# **APPENDIX B5**

Segment A – PM Existing Vissim Report





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# **MEMORANDUM**

DATE: Original Submittal October 7, 2018 (Pre FEIS)

Final Submittal April 21, 2020 (Appendix to the FEIS Transportation Technical Report)

TO: Anthony Buczek, PE, PTOE; Metro

FROM: Randy Johnson, PE, PTOE

Aaron Berger, PE (WA)

SUBJECT: Metro SW Corridor DEIS- Segment A - PM model P# 17017-000

Existing Conditions Vissim Model Calibration Methodology and Results Memorandum

This memorandum documents the development and calibration of the existing year 2017 weekday PM peak period Vissim microsimulation model for the Metro SW Corridor DEIS project. This memorandum also documents the performance measures reported by the existing year Vissim model. The existing conditions model calibration will be used as the basis for future year traffic models to support the traffic analysis conducted as part of the Final Environmental Impact Statement (FEIS). The existing conditions analysis and calibration reported in this memo includes refinements based on Draft Environmental Impact Statement (DEIS) received from partner agencies.

The Methods and Assumptions memorandum<sup>1</sup> documented the details of model development that were assumed going into this task. This memorandum documents additional assumptions made and parameters that were changed during calibration.

# **Project Description**

The project evaluates the transportation impacts (and other environmental issues) associated with the Future No-Build and Future Build Light Rail alternatives for 2035. Because the study area is so large and sometimes spans between different jurisdictions, this project was divided into the following three segments for evaluation of alignment alternatives, station access projects, and other segment-related options:

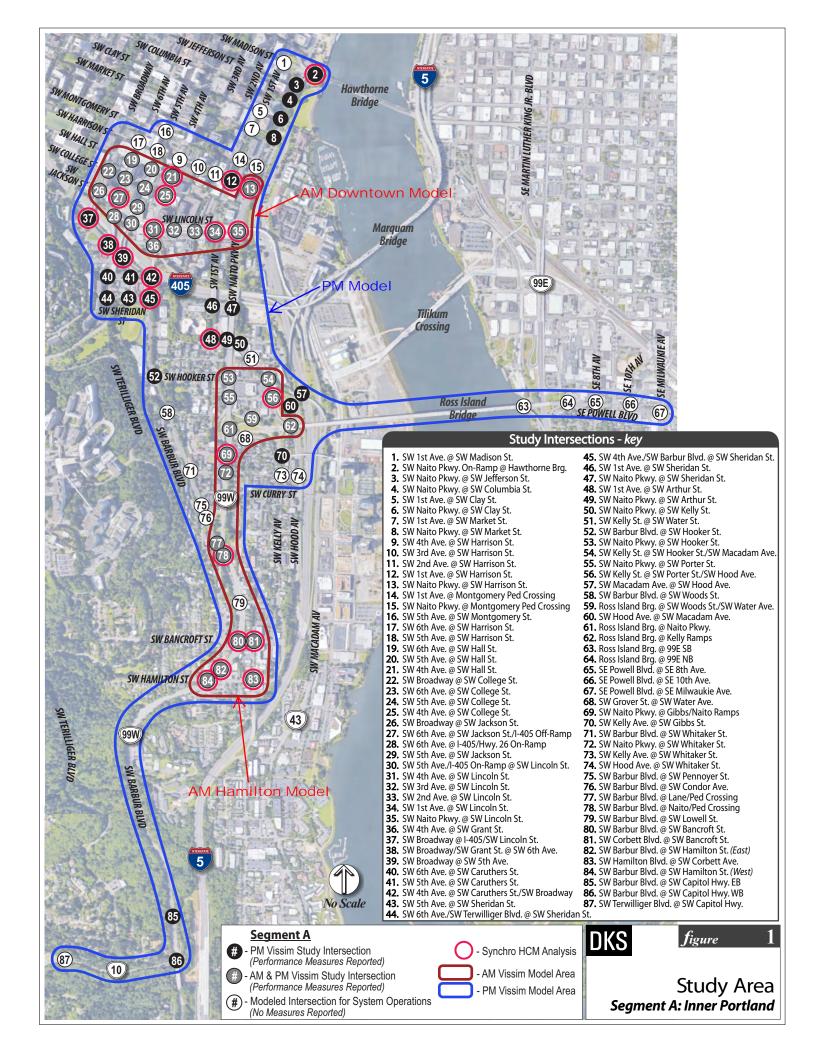
Segment A: Inner Portland

Segment B: Outer Portland

Segment C: Tigard and Tualatin

The transit alternatives address the impacts of various options for track alignment and station locations as well as related station access projects, bridgehead reconfigurations, and O&M facility sites within each of these three segments. This memo is focusing on the Existing Condition of Segment A - the PM peak period.

<sup>&</sup>lt;sup>1</sup> SWC Transportation Analysis Methods, June 2017, DKS Associates.





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# Segment A Study Area and Model Area

The Vissim model area is shown in Figure 1. Segment A includes a total of 87 signalized and unsignalized intersections. Performance measures were reported for major signalized and unsignalized intersections. This memorandum focuses on the Existing PM study intersections and model area (outlined in blue) shown in Figure 1. Note that many of the intersections included in the model are not study intersections. These intersections (shown with a white background in Figure 1) were included in the model due to their influence on arrival patters, lane utilization, and queuing at study intersections with reported performance measures. Performance measures for modeled intersections (non-study intersections) are not reported.

# **Data Collection Summary**

DKS collected the following data to help build and calibrate the base year Vissim model:

- Roadway geometry data: This included roadway segment lengths, number of lanes, lengths of storage bays and tapers, intersection geometry, pedestrian crossing locations and widths, and transit stop locations. This data was primarily obtained from aerial imagery and Google Street View and was verified with field observations.
- Traffic control data: This included posted speeds, stop bar and stop sign locations, traffic signal locations, traffic signal timing data, detector plans, and ramp metering rates and schedules. This data was obtained from aerial imagery and Google Street View and was verified with field observations with ODOT and PBOT providing signal timing sheets.
- Traffic count data: DKS collected traffic count data<sup>2</sup> at several Vissim model intersections to serve as inputs for the existing year PM peak hour Vissim model. Counts for the remaining study intersections were obtained from Metro. The traffic count data included 5-minute volume profiles. The system-wide peak hour was 4:30 PM to 5:30 PM.
- **Field observations and video data**: DKS conducted field observations in the study area during the weekday PM peak period<sup>3</sup>.
- Origin-Destination (O-D) data development: In addition to the turn movement count data at intersections, the Vissim model requires O-D data to route the traffic through the network, i.e., the origin and destination location of each vehicle. DKS developed using the Metro regional travel demand base year model, following the process described in detail in the Methods and Assumptions memorandum<sup>4</sup>. The result of the process was traffic demand with complete O-D routing, closely maintaining the Metro regional travel demand model trip distribution patterns while also matching count data for turn movements at all study intersections within the model. The O-D data then exported to Vissim in matrix format. Additional O-D data was collected at the intersection of SW Hamilton Street

<sup>&</sup>lt;sup>2</sup> Weekday PM and a.m. 2-hour traffic counts collected from March 14, 2017 through March 21, 2017.

<sup>&</sup>lt;sup>3</sup> Field observations conducted on Tuesday, March 14, 2017, Wednesday, March 15, 2017, and Thursday, March 16, 2017.

<sup>&</sup>lt;sup>4</sup> SWC Transportation Analysis Methods, June 2017, DKS Associates.



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and SW Barbur Boulevard to determine eastbound and westbound through versus left turn volumes as part of the traffic count video data collection.

- Travel Time Data: Travel time data was collected for selected routes through the model area from Google Maps over 15-minute intervals during the PM field observations. The Google Maps travel times represented the average travel time over the designated segment at each time recorded. Additional travel time measures were collected from INRIX HERE data, averaged over 15-minute intervals during the field work time periods. This data was downloaded in June of 2018, as the segment data was not available in 2017, and is provided in Attachment F.
- **Speed Data**: Speed data from INRIX was reviewed for the eastbound Ross Island Bridge to help capture the impacts of queue shockwaves from the intersections of SE Powell Boulevard and SE 20<sup>th</sup> Avenue.
- Congestion Data: Queue lengths throughout the project study area were recorded during field observations. In addition, traffic speed plots from Google maps were captured at 15-minute intervals during the traffic counts and field observations. The Google maps screenshots are included in Attachment A.
- Lane Utilization Data: Lane utilization data was captured through field observations and traffic count video data. Lane utilization observations focused primarily on driver behavior at the following locations:
  - o Approaching the I-405 northbound on-ramp at SW 6<sup>th</sup> Avenue
  - o Northbound traffic on SW Barbur Boulevard ultimately destined for eastbound Ross Island Bridge via SW Naito Parkway.
  - Northbound traffic from SW Naito Parkway destined for eastbound Hawthorne Bridge
- Transit Data: During field observations, the project team also noted locations where bus stop maneuvers impacted through traffic operations, mainly at the SW Hamilton Street and SW Barbur Boulevard intersection. All signal timing data related to light rail and streetcars was provided by PBOT. Transit lines and headways were obtained from the TriMet website.
- Saturation Flow Data: Saturation flow rate data is not typically collected for a Vissim model, as other parameter within the model generate calibrated flow rate conditions. However, during field observations the project team noted that for the entire 2-hour analysis period (4-6 PM) vehicles using the I-405 northbound on-ramp at SW 6<sup>th</sup> Avenue remained in a continuous rolling queue due to congestion from the I-405 and Hwy 26 merge upstream. Therefore, for modeling purposes the volume served at the on-ramp during the analysis time interval (4-6 PM) was assumed to be equal to the ramp capacity.

# Model Development Summary

This section describes the steps completed in the existing (or base) year 2017 PM model development process.

#### **Network Coding**

This step involved coding the geometry of the entire network. Network objects and attributes added in this step include the following:

1) Physical roadway (links and connectors)



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- 2) Intersection geometry (links and connectors)
- 3) Pedestrian links
- 4) Traffic control (speed distributions and decisions, reduced speed areas, conflict areas, priority rules, stop signs, signal heads, detectors, signal timing and ramp metering)

Free flow speed distributions were developed using the ODOT Vissim protocol methods for links without measured speed data based on posted speed.

## Traffic Demand and Routing

Vissim's Dynamic Traffic Assignment (DTA) feature was used in combination with the O-D matrix (based on Metro's travel demand base year model and traffic count data) to generate motor vehicle inputs and routing through the network. The DTA assignment was then converted to static vehicle inputs and complete O-D routes. Due to multiple feasible routes between many O-D pairs across the network, Vissim DTA was run with travel time on routes convergence criteria set to 85% of routes converged to within 20% travel time across all O-D multi-route options. Minor adjustments were made to static routes to ensure the demand matched the traffic counts at all study intersections.

Pedestrian counts were used as pedestrian inputs for all intersections and crossing locations within the Vissim model. Bicycle lanes or paths and counts were also included at the following locations:

- SW Naito Parkway and eastbound Hawthorne Bridge
- SW 4<sup>th</sup> Avenue and SW Lincoln Street
- SW 5<sup>th</sup> Avenue and SW Montgomery Street
- SW 5<sup>th</sup> Avenue and SW Harrison Street
- SW 5<sup>th</sup> Avenue and SW Hall Street
- SW 5<sup>th</sup> Avenue and SW College Street

#### Traffic Volume Peaking Profile

The initial PM peak two-hour volume inputs in Vissim were modified to include a "peaking profile" of 15-minute volume flow rate increments. The peaking profiles were generated based on traffic counts. All input locations with volumes greater than 300 vehicles per hour (vph) were assigned a profile unique to a corresponding downstream traffic count. The traffic counts for all other approaches representing volumes less than 300 vph were added together and used to develop a typical low volume approach profile for the model.

#### Vehicle Compositions

The volume inputs included heavy vehicle percentages based on the count data. The heavy vehicle percentages were rounded to the nearest one percent from the existing counts, and the percentages were applied to the corresponding volume inputs to the model network. The heavy vehicle fleet was modified from the Vissim defaults to be consistent with the ODOT Protocol for VISSIM Simulation.

#### Simulation Period and Seeding Period

The system-wide peak hour for the traffic count data collected was 4:30 to 5:30 PM. The Vissim simulation period included a seeding period (initialization period) followed by the entire two-hour peak period (4-6 PM). Measures of effectiveness



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were collected for the one-hour system peak period. The FHWA's Traffic Analysis Toolbox<sup>5</sup> recommends a seeding period equal to or greater than twice the estimated travel time at free-flow conditions to traverse the entire network. To be conservative and allow for the congestion levels and queues to develop to peak conditions, a seeding period of 30 minutes was chosen.

## **Error Checking**

The error checking portion of the model development focused on fixing coding errors before the calibration process began. Error checking is a process that includes a review of the coded data and a review of the animation. All coded data (geometry, speeds, signal timing data, stop and yield controls, transit data, and traffic volumes) was reviewed by the model developer and quality control reviewer.

A review of the animation was conducted to determine locations where conflict areas or priority rules might be missing, where signal timing may not be operating correctly or any other locations where generally coded parameters may have been overlooked.

## Calibration

Upon the completion of the error checking, DKS calibrated the simulation model generally following the guidelines in Sections 6.1 and 6.4 of the ODOT Simulation Protocol. The model validation was based on 15 simulation runs to account for daily variation.

The following calibration targets were used for the existing year Vissim model:

- A quantitative comparison between input data and model output results for traffic volumes.
- A qualitative comparison (visual inspection) of congestion and general operations along the entire study area based on field observation, video data, and Google Traffic Maps.

To best replicate field conditions, the Vissim model calibration process implemented a variety of standard techniques where appropriate, including:

- Lane change distance on turning movement connectors to capture upstream lane utilization.
- Intersection "keep clear" zones through congested intersections.
- Increased turning speeds for turning movements with larger than typical radii.
- Lane change aggressiveness (driver behavior parameter) in areas with high merging or weaving.

A large portion of the study area maintained Vissim default driver parameters from the Wiedemann 74 Model, typical for arterials and urban traffic. Given the amount of low speed, high access density, and frequent lane change facilities in the model, "cooperative lane change" behavior was selected to better match existing conditions. However, certain locations required special driver behavior types. Four new driver behaviors were created and used, as summarized below and shown in Figure 2. With the exception of the special case "RI Bridgehead" driver behavior, parameters calibrated as described below are all within the recommended ranges of the Protocol for Vissim Simulation, ODOT.

<sup>&</sup>lt;sup>5</sup> Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software, Federal Highway Administration, June 2004.



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- "Merge" (shown as green in Figure 2) This behavior type used the Wiedemann 99 driving behavior type defaults, but also included cooperative lane change and a longer "Following Variation" (CC2) length of 24 feet, allowing for larger gaps and better merge opportunities at low speeds. This behavior type was used as several congested locations that required frequent lane change maneuvers.
- "Milwaukie EB" (shown as red in Figure 2) This behavior type is a hold-over from the calibration work done on the Division Transit Project, which included a calibrated Vissim model of the east end of the Ross Island Bridge and the SE Powell Boulevard and SE Milwaukie Avenue. This vehicle behavior type was only used in locations identified in the Division Transit Project model.
- RI Bridge EB" (shown as yellow in Figure 2) This behavior type was developed through calibration of driving behavior for eastbound traffic on the Ross Island Bridge structure. The driving behavior is built off the Wiedemann 99 model, but also includes a "Following Variation (CC2) of 12 feet, and a headway time distribution averaged around 0.7 seconds (opposed to the default 0.9 seconds) and a safety reduction factor of 0.40.
- "RI Bridgehead" (shown as purple in Figure 2) This behavior type was developed through calibration of driving behavior for eastbound traffic in the west Ross Island Bridgehead area. The driving behavior is built off the Wiedemann 99 model, but also includes a "Following Variation (CC2) of 6 feet, and a headway time distribution averaged around 0.7 seconds (opposed to the default 0.9 seconds), as well as a safety reduction factor of 0.25. This driving behavior was especially calibrated to accommodate the "courtesy queueing" or zipper merge behavior that occurs at three locations in this area during the peak hour. The treatment of this area in the model is discussed further later in this document.



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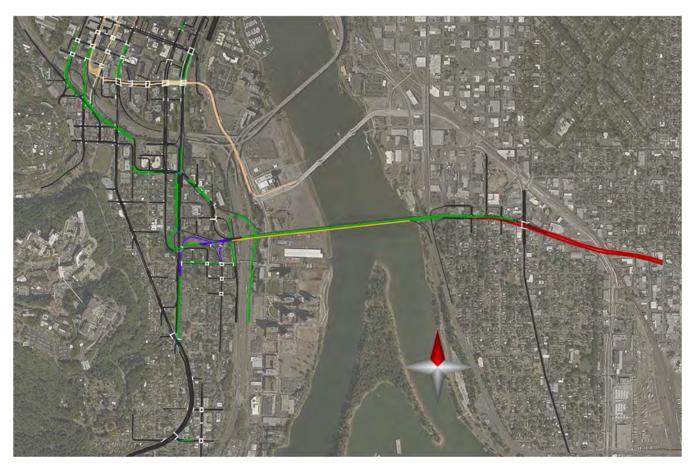


Figure 2: Travel Behavior Map

Initially all vehicle inputs used the average two-hour flow rate for the 30-minute seeding period. However, field observations and Google Traffic Maps indicate congestion in and around the model network prior to 4:00 PM. To help generate sufficient congestion within the model by 4:00 PM, select locations were given higher seeding period flow rates, as summarized below:

- SE 8<sup>th</sup> Avenue Southbound Seeding profile obtained from downstream 3:30-4:00 PM count
- SW Clay Street Eastbound Seeding profile obtained from downstream 3:30-4:00 PM count
- I-405 Southbound Off-Ramp to SW Broadway Downstream count only contained a profile for two hours (4-6 PM). However, field observations showed queue spillback onto the off-ramp as early as 4:00 PM. The two-hour profile showed the peak 15 minutes occurring from 4:00-4:15 PM and then leveling off through 6:00 PM, due to constrained flow from upstream queue spillback. To better estimate actual demand conditions, the 125% of the initial 15-minute flow rate (4:00-4:15 PM) was also used for the first 15 minutes of the seeding period and 110% was used for the second 15 minutes. Also, the demand in the 4:15-4:30 time interval was increased and the demand in the 5:30-5:45 time interval was increased, maintaining the net demand over the two-hour interval but smoothing the overall demand profile. Note that this change will be carried through all future PM models.



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• SW Macadam Street – Seeding profile obtained from downstream 3:30-4:00 PM count

The weaving conflicts created by traffic entering I-405 northbound from SW 6<sup>th</sup> Avenue and from I-405 northbound on-ramp and vehicle exiting I-405 northbound for eastbound U.S. Hwy 26 lead to rolling queues on the I-405 northbound on-ramp. These queues spill back onto SW 6<sup>th</sup> Avenue and impact operations at the SW 6<sup>th</sup> Avenue and SW Broadway intersection. As the I-405 weave movement is not included within the Vissim model limits, a profile of speed distributions was developed for the I-405 northbound on-ramp to simulate the rolling queue conditions. The speed profiles were calibrated to the existing volume profiles collected from the video counts, ensuring that the throughput profile at the I-405 northbound on-ramp matched existing conditions.

Eastbound queuing on the Ross Island Bridge is caused primarily by the following four factors:

- Lateral clearance issues between large vehicles on the bridge
- Lane change maneuvers and slowing for vehicles exiting onto the Hwy 99E southbound on-ramp
- Queue spillback from the SE Powell Boulevard and SE Milwaukie intersection due to heavy rail events at SE 12<sup>th</sup>
   Avenue/SE 11<sup>th</sup> Avenue and SE Clinton Street intersection
- Queue spillback from the SE Powell Boulevard and SE 20<sup>th</sup> Avenue/SE 26<sup>th</sup> Avenue intersections

The impacts from the Hwy 99E southbound on-ramp were captured with a 15-mph reduced speed area at the ramp entrance. The queue spillback from SE Milwaukie Avenue and SE 20<sup>th</sup> Avenue/SE 26<sup>th</sup> Avenue began significantly dissipating around 5:45 PM during the field observations. INRIX data from the east end of the Ross Island Bridge indicated a similar trend. Therefore, the INRIX data was used to calibrate eastbound vehicle speeds at the east end of the Ross Island Bridge, which resulted in time varying reduced speed areas, 9-mph from 3:30 PM to 4:00 PM (to build up to 4:00 PM observed conditions), 15-mph from 4:00 PM to 5:45 PM and 20-mph from 5:45 PM to 6:00 PM

Field observations at the Ross Island Bridgehead indicated driving behavior that required extra calibration at the following three two-way stop-controlled intersections:

- SW Kelly Avenue at westbound Ross Island Bridge
- SW Naito Parkway at westbound Ross Island Bridge
- SW Naito Parkway and SW Gibbs Streets

As westbound congestion builds on the Ross Island Bridge around 4:00 PM, driving behavior at these intersections changes from two-way stop control to "courtesy queueing" or a zipper merge. Vehicles on the mainline movement yield to minor street vehicles on a roughly one-to-one basis. This behavior was coded into the model. T

Field observations at the all-way stop-controlled intersection of SW Corbett Avenue and SW Hamilton Boulevard indicated rolling yield behavior for the heavy volume eastbound right and northbound left turn movements. To better replicate this behavior, yielding behavior at the intersection was modified from typical all-way stop controlled to provide some priority to these movements, and stop signs on the northbound and eastbound approaches were replaced with 5-mph reduced speed areas to replicate the rolling yield condition.

Model-wide, lane change distances were increased to match field observed vehicle behavior at specific locations that were observed.



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#### Volume/Density

The initial calibration target set was for traffic volumes. Per the ODOT Vissim Protocol guidelines, individual turn movements greater than 100 vehicles per hour, and entry and exit location volumes were generally calibrated within an acceptable GEH Statistic of less than 5.0, with some exceptions (mainly in the downtown area outside of the calibration area)<sup>6</sup>. The GEH statistic was calculated for all study intersections, focusing on the two-hour model analysis time period (4-6 PM). The traffic volume calibration results are documented in Attachment B to this document.

The total throughput at all study intersections passed the GEH statistic check. The majority of the movements with a volume greater than 100 vph also passed the GEH statistic check. Per conversations with the project team, there is some variance from the protocol guidelines allowed in the areas discussed as they are not areas being impacted but rather included in the model to help build realistic congestion in the study area.

#### **Travel Time**

As noted in the Data Collection Summary, peak 15-minute Google Traffic travel times were recorded during field observations. The travel time segments reported are listed in Table 1, along with the peak 15-minute Google Traffic travel times and Vissim minimum, maximum, and average peak hour travel times. Based on the calibrated extents of the model, the eastbound OR 26 segment was shortened from I-405 Southbound Off-Ramp to SW Milwaukie Avenue to I-405 Southbound Off-Ramp to Hwy 99E. Therefore, the Google travel times collected for this corridor during the field observations (which extended to SE Milwaukie Avenue) were replaced with the Google Typical Travel Time Range for the peak period.

Note that the HERE data shown in Table 1 is segment based (includes data from vehicles that only travel part of the overall measured travel time distance), and therefore some travel time values may vary compared to the travel times generated by the model as the segment data does not completely capture the impacts of lane utilization (or other factors) along the routes.

Table 1: Existing Conditions Travel Time Comparison

From	То	Direction	Distance (miles)	Vissim Average Travel Time 4:30- 5:30 PM average (min-max)	Maximum Observed Google Travel Time (minutes)	HERE Data Average Travel Time 4:30-5:30 PM
I-405 SB off- ramp/Broadway	Hwy 99E	EB	2.0	15:24 (8-22)	22*	10:36
Milwaukie Ave/Powell Boulevard	I-405 NB on- ramp/6 <sup>th</sup> Ave	WB	1.8	15:01 (6-32)	16	9:31
Barbur Blvd/Hamilton St	Hwy 99E	EB	1.8	9:19 (6-17)	17*	6:39

<sup>&</sup>lt;sup>6</sup> The GEH Statistic is a universal measure to compare model inputs and outputs. It is a continuous volume tolerance formula was developed to avoid the pitfalls associated with using a simple percentage comparison of a wide range of volumes.



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From	То	Direction	Distance (miles)	Vissim Average Travel Time 4:30- 5:30 PM average (min-max)	Maximum Observed Google Travel Time (minutes)	HERE Data Average Travel Time 4:30-5:30 PM
Milwaukie Ave/Powell Boulevard	Barbur Blvd/Hamilton St	WB	1.9	4:14 (3-10)	7	4:31
Macadam Ave/Curry St	Hwy 99E	EB	1.7	10:08 (5-21)	17*	6:44
Naito Pkwy/Harrison St	Hwy 99E	EB	1.8	8:41 (6-13)	12*	6:49

<sup>\*</sup>The Google Travel Time Segment measured during field observations extend to Milwaukie Avenue, so a longer travel time is expected.

Overall, the travel times ranges from VISSIM fall within the Google and HERE data set. The exact start and end points for each of the travel time routes are shown graphically and in text at the beginning of Attachment F.

#### Congestion

The simulation model was also used to measure delay relative to desired speed as an indicator of congestion. The Figures shown in Attachment C show the relative delay (queues) for each 15-minute interval during the 4-6 PM analysis period, as averaged over 15 simulations. The colors shown in these figures indicate the following approximate queue states:

- 1. Dark Green = Free flow, no delay
- 2. Light Green = Slight slowing
- 3. Yellow = Increased slowing, but not yet stop and go
- 4. Orange = Furthest extent of stop and go queues, rough approximation of 95th Percentile queue
- 5. Red = Fluctuates between low speed flow and stopped queue
- 6. Dark Red = Stop and go queue during the entire 15-minute peak interval

As part of the calibration process, these maps were compared to the Google Traffic maps screenshots captured during field observations and traffic counts.

## Base Year Model Measures of Effectiveness

The following measures of effectiveness were collected from the base year model and summarized in the appendices:

- Individual turn movement and total intersection delay at all study intersections for motor vehicles (Attachment D)
- Average and 95<sup>th</sup> percentile motor vehicle queue lengths (Attachment E)
- Corridor travel times for motor vehicles (Attachment F)

The delay measurements were calculated over the system peak hour interval (4:30-5:30 PM) for each simulation run. Delay reported for a study intersection is measured upstream to the next intersection and not through. To calculate 95<sup>th</sup> percentile queues, queue length data was collected from Vissim using queue counters on critical approaches and a 120-second interval to reflect queues that form while traffic flow is impeded. The 95th percentile queue was then calculated using a percentile function. Travel times were measured over segments within the study area based on the entering and exiting time stamp of each vehicle traversing the selected segment.



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# **ATTACHMENTS**

Attachment A: Google Traffic Maps

Attachment B: Vissim Model Two-Hour GEH Statistic

Attachment C: Vissim Model Queue Plots

Attachment D: Vissim Model Delay

Attachment E: Vissim Model Queue Data

Attachment F: Vissim Model Travel Time Data

# Attachment A Google Traffic Maps

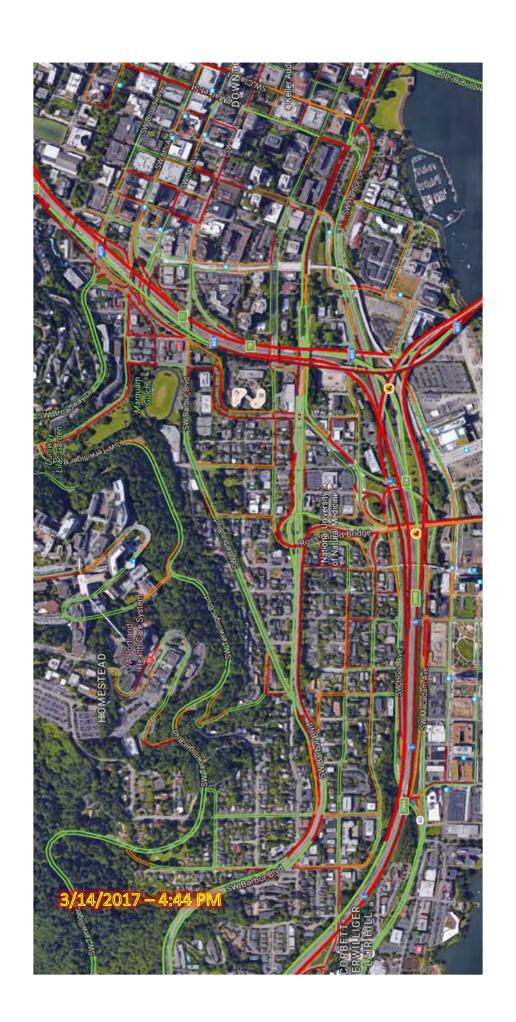
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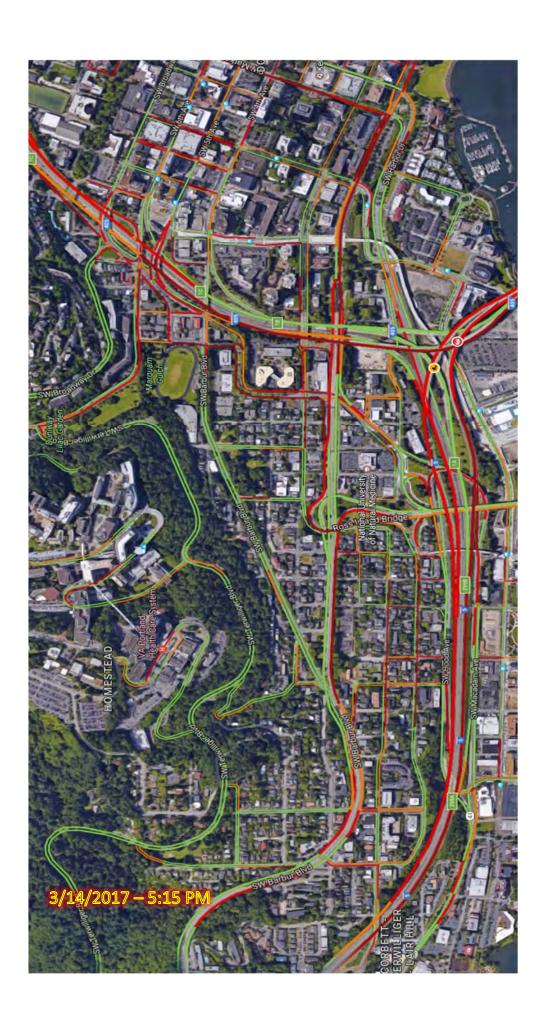
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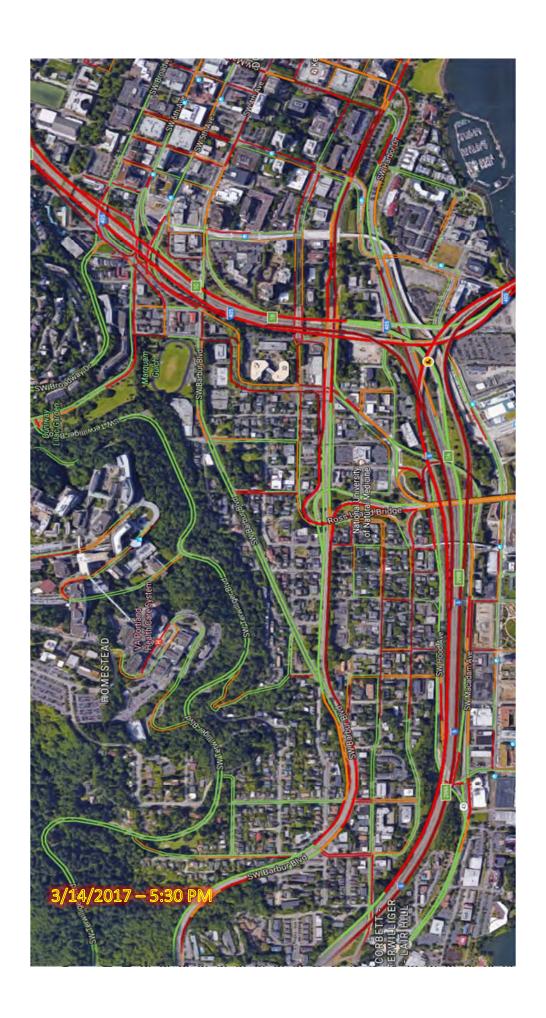


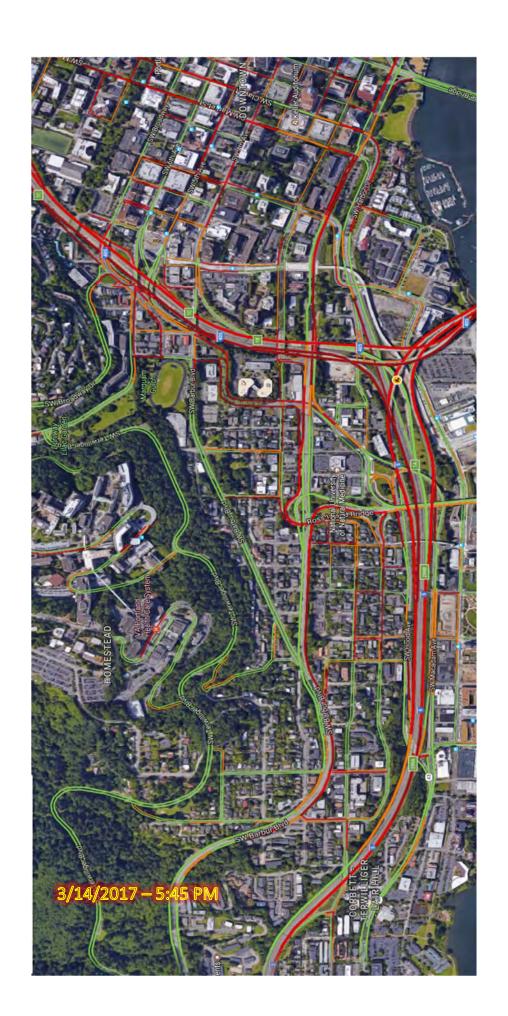


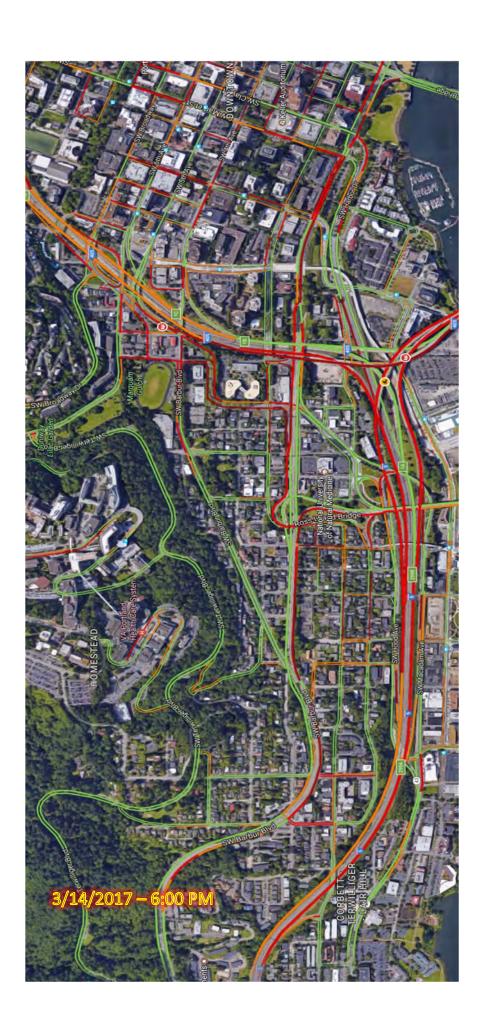


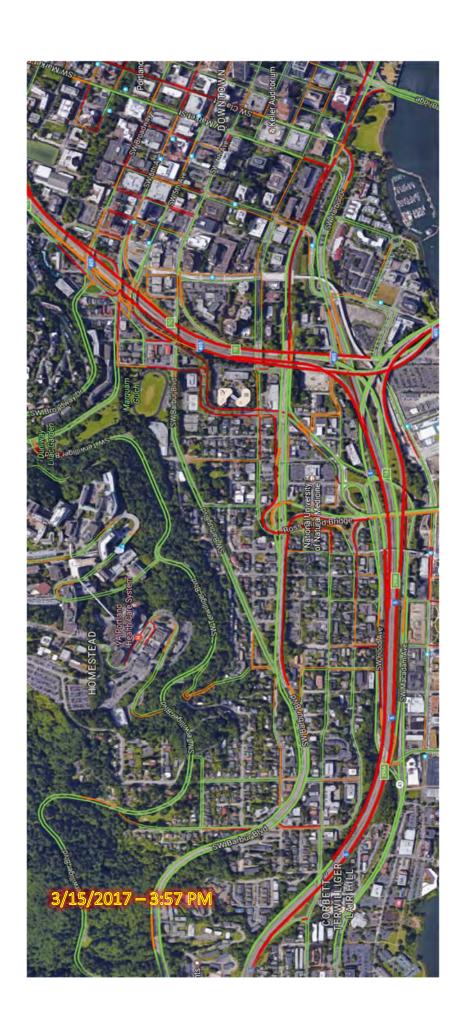


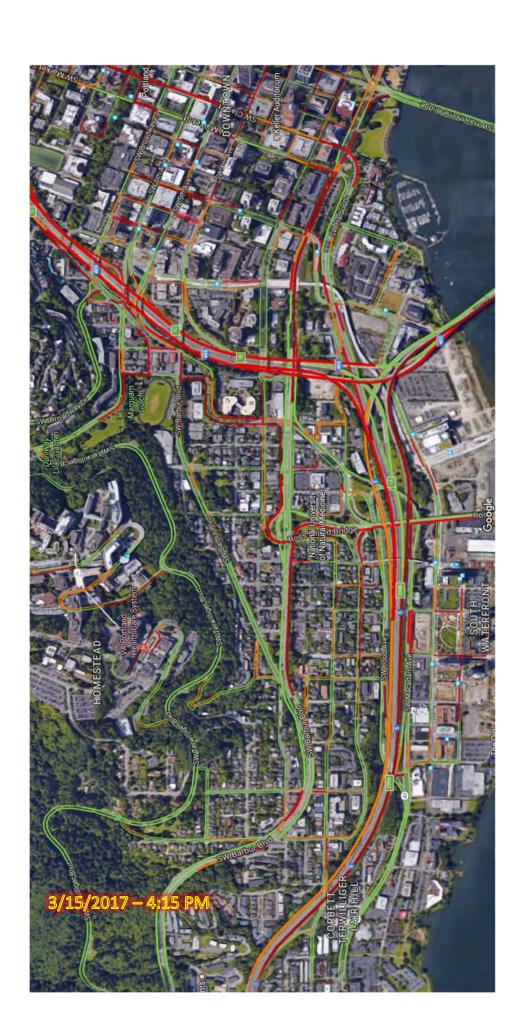


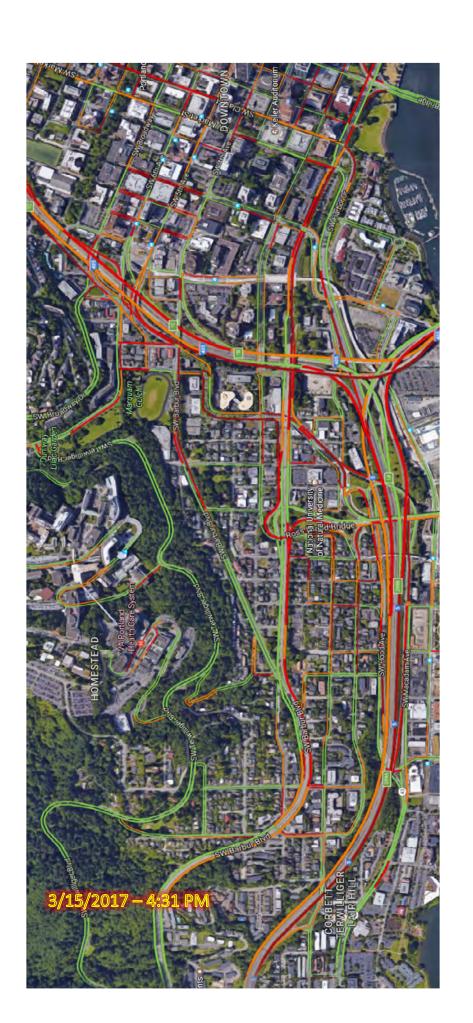






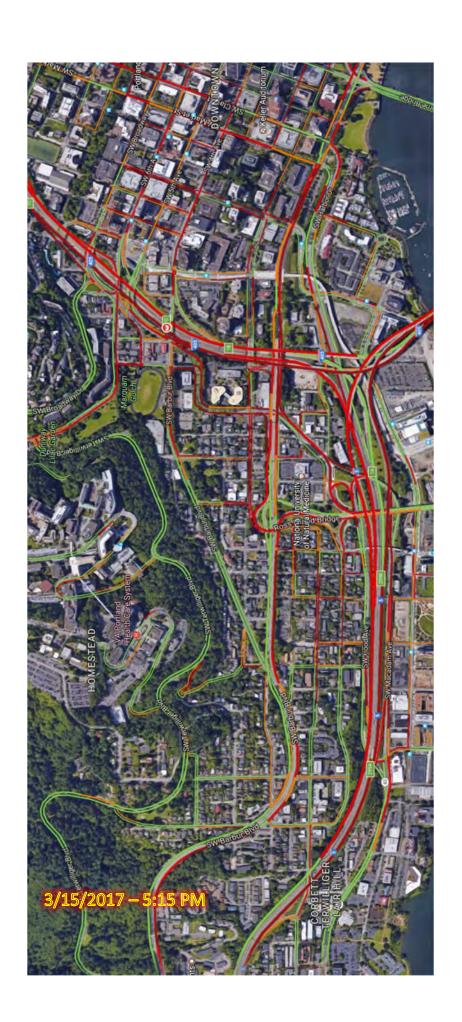


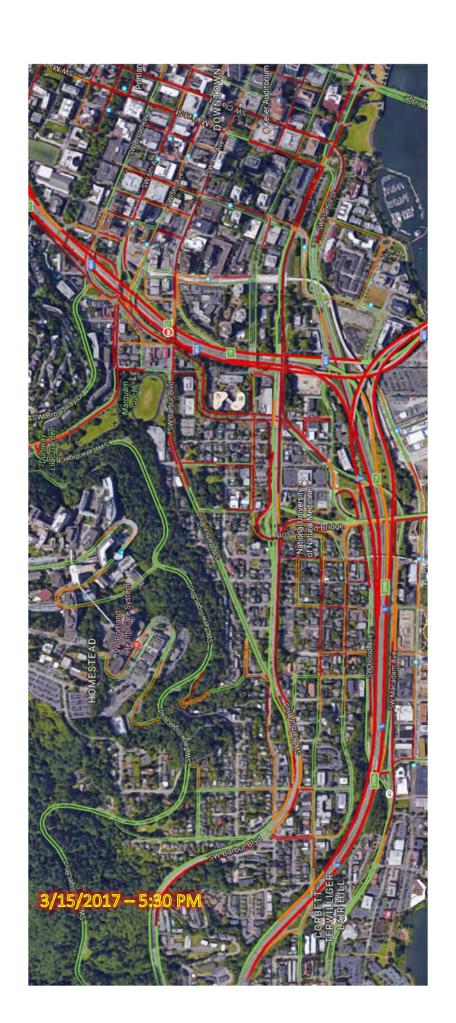


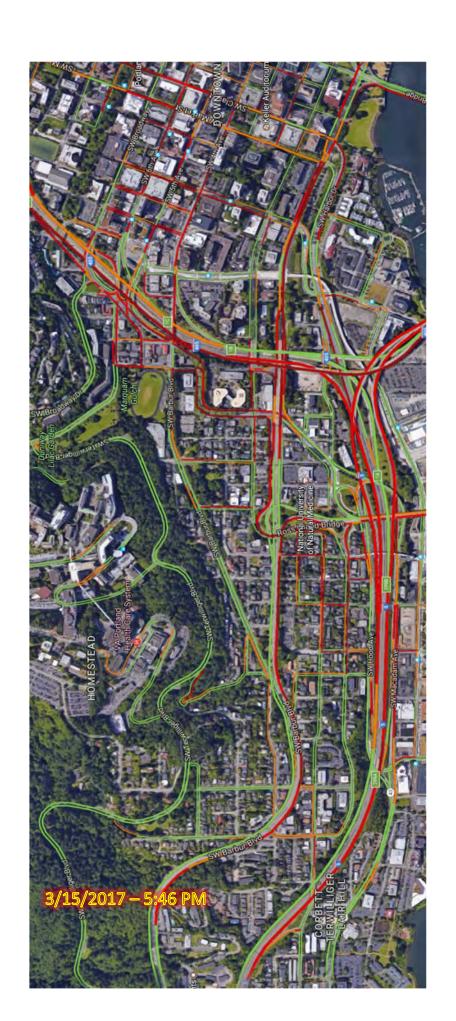






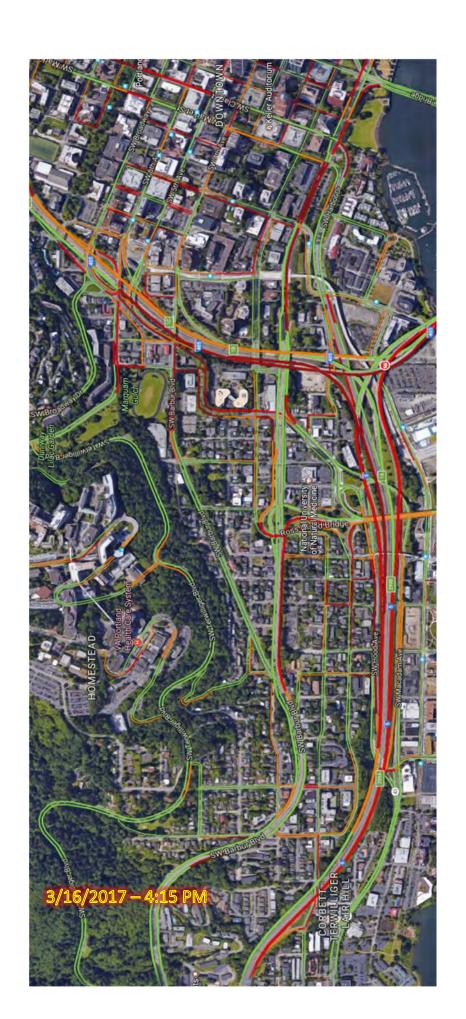


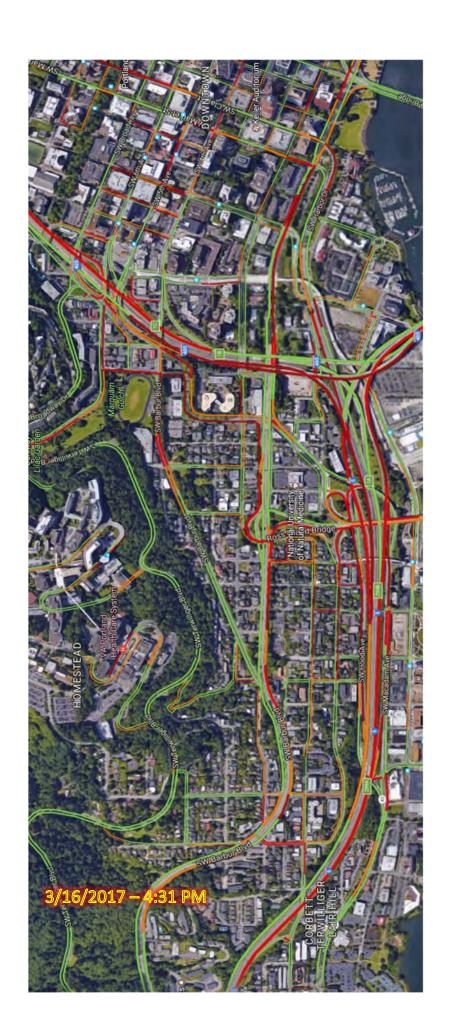


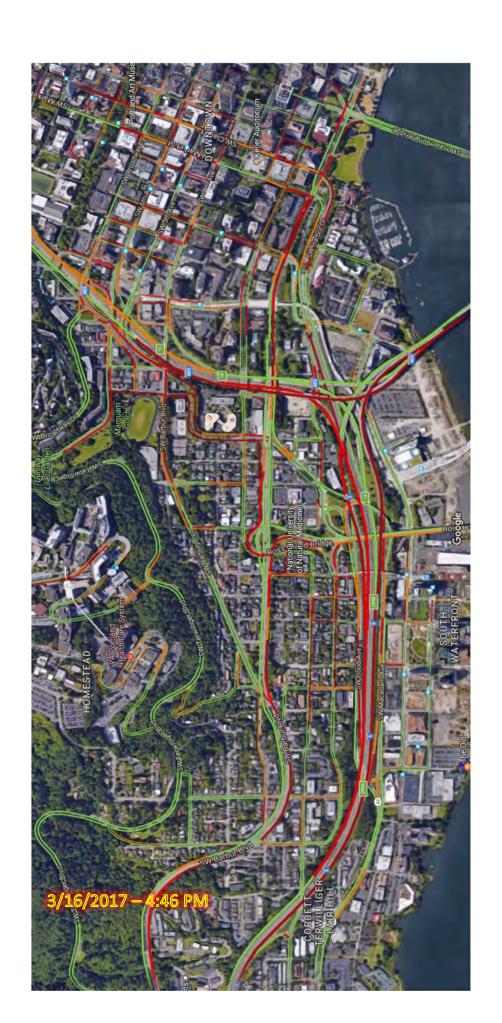


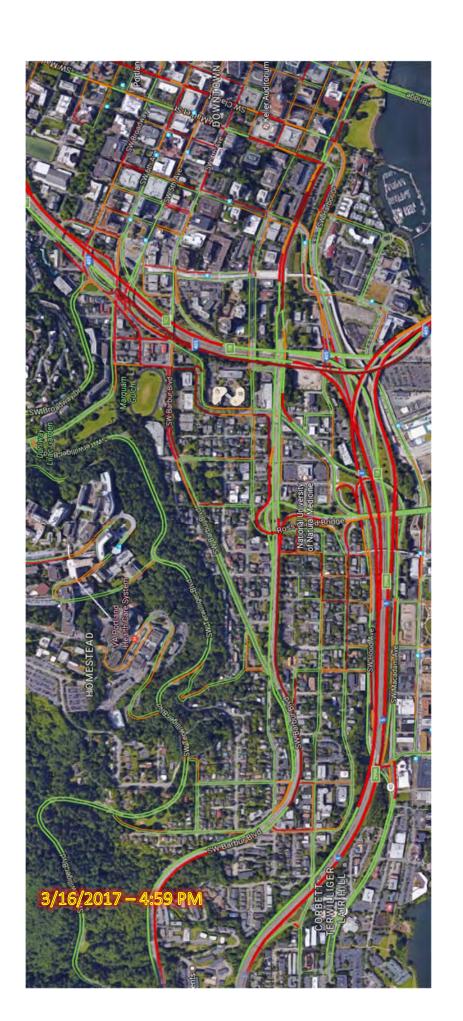


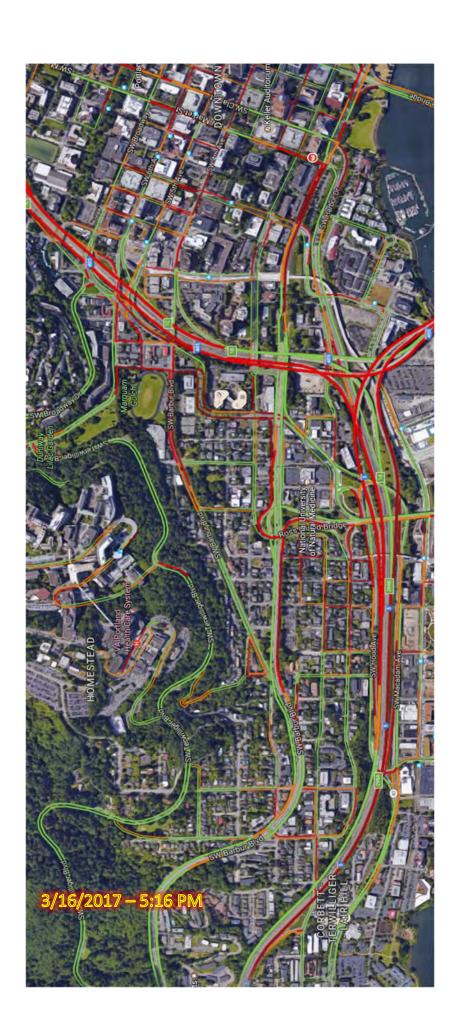




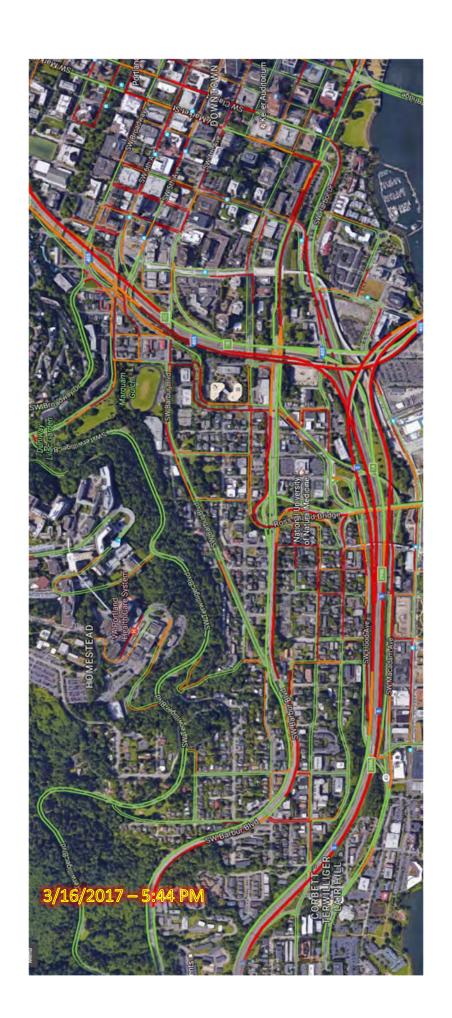


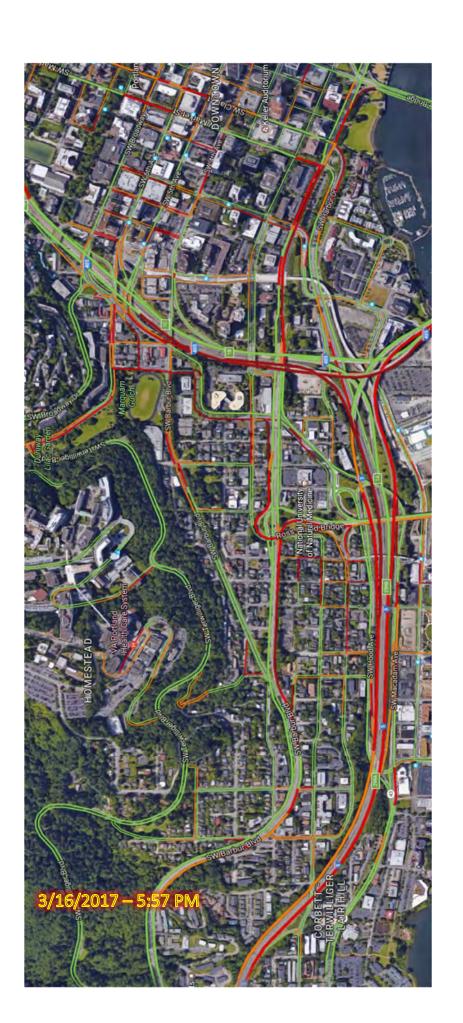












## Attachment B Vissim Model Two-Hour GEH Statistic

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Entry GEH	(4-6 PM)				
Entry Location	Count	Vissim Throughput	Diff	%Diff	GEH
SW 1st Ave @ SW Madison St - North Entrance	1409	1396	-13	-0.9%	0.3
SW Naito Pkwy @ SW Jefferson St - North Entrance	2855	2844	-11	-0.4%	0.2
SW 1st Ave @ SW Clay St - North Entrance	992	981	-11	-1.1%	0.4
SW 5th Ave @ SW Montgomery St - North Entrance	606	601	-5	-0.8%	0.2
SW Broadway @ SW College St - North Entrance	1493	1490	-3	-0.2%	0.1
SW 3rd Ave @ SW Lincoln St - North Entrance	75	72	-3	-4.0%	0.3
SW 2nd Ave @ SW Lincoln St - North Entrance	27	25	-2	-7.4%	0.4
SW Water Ave @ Ross Island Bridge - North Entrance	95	92	-3	-3.2%	0.3
SW Hood Ave @ SW Macadam Ave - North Entrance	858	847	-11	-1.3%	0.4
SE 8th Ave @ SE Powell Blvd - North Entrance	1641	1627	-14	-0.9%	0.3
SE 10th Ave @ SE Powell Blvd - North Entrance	168	163	-5	-3.0%	0.4
SE Milwaukie Ave @ SE Powell Blvd - North Entrance	1623	1596	-27	-1.7%	0.7
SW Kelly Ave @ SW Whitaker St - North Entrance	388	318	-70	-18.0%	3.7
SW Corbett Ave @ SW Bancroft St - North Entrance	461	455	-6	-1.3%	0.3
SW Terwilliger Blvd @ SW Capitol Hwy - North Entrance	1051	1037	-14	-1.3%	0.4
SW 3rd Ave Parking Lot OB @ SW Harrison St - North Entrance	75	89	14	18.7%	1.5
SW Hall St Parking Garage @ SW Hall St - North Entrance	26	24	-2	-7.7%	0.4
ADP South Driveway @ SW Arthur St - North Entrance	151	139	-12	-7.9%	1.0
SW 4th Ave @ SW Lincoln St - South Entrance	231	244	13	5.6%	0.8
SW 3rd Ave @ SW Lincoln St - South Entrance	33	41	8	24.2%	1.3
SW 2nd Ave @ SW Lincoln St - South Entrance	31	48	17	54.8%	2.7
SW 6th Ave/SW Terwilliger Blvd @ SW Sheridan St - South Entrance	1308	1257	-51	-3.9%	1.4
Hwy 99E NB @ Ross Island Bridge EB - South Entrance	59	56	-3	-5.1%	0.4
SE 8th Ave @ SE Powell Blvd - South Entrance	15	9	-6	-40.0%	1.7
SE 10th Ave @ SE Powell Blvd - South Entrance	22	17	-5	-22.7%	1.1
SE Milwaukie Ave @ SE Powell Blvd - South Entrance	811	803	-8	-1.0%	0.3
SW Hamilton Blvd @ SW Corbett Ave - South Entrance	1137	1127	-10	-0.9%	0.3
SW Barbur Blvd @ SW Capitol Hwy EB - South Entrance	2571	2560	-11	-0.4%	0.2
SW Terwilliger Blvd @ SW Capitol Hwy - South Entrance	349	339	-10	-2.9%	0.5
SW Harrison St Parking Garage @ SW Harrison St - South Entrance	115	113	-2	-1.7%	0.2
SW Broadway Dr @ SW Grant St - South Entrance	567	552	-15	-2.6%	0.6
SW Arthur St Parking Garage @ SW Arthur St - South Entrance	261	264	3	1.1%	0.2
Frontage Road @ SW Kelly Ave - South Entrance	89	79	-10	-11.2%	1.1
SW Corbett Ave @ SW Gibbs St - South Entrance	314	293	-21	-6.7%	1.2
SW Kelly Ave @ SW Curry St - South Entrance	272	265	-7	-2.6%	0.4
SW Naito Pkwy @ SW Clay St - East Entrance	1488	1396	-92	-6.2%	2.4
SW Naito Pkwy @ SW Harrison St - East Entrance	338	344	6	1.8%	0.3
SW 5th Ave @ SW Montgomery St - East Entrance	42	33	-9	-21.4%	1.5
SW 6th Ave @ SW Jackson St - East Entrance	316	311	-5	-1.6%	0.3
SW Water St @ SW Kelly St - East Entrance	208	263	55	26.4%	3.6
SW Barbur Blvd @ SW Hooker St - East Entrance	133	130	-3	-2.3%	0.3
SW Naito Pkwy @ SW Hooker St - East Entrance	54	48	-6	-11.1%	0.8
SW Corbett Ave/SW Kelly St @ SW Macadam Ave - East Entrance	1253	1211	-42	-3.4%	1.2
SW Barbur Blvd @ SW Woods St - East Entrance	50	47	-3	-6.0%	0.4
SE Milwaukie Ave @ SE Powell Blvd - East Entrance	3102	3112	10	0.3%	0.2
SW Barbur Blvd @ SW Whitaker St - East Entrance	61	57	-4	-6.6%	0.5
SW Hood Ave @ SW Whitaker St - East Entrance	1125	1123	-2	-0.2%	0.1
SW Barbur Blvd @ SW Pennoyer St - East Entrance	31	33	2	6.5%	0.4
SW Barbur Blvd @ SW Lowell St - East Entrance	16	9	-7	-43.8%	2.0
SW Corbett Ave @ SW Bancroft St - East Entrance	79	72	-7	-8.9%	0.8
SW Hamilton Blvd @ SW Corbett Ave - East Entrance	102	97	-5	-4.9%	0.5
SW Naito Pkwy @ Downtown PNR - East Entrance	105	76	-29	-27.6%	3.0
SW 1st Ave @ Harrison Square Driveway - East Entrance	227	234	7	3.1%	0.5
SW 4th Ave @ PSU Parking Garage - East Entrance	133	149	16	12.0%	1.3
SW Barbur Blvd @ Barbur Apartments Driveway - East Entrance	10	8	-2	-20.0%	0.7
SW 1st Ave @ SW Madison St - West Entrance	3128	3055	-73	-2.3%	1.3

Entry GEH (4	4-6 PM)				
Entry Location	Count	Vissim Throughput	Diff	%Diff	GEH
SW 1st Ave @ SW Market St - West Entrance	2362	2341	-21	-0.9%	0.4
SW 6th Ave @ SW Harrison St - West Entrance	248	237	-11	-4.4%	0.7
SW 6th Ave @ SW Hall St - West Entrance	219	217	-2	-0.9%	0.1
SW Broadway @ SW College St - West Entrance	36	16	-20	-55.6%	3.9
SW Broadway @ SW Jackson St - West Entrance	167	169	2	1.2%	0.2
SW 5th Ave @ SW Jackson St - West Entrance	17	16	-1	-5.9%	0.2
SW Broadway @ I-405 SB Off-Ramp/SW Lincoln St - West Entrance	1986	2038	52	2.6%	1.2
SW 4th Ave @ SW Caruthers St - West Entrance	51	48	-3	-5.9%	0.4
SW 1st Ave @ SW Sheridan St - West Entrance	32	28	-4	-12.5%	0.7
SW Barbur Blvd @ SW Hooker St - West Entrance	10	8	-2	-20.0%	0.7
SW Kelly St/SW Corbett Ave @ SW Porter St/SW Hood Ave - West Entrand	20	16	-4	-20.0%	0.9
SW Kelly Ave @ SW Whitaker St - West Entrance	408	404	-4	-1.0%	0.2
SW Barbur Blvd @ SW Condor Ave - West Entrance	202	199	-3	-1.5%	0.2
SW Barbur Blvd @ SW Lane St - West Entrance	334	334	0	0.0%	0.0
SW Barbur Blvd @ SW Abernathy St - West Entrance	38	40	2	5.3%	0.3
SW Barbur Blvd @ SW Hamilton St - West Entrance	284	244	-40	-14.1%	2.5
SW Terwilliger Blvd @ SW Capitol Hwy - West Entrance	1720	1725	5	0.3%	0.1
SW Naito Pkwy @ Harrison Square Driveway - West Entrance	169	125	-44	-26.0%	3.6
SW 1st Ave @ Make-A-Wish Driveway - West Entrance	69	77	8	11.6%	0.9
SW Naito Pkwy @ Ochin Inc Driveway - West Entrance	60	57	-3	-5.0%	0.4
SW 1st Ave @ ADP South East Driveway - West Entrance	155	105	-50	-32.3%	4.4
SW Barbur Blvd @ Under Armour Driveway - West Entrance	12	8	-4	-33.3%	1.3
SW 1st Ave @ SW Hooker St - West Entrance	643	686	43	6.7%	1.7
SW Kelly Ave @ SW Curry St - West Entrance	285	255	-30	-10.5%	1.8
Total	44692	44048	-644	-1.4%	3.1

Exit GEH	(4-6 PM)				
Exit Location	Count	Vissim Throughput	Diff	%Diff	GEH
SW Naito Pkwy @ SW Jefferson St - North Exit	2150	1993	-157	-7%	3.4
SW 4th Ave @ SW Harrison St - North Exit	2062	1974	-88	-4%	2.0
SW 6th Ave @ SW Harrison St - North Exit	1264	1216	-48	-4%	1.4
SW 3rd Ave @ SW Lincoln St - North Exit	5	8	3	60%	1.2
SW 2nd Ave @ SW Lincoln St - North Exit	32	39	7	22%	1.2
SW Corbett Ave/SW Kelly St @ SW Macadam Ave - North Exit	44	45	1	2%	0.1
SW Water Ave @ Ross Island Bridge - North Exit	23	21	-2	-9%	0.4
SE 8th Ave @ SE Powell Blvd - North Exit	123	122	-1	-1%	0.1
SE 10th Ave @ SE Powell Blvd - North Exit	670	639	-31	-5%	1.2
SE Milwaukie Ave @ SE Powell Blvd - North Exit	815	820	5	1%	0.2
SW Corbett Ave @ SW Bancroft St - North Exit	1079	1032	-47	-4%	1.4
SW Terwilliger Blvd @ SW Capitol Hwy - North Exit	352	341	-11	-3%	0.6
SW 3rd Ave Parking Lot IB @ SW Harrison St - North Exit	16	19	3	19%	0.7
SW Hall St Parking Garage @ SW Hall St - North Exit	28	30	2	7%	0.4
ADP South Driveway @ SW Arthur St - North Exit	5	6	1	20%	0.4
SW 1st Ave @ SW Madison St - South Exit	1168	1155	-13	-1%	0.4
SW 5th Ave @ SW Jackson St - South Exit	744	712	-32	-4%	1.2
SW 3rd Ave @ SW Lincoln St - South Exit	21	30	9	43%	1.8
SW 2nd Ave @ SW Lincoln St - South Exit	28	40	12	43%	2.1
SW 6th Ave/SW Terwilliger Blvd @ SW Sheridan St - South Exit	780	670	-110	-14%	4.1
SW Kelly St/SW Corbett Ave @ SW Porter St/SW Hood Ave - South Exit	72	86	14	19%	1.6
Hwy 99E SB @ Ross Island Bridge EB - South Exit	2286	2342	56	2%	1.2
SE 8th Ave @ SE Powell Blvd - South Exit	67	66	-1	-1%	0.1
SE 10th Ave @ SE Powell Blvd - South Exit	32	30	-2	-6%	0.4
SE Milwaukie Ave @ SE Powell Blvd - South Exit	921	908	-13	-1%	0.4
SW Hamilton Blvd @ SW Corbett Ave - South Exit	1146	1218	72	6%	2.1
SW Barbur Blvd @ SW Capitol Hwy WB - South Exit	2645	2659	14	1%	0.3
SW Terwilliger Blvd @ SW Capitol Hwy - South Exit	711	697	-14	-2%	0.5
SW Harrison St Parking Garage @ SW Harrison St - South Exit	107	109	2	2%	0.2
SW Broadway Dr @ SW Grant St - South Exit	439	462	23	5%	1.1
Frontage Road @ SW Kelly Ave - South Exit	3	11	8	267%	3.0
SW Corbett Ave @ SW Gibbs St - South Exit	464	466	2	0%	0.1
SW Kelly Ave @ SW Curry St - South Exit	31	32	1	3%	0.2
SW Hood Ave @ SW Curry St - South Exit	3622	3626	4	0%	0.1
SW 1st Ave @ SW Madison St - East Exit	3369	3296	-73	-2%	1.3
SW Naito Pkwy On-Ramp @ Hawthorne Bridge - East Exit	610	532	-78	-13%	3.3
SW Naito Pkwy @ SW Market St - East Exit	2320	2313	-7	0%	0.1
SW Naito Pkwy @ SW Harrison St - East Exit	258	245	-13	-5%	0.8
SW Water St @ SW Kelly St - East Exit	99	121	22	22%	2.1
SW Barbur Blvd @ SW Hooker St - East Exit	173	166	-7	-4%	0.5
SW Barbur Blvd @ SW Woods St - East Exit	582	580	-2	0%	0.1
SE Milwaukie Ave @ SE Powell Blvd - East Exit	4135	4129	-6	0%	0.1
SW Barbur Blvd @ SW Whitaker St - East Exit	131	135	4	3%	0.3
SW Barbur Blvd @ SW Pennoyer St - East Exit	14	15	1	7%	0.3
SW Barbur Blvd @ SW Lowell St - East Exit	355	361	6	2%	0.3
SW Corbett Ave @ SW Bancroft St - East Exit	120	117	-3	-3%	0.3
SW Hamilton Blvd @ SW Corbett Ave - East Exit	156	158	2	1%	0.2
SW Naito Pkwy @ Downtown PNR - East Exit	5	8	3	60%	1.2
SW 1st Ave @ Harrison Square Driveway - East Exit	5	5	0	0%	0.0
SW 1st Ave @ Make-A-Wish Driveway - East Exit	146	169	23	16%	1.8
SW 4th Ave @ PSU Parking Garage - East Exit	12	20	8	67%	2.0
SW Broadway @ I-405 SB On-ramp - East Exit	664	662	-2	0%	0.1
SW Barbur Blvd @ Barbur Apartments Driveway - East Exit	156	153	-3	-2%	0.2
SW Naito Pkwy @ SW Jefferson St - West Exit	362	357	-5	-1%	0.3
SW 1st Ave @ SW Clay St - West Exit	878	852	-26	-3%	0.9
SW 6th Ave @ SW Harrison St - West Exit	134	128	-6	-4%	0.5

Exit GEH	(4-6 PM)				
Exit Location	Count	Vissim Throughput	Diff	%Diff	GEH
SW Broadway @ SW College St - West Exit	32	35	3	9%	0.5
SW Broadway @ SW Jackson St - West Exit	102	105	3	3%	0.3
SW 6th Ave @ I-405/Hwy 26 On-Ramp - West Exit	2601	2529	-72	-3%	1.4
SW 5th Ave @ SW Jackson St - West Exit	17	18	1	6%	0.2
SW Broadway @ I-405 SB Off-Ramp/SW Lincoln St - West Exit	10	10	0	0%	0.0
SW 4th Ave @ SW Caruthers St - West Exit	29	26	-3	-10%	0.6
SW 6th Ave/SW Terwilliger Blvd @ SW Sheridan St - West Exit	19	35	16	84%	3.1
SW 1st Ave @ SW Sheridan St - West Exit	3	28	25	833%	6.4
SW Barbur Blvd @ SW Hooker St - West Exit	21	20	-1	-5%	0.2
SW Kelly St/SW Corbett Ave @ SW Porter St/SW Hood Ave - West Exit	49	67	18	37%	2.4
SW Naito Pkwy @ SW Whitaker St - West Exit	57	60	3	5%	0.4
SW Kelly Ave @ SW Whitaker St - West Exit	21	20	-1	-5%	0.2
SW Barbur Blvd @ SW Condor Ave - West Exit	20	27	7	35%	1.4
SW Barbur Blvd @ SW Lane St - West Exit	63	63	0	0%	0.0
SW Barbur Blvd @ SW Abernathy St - West Exit	34	32	-2	-6%	0.3
SW Barbur Blvd @ SW Hamilton St - West Exit	182	191	9	5%	0.7
SW Terwilliger Blvd @ SW Capitol Hwy - West Exit	2579	2619	40	2%	0.8
SW Naito Pkwy @ Harrison Square Driveway - West Exit	10	11	1	10%	0.3
SW 6th Ave @ SW 6th Ave Parking Garage - West Exit	106	114	8	8%	0.8
SW 1st Ave @ Make-A-Wish Driveway - West Exit	5	7	2	40%	0.8
SW Naito Pkwy @ Ochin Inc Driveway - West Exit	31	31	0	0%	0.0
SW 1st Ave @ Lincoln Apartments Driveway - West Exit	5	7	2	40%	0.8
SW Barbur Blvd @ Under Armour Driveway - West Exit	19	20	1	5%	0.2
SW 1st Ave @ SW Hooker St - West Exit	10	35	25	250%	5.3
SW Kelly Ave @ SW Curry St - West Exit	8	12	4	50%	1.3
SW Barbur Blvd SB @ SW Bancroft St - West Exit	57	57	0	0%	0.0
Total	44836	44441	-395	-1%	1.9

	Existing P	M GEH (4-6 p	.m.)					
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
		SBL	337	334	-3	-1%	12	0.2
		SBT	1072	1062	-10	-1%	13	0.3
1	SW 1st Ave @ SW Madison St	EBT	3032	2962	-70	-2%	10	1.3
		EBR	96	93	-3 or	-3%	9	0.3
		Total NBR	4537 610	4452 532	-85 -78	-2% -13%	10 8	1.3 3.3
2	SW Naito Pkwy On-Ramp @ Hawthorne Bridge	Total	610	532	-78 -78	-13%	8	3.3
		NBL	136	136	0	0%	14	0.0
		NBT	2150	1993	-157	-7%	49	3.4
3	SW Naito Pkwy @ SW Jefferson St	SBT	2629	2623	-6	0%	30	0.1
	over trained having great series series	SBR	226	221	-5	-2%	16	0.3
		Total	5141	4973	-168	-3%	70	2.4
		NBT	2486	2260	-226	-9%	54	4.6
		SBT	2629	2630	1	0%	43	0.0
4	SW Naito Pkwy @ SW Columbia St	EBL	410	401	-9	-2%	10	0.4
	or rate i king & or columbia of	EBR	575	583	8	1%	11	0.4
		Total	6100	5875	-225	-4%	72	2.9
		SBT	868	858	-10	-1%	10	0.3
		SBR	124	123	-10	-1%	10	0.3
5	SW 1st Ave @ SW Clay St	WBL	90	95	5	6%	9	0.1
	JVV 13t AVE @ JVV Clay 3t	WBT	754	729	-25	-3%	34	0.5
		Total	1836	1806	-30	-2%	36	0.7
		NBL	90	71	-19	-21%	9	2.1
		NBT	1639	1480	-159	-10%	37	4.0
		SBT	3029	3041	12	0%	42	0.2
		SBR	175	172	-3	-2%	10	0.2
6	SW Naito Pkwy @ SW Clay St	WBL	62	34	-3 -28	-2 <i>%</i> -45%	6	4.0
		WBT	579	581	2	0%	30	0.1
		WBR	847	781	-66	-8%	35	2.3
		Total	6421	6334	-87	-1%	88	1.1
		SBL	340	304	-36	-11%	10	2.0
		SBT	618	649	31	5%	17	1.2
7	SW 1st Ave @ SW Market St	EBT	1693	1687	-6	0%	19	0.1
,	3W 13t AVE @ 3W Market 3t	EBR	669	654	-15	-2%	24	0.6
		Total	3320	3294	-26	-1%	32	0.5
		NBT	1010	859	-151	-15%	41	4.9
		NBR	16	12	-4	-25%	3	1.1
		SBL	1478	1481	3	0%	36	0.1
		SBT	1613	1593	-20	-1%	44	0.1
8	SW Naito Pkwy @ SW Market St	EBL	719	693	-26	-4%	14	1.0
		EBT	826	820	-20 -6	-1%	23	0.2
		EBR	488	474	-0 -14	-3%	26	0.2
		Total	6150	5933	-14 -217	-3% -4%	82	2.8
		NBL	76	59	-217	-22%	12	2.0
		NBT	1346	1272	-74	-5%	42	2.0
		NBR	247	308	61	25%	19	3.7
		EBL	144	182	38	26%	15	3.0
9	SW 4th Ave @ SW Harrison St	EBT	238	191	-47	-20%	11	3.2
		WBT	325	339	14	-20% 4%	15	0.8
		WBR	572	520	-52	-9%	28	2.2
		Total	2948	2871	-52 -77	-9% -3%	67	1.4
		NBL	186	141	-45	-3%	14	3.5
		NBR	174	141 157	-45 -17	-24% -10%	21	3.5 1.3
		SBL	403	411	-17	2%	18	0.4
		SBT	917	935	18	2%	29	0.4
					-6			
12	SW 1st Ave @ SW Harrison St	SBR EBT	189 386	183 372	-6 -14	-3% -4%	14 13	0.4 0.7
		EBR	151	173	22	15%	13	1.7

	Existing P	M GEH (4-6 p	.m.)					
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
		WBL	49	92	43	88%	11	5.1
		WBT	515	516	1	0%	27	0.0
		Total	2970	2979	9	0%	78	0.2
		NBL	357	389	32	9%	24	1.7
		NBT NBR	556 48	523 46	-33 -2	-6% -4%	24 6	1.4 0.3
		SBT	2043	1977	-66	-3%	67	1.5
		SBR	97	113	16	16%	10	1.6
		EBL	237	209	-28	-12%	21	1.9
13	SW Naito Pkwy @ SW Harrison St	EBT	210	199	-11	-5%	13	0.8
		EBR	516	529	13	3%	21	0.6
		WBL	215	229	14	7%	9	0.9
		WBT	110	107	-3	-3%	8	0.3
		WBR	13	8	-5	-38%	3	1.5
		Total	4402	4328	-74	-2%	103	1.1
		SBT	606	601	-5	-1%	5	0.2
16	SW 5th Ave @ SW Montgomery St	WBL	42	33	-9	-21%	1	1.5
		Total	648	634	-14	-2%	5	0.6
		NBL	30	23	-7	-23%	4	1.4
		NBT	959	919	-40	-4%	24	1.3
		NBR	180	223	43	24%	14	3.0
17	SW 6th Ave @ SW Harrison St	EBL	84	80	-4	-5%	5	0.4
17	SW Oth Ave @ SW Harrison St	EBT	164	157	-7	-4%	5	0.6
		WBT	104	105	1	1%	14	0.1
		WBR	221	217	-4	-2%	20	0.3
		Total	1742	1723	-19	-1%	33	0.5
		SBL	128	124	-4	-3%	9	0.4
		SBT	520	513	-7	-1%	12	0.3
		EBT	254	248	-6	-2%	16	0.4
18	SW 5th Ave @ SW Harrison St	EBR	105	142	37	35%	12	3.3
		WBL	69	70	1	1%	7	0.1
		WBT	332	328	-4	-1%	18	0.2
		Total	1408	1425	17	1%	30	0.5
		NBL NBT	56	10	-46	-82% 6%	2	8.0 1.9
		EBL	1115 79	1181 77	66 -2	-3%	22 8	0.2
10	SW 6th Ave @ SW Hall St	EBT	140	140	0	-3% 0%		0.2
19	SVV OUI AVE W SVV Hall St	WBT	51	106	55	108%	8 10	6.2
		WBR	81	25	-56	-69%	4	7.7
		Total	1522	1538	16	1%	24	0.4
		SBL	68	75	7	10%	9	0.8
		SBT	626	652	26	4%	18	1.0
		EBT	84	65	-19	-23%	7	2.2
20	SW 5th Ave @ SW Hall St	EBR	62	77	15	24%	5	1.8
		WBL	50	120	70	140%	9	7.6
		WBT	140	138	-2	-1%	12	0.2
		Total	1030	1127	97	9%	28	3.0
		NBL	190	259	69	36%	16	4.6
21	SW 4th Ave @ SW Hall St	NBT	1517	1501	-16	-1%	42	0.4
21	אינו אינב שי אינו האינב	EBL	152	140	-12	-8%	11	1.0
		Total	1859	1899	40	2%	45	0.9
		SBL	132	128	-4	-3%	7	0.4
		SBT	1348	1347	-1	0%	10	0.0
		SBR	13	15	2	15%	3	0.5
22	SW Broadway @ SW College St	EBT	15	16	1	7%	0	0.3
	The same of the sa	EBR	21	0	-21	-100%	0	6.5
		WBL	338	249	-89	-26%	14	5.2
		WBT	19	20	1	5%	3	0.2

	Existing PM GEH (4-6 p.m.)										
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH			
		Total	1886	1774	-112	-6%	17	2.6			
		NBL	212	112	-100	-47%	9	7.9			
		NBT	1022	1016	-6	-1%	22	0.2			
22	CM CAL ALIA O CM CALLARA CA	EBL	77	82	5	6%	6	0.6			
23	SW 6th Ave @ SW College St	EBT WBT	70 145	63 157	-7 12	-10% 8%	8 9	0.9 1.0			
		WBR	72	94	22	31%	10	2.4			
		Total	1614	1524	-90	-6%	22	2.4			
		SBL	54	87	33	61%	9	3.9			
		SBT	684	763	79	12%	15	2.9			
		EBT	37	9	-28	-76%	2	5.8			
24	SW 5th Ave @ SW College St	EBR	49	53	4	8%	8	0.6			
		WBL	208	182	-26	-13%	11	1.9			
		WBT	217	249	32	15%	11	2.1			
		Total	1249	1345	96	8%	29	2.7			
		NBL	425	432	7	2%	16	0.3			
25	SW 4th Ave @ SW College St	NBT	1616	1663	47	3%	40	1.2			
25	SVV 4til Ave @ SVV College St	EBL	91	96	5	5%	9	0.5			
		Total	2132	2191	59	3%	38	1.3			
		SBL	85	75	-10	-12%	11	1.1			
		SBT	1539	1527	-12	-1%	19	0.3			
		SBR	83	0	-83	-100%	0	12.9			
26	SW Broadway @ SW Jackson St	EBT	71	73	2	3%	6	0.2			
		EBR	96	96	0	0%	6	0.0			
		WBL	364	330	-34	-9%	27	1.8			
		WBT	19	105	86	453%	10	10.9			
		Total	2257	2206	-51	-2%	35	1.1			
		NBL	383	437	54	14%	30	2.7			
27	CM Cale Assa O CM Includes Ca	NBT	772	670	-102	-13%	21	3.8			
27	SW 6th Ave @ SW Jackson St	EBL	156	148	-8 -5	-5%	14	0.6			
		WBR Total	316 1627	311 1566	-5 -61	-2% -4%	1 26	0.3 1.5			
		NBL	2601	2529	-72	-3%	11	1.4			
28	SW 6th Ave @ I-405/Hwy 26 On-Ramp	Total	2601	2529	-72	-3%	11	1.4			
		SBL	214	286	72	34%	14	4.6			
		SBT	727	696	-31	-4%	17	1.2			
29	SW 5th Ave @ SW Jackson St	SBR	17	18	1	6%	5	0.2			
		EBR	17	16	-1	-6%	1	0.2			
		Total	975	1014	39	4%	22	1.2			
		SBL	161	184	23	14%	12	1.8			
		SBT	53	0	-53	-100%	0	10.3			
30	SW 5th Ave @ SW Lincoln St	WBL	15	0	-15	-100%	0	5.5			
		WBU	53	22	-31	-58%	5	5.1			
		Total	282	206	-76	-27%	13	4.9			
		NBL	38	14	-24	-63%	3	4.7			
		NBT	1317	1354	37	3%	36	1.0			
		EBL	43	3	-40	-93%	1	8.3			
31	SW 4th Ave @ SW Lincoln St	EBT	171	204	33	19%	13	2.4			
		WBT	30	8	-22	-73%	3	5.0			
		WBR	329	367 2254	38	12%	19 51	2.0			
		Total	2280	2254 41	-26 8	-1%	51 0	0.5 1.3			
		NBR SBR	33 75	72	-3	24% -4%		0.3			
		EBT	271	234	-3 -37	-4% -14%	1 12	2.3			
32	SW 3rd Ave @ SW Lincoln St	EBR	2/1	30	-37 9	43%	6	1.8			
32	300 Std Ave & 300 Ellicoll St	WBT	284	303	19	7%	19	1.1			
		WBR	5	8	3	60%	2	1.2			
		Total	689	689	0	0%	27	0.0			

	Existing P	M GEH (4-6 p	.m.)					
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
		NBL	13	12	-1	-8%	2	0.3
		NBR	18	36	18	100%	2	3.5
		SBL	17	12	-5	-29%	3	1.3
		SBR	10	13	3	30%	3	0.9
		EBL	9	9	0	0%	3	0.0
33	SW 2nd Ave @ SW Lincoln St	EBT	286	255	-31	-11%	12	1.9
		EBR	9 19	11 29	2 10	22% 53%	3 7	0.6 2.0
		WBL WBT	266	285	19	7%	20	1.1
		WBR	23	30	7	30%	6	1.4
		Total	670	692	22	3%	31	0.8
		NBL	186	183	-3	-2%	18	0.2
		NBT	461	437	-24	-5%	27	1.1
		SBT	1059	1108	49	5%	30	1.5
34	SW 1st Ave @ SW Lincoln St	SBR	122	161	39	32%	12	3.3
		EBL	40	41	1	3%	6	0.2
		EBR	281	261	-20	-7%	13	1.2
		Total	2149	2192	43	2%	65	0.9
		NBT	981	982	1	0%	42	0.0
35	SW Naito Pkwy @ SW Lincoln St	SBT	2823	2783	-40	-1%	72	0.8
		Total	3804	3765	-39	-1%	83	0.6
		NBR	493	496	3	1%	10	0.1
		SBL	1010	950	-60	-6%	24	1.9
		SBT	315	337	22	7%	12	1.2
37	SW Broadway @ I-405 SB Off-Ramp/SW Lincoln St	SBR	10	10	0	0%	4	0.0
37	3W Broadway @ 1-403 3B OTT-Kamp/3W Lincoll St	EBT	1868	1912	44	2%	14	1.0
		EBR	118	126	8	7%	12	0.7
		EBU	16	19	3	19%	5	0.7
		Total	3830	3849	19	0%	35	0.3
		NBT	946	946	0	0%	36	0.0
		EBL	385	331	-54	-14%	15	2.9
38	SW Broadway @ SW Grant St/SW 6th Ave	EBT	2258	2396	138	6%	26	2.9
	, , ,	EBR	796	701	-95	-12%	24	3.5
		WBR	2401	2358	-43	-2%	33	0.9
		Total	6789	6730	-59	-1%	40	0.7
		SBL EBT	405 2261	513 2396	108 135	27% 6%	19 28	5.0 2.8
39	SW Broadway @ SW 5th Ave	WBT	2401	2360	-41	-2%	31	0.8
		Total	5067	5269	202	4%	46	2.8
		NBL	4	4	0	0%	1	0.0
		NBT	865	886	21	2%	34	0.7
		SBT	775	687	-88	-11%	24	3.3
		SBR	21	18	-3	-14%	4	0.7
40	CIM AND ASSESSMENT OF THE CO	EBL	40	39	-1	-3%	2	0.2
40	SW 4th Ave @ SW Caruthers St	EBR	11	9	-2	-18%	2	0.6
		WBL	164	87	-77	-47%	6	6.9
		WBT	4	4	0	0%	2	0.0
		WBR	68	25	-43	-63%	6	6.3
		Total	1952	1758	-194	-10%	35	4.5
		SBT	2571	2817	246	10%	35	4.7
		SBR	95	94	-1	-1%	9	0.1
41	SW 5th Ave @ SW Caruthers St	WBL	24	21	-3	-13%	4	0.6
		WBT	141	22	-119	-84%	4	13.2
		Total	2831	2954	123	4%	35	2.3
		NBL	397	402	5	1%	19	0.3
		NBT	1112	1151	39	4%	37	1.2
42	SW 4th Ave @ SW Caruthers St/SW Broadway	WBT	2004	1978	-26	-1%	30	0.6
		WBR	175	218	43	25%	15	3.1

Existing PM GEH (4-6 p.m.)										
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH		
		Total	3790	3852	62	2%	51	1.0		
43	SW 5th Ave @ SW Sheridan St	SBL EBT	2595 590	2841 466	246 -124	9% -21%	26 26	4.7 5.4		
45	SW Stil Ave @ SW Sheridan St	Total	3185	3307	122	4%	43	2.1		
		NBT	869	875	6	1%	38	0.2		
		NBR	439	365	-74	-17%	22	3.7		
4.4	SNA Cabo Anna (SNA) Tamurilliman Blood @ SNA Shanidan Sa	SBL	151	93	-58	-38%	7	5.3		
44	SW 6th Ave/SW Terwilliger Blvd @ SW Sheridan St	SBT	780	670	-110	-14%	24	4.1		
		SBR	19	18	-1	-5%	4	0.2		
		Total	2258	2038	-220	-10%	52	4.7		
		NBT	1370	1340	-30	-2%	32	0.8		
		NBR	64	61	-3	-5%	5	0.4		
45	SW 4th Ave/SW Barbur Blvd @ SW Sheridan St	EBL	202	217	15	7%	13	1.0		
		EBT	1659	1772	113	7%	38	2.7		
		EBR	1324	1321	-3 02	0%	25 55	0.1		
		Total NBL	4619 1	4711 1	92	2% 0%	55 1	0.0		
		NBT	340	346	6	2%	22	0.0		
		NBR	288	335	47	16%	13	2.7		
		SBL	684	683	-1	0%	16	0.0		
		SBT	654	653	-1	0%	33	0.0		
		SBR	2	26	24	1200%	5	6.4		
46	SW 1st Ave @ SW Sheridan St	EBL	5	13	8	160%	2	2.7		
		EBT	9	10	1	11%	3	0.3		
		EBR	18	5	-13	-72%	2	3.8		
		WBL	48	70	22	46%	8	2.9		
		WBT	0	1	1	#DIV/0!	1	1.4		
		WBR	59	44	-15	-25%	8	2.1		
		Total	2108	2188	80	4%	49	1.7		
		EBT	981	1029	48	5%	15	1.5		
47	SW Naito Pkwy @ SW Sheridan St	WBT	107	115	8	7%	13	0.8		
		Total	1088	1144	56	5%	23	1.7		
		NBL	50	58	8	16%	7	1.1		
		NBT NBR	186 158	189 157	3 -1	2% -1%	15 7	0.2 0.1		
		SBL	215	243	28	13%	18	1.9		
		SBT	522	461	-61	-12%	25	2.8		
		SBR	133	126	-7	-5%	4	0.6		
48	SW 1st Ave @ SW Arthur St	EBL	60	125	65	108%	8	6.8		
		EBT	1775	1861	86	5%	38	2.0		
		EBR	144	117	-27	-19%	14	2.4		
		WBT	1952	1965	13	1%	41	0.3		
		WBR	383	368	-15	-4%	13	0.8		
		Total	5578	5670	92	2%	67	1.2		
		EBT	205	306	101	49%	17	6.3		
49	SW Naito Pkwy @ SW Arthur St	EBR	1943	1958	15	1%	38	0.3		
		Total	2148	2264	116	5%	40	2.5		
		NBL	2303	2325	22	1%	46	0.5		
50	SW Naito Pkwy @ SW Kelly St	NBT	611	617	6	1%	29	0.2		
		Total	2982	2942	-40	-1%	58	0.7		
		NBT	2769	2678	-91 o	-3%	54 °	1.7		
		NBR SBL	61 38	69 52	8 14	13% 37%	8 8	1.0 2.1		
51	SW Water St @ SW Kelly St	SBT	38 232	310	78	34%	8 19	2.1 4.7		
31	SVV VValet St @ SVV Kelly St	WBL	63	13	-50	-79%	4	8.1		
		WBR	145	250	105	72%	23	7.5		
		Total	3491	3371	-120	-3%	50	2.0		
		NBL	11	11	0	0%	4	0.0		

	Existing P	M GEH (4-6 p	.m.)					
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
		NBT	1353	1330	-23	-2%	28	0.6
		NBR	67	64	-3	-4%	9	0.4
		SBL	103	100	-3	-3%	10	0.3
		SBT	1215	1221	6	0%	25	0.2
		SBR	8	6	-2	-25%	2	0.8
52	SW Barbur Blvd @ SW Hooker St	EBL	4	3	-1	-25%	1	0.5
		EBT	3	2	-1	-33%	1	0.6
		EBR	3	3	0	0%	1	0.0
		WBL	45	44	-1	-2%	4	0.1
		WBT	2	3	1	50%	2	0.6
		WBR	86	83	-3	-3%	4	0.3
		Total	2900	2870	-30	-1%	40	0.6
		NBT	545	507	-38	-7%	16	1.7
53	SW Naito Pkwy @ SW Hooker St	SBT	5603	5626	23	0%	54	0.3
	21. Hard King & St. Hooker St.	WBT	54	48	-6	-11%	0	0.8
		Total	6202	6182	-20	0%	79	0.3
		NBT	1621	1585	-36	-2%	29	0.9
54	SW Corbett Ave/SW Kelly St @ SW Macadam Ave	WBT	1209	1166	-43	-4%	47	1.2
	Table 1 and	WBR	44	45	1	2%	5	0.1
		Total	2874	2797	-77	-3%	50	1.4
55	SW Naito Pkwy @ SW Porter St	NBR	23	22	-1	-4%	3	0.2
	3W Water Kwy & 3W Forter St	Total	23	22	-1	-4%	3	0.2
		NBT	1621	1587	-34	-2%	30	0.8
		NBR	1405	1418	13	1%	27	0.3
	SW Kelly St/SW Corbett Ave @ SW Porter St/SW Hood	SBL	194	186	-8	-4%	13	0.6
56	Ave	SBT	52	70	18	35%	10	2.3
	AVE	SBR	49	67	18	37%	5	2.4
		EBR	20	16	-4	-20%	0	0.9
		Total	3341	3345	4	0%	50	0.1
		NBL	0	3	3	#DIV/0!	2	2.4
		NBT	1402	1375	-27	-2%	28	0.7
		NBR	361	357	-4	-1%	13	0.2
		SBL	221	223	2	1%	10	0.1
		SBT	1042	1053	11	1%	21	0.3
58	SW Barbur Blvd @ SW Woods St	SBR	0	1	1	#DIV/0!	1	1.4
		EBL	0	5	5	#DIV/0!	1	3.2
		EBR	0	3	3	#DIV/0!	1	2.4
		WBL	21	22	1	5%	3	0.2
		WBR	29	25	-4	-14%	4	0.8
		Total	3076	3066	-10	0%	40	0.2
1		SBR	95	92	-3	-3%	1	0.3
59	SW Water Ave @ Ross Island Bridge	WBT	1552	1572	20	1%	30	0.5
	on trace. Are & hoss island bridge	WBR	23	21	-2	-9%	4	0.4
		Total	1670	1686	16	1%	29	0.4
		SBT	858	847	-11	-1%	41	0.4
60	SW Hood Ave @ SW Macadam Ave	EBR	1599	1604	5	0%	33	0.1
		Total	2457	2451	-6	0%	48	0.1
		NBR	1531	1478	-53	-3%	28	1.4
61	SW Naito Pkwy @ Ross Island Bridge	EBT	3344	3424	80	2%	49	1.4
		Total	4875	4902	27	1%	49	0.4
62	Kelly Ramps @ Ross Island Bridge	NBR	1334	1287	-47	-4%	31	1.3
02	Keny Kampa & Ross Island Bridge	Total	1334	1287	-47	-4%	31	1.3
		EBT	3923	3918	-5	0%	73	0.1
63	Hwy 99E SB @ Ross Island Bridge EB	EBR	2286	2342	56	2%	27	1.2
		Total	6209	6260	51	1%	64	0.6
		NBR	59	56	-3	-5%	0	0.4
64	Hwy 99E NB @ Ross Island Bridge EB	EBT	3923	3916	-7	0%	73	0.1
		Total	3982	3972	-10	0%	73	0.2

	Existing P	M GEH (4-6 p	.m.)					
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
		NBR	15	9	-6	-40%	0	1.7
		SBR	1641	1627	-14	-1%	7	0.3
65	CERLA OCER HALL	EBT	3915	3901	-14	0%	72	0.2
65	SE 8th Ave @ SE Powell Blvd	EBR	67	66	-1	-1%	9	0.1
		WBT	2960	2958	-2	0%	35	0.0
		WBR	123	122	-1	-1%	10	0.1
		Total	8721	8683	-38	0%	81	0.4
		NBR	22	17	-5 -	-23%	0	1.1
		SBR	168	163	-5 27	-3%	1	0.4
		EBL	613	586	-27	-4%	28	1.1
66	CE 4011 A C CE D	EBT	3298	3300	2	0%	61	0.0
66	SE 10th Ave @ SE Powell Blvd	EBR	19	17	-2	-11%	4	0.5
		WBL	13	13	0	0%	3	0.0
		WBT	2915	2920	5	0%	29	0.1
		WBR	57	53	-4	-7%	9	0.5
		Total	7105	7071	-34	0%	72	0.4
		NBL	300	298	-2	-1%	11	0.1
		NBT	363	355	-8	-2%	11	0.4
		NBR	148	150	2	1%	9	0.2
		SBL	814	792	-22	-3%	23	0.8
		SBT	567	565	-2	0%	19	0.1
67	SE Milwaukie Ave @ SE Powell Blvd	SBR	242	239	-3	-1%	11	0.2
		EBT	3173	3187	14	0%	54	0.2
		EBR	147	145	-2	-1%	14	0.2
		WBL	207	198	-9	-4%	12	0.6
		WBT	2443	2449	6	0%	21	0.1
		WBR	452	465	13	3%	19	0.6
		Total	8856	8842	-14	0%	60	0.1
		EBT	646	610	-36	-6%	21	1.4
68	SW Water Ave @ SW Grover St	EBR	364	410	46	13%	27	2.3
		WBT	105	124	19	18%	10	1.8
		Total	1123	1144	21	2%	38	0.6
		NBT	1501	1437	-64	-4%	31	1.7
69	SW Naito Pkwy @ SW Gibbs St/Naito Ramps	NBR	7	6	-1	-14%	2	0.4
		WBR	598	569	-29	-5%	28	1.2
		Total	2106	2013	-93	-4%	35	2.0
		NBL	4	0	-4	-100%	0	2.8
		NBT	1276	1207	-69	-5%	30	2.0
		NBR	2	0	-2	-100%	0	2.0
		SBL	14	37	23	164%	6	4.6
70	SW Kelly Ave @ SW Gibbs St	SBT	284	216	-68	-24%	17	4.3
		SBR	7	17	10	143%	4	2.9
		EBL	58	80	22	38%	6	2.6
		EBT	13	0	-13	-100%	0	5.1
		EBR	104	101	-3 104	-3%	9	0.3
		Total	1762	1658	-104	-6%	43	2.5
		NBR	107	108	1	1%	9	0.1
7.4	CM Banks, Bl. LO CM 1971 1 C	SBL	24	27	3	13%	5	0.6
71	SW Barbur Blvd @ SW Whitaker St	WBL	40	38	-2	-5%	3	0.3
		WBR	21	19	-2	-10%	3	0.4
		Total	192	191	-1	-1%	9	0.1
		SBT	3562	3604	42	1%	66	0.7
72	SW Naito Pkwy @ SW Whitaker St	SBR	57	60	3	5%	10	0.4
		Total	3619	3697	78	2%	63	1.3
		NBL	10	10	0	0%	3	0.0
		NBT	408	387	-21	-5%	14	1.1
		SBT	384	315	-69	-18%	18	3.7
		SBR	4	3	-1	-25%	2	0.5

	Existing P	M GEH (4-6 p	.m.)					
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
73	SW Kelly Ave @ SW Whitaker St	EBL	405	402	-3	-1%	10	0.1
	, -	EBR	3	2	-1 27	-33%	1 -	0.6
		WBL WBT	5 7	32 7	27 0	540% 0%	5 3	6.3 0.0
		WBR	469	411	-58	-12%	22	2.8
		Total	1695	1568	-127	-7%	39	3.1
		SBT	2005	2058	53	3%	38	1.2
		SBR	481	447	-34	-7%	22	1.6
74	SW Hood Ave @ SW Whitaker St	WBL	1125	1123	-2	0%	2	0.1
		Total	3611	3627	16	0%	49	0.3
		NBR	7	7	0	0%	3	0.0
		SBL	7	8	1	14%	3	0.4
75	SW Barbur Blvd @ SW Pennoyer St	WBL	16	20	4	25%	4	0.9
		WBR	15	13	-2	-13%	3	0.5
		Total	68	48	-20	-29%	4	2.6
		NBL	3	3	0	0%	2	0.0
		SBR	17	24	7	41%	5	1.5
76	SW Barbur Blvd @ SW Condor Ave	EBL	197	194	-3	-2%	4	0.2
		EBR	5	5	0	0%	2	0.0
		Total	223	225	2	1%	6	0.1
		NBL	58	58	0	0%	9	0.0
		NBT	1601	1577	-24	-1%	33	0.6
		SBT	1073	1103	30	3%	29	0.9
77	SW Barbur Blvd @ SW Lane St	SBR	5	5	0	0%	2	0.0
		EBL	43	53	10	23%	5	1.4
		EBR	291	281	-10	-3%	15	0.6
		Total	3071	3077	6	0%	31	0.1
		NBL	16	16	0	0%	4	0.0
		SBT SBR	1346 18	1382 16	36 -2	3% -11%	32 4	1.0 0.5
78	SW Barbur Blvd @ SW Abernathy St	EBL	22	26	-2 4	18%	2	0.5
		EBR	16	14	-2	-13%	2	0.5
		Total	1418	1452	34	2%	71	0.9
		NBR	355	361	6	2%	15	0.3
79	SW Barbur Blvd @ SW Lowell St	WBR	16	9	-7	-44%	0	2.0
		Total	371	370	-1	0%	15	0.1
		NBR	532	518	-14	-3%	23	0.6
80	SW Barbur Blvd @ SW Bancroft St	WBR	123	121	-2	-2%	10	0.2
		Total	655	638	-17	-3%	21	0.7
		NBL	99	100	1	1%	10	0.1
		NBT	633	598	-35	-6%	25	1.4
		NBR	34	32	-2	-6%	5	0.3
		SBL	13	10	-3	-23%	3	0.9
		SBT	438	436	-2	0%	4	0.1
		SBR	10	9	-1	-10%	4	0.3
81	SW Corbett Ave @ SW Bancroft St	EBL	426	415	-11	-3%	26	0.5
		EBT	73	75	2	3%	10	0.2
		EBR	33	27	-6	-18%	6	1.1
		WBL	45	40	-5	-11%	3	0.8
		WBT	14	13	-1 1	-7%	2	0.3
		WBR	20	19 1774	-1	-5% 2%	3	0.2
		Total	1838	1774	-64 10	-3%	36	1.5 0.2
		NBT NBR	3532 368	3522 376	-10 8	0% 2%	38 16	0.2
		SBL	683	737	54	2% 8%	24	2.0
		SBT	4090	4131	54 41	8% 1%	70	0.6
		SBR	91	99	8	9%	10	0.8
		EBL	148	128	-20	-14%	24	1.7
ดว	CIM Rarhur Rlvd @ CIM Hamilton Ct		1 10	120		±-7/0	27	<b>-</b> .,

Existing PM GEH (4-6 p.m.)								
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
02	300 Barbar Broa & 300 Harrinton St	EBT	116	95	-21	-18%	11	2.0
		EBR	20	21	1	5%	3	0.2
		WBL	534	535	1	0%	23	0.0
		WBT	91	92	1	1%	8	0.1
		WBR	229	227	-2	-1%	11	0.1
		Total	9902 556	9964 554	-2	1%	87 17	0.6
		NBL NBT	510	503	-2 -7	0% -1%	25	0.1
		NBR	71	70	-7 -1	-1%	9	0.3
		SBL	3	3	0	0%	2	0.0
		SBT	288	280	-8	-3%	12	0.5
		SBR	225	222	-3	-1%	10	0.2
83	SW Hamilton Blvd @ SW Corbett Ave	EBL	250	213	-37	-15%	14	2.4
03	3W Hamilton Biva & 3W Consett Ave	EBT	82	85	3	4%	7	0.3
		EBR	835	915	80	10%	24	2.7
		WBL	23	23	0	0%	4	0.0
		WBT	73	69	-4	-5%	3	0.5
		WBR	6	5	-1	-17%	2	0.4
		Total	2922	2942	20	1%	40	0.4
		NBT	2571	2560	-11	0%	7	0.4
85	SW Barbur Blvd @ SW Capitol Hwy EB	WBR	1413	1414	1	0%	23	0.2
03	SW Barbar Biva & SW Capitor riwy EB	Total	3984	3974	-10	0%	25	0.2
		SBT	2645	2659	14	1%	66	0.3
86	SW Barbur Blvd @ SW Capitol Hwy WB	SBR	1937	1967	30	2%	35	0.7
		Total	4582	4626	44	1%	78	0.6
		NBL	176	169	-7	-4%	14	0.5
		NBT	158	154	-4	-3%	12	0.3
	SW Terwilliger Blvd @ SW Capitol Hwy	NBR	15	16	1	7%	3	0.3
		SBL	34	32	-2	-6%	9	0.3
		SBT	499	484	-15	-3%	14	0.7
		SBR	518	521	3	1%	18	0.1
87		EBL	167	159	-8	-5%	14	0.6
		EBT	1369	1378	9	1%	23	0.2
		EBR	184	188	4	2%	14	0.3
		WBL	28	25	-3	-11%	4	0.6
		WBT	1885	1929	44	2%	32	1.0
		WBR	27	28	1	4%	5	0.2
		Total	5060	5083	23	0%	35	0.3
		NBR	5	8	3	60%	3	1.2
100	SW Naito Pkwy @ Downtown PNR	WBR	105	76	-29	-28%	12	3.0
		Total	110	84	-26	-24%	12	2.6
		SBL	5	5	0	0%	3	0.0
101	SW 1st Ave @ Harrison Square Driveway	WBL	227	234	7	3%	2	0.5
		Total	232	239	7	3%	4	0.5
		NBL	5	0	-5	-100%	0	3.2
		SBR	5	11	6	120%	4	2.1
102	SW Naito Pkwy @ Harrison Square Driveway	EBL	125	91	-34	-27%	21	3.3
		EBR	44	34	-10	-23%	8	1.6
		Total	179	137	-42	-23%	27	3.3
103	SW 3rd Ave Parking Lot OB @ SW Harrison St	SBL	52	51	-1	-2%	4	0.1
		SBR	23	38	15	65%	4	2.7
		Total	75	89	14	19%	1	1.5
104	SW 3rd Ave Parking Lot IB @ SW Harrison St	WBR	16	19	3	19%	5	0.7
104	SVV SIG AVE FAIKING LOT ID (# SVV HAITISUN ST	Total	16	19	3	19%	5	0.7
		NBL	50	50	0	0%	7	0.0
		NBR	65	63	-2	-3%	7	0.3
105	SW Harrison St Parking Garage @ SW Harrison St	EBR	50	53	3	6%	7	0.4
		WBL	57	56	-1	-2%	7	0.1

Existing PM GEH (4-6 p.m.)								
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
		Total	222	223	1	0%	11	0.1
106	SW 6th Ave @ SW 6th Ave Parking Garage	NBL	106	114	8	8%	8	0.8
		Total SBL	106 16	114 13	-3	-19%	8	0.8
	SW Hall St Parking Garage @ SW Hall St	SBR	10	11	-5 1	10%	2	0.8
107		EBL	10	11	1	10%	3	0.3
107		WBR	18	19	1	6%	4	0.2
		Total	54	54	0	0%	5	0.0
		NBT	355	303	-52	-15%	23	2.9
108	SW 1st Ave @ Make-A-Wish Driveway	NBR	146	169	23	16%	15	1.8
		SBT	1112	1192	80	7%	35	2.4
		SBR	5	7	2	40%	3	0.8
		EBR	69	77	8	12%	1	0.9
		WBR	5	0	-5	-100%	0	3.2
		Total	1692	1748	56	3%	51	1.4
		NBL	25	23	-2	-8%	5	0.4
		SBR	6	8	2	33%	2	0.8
109	SW Naito Pkwy @ Ochin Inc Driveway	EBL	5	5	0	0%	3	0.0
		EBR	55	52	-3	-5%	3	0.4
		Total	91	88	-3	-3%	6	0.3
	SW 4th Ave @ PSU Parking Garage	NBR	12	20	8	67%	6	2.0
110		WBR	133	149	16	12%	1	1.3
		Total	145	169 662	24 -2	17%	5	1.9
111	SW Broadway @ I-405 SB On-ramp	SBL	664 664	662	-2 -2	0% 0%	28 28	0.1 0.1
	SW 1st Ave @ Lincoln Apartments Driveway	Total SBR	5	7	2	40%	3	0.1
112		EBR	5	0	-5	-100%	0	3.2
112		Total	10	7	-3	-30%	3	1.0
	SW 1st Ave @ Boy Scouts of America Driveway	NBR	1	63	62	6200%	8	11.0
113		WBR	244	289	45	18%	17	2.8
		Total	255	352	97	38%	17	5.6
	SW Naito Pkwy @ Boy Scouts of America Driveway	NBL	229	224	-5	-2%	12	0.3
		SBR	15	67	52	347%	7	8.1
114		EBL	0	63	63	#DIV/0!	8	11.2
		EBR	1	0	-1	-100%	0	1.4
		Total	245	353	108	44%	15	6.2
	SW Broadway Dr @ SW Grant St	NBT	492	487	-5	-1%	16	0.2
		NBR	75	65	-10	-13%	10	1.2
115		SBT	433	462	29	7%	17	1.4
		WBL	6	0	-6	-100%	0	3.5
		WBR	1	0	-1	-100%	0	1.4
		Total	1007 0	1014 6	7 6	1% #DIV/OL	21	0.2 3.5
116	SW 1st Ave @ ADP South East Driveway	SBL EBR	155	6 105	-50	#DIV/0! -32%	3	3.5 4.4
110		Total	160	105	-50 -50	-32%	1 3	4.4
		SBR	151	139	-12	-8%	1	1.0
117	ADP South Driveway @ SW Arthur St	WBR	5	6	1	20%	2	0.4
11/	ADI SOUTH DITTERMY & SW AIRING SC	Total	156	144	-12	-8%	3	1.0
		NBT	0	4	4	#DIV/0!	2	2.8
118	SW Arthur St Parking Garage @ SW Arthur St	NBR	261	260	-1	0%	1	0.1
		Total	266	264	-2	-1%	2	0.1
119	Frontage Road @ SW Kelly Ave	NBL	21	19	-2	-10%	3	0.4
		NBR	68	60	-8	-12%	3	1.0
		EBR	3	4	1	33%	2	0.5
		WBL	0	7	7	#DIV/0!	3	3.7
		Total	92	90	-2	-2%	6	0.2
		SBT	1977	1997	20	1%	54	0.4
120	SW Naito Pkwy Diverge to RI Bridge	SBR	1706	1638	-68	-4%	40	1.7

	Existing	PM GEH (4-6 p	.111.)	VICCINA				
Intersection Number	Intersection Name	Movement	Input Volume*	VISSIM Output Volume	Diff	%Diff	Standard Deviation	GEH
		Total	3683	3634	-49	-1%	71	0.8
121	SW Barbur Blvd @ Under Armour Driveway	NBL	14	16	2	14%	4	0.5
		SBR	5	4	-1	-20%	1	0.5
		EBL	5	3	-2	-40%	1	1.0
		EBR	7	5	-2	-29%	1	0.8
		Total	31	28	-3	-10%	4	0.6
122	SW 1st Ave @ SW Hooker St	NBL	5	5	0	0%	2	0.0
		NBT	100	119	19	19%	9	1.8
		SBT	661	548	-113	-17%	27	4.6
		SBR	5	30	25	500%	6	6.0
		EBL	294	262	-32	-11%	26	1.9
		EBR	349	424	75	21%	48	3.8
		Total	1414	1387	-27	-2%	73	0.7
		SBL	0	44	44	#DIV/0!	9	9.4
		SBR	372	366	-6	-2%	22	0.3
123	SW Water St @ SW Gibbs St	EBT	7	6	-1	-14%	2	0.4
	Sw water st @ Sw Gibbs St	WBT	226	203	-23	-10%	13	1.6
		Total	605	619	14	2%	34	0.6
		NBL	113	157	44	39%	9	3.8
	SW Corbett Ave @ SW Gibbs St	NBT	113	80	-33	-29%	6	3.4
		NBR	88	56	-33 -32	-29%	7	3.8
		SBL	87	123	36	41%	9	3.5
		SBT		443	-3	-1%	17	0.1
124			446					
		SBR	113	45	-68	-60%	7	7.7
		EBL	0	45	45	#DIV/0!	9	9.5
		EBR	7	6	-1	-14%	2	0.4
		WBL	11	17	6	55%	4	1.6
		Total	978	971	-7	-1%	27	0.2
125	SW Hood Ave @ SW Gibbs St	EBR	29	36	7	24%	5	1.2
	0.0.1.0007.000 @ 0.0.00000	Total	29	36	7	24%	5	1.2
		NBL	5	5	0	0%	2	0.0
126	SW Kelly Ave @ SW Curry St	NBT	257	248	-9	-4%	8	0.6
		NBR	10	12	2	20%	4	0.6
		SBL	364	315	-49	-13%	18	2.7
		SBT	25	28	3	12%	4	0.6
		SBR	3	7	4	133%	2	1.8
		EBL	161	139	-22	-14%	18	1.8
		EBT	118	112	-6	-5%	19	0.6
		EBR	6	4	-2	-33%	2	0.9
		Total	949	870	-79	-8%	40	2.6
127		SBT	3130	3182	52	2%	39	0.9
	SW Hood Ave @ SW Curry St	EBR	492	444	-48	-10%	25	2.2
		Total	3622	3626	4	0%	50	0.1
128	Barbur/Naito SB Merge	NBT	3500	3475	-25	-1%	42	0.4
		SBT	1351	1418	67	5%	33	1.8
		EBR	3570	3609	39	1%	64	0.7
		Total	8421	8502	81	1%	61	0.9
		SBR	57	57	0	0%	6	0.0
129	SW Barbur Blvd SB @ SW Bancroft St	Total	57	57	0	0%	6	0.0
130		NBR	89	84	-5	-6%	8	0.5
	SW Barbur Blvd @ Barbur Apartments Driveway	SBL	67	69	2	3%	9	0.2
		WBL	5	5	0	0%	1	0.0
		WBR	5	3	-2	-40%	1	1.0
		Total	166	161	- <u>-</u> 2	-3%	9	0.4
121	SW Naito Pkwy @ SW Pennoyer St	NBT	1508	1451	-57	-4%	31	1.5
		SBT	3570	3606	36	1%	65	0.6
131		Total	5078	5057	-21	0%	76	0.6
*Note that the		TOTAL	2010	3037	-21	U/0	70	0.5

## Attachment C Vissim Model Queue Plots

Metro SW Corridor DEIS- Segment A - PM model

Existing Conditions Vissim Model Methodology and

Results Memorandum

## Existing: Full Study Area

No LRT Alignment











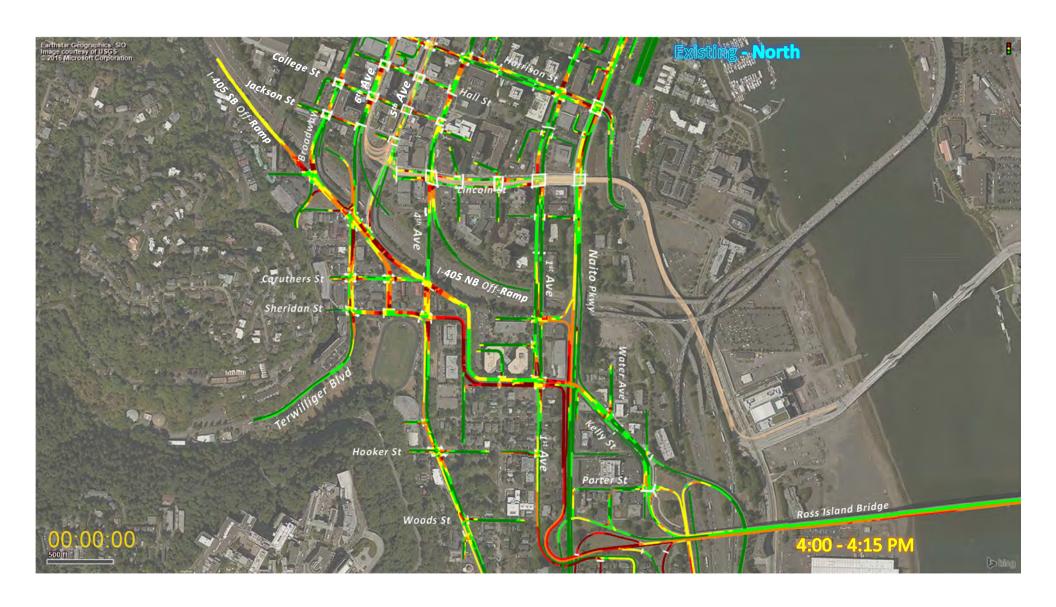


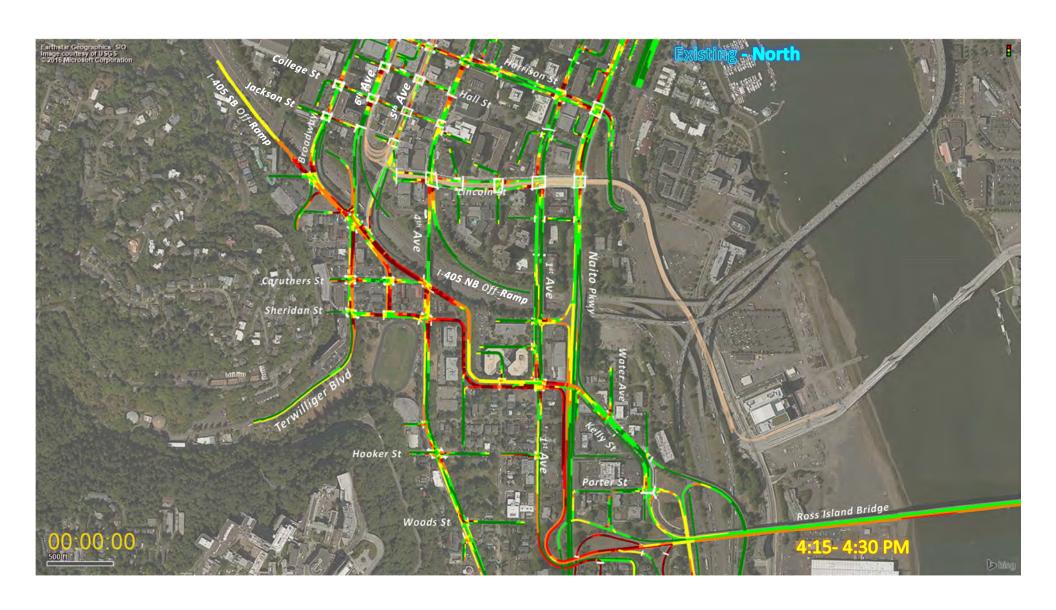


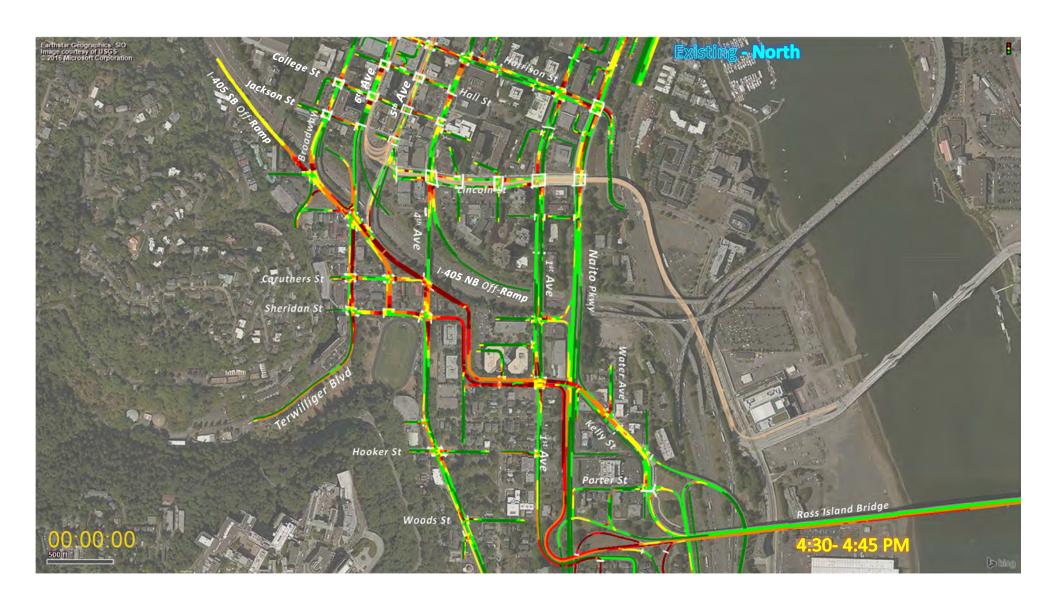


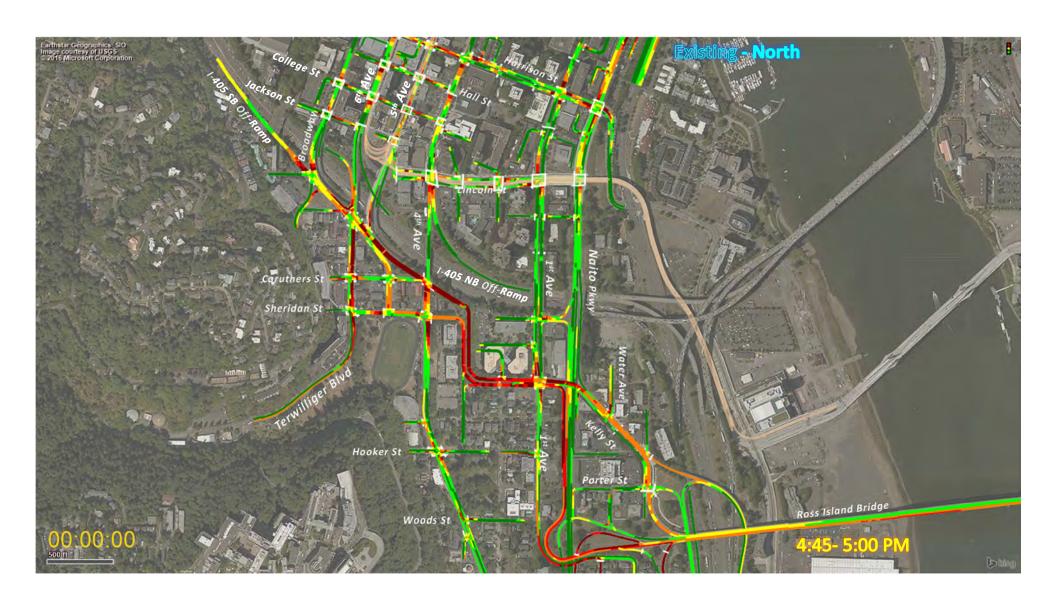
## Existing: North

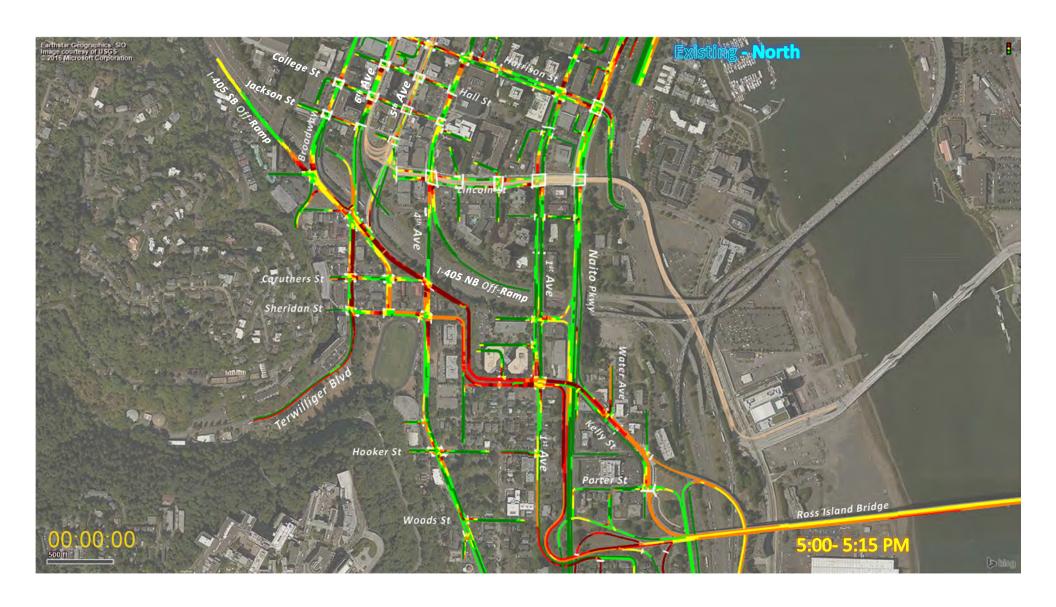
No LRT Alignment

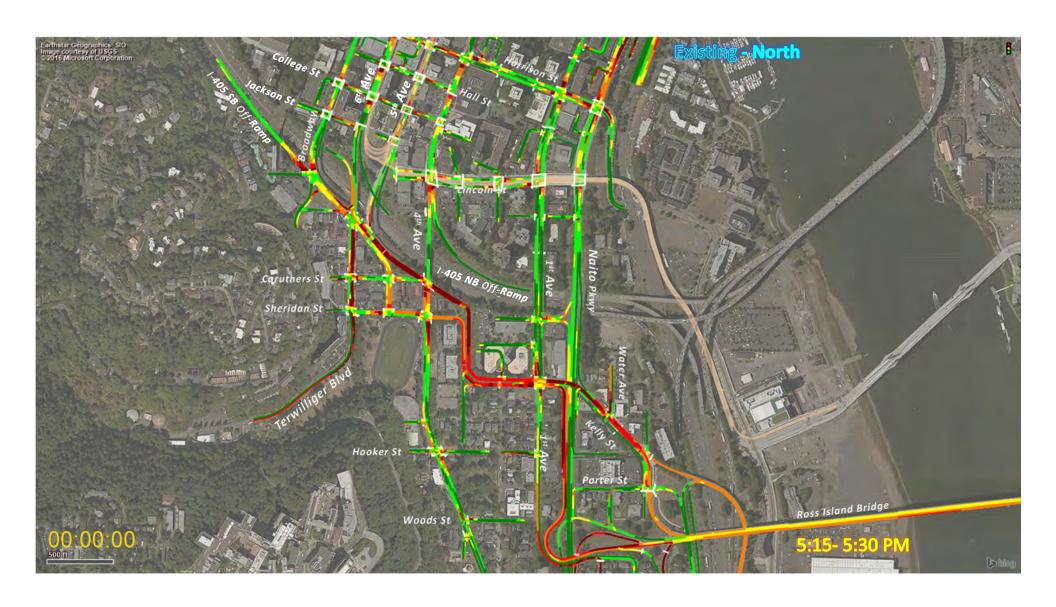


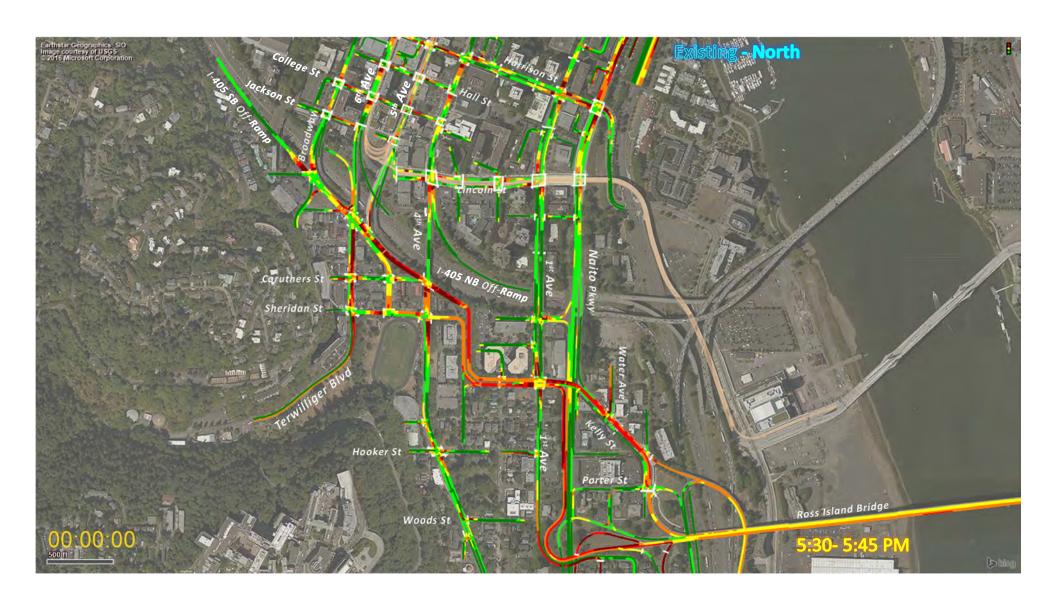


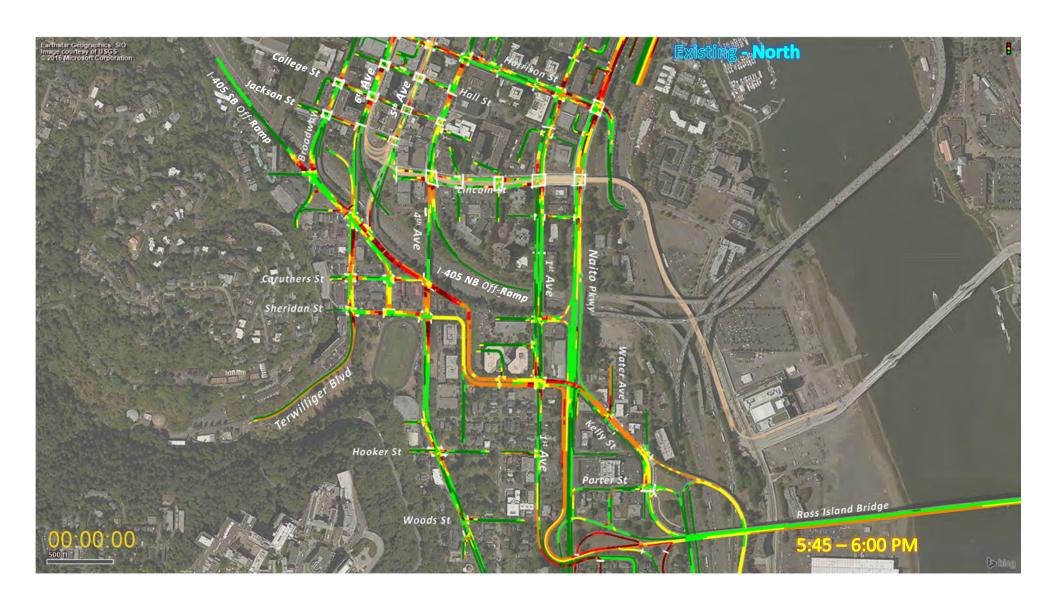












## Existing: South

No LRT Alignment









