19.8		29.8	19.5	23.6
Actuated g/C Ratio	0.64	0.60	0.70	0.58	0.57	0.66	0.25	0.17		0.25	0.16	0.20
Clearance Time (s)	4.0	5.5	4.5	4.5	5.5	5.0	4.5	5.0		5.0	5.0	4.0
Vehicle Extension (s)	3.5	3.5	3.5	1.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
Lane Grp Cap (vph)	170	1105	1110	293	1068	997	218	306		236	302	308
v/s Ratio Prot	c0.02	0.38	0.01	0.00	c0.48	0.01	c0.07	0.13		0.06	c0.14	0.01
v/s Ratio Perm	0.30		0.06	0.01		0.04	0.13			0.11		0.04
v/c Ratio	0.51	0.64	0.11	0.02	0.84	0.07	0.79	0.76		0.70	0.87	0.29
Uniform Delay, d1	21.1	15.2	5.8	13.0	21.1	7.1	38.3	47.8		37.9	49.0	41.1
Progression Factor	1.00	1.00	1.00	1.27	0.99	2.44	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	2.8	0.1	0.0	6.7	0.0	17.5	10.6		9.0	22.5	0.6
Delay (s)	23.8	18.0	5.8	16.4	27.6	17.4	55.9	58.4		47.0	71.5	41.7
Level of Service	C	B	A	B	C	B	E	E		D	E	D
Approach Delay (s)		16.4			26.4			57.3			55.5	
Approach LOS		B			C			E			E	

Intersection Summary

HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

2: SW 120th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (veh/h)	809	10	12	945	10	12
Future Volume (Veh/h)	809	10	12	945	10	12
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)	843	10	13	984	10	13
Pedestrians						1
Lane Width (ft)						12.0
Walking Speed (ft/s)						4.0
Percent Blockage						0
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage (veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			854			1854 844
vC1, stage 1 conf vol						844
vC2, stage 2 conf vol						1010
vCu, unblocked vol			854			1854 844
tC, single (s)			4.5			6.7 6.3
tC, 2 stage (s)						5.7
tF (s)			2.6			3.8 3.4
p0 queue free %			98			96 96
cM capacity (veh/h)			638			237 353
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	843	10	13	984	23	
Volume Left	0	0	13	0	10	
Volume Right	0	10	0	0	13	
cSH	1700	1700	638	1700	291	
Volume to Capacity	0.50	0.01	0.02	0.58	0.08	
Queue Length 95th (ft)	0	0	2	0	6	
Control Delay (s)	0.0	0.0	10.8	0.0	18.4	
Lane LOS	B			C		
Approach Delay (s)	0.0		0.1		18.4	
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			60.6%	ICU Level of Service	B	
Analysis Period (min)	15					

HCM Signalized Intersection Capacity Analysis

3: SW 115th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖↗	↖			↑	↗	↖	↗	
Traffic Volume (vph)	3	756	65	67	764	2	191	1	368	11	1	7
Future Volume (vph)	3	756	65	67	764	2	191	1	368	11	1	7
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			0.99	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	1845	1562	3335	1826			1798	1568	1805	1612	
Flt Permitted	0.21	1.00	1.00	0.95	1.00			0.72	1.00	0.39	1.00	
Satd. Flow (perm)	390	1845	1562	3335	1826			1363	1568	739	1612	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	796	68	71	804	2	201	1	387	12	1	7
RTOR Reduction (vph)	0	0	28	0	0	0	0	0	99	0	6	0
Lane Group Flow (vph)	3	796	40	71	806	0	0	202	288	12	2	0
Confl. Peds. (#/hr)	2					2	3					3
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	0%	3%	2%	5%	4%	0%	0%	0%	3%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1			4
Permitted Phases	2		2				8		8	4		
Actuated Green, G (s)	66.6	66.6	66.6	18.0	83.6			21.4	39.4	21.4	21.4	
Effective Green, g (s)	66.6	68.1	68.1	18.0	85.1			21.9	39.4	21.9	21.9	
Actuated g/C Ratio	0.55	0.57	0.57	0.15	0.71			0.18	0.33	0.18	0.18	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.5	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	4.5	3.5			3.5	4.5	3.5	3.5	
Lane Grp Cap (vph)	228	1047	886	500	1294			248	567	134	294	
v/s Ratio Prot	0.00	c0.43		0.02	c0.44				0.08		0.00	
v/s Ratio Perm	0.01		0.03					c0.15	0.11	0.02		
v/c Ratio	0.01	0.76	0.05	0.14	0.62			0.81	0.51	0.09	0.01	
Uniform Delay, d1	15.3	19.7	11.5	44.3	9.1			47.1	32.5	40.8	40.2	
Progression Factor	1.22	0.89	1.28	0.84	0.55			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	4.2	0.1	0.2	1.8			18.7	1.2	0.3	0.0	
Delay (s)	18.6	21.8	14.8	37.5	6.9			65.8	33.7	41.1	40.2	
Level of Service	B	C	B	D	A			E	C	D	D	
Approach Delay (s)		21.3			9.3			44.7			40.7	
Approach LOS		C			A			D			D	

Intersection Summary

HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

04/06/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	796	314	8	571	37	216	14	10	67	27	53
Future Volume (vph)	26	796	314	8	571	37	216	14	10	67	27	53
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	3.5		4.0	3.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	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		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	1827	1563	1444	1810	1578	1787	1674		1626	1634	
Flt Permitted	0.30	1.00	1.00	0.17	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	511	1827	1563	263	1810	1578	1787	1674		1626	1634	
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)	28	865	341	9	621	40	235	15	11	73	29	58
RTOR Reduction (vph)	0	0	70	0	0	16	0	10	0	0	54	0
Lane Group Flow (vph)	28	865	271	9	621	24	235	16	0	73	33	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			4									
Heavy Vehicles (%)	11%	4%	1%	25%	5%	0%	1%	9%	0%	11%	0%	7%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	76.7	73.7	73.7	72.7	71.7	71.7	20.7	8.6		18.2	6.1	
Effective Green, g (s)	76.7	74.7	74.7	72.7	72.7	72.7	20.7	10.1		18.2	7.6	
Actuated g/C Ratio	0.64	0.62	0.62	0.61	0.61	0.61	0.17	0.08		0.15	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	4.0	4.0	1.5	4.0	4.0	3.5	3.5		3.5	3.5	
Lane Grp Cap (vph)	354	1137	972	169	1096	956	308	140		246	103	
v/s Ratio Prot	c0.00	c0.47		0.00	0.34		c0.13	0.01		0.04	c0.02	
v/s Ratio Perm	0.05		0.17	0.03		0.02						
v/c Ratio	0.08	0.76	0.28	0.05	0.57	0.03	0.76	0.11		0.30	0.32	
Uniform Delay, d1	10.1	16.2	10.3	14.7	14.2	9.5	47.3	50.8		45.2	53.7	
Progression Factor	0.71	0.69	0.38	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	3.6	0.5	0.0	2.1	0.0	11.0	0.4		0.8	2.1	
Delay (s)	7.2	14.8	4.5	14.7	16.3	9.5	58.3	51.2		46.0	55.8	
Level of Service	A	B	A	B	B	A	E	D		D	E	
Approach Delay (s)		11.8			15.9			57.6			51.3	
Approach LOS		B			B			E			D	





















Intersection Summary

HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

5: SW 115th Avenue & SW Itel Street

04/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	68	1	12	21	1	80	4	209	5	19	72	25
Future Volume (vph)	68	1	12	21	1	80	4	209	5	19	72	25
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	93	1	16	29	1	110	5	286	7	26	99	34
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	93	17	29	111	5	293	26	133				
Volume Left (vph)	93	0	29	0	5	0	26	0				
Volume Right (vph)	0	16	0	110	0	7	0	34				
Hadj (s)	0.50	-0.66	0.50	-0.26	0.50	0.31	0.50	0.07				
Departure Headway (s)	6.4	5.3	6.4	5.6	5.9	5.7	6.1	5.6				
Degree Utilization, x	0.17	0.02	0.05	0.17	0.01	0.46	0.04	0.21				
Capacity (veh/h)	521	627	522	593	584	612	563	609				
Control Delay (s)	9.5	7.2	8.5	8.6	7.7	12.3	8.1	8.9				
Approach Delay (s)	9.1		8.6		12.3		8.8					
Approach LOS	A		A		B		A					
Intersection Summary												
Delay			10.3									
Level of Service			B									
Intersection Capacity Utilization			33.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

6: SW 115th Avenue & Site Access

04/06/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	112	38	5	30	95	15
Future Volume (Veh/h)	112	38	5	30	95	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	172	58	8	46	146	23
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	220	158	169			
vC1, stage 1 conf vol	158					
vC2, stage 2 conf vol	62					
vCu, unblocked vol	220	158	169			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	94	99			
cM capacity (veh/h)	838	893	1421			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	230	8	46	169		
Volume Left	172	8	0	0		
Volume Right	58	0	0	23		
cSH	851	1421	1700	1700		
Volume to Capacity	0.27	0.01	0.03	0.10		
Queue Length 95th (ft)	27	0	0	0		
Control Delay (s)	10.8	7.5	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	10.8	1.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			5.6			
Intersection Capacity Utilization			21.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

24: SW 124th Avenue & SW Blake Street

04/06/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↗	↖	↓
Traffic Volume (veh/h)	101	16	364	24	2	408
Future Volume (Veh/h)	101	16	364	24	2	408
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	110	17	396	26	2	443
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	843	396			422	
vC1, stage 1 conf vol	396					
vC2, stage 2 conf vol	447					
vCu, unblocked vol	843	396			422	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	80	97			100	
cM capacity (veh/h)	538	653			1137	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	127	396	26	2	443	
Volume Left	110	0	0	2	0	
Volume Right	17	0	26	0	0	
cSH	551	1700	1700	1137	1700	
Volume to Capacity	0.23	0.23	0.02	0.00	0.26	
Queue Length 95th (ft)	22	0	0	0	0	
Control Delay (s)	13.5	0.0	0.0	8.2	0.0	
Lane LOS	B			A		
Approach Delay (s)	13.5	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			35.5%	ICU Level of Service	A	
Analysis Period (min)			15			

Queuing and Blocking Report
Existing (2016)

04/06/2017

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	144	365	485	325	102
Average Queue (ft)	44	121	148	167	30
95th Queue (ft)	94	262	337	279	69
Link Distance (ft)		882	1243	789	789
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	0	5			
Queuing Penalty (veh)	1	4			

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	EB	WB	WB	NB
Directions Served	T	L	T	LR
Maximum Queue (ft)	22	80	28	150
Average Queue (ft)	1	15	1	37
95th Queue (ft)	10	50	18	117
Link Distance (ft)	1243		1275	663
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		230		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L
Maximum Queue (ft)	24	669	204	178	142	246	118	197	42
Average Queue (ft)	1	186	26	79	48	44	32	59	9
95th Queue (ft)	9	467	120	137	116	145	84	140	31
Link Distance (ft)		1275				990		518	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	185		85	225	225		165		110
Storage Blk Time (%)		11	0	0		0		1	
Queuing Penalty (veh)		8	0	0		0		0	

Queuing and Blocking Report
Existing (2016)

04/06/2017

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	236	766	330	65	529	61	374	500	54	49
Average Queue (ft)	20	257	67	11	171	8	243	47	9	9
95th Queue (ft)	102	607	271	41	381	34	393	263	36	33
Link Distance (ft)		990			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	175		170	
Storage Blk Time (%)		13			4		27			
Queuing Penalty (veh)		38			1		3			

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	TR	L	TR
Maximum Queue (ft)	86	88	19	58	85	49	88
Average Queue (ft)	14	7	1	2	27	6	24
95th Queue (ft)	53	41	9	25	68	29	65
Link Distance (ft)		1118		969	772		471
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	28		100			100	
Storage Blk Time (%)	1	0		0	0		0
Queuing Penalty (veh)	0	0		0	0		0

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 56

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	182	686	407	338	113
Average Queue (ft)	61	267	178	175	33
95th Queue (ft)	144	698	375	295	75
Link Distance (ft)		882	1243	797	797
Upstream Blk Time (%)		2			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	1	10			
Queuing Penalty (veh)	10	9			

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	WB	WB	NB
Directions Served	T	R	L	T	LR
Maximum Queue (ft)	624	65	98	36	198
Average Queue (ft)	167	7	20	1	69
95th Queue (ft)	697	83	65	26	255
Link Distance (ft)	1243			1278	663
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125	230		
Storage Blk Time (%)	6				
Queuing Penalty (veh)	1				

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L
Maximum Queue (ft)	10	1252	205	298	351	705	156	216	56
Average Queue (ft)	0	799	86	219	218	194	59	89	8
95th Queue (ft)	6	1386	225	320	362	633	137	187	36
Link Distance (ft)		1278				989		523	
Upstream Blk Time (%)		0				2			
Queuing Penalty (veh)		5				19			
Storage Bay Dist (ft)	185		85	225	225		165		110
Storage Blk Time (%)		26	1	17	12	2	1	2	
Queuing Penalty (veh)		46	15	142	97	5	1	1	

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	318	940	330	136	1339	299	374	573	77	70
Average Queue (ft)	41	332	103	14	543	54	248	83	19	21
95th Queue (ft)	140	790	342	81	1517	239	398	361	56	55
Link Distance (ft)		989			2844			2764		1453
Upstream Blk Time (%)		0								
Queuing Penalty (veh)		1								
Storage Bay Dist (ft)	265		130	240		240	175		170	
Storage Blk Time (%)		14	0		17		30	0		
Queuing Penalty (veh)		46	0		12		5	0		

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	SB	SB	B23	B23
Directions Served	L	TR	L	TR	TR	L	TR	T	
Maximum Queue (ft)	74	76	8	89	84	120	120	536	326
Average Queue (ft)	14	5	0	28	32	60	62	31	11
95th Queue (ft)	50	33	6	77	75	99	104	229	139
Link Distance (ft)		1118		969	772		471	523	523
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								0	0
Storage Bay Dist (ft)	28		100			100			
Storage Blk Time (%)	1	0		0	0	0	0		
Queuing Penalty (veh)	0	0		0	0	0	0		

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 417

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	199	952	494	453	114
Average Queue (ft)	90	763	187	226	32
95th Queue (ft)	209	1219	424	407	74
Link Distance (ft)		882	1243	789	789
Upstream Blk Time (%)		22			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	1	25			
Queuing Penalty (veh)	13	21			

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	WB	NB
Directions Served	T	R	L	LR
Maximum Queue (ft)	1238	260	88	246
Average Queue (ft)	832	22	19	88
95th Queue (ft)	1463	158	58	258
Link Distance (ft)	1243			663
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	2			
Storage Bay Dist (ft)		125	230	
Storage Blk Time (%)	23			
Queuing Penalty (veh)	5			

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L
Maximum Queue (ft)	5	1333	205	310	394	1012	199	261	52
Average Queue (ft)	0	1211	101	282	328	517	68	105	10
95th Queue (ft)	3	1542	240	345	454	1139	146	214	35
Link Distance (ft)		1275				990		518	
Upstream Blk Time (%)		3				6			
Queuing Penalty (veh)		41				74			
Storage Bay Dist (ft)	185		85	225	225		165		110
Storage Blk Time (%)		28	3	53	34	3	1	5	
Queuing Penalty (veh)		65	30	441	278	13	1	3	

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	317	913	330	211	2410	360	374	604	83	109
Average Queue (ft)	48	429	125	16	1588	97	279	119	21	21
95th Queue (ft)	165	844	378	124	3499	337	418	437	61	66
Link Distance (ft)		990			2844			2764		1453
Upstream Blk Time (%)		0			23					
Queuing Penalty (veh)		0			0					
Storage Bay Dist (ft)	265		130	240		240	175		170	
Storage Blk Time (%)		19			35		39	0		0
Queuing Penalty (veh)		62			26		7	0		0

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	SB	SB	B23	B23
Directions Served	L	TR	L	TR	TR	L	TR	T	
Maximum Queue (ft)	83	86	31	73	88	132	215	520	544
Average Queue (ft)	17	9	1	22	41	58	96	78	44
95th Queue (ft)	59	50	17	66	79	103	174	376	284
Link Distance (ft)		1118		969	772		471	518	518
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								1	1
Storage Bay Dist (ft)	28		100			100			
Storage Blk Time (%)	1	0	0	0	0	0	3		
Queuing Penalty (veh)	0	0	0	0	0	1	3		

Intersection: 6: SW 115th Avenue & Site Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	41
Average Queue (ft)	18
95th Queue (ft)	47
Link Distance (ft)	220
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 1086

Queuing and Blocking Report
 2017 Pre-Development with Future Network

04/06/2017

Intersection: 1: SW 124th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	199	935	525	161	565	436	446	688	284	287	106
Average Queue (ft)	73	843	241	24	276	50	138	365	143	125	30
95th Queue (ft)	182	1096	644	101	486	190	358	623	264	219	76
Link Distance (ft)		870			1241			1784		784	784
Upstream Blk Time (%)		26									
Queuing Penalty (veh)		0									
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	3	37			3			13	0	0	
Queuing Penalty (veh)	28	94			5			17	0	0	

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	EB	WB	NB
Directions Served	T	L	LR
Maximum Queue (ft)	20	65	101
Average Queue (ft)	1	14	24
95th Queue (ft)	11	49	72
Link Distance (ft)	1241		663
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		230	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L
Maximum Queue (ft)	10	701	204	246	314	395	222	198	69
Average Queue (ft)	1	202	52	137	121	67	89	58	13
95th Queue (ft)	7	543	163	217	232	218	174	140	47
Link Distance (ft)		1278				989		522	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	185		85	225	225		165		110
Storage Blk Time (%)		12	1	1	0	1	3	1	1
Queuing Penalty (veh)		30	5	4	2	2	2	0	0

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	91	407	215	140	390	113	295	308	87	75
Average Queue (ft)	30	126	13	15	150	13	168	37	21	17
95th Queue (ft)	70	302	92	84	316	68	282	162	62	50
Link Distance (ft)		989			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		5			2		22	0		
Queuing Penalty (veh)		13			2		4	0		

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	TR	L	TR
Maximum Queue (ft)	88	105	17	90	90	122	140
Average Queue (ft)	14	9	1	28	36	53	59
95th Queue (ft)	54	51	11	81	75	99	103
Link Distance (ft)		1118		969	772		471
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	28		100			100	
Storage Blk Time (%)	1	0		0	0	0	0
Queuing Penalty (veh)	0	0		0	0	1	0

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 7: SW 124th Avenue & SW Blake Street

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)

Zone Summary

Zone wide Queuing Penalty: 209

Queuing and Blocking Report
2017 Post-Development with Future Network

04/06/2017

Intersection: 1: SW 124th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	200	938	525	84	493	258	456	615	306	270	112
Average Queue (ft)	82	895	260	23	246	40	121	353	162	130	36
95th Queue (ft)	196	966	660	57	426	143	289	543	281	220	83
Link Distance (ft)		870			1241			1784		784	784
Upstream Blk Time (%)		35									
Queuing Penalty (veh)		0									
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	4	41			1			10	0		
Queuing Penalty (veh)	50	105			2			13	0		

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	72	110
Average Queue (ft)	11	27
95th Queue (ft)	45	78
Link Distance (ft)		663
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	230	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L
Maximum Queue (ft)	10	890	205	309	394	842	237	273	61
Average Queue (ft)	1	378	105	221	223	174	107	73	9
95th Queue (ft)	6	772	242	316	366	601	202	184	37
Link Distance (ft)		1278				989		522	
Upstream Blk Time (%)						1			
Queuing Penalty (veh)						8			
Storage Bay Dist (ft)	185		85	225	225		165		110
Storage Blk Time (%)		20	2	14	9	2	5	1	0
Queuing Penalty (veh)		66	18	95	57	7	5	1	0

Queuing and Blocking Report
 2017 Post-Development with Future Network

04/06/2017

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	145	405	211	47	542	165	294	337	80	51
Average Queue (ft)	33	99	12	8	177	16	168	27	21	16
95th Queue (ft)	93	287	91	33	413	102	270	136	58	41
Link Distance (ft)		989			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		4			3		25			
Queuing Penalty (veh)		9			3		4			

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	SB	SB	B23	B23
Directions Served	L	TR	L	TR	TR	L	TR	T	
Maximum Queue (ft)	88	90	35	90	112	111	150	560	310
Average Queue (ft)	17	7	1	26	43	54	82	68	14
95th Queue (ft)	58	43	16	76	89	97	129	357	149
Link Distance (ft)		1118		969	772		471	522	522
Upstream Blk Time (%)								0	0
Queuing Penalty (veh)								1	0
Storage Bay Dist (ft)	28		100			100			
Storage Blk Time (%)	1	0	0	0	0	0	2		
Queuing Penalty (veh)	0	0	0	0	0	1	2		

Intersection: 6: SW 115th Avenue & Site Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	20
95th Queue (ft)	48
Link Distance (ft)	220
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: SW 124th Avenue & SW Blake Street

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)

Zone Summary

Zone wide Queuing Penalty: 450

Queuing and Blocking Report
 2017 Pre-Development with Blake Street

04/06/2017

Intersection: 1: SW 124th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	200	904	525	26	486	199	292	469	429	453	81
Average Queue (ft)	74	494	112	5	226	39	113	281	196	148	28
95th Queue (ft)	175	867	424	20	413	145	222	442	387	304	63
Link Distance (ft)		870			1240			1784		800	800
Upstream Blk Time (%)		3									
Queuing Penalty (veh)		0									
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	2	26			2			5	5	0	
Queuing Penalty (veh)	24	68			3			6	8	0	

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	EB	WB	NB
Directions Served	T	L	LR
Maximum Queue (ft)	30	91	110
Average Queue (ft)	1	18	29
95th Queue (ft)	12	60	84
Link Distance (ft)	1240		663
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		230	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	T	R	L	L	TR	LT	R	L
Maximum Queue (ft)	639	203	280	309	498	136	171	51
Average Queue (ft)	169	38	140	118	68	55	53	8
95th Queue (ft)	439	138	235	237	308	116	128	33
Link Distance (ft)	1278				989		521	
Upstream Blk Time (%)					0			
Queuing Penalty (veh)					4			
Storage Bay Dist (ft)		85	225	225		165		110
Storage Blk Time (%)	10	0	3	2	1	0	0	
Queuing Penalty (veh)	18	2	19	17	1	0	0	

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	82	544	328	53	560	110	299	393	73	67
Average Queue (ft)	23	144	26	8	158	14	172	52	19	17
95th Queue (ft)	58	366	155	33	399	69	287	222	59	52
Link Distance (ft)		989			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		5			3		25	0		
Queuing Penalty (veh)		14			2		4	0		

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB	B23
Directions Served	L	TR	L	TR	L	TR	L	TR	T
Maximum Queue (ft)	59	51	65	100	21	123	101	107	211
Average Queue (ft)	11	4	6	22	1	58	47	57	7
95th Queue (ft)	44	30	35	70	12	100	90	94	110
Link Distance (ft)		1118		969		772		471	521
Upstream Blk Time (%)									0
Queuing Penalty (veh)									0
Storage Bay Dist (ft)	28		100		105		100		
Storage Blk Time (%)	1	0	0	0		0	0	0	
Queuing Penalty (veh)	0	0	0	0		0	0	0	

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 7: SW 124th Avenue & SW Blake Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	49
Average Queue (ft)	16
95th Queue (ft)	43
Link Distance (ft)	2554
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 192

Queuing and Blocking Report
2017 Post-Development with Blake Street

04/06/2017

Intersection: 1: SW 124th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	200	922	525	26	587	183	283	448	488	646	210
Average Queue (ft)	70	572	174	5	234	35	109	271	272	225	39
95th Queue (ft)	173	969	543	20	441	117	210	427	518	543	205
Link Distance (ft)		870			1240			1784		779	779
Upstream Blk Time (%)		5								2	
Queuing Penalty (veh)		0								0	
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	1	28			2			3	20	0	
Queuing Penalty (veh)	13	75			2			4	33	1	

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	WB	WB	NB
Directions Served	L	T	LR
Maximum Queue (ft)	78	32	120
Average Queue (ft)	17	1	35
95th Queue (ft)	52	23	98
Link Distance (ft)		1278	663
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	230		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L
Maximum Queue (ft)	5	747	205	298	353	575	160	211	51
Average Queue (ft)	0	235	71	179	165	95	64	64	8
95th Queue (ft)	4	575	205	275	294	357	136	150	34
Link Distance (ft)		1278				989		520	
Upstream Blk Time (%)						0			
Queuing Penalty (veh)						1			
Storage Bay Dist (ft)	185		85	225	225		165		110
Storage Blk Time (%)		13	1	6	3	1	1	1	
Queuing Penalty (veh)		27	5	38	23	4	1	1	

Queuing and Blocking Report
 2017 Post-Development with Blake Street

04/06/2017

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	162	430	274	69	404	175	299	448	80	59
Average Queue (ft)	31	122	25	11	154	17	188	64	26	14
95th Queue (ft)	95	331	147	44	328	90	299	264	64	44
Link Distance (ft)		989			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		6			3		25	0		
Queuing Penalty (veh)		14			2		4	0		

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB	B23	B23
Directions Served	L	TR	L	TR	L	TR	L	TR	T	
Maximum Queue (ft)	86	90	72	92	21	125	172	199	437	209
Average Queue (ft)	16	10	7	22	1	58	51	83	19	11
95th Queue (ft)	56	50	39	70	11	102	111	146	178	134
Link Distance (ft)		1118		969		772		471	520	520
Upstream Blk Time (%)									0	0
Queuing Penalty (veh)									0	0
Storage Bay Dist (ft)	28		100		105		100			
Storage Blk Time (%)	1	0	0	0		0	0	2		
Queuing Penalty (veh)	0	0	0	0		0	0	2		

Intersection: 6: SW 115th Avenue & Site Access

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	40	40	5
Average Queue (ft)	19	7	0
95th Queue (ft)	48	31	0
Link Distance (ft)	220		772
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
2017 Post-Development with Blake Street

04/06/2017

Intersection: 7: SW 124th Avenue & SW Blake Street

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	63	35
Average Queue (ft)	21	6
95th Queue (ft)	49	29
Link Distance (ft)	2554	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 250

Queuing and Blocking Report
Existing (2016)

04/06/2017

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	147	256	542	279	225
Average Queue (ft)	56	104	194	155	97
95th Queue (ft)	109	217	427	260	186
Link Distance (ft)		882	1243	799	799
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	1	4			
Queuing Penalty (veh)	11	4			

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	66	96
Average Queue (ft)	9	25
95th Queue (ft)	38	77
Link Distance (ft)		663
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	230	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L	TR
Maximum Queue (ft)	27	611	205	87	62	311	125	215	54	38
Average Queue (ft)	2	186	16	35	7	57	35	84	14	9
95th Queue (ft)	14	478	93	73	36	196	95	171	44	35
Link Distance (ft)		1282				988		514		312
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	185		85	225	225		165		110	
Storage Blk Time (%)		11				1		2		
Queuing Penalty (veh)		5				0		1		

Queuing and Blocking Report
Existing (2016)

04/06/2017

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	57	453	330	59	558	165	354	314	103	111
Average Queue (ft)	13	169	48	8	196	12	204	31	31	38
95th Queue (ft)	42	358	181	34	390	83	325	136	76	84
Link Distance (ft)		988			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	175		170	
Storage Blk Time (%)		10	0		4		22	0		
Queuing Penalty (veh)		42	0		1		5	0		

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	TR	TR	L	TR
Maximum Queue (ft)	48	59	62	81	33	53
Average Queue (ft)	30	6	7	18	6	21
95th Queue (ft)	50	33	34	56	26	48
Link Distance (ft)		1118	970	772		480
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	28				100	
Storage Blk Time (%)	4	0	0	0		
Queuing Penalty (veh)	0	0	0	0		

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 70

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	137	331	949	301	276
Average Queue (ft)	58	119	383	166	122
95th Queue (ft)	114	252	913	282	226
Link Distance (ft)		882	1243	791	791
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	2	6			
Queuing Penalty (veh)	18	5			

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	WB	WB	NB
Directions Served	L	T	LR
Maximum Queue (ft)	76	107	165
Average Queue (ft)	12	8	45
95th Queue (ft)	48	74	143
Link Distance (ft)		1276	663
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	230		
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B23	SB	SB
Directions Served	L	T	R	L	L	TR	LT	R	T	L	TR
Maximum Queue (ft)	170	878	205	128	89	417	250	581	108	68	33
Average Queue (ft)	7	472	31	56	19	108	174	329	6	12	8
95th Queue (ft)	80	890	134	104	63	275	312	530	61	45	31
Link Distance (ft)		1276				990		507	480		304
Upstream Blk Time (%)								3			
Queuing Penalty (veh)								11			
Storage Bay Dist (ft)	185		85	225	225		165			110	
Storage Blk Time (%)		26				1	6	48			
Queuing Penalty (veh)		17				1	22	75			

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	191	819	330	60	542	299	369	457	179	254
Average Queue (ft)	27	349	123	11	253	23	229	78	55	86
95th Queue (ft)	114	693	347	44	452	140	379	309	123	194
Link Distance (ft)		990			2844			2764		1453
Upstream Blk Time (%)		0								
Queuing Penalty (veh)		0								
Storage Bay Dist (ft)	265		130	240		240	175		170	
Storage Blk Time (%)		18	0		6		32	0	0	6
Queuing Penalty (veh)		78	1		3		8	0	0	4

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	TR	TR	L	TR
Maximum Queue (ft)	52	60	96	103	49	90
Average Queue (ft)	33	11	49	48	18	29
95th Queue (ft)	53	47	86	82	47	64
Link Distance (ft)		1118	970	772		480
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	28				100	
Storage Blk Time (%)	6	0	0	0		0
Queuing Penalty (veh)	0	0	0	0		0

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 242

Queuing and Blocking Report
2017 Post-Development

04/06/2017

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	178	395	1053	310	302
Average Queue (ft)	62	129	406	165	137
95th Queue (ft)	126	288	871	273	252
Link Distance (ft)		882	1243	799	799
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	2	6			
Queuing Penalty (veh)	18	5			

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	EB	WB	WB	NB
Directions Served	T	L	T	LR
Maximum Queue (ft)	211	53	42	157
Average Queue (ft)	12	8	1	34
95th Queue (ft)	128	35	30	116
Link Distance (ft)	1243		1282	663
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		230		
Storage Blk Time (%)	1			
Queuing Penalty (veh)	0			

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B23	SB	SB
Directions Served	L	T	R	L	L	TR	LT	R	T	L	TR
Maximum Queue (ft)	86	1126	205	133	86	362	250	632	485	67	34
Average Queue (ft)	3	608	44	60	25	115	215	517	136	16	8
95th Queue (ft)	55	1094	164	111	71	282	329	663	452	52	31
Link Distance (ft)		1282				988		514	480		312
Upstream Blk Time (%)		0						29	6		
Queuing Penalty (veh)		3						136	28		
Storage Bay Dist (ft)	185		85	225	225		165			110	
Storage Blk Time (%)		31	0			1	12	68		0	
Queuing Penalty (veh)		22	0			1	56	142		0	

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	255	937	330	41	368	165	360	331	165	189
Average Queue (ft)	26	418	139	7	214	16	219	56	58	57
95th Queue (ft)	114	767	380	30	358	102	356	247	127	132
Link Distance (ft)		988			2844			2764		1453
Upstream Blk Time (%)		0								
Queuing Penalty (veh)		0								
Storage Bay Dist (ft)	265		130	240		240	175		170	
Storage Blk Time (%)		20	0		5		27	0	0	1
Queuing Penalty (veh)		94	0		2		7	0	0	1

Intersection: 5: SW 115th Avenue & SW ITEL Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	TR	TR	L	TR
Maximum Queue (ft)	52	99	143	470	61	96
Average Queue (ft)	33	16	58	131	17	40
95th Queue (ft)	55	61	119	387	49	76
Link Distance (ft)		1118	970	772		480
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	28				100	
Storage Blk Time (%)	12	1	4	16	0	0
Queuing Penalty (veh)	0	0	0	0	0	0

Intersection: 6: SW 115th Avenue & Site Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	80
Average Queue (ft)	44
95th Queue (ft)	69
Link Distance (ft)	220
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 515

Queuing and Blocking Report
2017 Pre-Development with Future Network

04/06/2017

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	200	762	448	524	1030	475	324	429	412	505	252
Average Queue (ft)	90	306	58	95	440	72	134	221	161	229	110
95th Queue (ft)	185	603	238	323	808	315	252	376	318	420	199
Link Distance (ft)		870			1241			1784		802	802
Upstream Blk Time (%)		0			0						
Queuing Penalty (veh)		0			0						
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	15	26			13			3	0	4	
Queuing Penalty (veh)	125	63			22			4	0	6	

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	EB	WB	WB	NB
Directions Served	T	L	T	LR
Maximum Queue (ft)	5	71	49	76
Average Queue (ft)	0	9	2	25
95th Queue (ft)	4	40	27	61
Link Distance (ft)	1241		1276	663
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		230		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B23	SB	SB
Directions Served	L	T	R	L	L	TR	LT	R	T	L	TR
Maximum Queue (ft)	23	898	205	93	135	386	250	432	6	48	38
Average Queue (ft)	2	353	46	42	14	109	176	198	0	11	7
95th Queue (ft)	11	742	165	81	76	263	276	361	5	38	28
Link Distance (ft)		1276				990		509	480		303
Upstream Blk Time (%)								0			
Queuing Penalty (veh)								0			
Storage Bay Dist (ft)	185		85	225	225		165			110	
Storage Blk Time (%)		23				1	16	10			
Queuing Penalty (veh)		20				1	46	23			

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	66	548	330	51	340	54	295	341	155	152
Average Queue (ft)	17	159	48	6	142	8	163	49	65	54
95th Queue (ft)	49	372	167	30	285	34	278	196	134	111
Link Distance (ft)		990			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		7	0		2		21	0	0	0
Queuing Penalty (veh)		22	0		1		5	0	0	0

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	TR	TR	L	TR
Maximum Queue (ft)	52	66	118	108	49	72
Average Queue (ft)	34	13	56	51	17	30
95th Queue (ft)	51	51	94	85	46	59
Link Distance (ft)		1118	970	772		480
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	28				100	
Storage Blk Time (%)	6	0	0	0		0
Queuing Penalty (veh)	0	0	0	0		0

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 24: SW 124th Avenue & SW Blake Street

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)

Zone Summary

Zone wide Queuing Penalty: 339

Queuing and Blocking Report
 2017 Post-Development with Future Network

04/06/2017

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	199	769	441	525	966	472	359	454	414	547	406
Average Queue (ft)	97	344	71	135	495	95	158	224	195	303	150
95th Queue (ft)	194	665	269	411	869	368	307	416	399	586	402
Link Distance (ft)		870			1241			1784		802	802
Upstream Blk Time (%)		1			0					3	1
Queuing Penalty (veh)		0			0					0	0
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	17	29			16		1	4	1	12	
Queuing Penalty (veh)	144	71			34		2	6	3	19	

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	WB	WB	NB
Directions Served	L	T	LR
Maximum Queue (ft)	56	66	134
Average Queue (ft)	9	1	30
95th Queue (ft)	37	19	92
Link Distance (ft)		1276	663
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	230		
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B23	SB	SB
Directions Served	L	T	R	L	L	TR	LT	R	T	L	TR
Maximum Queue (ft)	238	866	205	125	100	340	250	549	47	62	48
Average Queue (ft)	11	457	61	45	19	145	226	306	2	12	6
95th Queue (ft)	98	787	189	93	66	294	286	503	27	38	29
Link Distance (ft)		1276				990		509	480		303
Upstream Blk Time (%)								1			
Queuing Penalty (veh)								4			
Storage Bay Dist (ft)	185		85	225	225		165			110	
Storage Blk Time (%)		33	0			3	28	18			
Queuing Penalty (veh)		31	0			2	103	56			

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	119	433	328	51	339	110	296	288	140	165
Average Queue (ft)	20	157	48	8	143	11	169	47	59	61
95th Queue (ft)	76	353	157	33	279	66	283	167	118	131
Link Distance (ft)		990			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		7	0		1		24	0	0	1
Queuing Penalty (veh)		24	0		1		6	0	0	1

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	TR	TR	L	TR
Maximum Queue (ft)	52	63	118	206	50	88
Average Queue (ft)	34	13	55	74	17	38
95th Queue (ft)	52	51	95	136	47	71
Link Distance (ft)		1118	970	772		480
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	28				100	
Storage Blk Time (%)	7	0	0	2		0
Queuing Penalty (veh)	0	0	0	0		0

Intersection: 6: SW 115th Avenue & Site Access

Movement	EB
Directions Served	LR
Maximum Queue (ft)	78
Average Queue (ft)	44
95th Queue (ft)	68
Link Distance (ft)	220
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 24: SW 124th Avenue & SW Blake Street

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)

Zone Summary

Zone wide Queuing Penalty: 508

Queuing and Blocking Report
 2017 Pre-Development with Blake Street

04/06/2017

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	199	442	166	123	621	310	207	313	177	304	182
Average Queue (ft)	61	186	31	7	303	34	102	164	93	174	90
95th Queue (ft)	146	339	107	79	547	174	177	267	163	270	166
Link Distance (ft)		870			1241			1784		772	772
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	1	18			6			0		0	
Queuing Penalty (veh)	9	42			5			0		0	

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	42	67
Average Queue (ft)	6	21
95th Queue (ft)	28	57
Link Distance (ft)		663
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	230	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L	TR
Maximum Queue (ft)	18	516	204	74	60	263	231	294	48	30
Average Queue (ft)	2	178	26	35	11	61	104	115	10	7
95th Queue (ft)	10	414	116	69	41	165	190	236	35	26
Link Distance (ft)		1278				989		508		312
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	185		85	225	225		165		110	
Storage Blk Time (%)		15				0	2	5		
Queuing Penalty (veh)		9				0	7	7		

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	60	307	169	35	306	40	276	193	165	154
Average Queue (ft)	14	113	33	4	126	8	140	29	56	51
95th Queue (ft)	43	250	101	20	249	31	234	101	114	110
Link Distance (ft)		989			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		5			1		17	0	0	
Queuing Penalty (veh)		18			0		4	0	0	

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	49	54	33	85	31	93	48	72
Average Queue (ft)	29	15	15	45	4	47	12	36
95th Queue (ft)	48	46	38	78	20	82	37	65
Link Distance (ft)		1118		970		772		480
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	28		100		105		100	
Storage Blk Time (%)	5	1		0		0		
Queuing Penalty (veh)	1	1		0		0		

Intersection: 6: SW 115th Avenue & Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 24: SW 124th Avenue & SW Blake Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	89
Average Queue (ft)	33
95th Queue (ft)	67
Link Distance (ft)	2554
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 104

Queuing and Blocking Report
 2017 Post-Development with Blake Street

04/06/2017

Intersection: 1: Tualatin-Sherwood Road & SW 124th Avenue

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	183	452	178	18	652	475	257	321	255	299	204
Average Queue (ft)	71	209	31	2	334	51	120	161	112	174	93
95th Queue (ft)	154	387	110	13	583	252	217	277	204	281	176
Link Distance (ft)		870			1240			1784		778	778
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100		375	375		375	375		375		
Storage Blk Time (%)	2	19				8					
Queuing Penalty (veh)	17	46				8					

Intersection: 2: SW 120th Avenue & Tualatin-Sherwood Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	66	61
Average Queue (ft)	11	20
95th Queue (ft)	44	52
Link Distance (ft)		663
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	230	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SW 115th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	L	TR	LT	R	L	TR
Maximum Queue (ft)	20	617	205	97	60	209	247	343	40	33
Average Queue (ft)	1	232	33	41	14	67	139	166	7	7
95th Queue (ft)	8	503	138	81	46	161	234	299	27	27
Link Distance (ft)		1277				990		508		302
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	185		85	225	225		165		110	
Storage Blk Time (%)		20				0	6	12		
Queuing Penalty (veh)		14				0	23	23		

Queuing and Blocking Report
 2017 Post-Development with Blake Street

04/06/2017

Intersection: 4: SW Avery Street/SW 112th Avenue & Tualatin-Sherwood Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	TR
Maximum Queue (ft)	54	397	229	58	273	39	280	186	149	161
Average Queue (ft)	14	140	42	13	119	8	143	32	55	56
95th Queue (ft)	41	310	138	45	233	31	234	110	120	125
Link Distance (ft)		990			2844			2764		1453
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	265		130	240		240	135		170	
Storage Blk Time (%)		6			0		19	0	0	1
Queuing Penalty (veh)		22			0		5	0	0	1

Intersection: 5: SW 115th Avenue & SW Itel Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	50	55	38	85	30	132	30	102
Average Queue (ft)	30	17	16	45	2	62	13	43
95th Queue (ft)	52	52	41	78	16	102	36	77
Link Distance (ft)		1118		970		772		480
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	28		100		105		100	
Storage Blk Time (%)	6	1		0		1		0
Queuing Penalty (veh)	1	1		0		0		0

Intersection: 6: SW 115th Avenue & Site Access

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	78	12
Average Queue (ft)	41	1
95th Queue (ft)	67	8
Link Distance (ft)	220	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
2017 Post-Development with Blake Street

04/06/2017

Intersection: 24: SW 124th Avenue & SW Blake Street

Movement	WB	NB	SB
Directions Served	LR	T	L
Maximum Queue (ft)	121	4	19
Average Queue (ft)	44	0	1
95th Queue (ft)	84	3	9
Link Distance (ft)	2554	839	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 161