



# Transportation Supplemental Memorandum

Multnomah County | Earthquake Ready  
Burnside Bridge Project

*Portland, OR*

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# Earthquake Ready Burnside Bridge Transportation Supplemental Memorandum

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## Acronyms, Initialisms, and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADT	Average daily traffic
API	Area of Potential Impact
BAT	Business Access and Transit
BLTS	Bicycle Level of Traffic Stress
CMF	FHWA Crash Modification Factor
CSZ	Cascadia Subduction Zone
EIS	Environmental Impact Statement
EQRB	Earthquake Ready Burnside Bridge
ETC	Enhanced Transit Corridor
FHWA	Federal Highway Administration
HSM	AASHTO Highway Safety Manual
IHSDM	Interactive Highway Safety Design Model
ITRD	Joint Transport Research Centre's International Transport Research Documentation Database
LOS	Level of service
MLK	Martin Luther King, Jr.
mph	Miles per hour
MUTCD	Manual on Uniform Traffic Control Devices
NACTO	National Association of City Transportation Officials
NCHRP	National Cooperative Highway Research Program
OECD	Organization for Economic Co-operation and Development
PBOT	Portland Bureau of Transportation
RTP	Regional Transportation Plan
SPF	Safety Performance Functions
SDEIS	Supplemental Draft Environmental Impact Statement
TDM	travel demand model
TEV	total entering vehicles
TRB	Transportation Research Board
TRID	Transportation Research Information Database

TRIS	Transportation Research Information Services
vph	volume per hour
vmt	vehicle miles traveled

## Executive Summary

This Supplemental Memorandum for the Earthquake Ready Burnside Bridge Project Transportation Technical Report discusses the transportation related impacts stemming from the Refined Long-span Alternative (4-lane Version) and adds supplemental analysis on the long-term impacts of the four proposed Lane Options for the Refined Long-Span Alternative. The four Lane Options propose different space allocations between transportation modes on a narrowed bridge deck. The following topics are included in this memorandum:

- Traffic and freight operational impacts, including volumes, delays, and queuing.
- Transit ridership, travel time, delay, and reliability
- Active transportation impacts, including volumes, access, and comfort.
- Safety impacts, including projected changes in crash factors and rates.

This information provides context for evaluating the proposed Lane Options based on their anticipated impacts to all transportation modes in the Project Area and applies professional judgment to assess the level of impacts stemming from each alternative and proposed possible implementable mitigations.

Each of the Lane Options was assessed for how performance of traffic, transit, safety, and active transportation would operate. The active transportation analysis includes a focus on bicycles, pedestrians, ADA access and e-scooters. Impacts due to the Lane Options are compared against the No-build and Long-span Alternatives that were analyzed and summarized in the *EQRB Transportation Technical Report* (Multnomah County 2021c).

### Summary of Impacts

The information below summarizes the findings for each of the modal topics discussed in detail within this supplemental memorandum for the Refined Long-span Alternative.

#### *Temporary Construction Impacts*

- No new construction impacts are anticipated.

#### *Traffic and Freight*

- Vehicle volumes are projected to be within 100 vehicles per hour (vph) of each other across all four of the Lane Options.
- With the modifications to signal timing at the W Burnside Street and NW/SW 2nd Avenue intersection and the four intersections along E Burnside Street and NE Martin Luther King, Jr. (MLK) Boulevard, the updated No-Build Condition is projected to serve 96 percent of projected westbound traffic volume during the AM peak hour.

- Lane Option 1 (Balanced) is projected to serve 96 percent of projected eastbound traffic volume during the PM peak hour, resulting in increased intersection delay and queuing for the intersections along W Burnside Street during the PM peak hour.
- Lane Option 2 (Eastbound Focus) is projected to serve 94 percent of projected westbound traffic volume during the AM peak hour, resulting in similar intersection operations to the updated No-Build Condition during the AM peak hour.
- Lane Option 3 (Reversible Lane) is projected to serve 100 percent of projected vehicle demand in the peak direction during the PM peak hour (peak direction is eastbound). During the AM peak hour, Lane Option 3 (Reversible Lane) is projected to serve 94 percent of the projected westbound traffic, resulting in similar intersection operations to the updated No-Build Condition.
- Lane Option 4 (General-Purpose with Bus Priority) is projected to serve 96 percent of projected westbound traffic volume during the AM peak hour and to operate the most efficiently for both the AM and PM peak hours of the Lane Options.

### *Transit*

- Lane Option 1 (Balanced) is projected to produce the greatest ridership gains (up to 1.2 percent) for bus lines 12, 19 and 20 compared to the No-Build Alternative.
- Lane Option 2 (Eastbound Focus) is projected to feature the largest impacts to westbound AM Peak travel times, adding 18 seconds of travel time across the Burnside Bridge.
- All Lane Options except Lane Option 4 (General-Purpose with Bus Priority) would feature the same westbound PM Peak travel time impact of 18 seconds.
- All Lane Options, with the exception of Lane Option 4 (General-Purpose with Bus Priority), forecast ridership roughly equal or improved compared to the Draft EIS Long-span Alternative.
- Only Lane Option 4 is expected to feature reduced ridership, likely due to maintained or slightly improved traffic operations.
- All of the Lane Options accommodate the future expansion of Portland Streetcar over the Burnside Bridge.
- Westbound delay and queue spill back resulting from the zipper merge through the S-curve would create minor delay and reliability impacts for transit operations under both Lane Options 2 and 3.
- All Lane Options would relocate the existing westbound bus stop on the Burnside Bridge deck.
- The 50-foot and 47-foot cross sections both meet TriMet's minimum lane widths for bus facilities.
- The 44-foot cross section may impact transit operations and would increase minor crashes and mirror strikes for transit vehicles.

### *Active Transportation*

- Active transportation volumes are expected to be the same as those projected in the Draft EIS Long-span Alternative.
- The width available for people walking and biking on the mid-span cross section would narrow under all of the Lane Options compared to the Draft EIS Long-span Alternative. The space reserved for active modes in the Draft EIS Long-span Alternative totaled 40-feet. Under the four Lane Options, this space is reduced to 28-, 31-, or 34-feet; a reduction in width of 30, 23, or 15 percent, respectively.
- The Refined Long-span Alternative evaluated the potential for stairways and elevators at all quadrants of the bridge which would improve access, including ADA access, to the Burnside Bridge.
- The 44-foot roadway cross section provides additional bicycle and pedestrian space on the bridge deck that would improve comfort for people walking and bicycling across the bridge compared to the 47- and 50-foot roadway cross sections.

### *Safety*

The crashes were predicted for segments and intersections for 20-years within the Safety API using the American Association of State Highway and Transportation Officials (AASHTO) *Highway Safety Manual* (AASHTO 2010). The three bridge width scenarios (50-foot, 47-foot, and 44-foot) with Lane Option 1 (balanced), Lane Option 2 (eastbound focus), Lane Option 3 (reversible lane), and Lane Option 4 were analyzed and compared to the No-Build and Draft EIS Long-span Alternative. In summary,

- The Draft EIS Long-Span Alternative will have higher crashes compared to No-Build scenario because of the narrower average offset distance to the roadside barrier and the fixed object from the general-purpose lanes.
- Under each bridge width scenario (i.e., 50-foot, 47-foot, and 44-foot), Lane Option 4 will have the highest number of crashes because of the narrow average offset distance between the general-purpose lane and the roadside barrier compared to other alternatives.
- Under each bridge width scenario (i.e., 50-foot, 47-foot, and 44-foot), there are no significant differences in crash rates and number of crashes between Lane Option 1 (balanced), Lane Option 2 (eastbound focus), and Lane Option 3 (reversible lane). In Lane Option 3, details of the transition to/from the general-purpose or reversible lane still need to be developed.
- There is no significant difference in intersection geometry between the three bridge widths. For each Lane Option 1 (Balanced), Lane Option 2 (Eastbound Focus), Lane Option 3 (Reversible Lane) and Lane Option 4 (General-Purpose with Bus Priority), the predicted crash at the intersections is the same for different bridge widths.
- The study area (intersections plus bridge) is forecast to have the lowest number of crashes under the 50-foot bridge width scenario and any Lane Option scenario.
- Under the 47-foot bridge width, Lane Options 1, 2 or 3 the study area (intersections plus bridge) will have approximately one more fatal and injury crashes (0.5 percent)

and two (0.5 percent) more property damage only crashes compared to the 50-foot cross-section. In Lane Option 4, no significant difference in fatal and injury crashes is forecast, but one more property damage only (one percent) crash compared to the 50-foot bridge width.

- Under the 44-foot bridge width, Lane Options 1, 2 and 3, the study area (intersection plus bridge) is forecast to have two (1.5 percent) more fatal and injury crashes and six (2 percent) more property damage only crashes over the 20-year period. Under Lane Option 4 (General-Purpose with Bus Priority), there could be approximately two (1 percent) more fatal and injury crash and approximately four (1.5 percent) more property damage only crashes compared to the 50-foot bridge width.

# 1 Introduction

In support of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Earthquake Ready Burnside Bridge (EQRB) Project, this supplemental technical memorandum has been prepared to evaluate the impacts of potential design refinements to the Preferred Alternative on transportation within the project's Area of Potential Impact (API). The intent of the design modifications is to reduce the overall cost and improve the affordability of the EQRB Project. This technical memorandum is a supplement to the Draft EIS technical reports and as such does not repeat all of the information in those reports, but instead focuses on the impacts of the design modification options, how they compare to each other, and how they compare to the version of the Preferred Alternative that was evaluated in the *EQRB Draft Environmental Impact Statement* (Multnomah County 2021b).

Much of the information included in the Draft EIS and Draft EIS technical reports, including project purpose, relevant regulations, analysis methodology and affected environment, is incorporated by reference because it has not changed, except where noted in this technical memorandum.

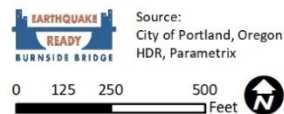
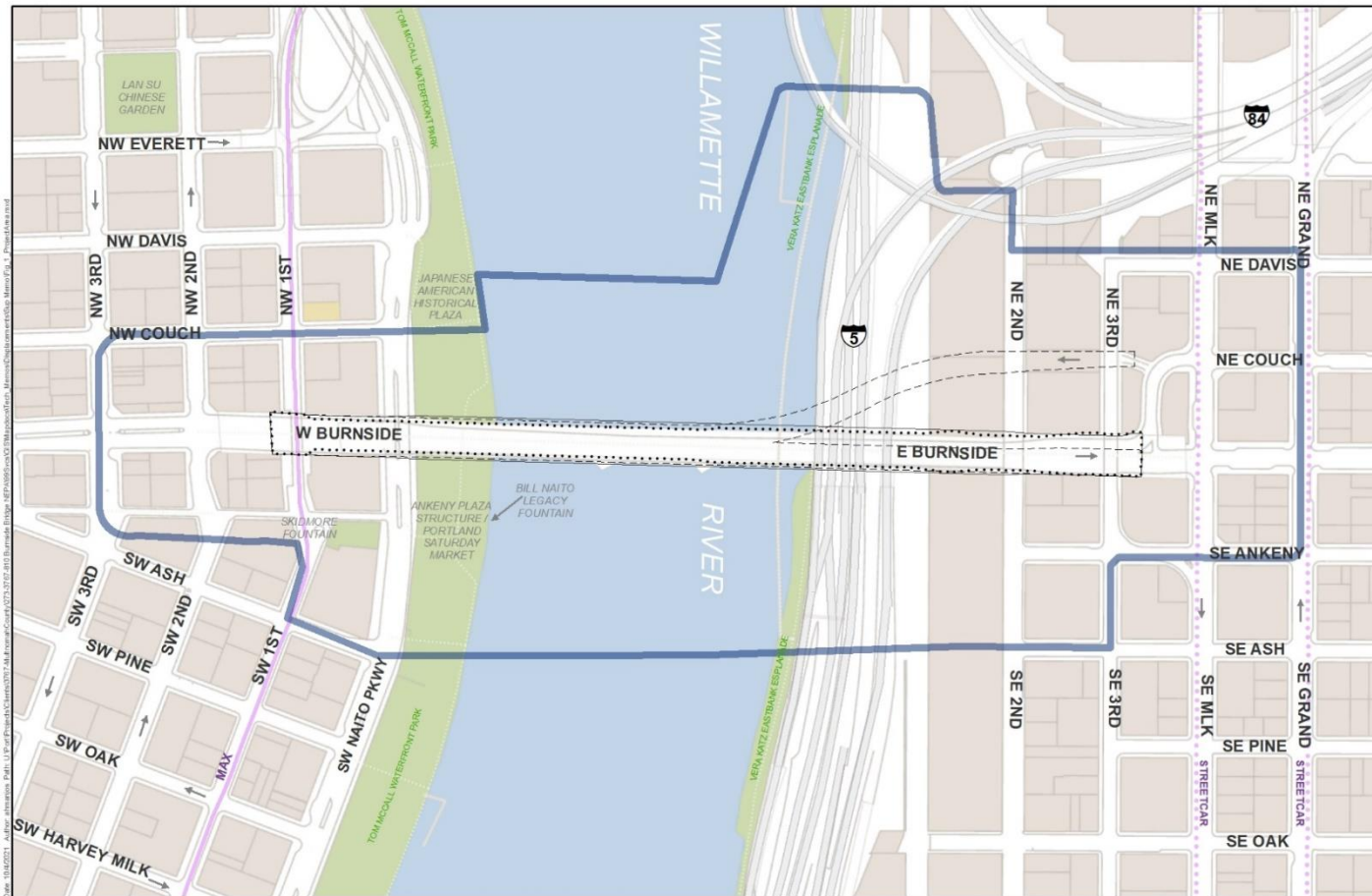
## 1.1 Project Location

The Project Area is located within the central city of Portland. The Burnside Bridge crosses the Willamette River connecting the west and east sides of the city. The Project Area encompasses a one-block radius around the existing Burnside Bridge and W/E Burnside Street, from NW/SW 3rd Avenue on the west side of the river and NE/SE Grand Avenue on the east side. Several neighborhoods surround the area including Old Town/Chinatown, Downtown, Kerns, and Buckman. Figure 1 shows the Project Area.

## 1.2 Project Purpose

The primary purpose of the Project is to build a seismically resilient Burnside Street lifeline crossing over the Willamette River that will remain fully operational and accessible for vehicles and other modes of transportation following a major Cascadia Subduction Zone (CSZ) earthquake. The Burnside Bridge will provide a reliable crossing for emergency response, evacuation, and economic recovery after an earthquake. Additionally, the bridge will provide a long-term safe crossing with low-maintenance needs.

Figure 1. Project Area



- Project Area
- Retrofit
- Short-span Alternative
- Long-span Alternative
- Refined Long-span Alternative
- Couch Extension Alternative

Project Area

Earthquake Ready Burnside



## 2 Project Alternatives

This technical memorandum evaluates potential proposed design refinements to the Draft EIS Preferred Alternative. All of the Project Alternatives evaluated in the Draft EIS are summarized in Chapter 2 of the Draft EIS and described in detail in the *EQRB Description of Alternatives Report* (Multnomah County 2021a). Briefly, the Draft EIS evaluated a No-Build Alternative and four Build Alternatives. One of the Build Alternatives, the Long-span Alternative, was identified as the Preferred Alternative. The potential refinements evaluated in this technical memorandum are collectively referred to as the “Refined Long-span Alternative (Four-lane Version)” or the “Refined Long-span.” The Refined Long-span includes Project elements that were studied in the Draft EIS but have been modified as well as new options that were not studied in the Draft EIS. These refinements and new options are intended to provide lower cost and, in some cases, lower impact designs and ideas that could be adopted to reduce the cost of the Draft EIS Preferred Alternative while still achieving seismic resiliency. The potential design refinements, and how they differ from the Draft EIS Long-span Alternative, are described below.

- Bridge width – The total width of the bridge over the river would be approximately 82 to 93 feet (range varies depending on the bridge type and segment). For comparison, the Draft EIS Replacement Alternatives were approximately 110 to 120 feet wide over the river. The refined bridge width would accommodate approximately 78 feet for vehicle lanes, bike lanes, and pedestrians, which is comparable to the existing bridge.
  - The refined bridge design would accommodate four vehicle lanes (rather than five as evaluated in the Draft EIS). The following lane configuration options are being evaluated:
    - Lane Option 1 (Balanced) – Two westbound lanes (general-purpose) plus two eastbound lanes (one general-purpose and one bus-only lane)
    - Lane Option 2 (Eastbound Focus) – One westbound lane (general-purpose) plus three eastbound lanes (two general-purpose and one bus-only)
    - Lane Option 3 (Reversible Lane) – One westbound lane (general-purpose) plus two eastbound lanes (one general-purpose and one bus-only) plus one reversible lane (westbound AM peak and eastbound PM peak)
    - Lane Option 4 (General-Purpose with Bus Priority) – Two westbound general-purpose lanes plus two eastbound general-purpose lanes, plus bus priority access (e.g., queue bypass) at each end of the bridge.
  - The width of the vehicle lanes would be, at minimum, 10 feet and could vary depending on how the total bridge width is allocated between the different modes.
  - The total width of the bicycle lanes and pedestrian sidewalks would be approximately 28 to 34 feet. This is wider than the existing bridge but narrower than what was proposed in the Draft EIS for the replacement alternatives.

- Physical barriers between vehicle lanes and the bicycle lanes are proposed and are in addition to the above dimensions.
- The refined bridge would allow narrower in-water piers, due to less weight needing to be transferred to the in-water supports.
  - Other Design Refinements being evaluated:
    - West approach – This memorandum evaluates a refined girder bridge type for the approach over the west channel of the river, Tom McCall Waterfront Park, and Naito Parkway. Compared to the cable-stayed and tied arch options evaluated in the Draft EIS, this option would not only reduce costs but also avoid an adverse effect to the Skidmore/Old Town National Landmark Historic District. It would have two sets of columns in Tom McCall Waterfront Park compared to just one with the Draft EIS tied-arch option and five with the existing bridge.
    - East approach – This memorandum evaluates a potential span length change for the east approach tied-arch option that would minimize the risks and reduce costs associated with placing a pier and foundation in the geologic hazard zone that extends from the river to about E 2nd Avenue. The revised tied-arch option would be about 720 to 820 feet long and approximately 150 feet tall (the Draft EIS Long-span Alternative was the same height and 740 feet long). The refined alternative would place the eastern pier of the tied arch span either on the east side of 2nd Avenue (Option 1) or just west of 2nd Avenue (Option 2). Increasing the length of the tied arch span would also reduce the length and depth of the subsequent girder span to the east.
    - Americans with Disabilities Act (ADA) access to other facilities – This memorandum evaluates an option to provide ramps or stairs and elevator access between the bridge and the Vera Katz Eastbank Esplanade. It also evaluates a ramps or stairs and elevator option and an improved sidewalk option for upgraded access between the bridge and W 1st Avenue including the Skidmore Fountain MAX station. The Draft EIS evaluated multiple ramp, stairs, and elevator options for the Vera Katz Eastbank Esplanade connection and evaluated potential ramps or stairs and elevator options for 1st Avenue. For the Vera Katz Eastbank Esplanade connection, the Project could also reconnect the City’s existing stairway and allow any upgraded connections to be implemented by the City as a separate, future project. The final decision on connection designs may be deferred to the final design phase of this project.
  - Construction Assumptions
    - Construction duration – The expected duration of project construction is 4.5 to 5.5 years, dependent upon the design option. See Table 1 for more information regarding construction impact extent and closure timeframes.
    - Construction area – Compared to the Draft EIS Long-span Alternative, the main refinement is that the construction area would be smaller for the west approach south of the bridge, including a smaller area within Tom McCall Waterfront Park south of the bridge.

- Construction access and staging – The construction access and staging is expected to be the same as that described in the Draft EIS.
- Vegetation – The Refined Long-span Alternative would remove slightly fewer trees and vegetation impacts than the Draft EIS Long-span Alternative, primarily within Tom McCall Waterfront Park south of the bridge.
- In-water work activity – The in-water work would be similar to that described in the Draft EIS, except that the replacement bridge in-water foundations would consist of a perched footing cap and a group of drilled shafts. Whereas the Draft EIS discussed the use of cofferdams to isolate in-water work, the Refined Long-span Alternative proposes to use a temporary caisson lowered to an elevation about mid-height of the water column to construct footing caps, avoiding additional disturbance of the riverbed that would be needed for a cofferdam. Additionally, the existing Pier 4 would be fully removed, Pier 1 would be partially removed below the mudline and Piers 2 and 3 removed to below the mudline. Existing in-water piles would be removed, subject to the design option advanced.
- Temporary freeway, rail, street, and trail closures – Temporary closures are expected to be the same as those described in the Draft EIS.
- Access for pedestrians and vehicles to businesses, residences, and public services – Access is expected to be the same as that described in the Draft EIS.
- On-street parking impacts – On-street parking impacts are expected to be the same as those described in the Draft EIS.
- Property acquisitions and relocations – Property acquisitions and relocations are similar to those listed in the Draft EIS, except that they have been modified to reflect a narrower set of bridge design options.
- Temporary use of Governor Tom McCall Waterfront Park – The park area that would be temporarily closed for construction has changed since the Draft EIS. On the north side of the bridge, the closure area has been reduced to avoid removing ten cherry trees and a berm that are part of the Japanese American Historical Plaza; this change would apply to all of the build alternatives. On the south side of the bridge, the park closure area has also been reduced to include only the area north of the Waterfront Park trellis; this revision applies only to the Refined Alternative.

**Table 1. Construction Impacts, Closure Extents, and Timeframes by Build Alternative**

Facility Impacted	Draft EIS Long-Span Alternative	Refined Long-Span Alternative
Tom McCall Waterfront Park	4.5-year closure within boundary of potential construction impacts	Same duration; Smaller closure area south of the bridge
Willamette River Greenway Trail	Portion of trail within Waterfront Park closed for same duration as park; detours in place for construction duration	Same
Japanese American Historical Plaza	Southern portion of plaza would be closed for same duration as Waterfront Park	Same

Facility Impacted	Draft EIS Long-Span Alternative	Refined Long-Span Alternative
Ankeny Plaza Structure	Closure for duration of construction but no impacts to Ankeny Plaza structure	Plaza Structure would not be closed during construction or impacted
Bill Naito Legacy Fountain	No closure of fountain and associated hardscape	Same
Vera Katz Eastbank Esplanade	18 months (this could extend to 3.5 to 4.5 years if project builds ramps rather than elevators and stairs for the ADA/bicycle/pedestrian connection); detours in place for construction duration	Same
Burnside Skatepark	4-month full closure	Same
River Crossing on Burnside Street	4- to 5-year closure	Same
Saturday Market Location	4.5-year closure or use of alternative location	Same
Skidmore Fountain MAX Station	Approximately 5 weeks	Same
Navigation Channel/Willamette River Water Trail	Intermittent closures; 2 to 10 closures; each closure up to 3 weeks	Same
<b>Overall Construction Duration</b>	<b>4.5 to 5.5 years</b>	<b>Same</b>

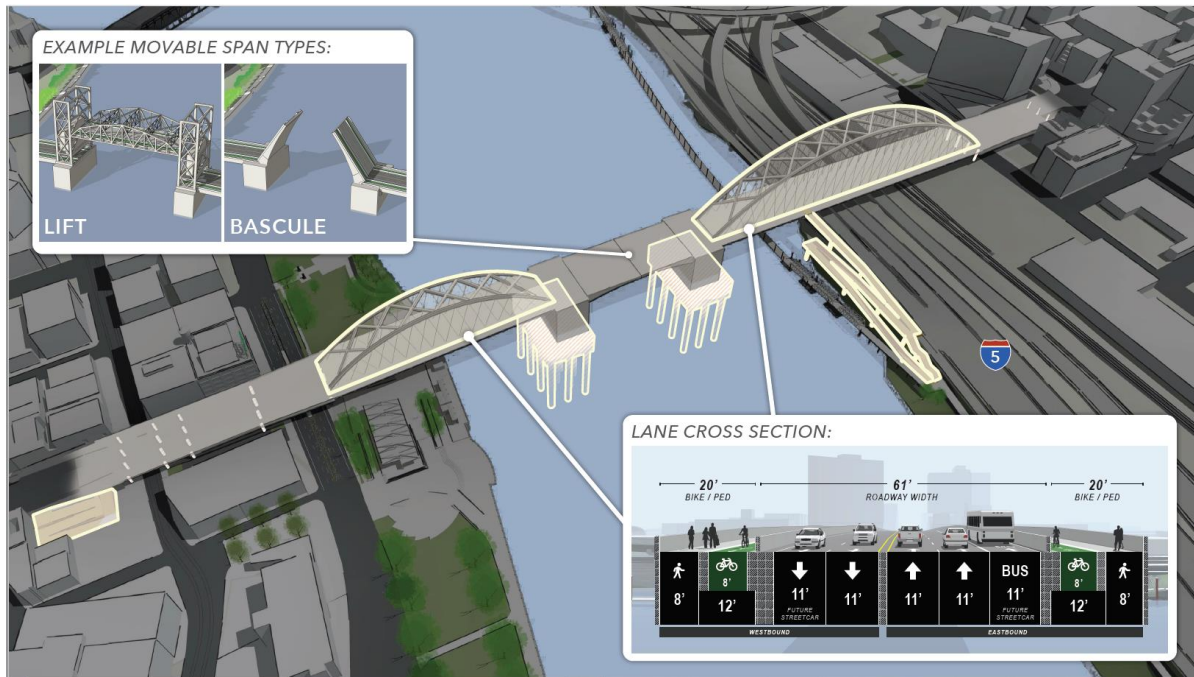
### Cross Sections

Figure 3 highlights the elements of the Draft EIS Long-span Alternative that have been modified to create the Refined Long-span Alternative, as described above. Figure 2 shows the Draft EIS Long-span Alternative and Figure 3 shows the Refined Long-span Alternative. Both figures include the tied-arch option for the east approach and the bascule option for the center movable span, but the east span could also be a cable-stayed bridge and the movable span could be a vertical lift bridge. For the west approach, the Draft EIS Long-span Alternative shows the tied-arch option while the Refined Long-span Alternative shows the refined girder bridge. The Refined Long-span Alternative image shows just one of the four possible lane configuration options being studied. All four configuration options, as well as many more graphics of the Refined Long-span Alternative, and how it compares to the Draft EIS Long-span Alternative, can be found in Chapter 2 of the *EQRB Supplemental Draft Environmental Impact Statement* (Multnomah County 2022a). Figure 3 also shows just one of the possible ways to allocate the bridge width between vehicle lanes, bicycle lanes and sidewalks; the total width of the bicycle and pedestrian facilities could range from approximately 28 to 34 feet.

The Refined Long-span Alternative would have one less lane for motor vehicles than the Draft EIS alternatives and the existing bridge. It would dedicate more of the cross section (28, 31, or 34 feet depending on the roadway width configuration selected) to pedestrians and bicyclists than the existing bridge (25.6 feet), but less than proposed for the Draft EIS Long-span Alternative (40 feet).

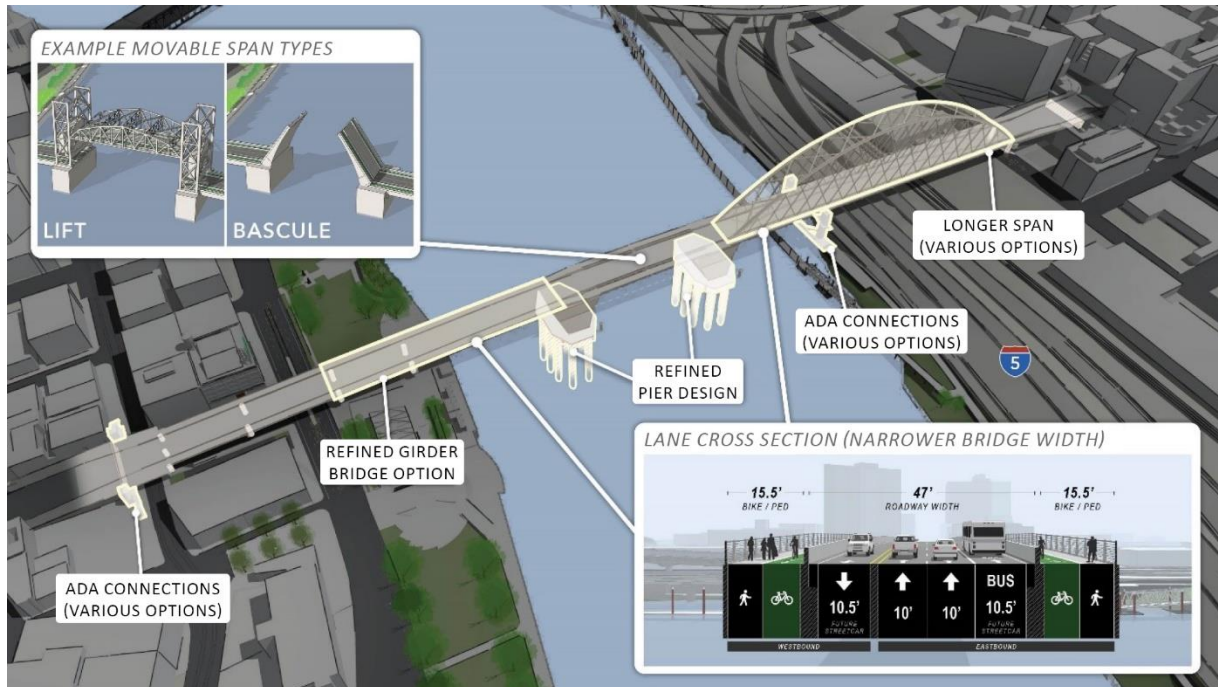
Figure 4 shows the differences between the existing bridge, the Draft EIS Long-Span Alternative and the Refined Long-Span Alternative. Figure 5, Figure 6, and Figure 7 show the four Lane Options for the Refined Long-Span Alternative with respective roadway widths of 50 feet, 47 feet and 44 feet. The reduction in overall width is achieved primarily by reducing the shy distances between lanes and outer barriers while the lane widths remain unchanged.

**Figure 2. Draft EIS Long-Span Alternative**



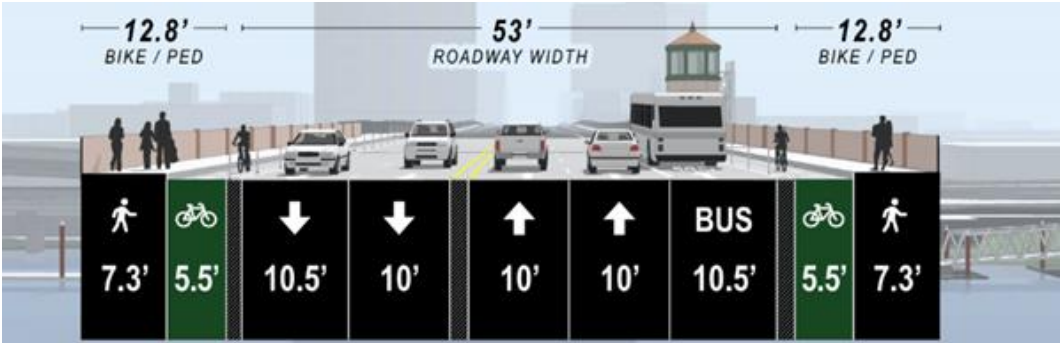
Note: The Draft EIS Long-span Alternative included multiple bridge types for both the east and west approach. This figure shows only the tied arch option.

Figure 3. Refined Long-Span Alternative

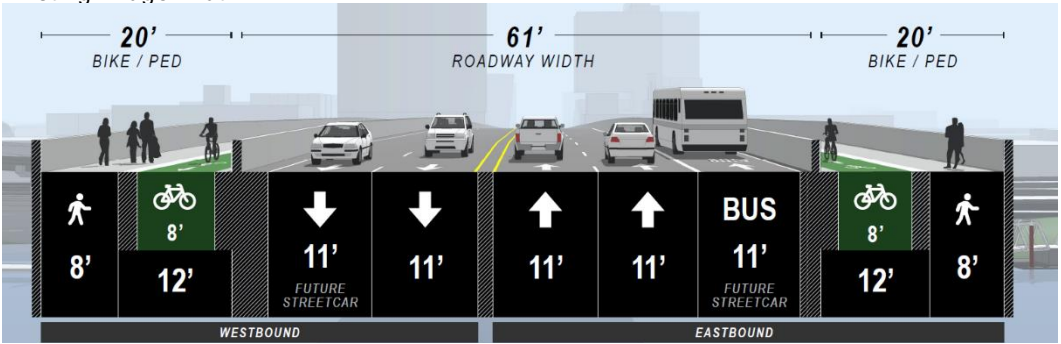


Notes: The Refined Long-span Alternative evaluated in this SDEIS includes both cable-stayed and tied arch options for the east span. This figure shows only the tied arch option. The Draft EIS studied, and SDEIS further studies, a bascule option and vertical lift option for the center movable span. The inset shows both options but the main figure shows the bascule option. This figure also shows just one of the lane configuration options considered in the SDEIS.

Figure 4. Bridge Width – Cross Section Over River



Existing Bridge Width



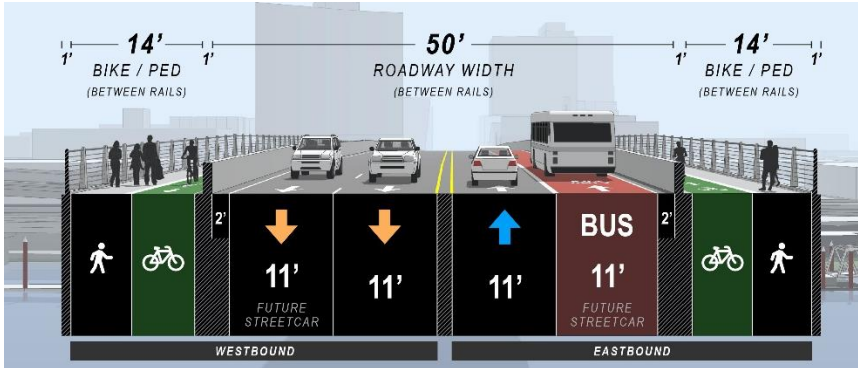
Draft EIS Long-Span Alternative Bridge Width



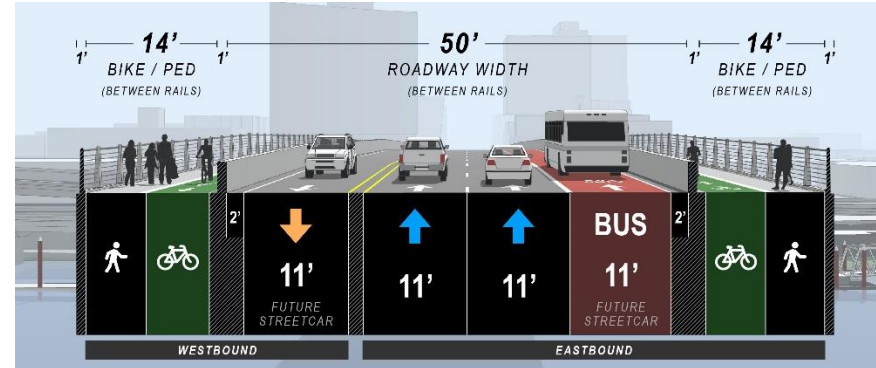
Refined Long-Span Alternative Bridge Width featuring a 47' Roadway Width

### Figure 5. Refined Long-Span Alternative Lane Configuration Options (50-Foot Roadway Width)

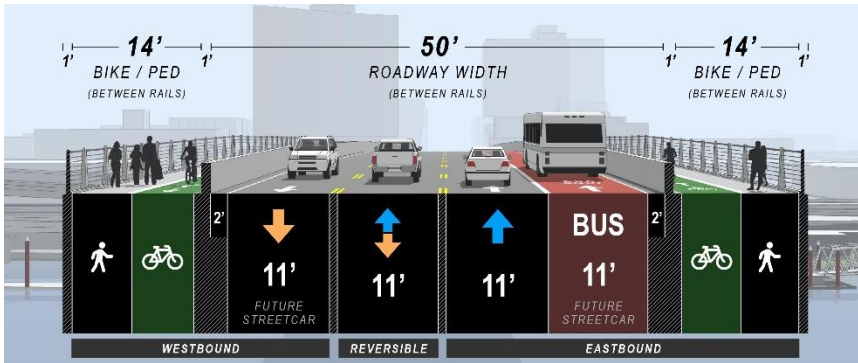
Four different lane configuration options are being evaluated for the Refined Long-span Alternative.



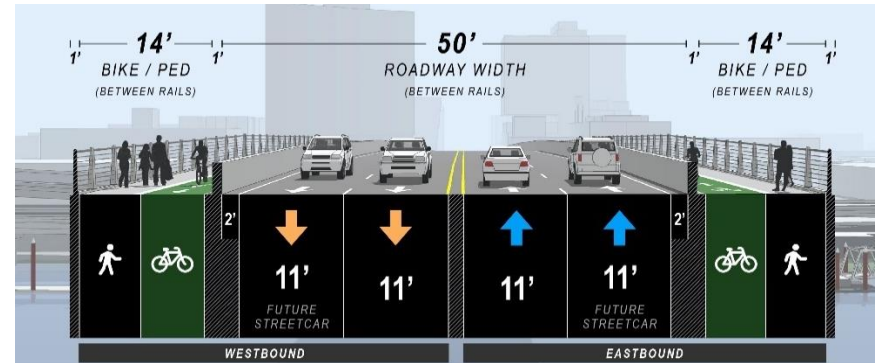
Option 1 (Balanced): 2 WB Lanes | 1 EB + 1 Bus Lane



Option 2 (Eastbound Focus): 1 WB Lanes | 2 EB + 1 Bus Lane



Option 3 (Reversible Lane): EB (eastbound), WB (westbound)

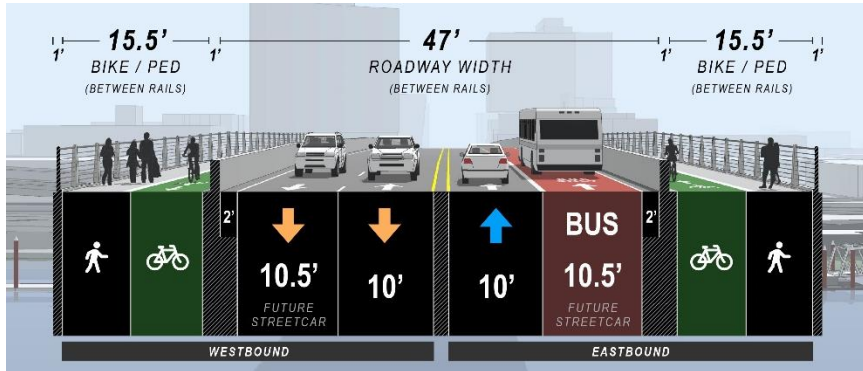


Option 4 (General-Purpose with Bus Priority): General-Purpose 2 WB | 2 EB, with Bus Queue Jump

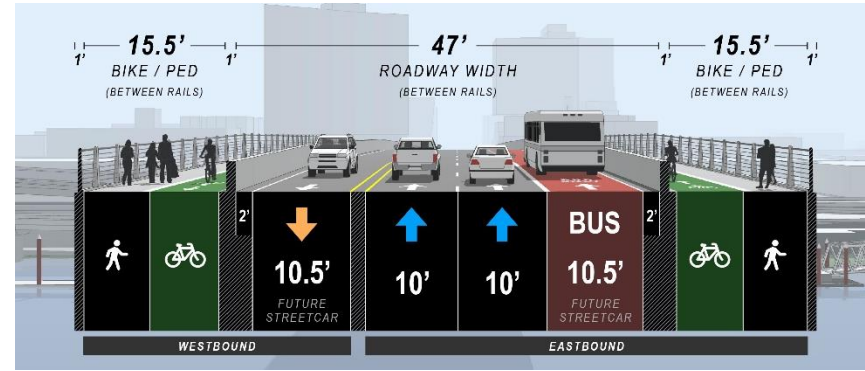


### Figure 6. Refined Long-Span Alternative Lane Configuration Options (47-Foot Roadway Width)

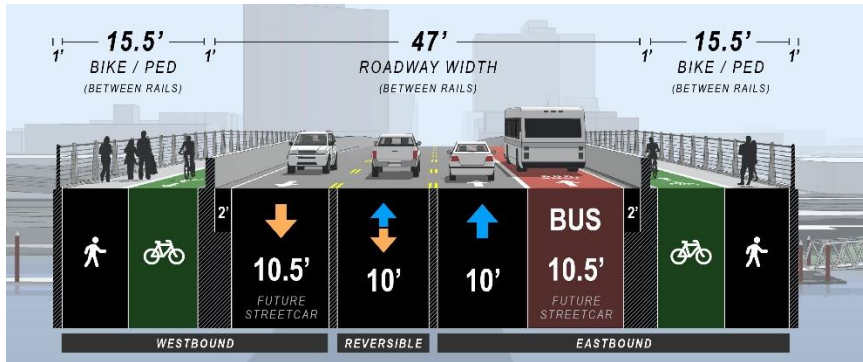
Four different lane configuration options are being evaluated for the Refined Long span Alternative.



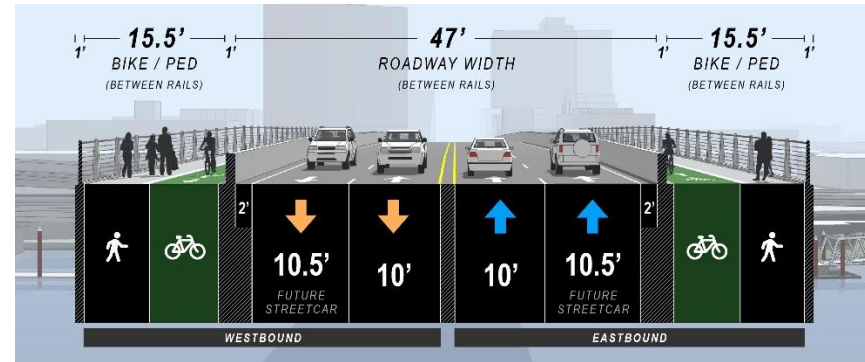
Option 1 (Balanced): 2 WB Lanes | 1 EB + 1 Bus Lane



Option 2 (Eastbound Focus): 1 WB Lanes | 2 EB + 1 Bus Lane



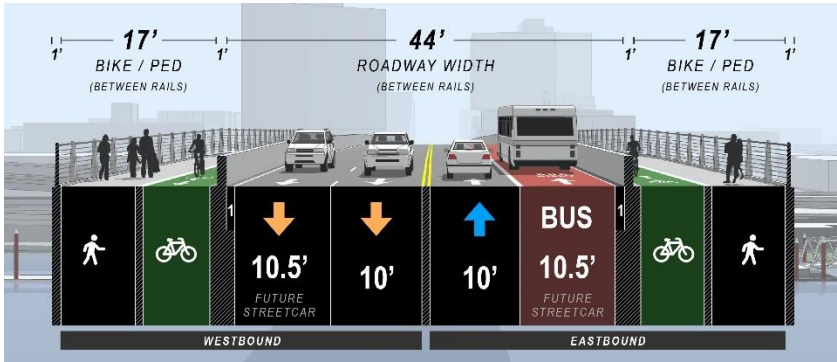
Option 3 (Reversible Lane): EB (eastbound), WB (westbound)



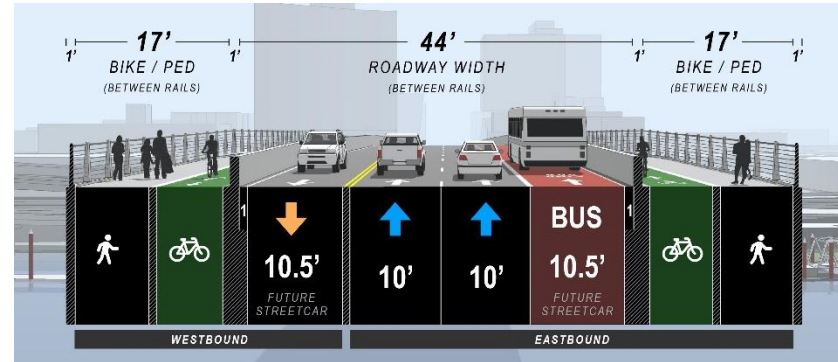
Option 4 (General-Purpose with Bus Priority): General-Purpose 2 WB | 2 EB, with Bus Queue Jump,

### Figure 7. Refined Long-Span Alternative Lane Configuration Options (44-Foot Roadway Width)

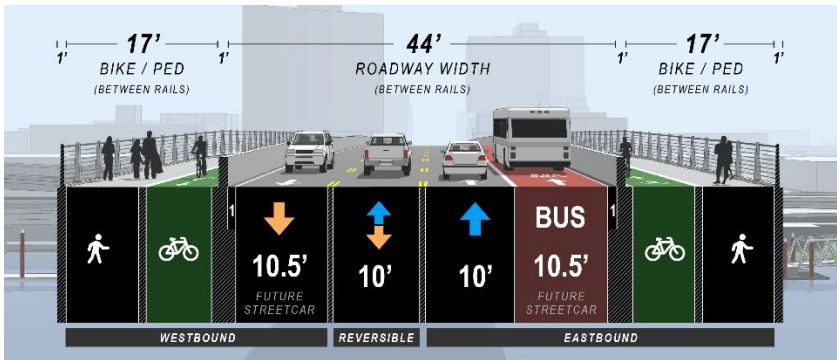
Four different lane configuration options are being evaluated for the Refined Long span Alternative.



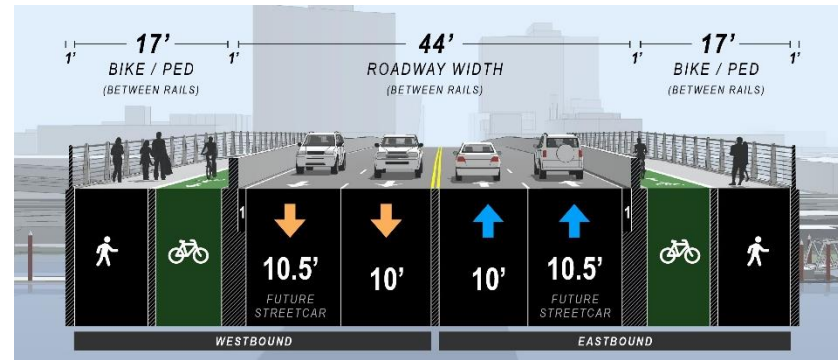
Option 1 (Balanced): 2 WB Lanes | 1 EB + 1 Bus Lane



Option 2 (Eastbound Focus): 1 WB Lanes | 2 EB + 1 Bus Lane



Option 3 (Reversible Lane): EB (eastbound), WB (westbound)



Option 4 (General-Purpose with Bus Priority): General-Purpose 2 WB | 2 EB, with Bus Queue Jump

## 3 Definitions

The following terminology is used when discussing geographic areas in the EIS:

- **Project Area** – The area within which improvements associated with the Project Alternatives would occur and the area needed to construct these improvements. The Project Area includes the area needed to construct all permanent infrastructure, including adjacent parcels where modifications are required for associated work such as utility realignments or upgrades. For the EQRB Project, the Project Area includes approximately a one-block radius around the existing Burnside Bridge and W/E Burnside Street, from NW/SW 3rd Avenue on the west side of the river and NE/SE Grand Avenue on the east side.
- **Area of Potential Impact (API)** – This is the geographic boundary within which physical impacts to the environment could occur with the Project Alternatives. The API is resource-specific and differs depending on the environmental topic being addressed. For all topics, the API will encompass the Project Area, and for some topics, the geographic extent of the API will be the same as that for the Project Area; for other topics (such as for transportation effects) the API will be substantially larger to account for impacts that could occur outside of the Project Area. The APIs for transportation topics are defined in Section 6.1 of this document.
- **Project vicinity** – The environs surrounding the Project Area. The project vicinity does not have a distinct geographic boundary but is used in general discussion to denote the larger area, inclusive of the Old Town/Chinatown, Downtown, Kerns, and Buckman neighborhoods.

## 4 Relevant Regulations

No additional regulations since the *EQRB Transportation Technical Report* (Multnomah County 2021c) were published that apply to the information presented in this supplemental memorandum. Section 4 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) contains information on the relevant regulations and planning documents that apply to the EQRB project.

Several updates on local plans covered in Section 4.1.2 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) are provided below:

- The Burnside Bridge is designated as a Local Service Truck Street under the City of Portland's Central City 2035 Plan.
- The Burnside Bridge is designated as a Major City Walkway under the City of Portland's 2035 Transportation System Plan.
- The Burnside Bridge is designated as a Major City Bikeway under the City of Portland's 2035 Transportation System Plan.
- Portland's Central City 2035 was officially readopted as of July 2020.

## 5 Analysis Methodology

### 5.1 Data Collection

No new data was collected for the purposes of this supplemental memorandum.

### 5.2 Long-Term Impact Assessment Methods

The methodology for assessing the future conditions of the Draft EIS No-Build and Build Alternatives can be found in Section 6 of the *EQRB Transportation Technical Report* (Multnomah County 2021c). For the purposes of this supplemental memorandum, all assessments methods are consistent with those outlined in the *EQRB Transportation Technical Report* (Multnomah County 2021c) except where detailed below.

#### 5.2.1 Modeling Scenarios

Four roadway configuration options were modeled according to the options and vehicle lane configurations described in Section 2. Four different lane configuration options are being evaluated for their impacts on traffic operations, transit and safety, including:

- Lane Option 1 (Balanced): 2 westbound lanes (general-purpose) plus 2 eastbound lanes (1 general-purpose and 1 bus-only lane)
- Lane Option 2 (Eastbound Focus): 1 westbound lane (general-purpose) plus 3 eastbound lanes (2 general-purpose and 1 bus-only)
- Lane Option 3 (Reversible Lane): 1 westbound lane (general-purpose) plus 2 eastbound lanes (1 general-purpose and 1 bus-only) plus on reversible lane (westbound AM peak and eastbound PM peak)
- Lane Option 4 (General-Purpose with Bus Priority): 2 westbound general-purpose lanes plus 2 eastbound general-purpose lanes, plus bus priority access (e.g., queue bypass) at each end of the bridge.

For the purposes of the traffic operations, transit modeling and active transportation usage there is no difference between the 50-foot, 47-foot and 44-foot roadway widths. The different lane widths are not expected to impact traffic queuing, intersection operations, delay, transit ridership, transit travel times or overall bicycle and pedestrian volumes. The different roadway widths are expected to impact safety and the impacts are described in Section 7.1.8. A qualitative discussion on the differing design elements is included in the sections on transit and active transportation.

#### Traffic Operations Software

Intersection traffic operations and 95th percentile queuing for most study intersections were evaluated using SimTraffic as described in Section 6.2.2 of the *EQRB Transportation Technical Report* (Multnomah County 2021c).

Similar to the Draft EIS, intersection traffic operations and 95th percentile queuing were evaluated using SimTraffic models to understand the true impact of traffic congestion and closely spaced intersection interactions. Synchro/SimTraffic models were developed

for future year (2045) No-Build and Build scenarios. AM and PM peak periods were analyzed for all analysis scenarios.

Compared to the Draft EIS, the signal timing for the 2045 future year was updated with a few modifications:

- Increased the cycle length from 70 seconds to 90 seconds for the four study intersections east of the bridge:
  - E Burnside Street and NE/SE MLK Boulevard
  - E Burnside Street and NE/SE Grand Avenue
  - NE Couch Street and NE MLK Boulevard
  - NE Couch Street and NE Grand Avenue
- Modified the signal phasing at E Burnside Street and NE/SE MLK Boulevard to include a 20 second hold phase for the eastbound approach for the bus queue jump heading eastbound. Twenty seconds of green time was removed from the eastbound right turn movement to account for the bus queue jump at the signal.
- Modified the signal phasing at W Burnside Street and NW/SW 2nd Avenue to include a 20 second hold phase for the westbound approach for the protected bike lane heading westbound. Twenty seconds of green time was removed from the westbound right turn movement to account for the protected bike phase at the signal.

Similar to the Draft EIS, signal timing plans at study intersections were optimized for both the No-Build and Build scenarios.

Three of the four Lane Options include a zipper merge on one side of the Burnside Bridge. A zipper merge occurs when a lane ends and motorists use both lanes of traffic until reaching the defined merge area, and then alternate in “zipper” fashion into the remaining, open lane. Flow rates for traffic through the zipper merges were developed based on example merges within the City of Portland. PBOT provided information for 11 example merges within the City of Portland, 9 of which had speed limits of 25 to 30 mph. Of these 9 relevant examples based on similar speeds to the proposed Burnside Bridge, the average vehicle volume throughput at the merges was 860 vehicles per hour (vph), with the largest 2 merges having vehicle volume throughputs of 1,010 vph and 1,340 vph. A test was run in SimTraffic to determine the maximum vehicle volume throughput for a merge with similar conditions to the Burnside Bridge: 25 mph speeds and 10-foot-wide travel lanes. This test provided a maximum flow rate of 1,400 vph through a zipper merge. Based on the 9 relevant examples provided from PBOT, conversations with PBOT staff, and the SimTraffic test merge, a saturated flow rate of 1,500 vph was selected to be coded into SimTraffic for the Burnside Bridge for both directions of travel. This saturation flow rate was applied to the four Build options: Lane Option 1 (Balanced), Lane Option 2 (Eastbound Focus), Lane Option 3 (Reversible Lane), and Lane Option 4 (General-Purpose with Bus Priority).

The SimTraffic models were not calibrated to account for any external constraints, such as congestion east of the Burnside Bridge from the E Burnside Street and NE/SE 14th Avenue intersection or congestion from the metered on-ramp from NE Grand Avenue to I-84. All intersection delay and queuing results for the intersections east of the Burnside

Bridge (E Burnside Street and NE/SE MLK Boulevard and E Burnside Street and NE/SE Grand Avenue) would likely be impacted by downstream congestion.

### Future Traffic Volumes

Intersection traffic volumes were developed for the updated No-Build Condition using the same methods described in Section 6.2.3 of the *EQRB Transportation Technical Report* (Multnomah County 2021c). Intersection traffic volumes were also developed for the Build Alternatives: Lane Option 1 (Balanced), Lane Option 2 (Eastbound Focus), and Lane Option 3 (Reversible Lane) using the same methods. Intersection traffic volumes for Lane Option 4 (General-Purpose with Bus Priority) are identical to the updated No-Build Condition. For all of the No-Build and Build Alternatives, these intersection traffic volumes represent the volume demand.

### Future Traffic and Freight Operations

The operational criteria and standards for traffic and freight operations are described in section 6.2.4 and 6.2.5 of the Draft EIS Transportation Technical Report. Two additional measures, vehicle volume throughput and travel time, were used in the SimTraffic analysis.

#### *Vehicle Volume Throughput and Percent Served*

The traffic volumes often shown for peak hours is the volume demand, or the amount of volume that would like to use a certain roadway or intersection during the peak hour. The vehicle volume throughput represents the actual amount of the volume that is able to make it through the network or intersection during the peak hour.

Vehicle volume throughput compared to volume demand is the percent served. When a portion of the volume demand is unserved, the reported delay and level of service would be longer since a portion of the volume demand that did not arrive in the model during the peak hour of analysis.

#### *Travel Time*

Travel times for transit were developed from the SimTraffic models for the SDEIS. Travel times across the Burnside Bridge were used to compare general-purpose traffic operations and transit operations between the different Lane Options. Travel times for transit were calculated using travel times and intersection delay from SimTraffic as well as estimated bus stop dwell times.

### Future Transit Conditions

Transit modeling includes information on transit travel times, average transit vehicle speeds, ridership, reliability and person throughput impacts as previously described in section 6.2.6 of the *EQRB Transportation Technical Report* (Multnomah County 2021c). The Build and No-Build Alternatives in that report featured identical transit conditions for the five-lane cross section. Transit vehicle average speeds, reliability and throughput measures are new for the SDEIS. For all measures, new information has been modeled for the future SDEIS No-Build condition to create a new baseline of comparison using updated methodologies and traffic volume inputs.

The future transit conditions within the Draft EIS consisted of an eastbound bus-only lane while westbound transit vehicles operate in a mixed traffic environment. The four different Lane Options of the Refined Long-span Alternative are compared to the build and no-build conditions.

### Transit Operations Software

A combination of the Metro Regional Travel Demand Model and SimTraffic were used for transit operations analysis.

#### *Metro Regional Travel Demand Model*

There are several key projects and inputs built into Metro's future model year that affects overall transit ridership projections.

- Increased central city density would lower car ownership and increase transit ridership in the Portland Core.
- Parking costs within the Portland Core would increase faster than the overall rate of inflation. The increased cost of parking is assumed to transition mode share away from single occupancy vehicles and toward transit.
- The roadway mix within the Portland Core, based on the Regional Transportation Plan (RTP) project list, would reallocate roadway space away from general-purpose lanes and toward a more balanced multimodal mix, encouraging more walking, biking, and transit trips in the Portland Core.
- Specific transit projects taken from the RTP project list are reflected in the Metro Regional Travel Demand Model future year and assumed impacts on transit ridership are as follows:
  - The MAX Red Line is extended from its current western terminus to a new end point at the Hillsboro Fairground Complex, approximately 8 miles to the west of the line's current terminus.
  - The MAX Yellow/Orange Line is extended north, across the Columbia River to a new terminus in Washington at Clark College, approximately 3 miles to the north of the line's current terminus.
  - The MAX SW Corridor Line is completed and interlined with the Green Line. As of this report, the SW Corridor MAX extension plans to add approximately 11 miles of new service to the MAX network.
  - The Portland Streetcar adds an extension between Montgomery Park in the west and the Hollywood Transit Center in the east, representing approximately 5 miles of a new streetcar line.

The Metro Regional Travel Demand Model 2045 model year includes a high-level implementation of the City of Portland's Enhanced Transit Network Plan, which is functionally similar to the updated plan for implementation represented by the Rose Lane Plan adopted in February of 2020. The City of Portland's Rose Lane Project will aim to install Business Access and Transit (BAT) lanes across a network of streets throughout central Portland. At the time of this report, the exact extent, design, and implementation dates are not determined. It is likely that the majority of the proposed Rose Lane network

is implemented by the future year date. Thus, given uncertainty of final design, the report relies on a qualitative analysis of the impacts from implementing the Rose Lane Project.

### *SimTraffic*

Unlike the *EQRB Transportation Technical Report* (Multnomah County 2021c), SimTraffic models were used to report travel times and travel time reliability for transit rather than the Regional Travel Demand Model. SimTraffic is discussed in the Traffic Operation section above.

### Future Transit Operations

This report includes additional measures beyond what was in the *EQRB Transportation Technical Report* (Multnomah County 2021c) including transit travel times, average vehicle speed, reliability and projected ridership based on microsimulation and regional modeling tools to understand impacts to transit as described below. The performance measures described below were developed in partnership with participating agency input.

### Travel Times and Transit Vehicle Speeds

Traffic volume inputs were based on a combination of the Metro and PBOT's Regional Travel Demand Models. The projected traffic volumes were an input into SimTraffic, which was used to produce transit travel times. Knowing the transit travel times allows for average vehicle speeds to also be calculated using the outputs from SimTraffic. AM and PM peak periods are analyzed for all analysis scenarios with transit travel times calculated bi-directionally between and inclusive of NW/SW 2nd Avenue and NE/SE MLK Boulevard.

Previously, the *EQRB Transportation Technical Report* (Multnomah County 2021c) used the Metro Regional Travel Demand Model to calculate transit travel speeds. Using SimTraffic allows for the microsimulation of intersection operations that can impact transit vehicle operations including signal timing, intersection delay, queuing and turning movements of vehicles.

Ridership, and person trip projections were developed using Metro Regional Travel Demand Model.

### Reliability

Reliability was a performance measure not included in the *EQRB Transportation Technical Report* (Multnomah County 2021c). Travel time reliability is measured qualitatively by comparing auto delay at intersections and percent of time queuing spills back and impacts the buses in both the westbound and eastbound direction.

In the westbound direction, the westbound right turn at W Burnside Street and NW/SW 2nd Avenue has the potential to spill back and impact the buses in the westbound general-purpose lane(s), as the westbound right-turn lane is assumed to be 190 feet long. In the eastbound direction, there is a bus-only lane across the bridge for the No Build condition, the Balanced, the Eastbound Focus, and the Reversible Lane Options that would not be impacted by queuing from general-purpose traffic. For the General-Purpose with Bus Priority Option, which does not have a bus-only lane across the bridge,



the eastbound through lane(s) at E Burnside Street and SE MLK Boulevard have the potential to spill back and impact the buses entering the bus-only queue jump lane at the intersection, as the eastbound right-turn lane is assumed to be 300 feet long.

Intersection delay and percent of time queuing spills back were collected from the SimTraffic models. Intersection delay is reported for the general-purpose through movement in the westbound direction and for the bus-only through lane in the eastbound direction.

## Ridership

Assessment of transit ridership during future conditions relies on Metro's 2040 Travel Demand Model, grown to the 2045 model year as previously described, and reported for the year 2045. The 2045 model year considers all projects included on Metro's 2040 funded list of projects found in the RTP. Transit ridership is reported by daily average ridership for each of the effected transit lines within the project area and additionally reported for each line as a whole, rather than transit ridership within the direct impact area.

The analysis of transit ridership is consistent with the methodology used in the *EQRB Transportation Technical Report* (Multnomah County 2021c). Updates to the model were made to be consistent with other updates made to traffic operations and project lists taken into account elsewhere in this memorandum.

## Person Throughput

Person throughput was a performance measure not previously included in the *EQRB Transportation Technical Report* (Multnomah County 2021c). The measure provides a total number of people moved over the Burnside Bridge during peak hours by transportation mode. This provides an estimate of the number of people served rather than the number of vehicles served. Person throughput is reported for transit, auto, and freight/commercial vehicle modes. For auto and freight/commercial vehicles, the model uses a vehicle occupancy ratio that when multiplied by the total volumes provides an estimate of the total number of people that crossed the Burnside Bridge during peak hours in auto and freight/commercial vehicles. For transit, total ridership during the peak hour is an output of the model.

A ratio between the throughput for transit and general-purpose plus commercial vehicles can be calculated, providing a simple measure for comparison purposes. In the report, a ratio above one represents a scenario with more person throughput carried by transit while a ratio below one represents a scenario with person throughput carried more by general-purpose and commercial vehicles.

## Future Active Transportation Conditions

There is no difference to the methodologies used in the *EQRB Transportation Technical Report* (Multnomah County 2021c).

## Future Safety Conditions

The safety analysis scenarios are:

1. No-Build Existing Cross Section
2. Draft EIS Long-span Alternative (5-lane Version)
3. Refined Long-span Alternative Cross Section (see typical sections in Figure 5 through Figure 7)
  - A. Lane Option 1 (Balanced): 2 westbound lanes (general-purpose) plus 2 eastbound lanes (1 general-purpose and 1 bus-only lane)
  - B. Lane Option 2 (Eastbound Focus): 1 westbound lane (general-purpose) plus 3 eastbound lanes (2 general-purpose and 1 bus-only)
  - C. Lane Option 3 (Reversible Lane): 1 westbound lane (general-purpose) plus 2 eastbound lanes (1 general-purpose and 1 bus-only) plus 1 reversible lane (westbound AM peak and eastbound PM peak)
  - D. Lane Option 4 (General-Purpose with Bus Priority): 2 westbound general-purpose lanes plus 2 eastbound general-purpose lanes, plus bus priority access (e.g., queue bypass) at each end of the bridge.

### *Safety Performance Analysis Methods*

Safety performance is analyzed on the bridge at a mid-span location between the intersections at either end and at the intersections of NW 2nd Avenue/W. Burnside Street, NE MLK Boulevard/E. Burnside Street, and NE Couch St/NE MLK Boulevard. Figure 8 presents the safety analysis direct API.

### MID-SPAN ASSESSMENT

For the mid-span assessment, the relative safety performance of the No-Build Alternative, Draft EIS Long-span Alternative, and Refined Long-span Alternative for all Lane Options is estimated using the AASHTO *Highway Safety Manual* (HSM) Predictive Method for urban and suburban arterials (AASHTO 2010). The method provides Safety Performance Functions (SPFs) for two-lane undivided arterials and four-lane undivided arterials. Oregon calibration factors for these facility types are shown in Table 2. The methods were applied using the Interactive Highway Safety Design Model (IHSDM).

**Table 2. Oregon HSM Calibration Factors**

Facility Type	Calibration Factor
Two-lane undivided urban and suburban arterials	0.62
Four-lane undivided urban and suburban arterials	0.63

Source: Calibrating the Highway Safety Manual Predictive Method for Oregon Highways, SPR 684 OTREC-RR-12-02, ODOT/OTREC, February 2012

There is no specific analysis method for three-lane arterials (two-lanes in one direction and one-lane in the other direction). Therefore, safety performance for Balanced, Eastbound Focus, and Reversible Lane options are estimated by interpolating results between the two-lane and four-lane predictive methods.

Results of the predictive method are further modified with crash modification factors accounting for cross-sectional characteristics not included in the predictive method. The Federal Highway Administration (FHWA) Crash Modification Factor (CMF) Clearinghouse provides a CMF for the change in safety associated with lane widths other than 12 feet wide on urban and suburban arterials (CMF ID 8691 “Increase Lane Width”). This CMF is a function of speed, and existing and proposed lane widths. Table 3 presents a summary of CMFs for different lane widths used in this analysis. The HSM Predictive Method predicts crashes for a default 12-foot lane width, and the CMF for lane widths other than 12 feet are applied to the outcomes from the Predictive Method.

Each proposed alternative includes barrier to separate motor vehicles from people walking and biking. While the barrier would preclude, most if not all motor vehicle/pedestrian and motor vehicle/bicycle crashes, the barrier is a fixed object, and drivers may make mistakes and collide with the barrier. Increasing the distance from the edge of the traveled lane to the barrier – providing a shoulder – can decrease the frequency of these crash types. The FHWA CMF Clearinghouse provides a CMF accounting for the influence of shoulder width on urban and suburban arterials (CMF ID 8711 “Widen Shoulder”). This CMF depends on the baseline and proposed shoulder width. This CMF is applied to the results of the HSM predictive method to account for the shoulder width provided in the alternatives. Lane Option 1, 2 and 3 include an eastbound bus only lane. The bus lane increases the distance between the eastbound general-purpose lane and the barrier. Under existing conditions 6 to 7 buses per hour would operate in the bus-only lane. This is approximately one bus every 8 to 10 minutes. When there is no bus in the lane, the bus-only lane does provide additional offset to the barrier and provides space for swerving or other maneuvers. As such the bus-only lane was assumed to provide benefits similar to a wider shoulder. However, because the predictive method is a bi-directional model, the CMFs are applied on a bi-directional basis; therefore, the westbound shoulder plus the eastbound bus-only lane and shoulder are averaged to determine the shoulder width CMF applied in each scenario. The average distance may over-estimate crash reduction benefits in the westbound direction and under-estimate crash reduction benefits in the eastbound direction. Table 3 summarizes all of the CMFs applied to the results of the predictive analysis.

**Table 3. Crash Modification Factor (CMF) for Lane Width and Shoulder Width**

Lane Width and Speed <sup>1</sup>	CMF
Lane Width: 10 feet or 10.5 feet and Speed – 35 mph	1.01
Lane Width: 10 feet or 10.5 feet and Speed – 25 mph	1.01
Lane Width: 11 feet and Speed – 25 mph	1.00
Shoulder <sup>2</sup>	CMF
Increase shoulder width from 0 feet to 2 feet	0.92

1. Source: CMF ID: 8691, link - <http://www.cmfclearinghouse.org/detail.cfm?facid=8691>
2. Source: CMF ID: 8711, link - <http://www.cmfclearinghouse.org/detail.cfm?facid=8711>

## REVERSIBLE LANE ASSESSMENT

There is no specific method for analyzing the safety performance of reversible lanes. Overall, there is limited research about the number and types of crashes that can occur with reversible lane applications. No CMFs documenting the before and after crash frequency or severity in locations with reversible lanes were discovered. As such, the Reversible Lane Option was analyzed using a quantitative and qualitative approach. The quantitative analysis used the HSM predictive method to estimate crash conditions on the bridge, mid-span after drivers have transitioned into the reversible or general-purpose lanes. After drivers have transitioned into the appropriate travel lane, driving across the Burnside Bridge would be comparable to driving across the Ross Island Bridge or any other multi-lane bridge without a median separating opposite directions of traffic. Again, there is no specific analysis method for three-lane arterials; therefore, safety performance for the Reversible Lane Options was estimated by interpolating results between the two-lane and four-lane predictive methods.

The number and severity of crashes in the Reversible Lane Option would also be influenced by how the transition into either the reversible or general-purpose lane(s) are managed (i.e., gates, signage, striping, over-head driver information). Information about best practices for designing these treatments are provided here. Finally, a brief literature review was conducted and summarized below. The research shows that reversible lanes on arterials with left turns to driveways or other streets would have more crashes than an arterial without reversible lanes; however, as this is a bridge there would not be any left turns to/from the reversible lane.

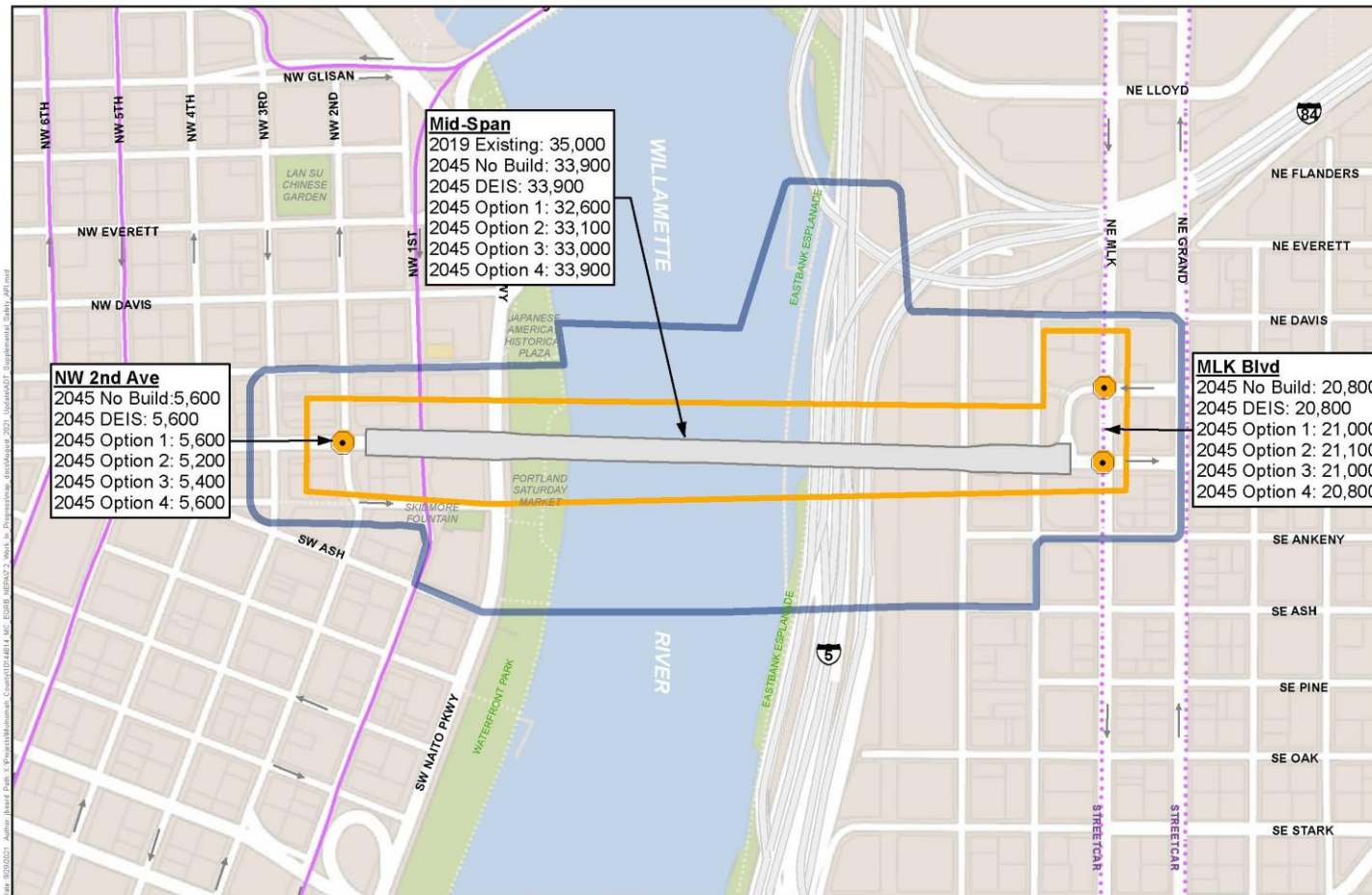
## INTERSECTION ASSESSMENT

The study intersections within the safety API are four-leg signalized with one-way arterial streets such as MLK Boulevard and Grand Avenue and 2nd Avenue. The HSM supplemental document, National Cooperative Highway Research Program (NCHRP) Project 17-58 “Safety Prediction and Models for Six-Lane and One-Way Urban and Suburban Arterials” provides SPFs for four-legged signalized intersection with one-way arterials. Oregon calibration factors for signalized intersection with one-way arterials are not available. The method was applied using the IHSDM.

## TRAFFIC VOLUMES

Average daily traffic (ADT) volumes were developed for the 2045 No-Build Alternative, Draft EIS Long-span Alternative, and Refined Long-span Alternative, Balanced (Section 7.1.4), Eastbound Focus (Section 7.1.5), Reversible Lane (Section 7.1.6) and General-Purpose with Bus Priority (Section 7.1.7) scenarios. A linear trend between the existing condition and 2045 No-Build Alternative ADT numbers was used to estimate annual ADT volumes between existing and 2045 for the Draft EIS and Refined Long-span Alternatives scenarios. Figure 8 presents the ADT volumes within the safety API.

Figure 8. Annual Daily Traffic (ADT) within Supplemental Safety API



**EARTHQUAKE READY BURNSIDE BRIDGE**  
 Source:  
 City of Portland, Oregon  
 HDR, Parametrix

0 250 500 1,000 Feet

- ▬ Project Area
- ▬ Supplemental Safety API
- Supplemental Safety Study Intersection
- Enhanced Seismic Retrofit

**Figure**  
 Average Daily Traffic (ADT) within Supplemental Safety API

Earthquake Ready Burnside

## 6 Affected Environment

The areas of potential impact are defined in Section 5 of the *EQRB Transportation Technical Report* (Multnomah County 2021c). The section defines both the direct and indirect API used for specific transportation topics. For the purposes of this supplemental memorandum, all API boundaries defined within that report are used here except for the API defined below.

### 6.1 Updated Area of Potential Impact

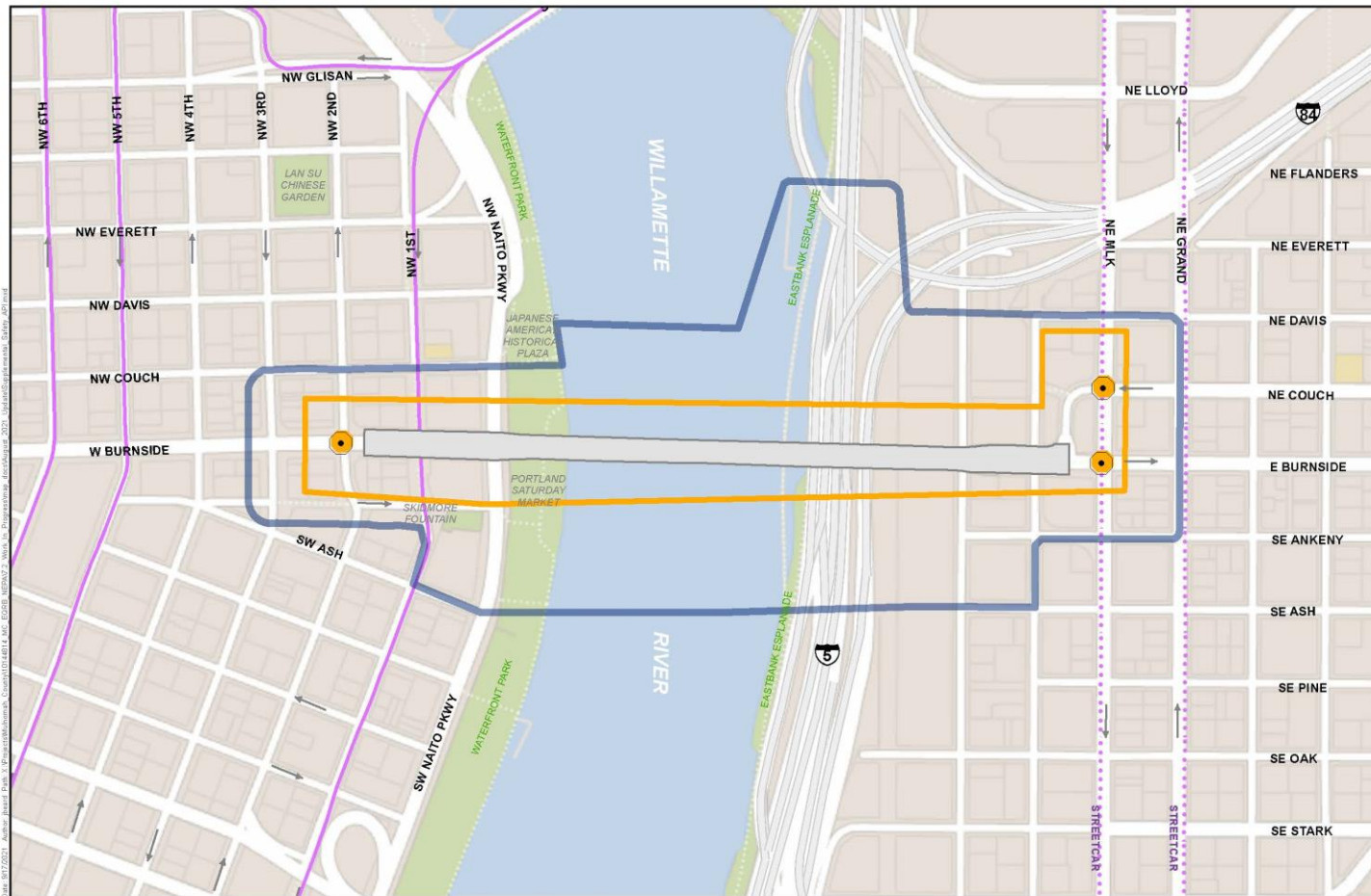
All indirect and direct API are the same as those in the *EQRB Transportation Technical Report* (Multnomah County 2021c) except for the direct API for safety (Figure 9). The safety direct API for the SDEIS is smaller than the safety direct API in the Draft EIS. The SDEIS API does not include NW 3rd Avenue or NW Couch Street because the optional refined cross sections do not influence conditions at these locations.

The SDEIS is not evaluating construction conditions so there is no indirect API for this safety analysis.

### 6.2 Existing Conditions Analysis

No updates were made to the existing conditions crash analysis. The 2011-2017 existing crash conditions documented in the Draft EIS are sufficient to support continued assessments of the Refined Long-span Alternative design.

Figure 9. Direct API for Safety Analysis



Source:  
City of Portland, Oregon  
HDR, Parametrix

- Project Area
- Supplemental Safety API
- Supplemental Safety Study Intersection
- Enhanced Seismic Retrofit

0 250 500 1,000  
Feet

**Figure**  
 Supplemental Safety API

Earthquake Ready Burnside

## 7 Impacts from the Design Modifications and Comparison to Draft EIS Alternatives

Environmental consequences for transportation are described and differentiated by modes if the impacts are different from the Draft EIS. The impacts on modes include roadway and freight, transit, walking and biking and safety for all modes.

Long-term impacts are considered to be permanent, reasonably foreseeable impacts related to the No-Build and Build Alternatives. The outcomes for traffic, transit, walking, biking, and safety could vary among alternatives due to specific design differences for these modes and are described in the following sections.

### 7.1.1 Construction Impacts

There is no difference in the temporary construction impacts described in Section 7.4 of the *EQRB Transportation Technical Report* (Multnomah County 2021c).

### 7.1.2 No-Build

This section provides an updated summary of No-Build Alternative conditions. Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) covers no-build conditions.

#### Traffic and Freight Operations

The roadway channelization for the 2045 future year is the same as outlined in Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c), with a few modifications. Several BAT lane projects were included in the Draft EIS No-Build and Build model, but the City of Portland has since added the following BAT lanes:

- Converted an eastbound general-purpose lane or eastbound turn pockets into an eastbound BAT lane along W Burnside Street between NW/SW Park Avenue and NW/SW 2nd Avenue
- Converted an eastbound general-purpose lane into an eastbound BAT lane along E Burnside Street between NE/SE Grand Avenue and NE/SE 12th Avenue
- Converted a westbound general-purpose lane into a westbound BAT lane along NE Couch Street between NE/SE 14th Avenue and NE/SE 7th Avenue

The signal timing for the 2045 future year is the same as outlined in the *EQRB Transportation Technical Report* (Multnomah County 2021c), with a few modifications:

- Increased the cycle length from 70 seconds to 90 seconds for the four study intersections east of the bridge:
  - E Burnside Street and NE/SE MLK Boulevard
  - E Burnside Street and NE/SE Grand Avenue
  - NE Couch Street and NE MLK Boulevard



- NE Couch Street and NE Grand Avenue
- Modified the signal phasing at E Burnside Street and NE/SE MLK Boulevard to include a 20-second hold phase for the eastbound approach for the bus queue jump heading eastbound. Twenty seconds of green time was removed from the eastbound right turn movement to account for the bus queue jump at the signal.
- Modified the signal phasing at W Burnside Street and NW/SW 2nd Avenue to include a 20-second hold phase for the westbound approach for the protected bike lane heading westbound. Twenty seconds of green time was removed from the westbound right-turn movement to account for the protected bike phase at the signal.

The overall AM and PM peak hours are the same as outlined in Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c).

The Burnside Bridge is now estimated to carry a total of 33,900 vehicles per day in the 2045 future year, a decrease of 1,100 vehicles compared to the Existing Conditions and representing a decrease of 3.1 percent overall. The projected decrease in average daily traffic demand is the result of assumed future conditions developed by Metro, the City of Portland, and TriMet and built into Metro’s TDM reflecting substantial bike, pedestrian, and transit investments in the central city as outlined above in the roadway BAT lane changes. Vehicles traveling in the eastbound direction are predicted to total 18,400 per day with 15,500 vehicles per day in the westbound direction. The AM peak hour volume is 2,365 vehicles and the PM peak hour volume is 2,590 vehicles, both slight decreases compared to the existing 2019 conditions.

Table 4 displays ADT estimates for the updated No-Build Alternative condition.

**Table 4. 2045 No-Build Average Daily and AM/PM Peak Hour Demand Volumes Across the Burnside Bridge**

Average Daily Traffic (ADT), eastbound (EB), westbound (WB)

	2045 Daily Demand			2045 AM Peak Hour Demand			2045 PM Peak Hour Demand		
	Both Directions	EB	WB	Both Directions	EB	WB	Both Directions	EB	WB
Burnside Bridge	33,900 (-100)	18,400 (-100)	15,500	2,365 (-5)	965 (-5)	1,400	2,590 (-15)	1,485 (-10)	1,105 (-5)
Percentage of Total ADT	—	54.3%	45.7%	6.9%	—	—	7.7%	—	—

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses

Table 5 displays the 2045 updated No-Build AM and PM peak hour traffic volumes across the Burnside Bridge. These results include peak hour volume demand, peak hour vehicle volume throughput, and percent of volume demand served.

Vehicle volume throughput was not reported for the Draft EIS No-Build and Build condition, so the vehicle volume throughput shown below cannot be compared to the Draft EIS No-Build and Build condition.

**Table 5. 2045 No-Build Burnside Bridge Traffic Volumes**

eastbound (EB), vehicles per hour (vph), westbound (WB)

Direction	AM Peak Hour			PM Peak Hour		
	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served
EB Burnside Bridge	965 (-5)	965	100%	1,485 (-10)	1,485	100%
WB Burnside Bridge	1,400	1,345	96%	1,105 (-5)	1,105	100%

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses.

The percent served for both directions and peak hours is 100 percent, except in the westbound direction during the AM peak hour. During the AM peak hour, 96 percent of the volume demand is served in the westbound direction, meaning 55 vehicles are unserved. West of the NE Couch Street and NE MLK Blvd intersection is an S-curve approaching the Burnside Bridge, which likely slows down traffic and contributes to the unserved volume.

Table 6 displays the 2045 updated No-Build intersection traffic operations including total entering vehicles (TEV), intersection delay (in seconds), level of service (LOS) for each of the study intersections, and worst movement if the intersection is unsignalized for both the AM and PM peak hours. Intersection TEV is shown for both vehicle volume demand and vehicle volume throughput.

As discussed in Section 5.2, downstream congestion from E Burnside Street/14th Avenue and from the metered on-ramp from NE Grand Avenue to I-84 would impact intersection operations along E Burnside Street.

SimTraffic output worksheets are included in Appendix A and Appendix B.

**Table 6. 2045 No-Build Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 No-Build Conditions									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through-put TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through-put TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
1	NW Everett Street and NW 4th Avenue	Signalized	610 (-5)	610	10 (-1)	B	—	975 (-30)	975	22 (+1)	C	—
2	NW Everett Street and NW 3rd Avenue	Signalized	650 (-10)	650	6	A	—	1,220 (-10)	1,220	11	B	—
3	NW Couch Street and NW Broadway	Signalized	775	775	14 (+1)	B	—	1,185 (-5)	1,185	23	C	—
4	NW Couch Street and NW 6th Avenue	Signalized	290 (+5)	285	10	B	—	335 (-5)	335	10 (-1)	B	—
5	NW Couch Street and NW 5th Avenue	Signalized	245 (+5)	245	10	B	—	425 (-5)	425	12 (+1)	B	—
6	NW Couch Street and NW 4th Avenue	Unsignalized	385 (-10)	385	10 (+1)	B	EB	495 (-60)	495	18 (-6)	C	EB
7	NW Couch Street and NW 3rd Avenue	Unsignalized	585 (-5)	585	17 (-4)	C	WB	820 (-20)	820	47 (-5)	E	WB
8	NW Couch Street and NW 2nd Avenue	Unsignalized	710	690	22	C	EB	670 (-15)	670	28	D	WB
9	NW Couch Street and NW Naito Parkway	Signalized	1,145	1,145	17	B	—	1,505 (-5)	1,505	10	B	—
10	NE Couch Street and NE MLK Blvd	Signalized	2,450 (-5)	2,360	19 (+4)	B	—	2,825 (-10)	2,825	21 (+2)	C	—
11	NE Couch Street and NE Grand Avenue	Signalized	2,490 (-60)	2,365	25 (+5)	C	—	2,680 (-55)	2,680	21 (+6)	C	—

**Table 6. 2045 No-Build Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 No-Build Conditions									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through-put TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through-put TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
12	W Burnside Street and Broadway	Signalized	2,420	2,420	12 (+1)	B	—	2,715 (-40)	2,715	17 (+1)	B	—
13	W Burnside Street and 6th Avenue	Signalized	2,160 (-15)	2,160	5	A	—	2,110 (-45)	2,110	10	B	—
14	W Burnside Street and 5th Avenue	Signalized	2,140 (-10)	2,140	6 (+1)	A	—	2,220 (-45)	2,220	10 (+1)	B	—
15	W Burnside Street and 4th Avenue	Signalized	2,320 (-15)	2,320	11	B	—	2,580 (-45)	2,580	15	B	—
16	W Burnside Street and 3rd Avenue	Signalized	2,435 (-5)	2,415	8 (-1)	A	—	2,730 (-10)	2,730	13 (-1)	B	—
17	W Burnside Street and 2nd Avenue	Signalized	2,665 (-5)	2,665	9	A	—	2,905 (-15)	2,905	10 (-2)	B	—
18	E Burnside Street and SE MLK Blvd	Signalized	2,015 (-10)	2,015	14 (-5)	B	—	3,205 (-15)	3,205	21 (+1)	C	—
19	E Burnside Street and SE Grand Avenue	Signalized	2,260 (+20)	2,260	26 (+7)	C	—	2,885 (+30)	2,885	22 (+5)	C	—
20	SW Oak Street and SW Broadway	Signalized	430	430	7	A	—	715	715	8 (+1)	A	—
21	SW Oak Street and SW 6th Avenue	Signalized	345	345	11	B	—	470 (-5)	470	12	B	—
22	SW Oak Street and SW 5th Avenue	Signalized	295	295	10	B	—	340	340	11	B	—

**Table 6. 2045 No-Build Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 No-Build Conditions									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through-put TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through-put TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
23	SW Oak Street and SW 4th Avenue	Signalized	650	650	9 (+1)	A	—	855 (+5)	855	11	B	—
24	SW Oak Street and SW 3rd Avenue	Signalized	470 (-5)	470	11	B	—	775 (+5)	775	12 (+1)	B	—
25	SW Oak Street and SW 2nd Avenue	Signalized	700	700	10	B	—	720 (+5)	720	12	B	—
26	SW Oak Street and SW Naito Parkway	Signalized	1,255	1,255	14	B	—	1,520 (+5)	1,520	9	A	—

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses

All study intersections are anticipated to operate within City of Portland LOS standards with the exception of NW Couch Street and NW 3rd Avenue (Intersection #7), which is forecasted to operate at LOS E during the PM peak. Similar to the Draft EIS No-Build and Build condition, the demand TEV is forecasted to decrease between existing 2019 conditions and the future year 2045 for many intersections. As demand decreases for the critical movements, the delay decreases, and intersection operations improve. The largest difference in intersection delay is at E Burnside Street and SE Grand Avenue (Intersection #19) during the AM peak hour, which has an intersection delay that is 7 seconds longer than the Draft EIS No-Build and Build condition.

The 95th percentile queuing analysis is summarized in Table 7. Many of the queue lengths are less than 200 feet and are within the existing storage length between intersections. Some intersection approaches have queue lengths that exceed the existing storage length and back into an adjacent intersection. These approaches are highlighted in red in the table below.

The 95th percentile queues shown in Table 7 are for the critical movement of each approach.

Many of the queue lengths shown are similar to the Draft EIS No-Build and Build condition, with increases up to 60 feet. The largest difference in queue length is for the northbound approach at NE Couch Street and NE MLK Boulevard (Intersection #10) where the queue length is 60 longer than the queue length from the Draft EIS No-Build and Build condition during the AM peak hour.

**Table 7. 2045 No-Build Intersection Queuing**

			2045 No-Build Conditions	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
1	NW Everett Street and NW 4th Avenue	Signalized		
	Northbound approach		140 (+10)	190
	Eastbound approach		190 (-30)	260 (-10)
2	NW Everett Street and NW 3rd Avenue	Signalized		
	Southbound approach		120	170 (+10)
	Eastbound approach		80 (-10)	220 (-10)
3	NW Couch Street and NW Broadway	Signalized		
	Northbound approach		80 (+10)	110
	Southbound approach		190 (+10)	210 (-10)
	Eastbound approach		100 (-10)	260
	Westbound approach		130	110
4	NW Couch Street and NW 6th Avenue	Signalized		
	Northbound approach		80 (-10)	80 (-10)

**Table 7. 2045 No-Build Intersection Queuing**

			2045 No-Build Conditions	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Eastbound approach		60	100
	Westbound approach		80	60 (-10)
5	NW Couch Street and NW 5th Avenue	Signalized		
	Southbound approach		60 (+10)	100
	Eastbound approach		50 (-10)	100
	Westbound approach		70	90 (+10)
6	NW Couch Street and NW 4th Avenue	Unsignalized		
	Northbound approach		80	120 (-10)
	Eastbound approach		70 (+10)	100 (-20)
	Westbound approach		60 (-10)	60 (+10)
7	NW Couch Street and NW 3rd Avenue	Unsignalized		
	Southbound approach		70 (-10)	270 (-20)
	Eastbound approach		60	110
	Westbound approach		130 (-20)	180
8	NW Couch Street and NW 2nd Avenue	Unsignalized		
	Northbound approach		80	90
	Eastbound approach		70	100
	Westbound approach		110	130 (+10)
9	NW Couch Street and NW Naito Parkway	Signalized		
	Northbound approach		420	340
	Southbound approach		130	130
	Eastbound approach		80	110
10	NE Couch Street and NE MLK Blvd	Signalized		
	Southbound approach		250 (+20)	230 (-10)
	Westbound approach		170 (-40)	180 (+10)
11	NE Couch Street and NE Grand Avenue	Signalized		
	Northbound approach		190 (+60)	130 (+20)
	Westbound approach		240 (-10)	230 (-30)
12	W Burnside Street and Broadway	Signalized		
	Northbound approach		90	150
	Southbound approach		200	210 (-10)

**Table 7. 2045 No-Build Intersection Queuing**

		Signalized or Unsignalized	2045 No-Build Conditions	
			AM Peak Hour	PM Peak Hour
Intersection, Approach			95th Queue Length (ft.)	95th Queue Length (ft.)
	Eastbound approach		180 (-10)	200 (+50)
	Westbound approach		70 (+10)	210
13	W Burnside Street and 6th Avenue	Signalized		
	Northbound approach		120 (-10)	150 (+20)
	Eastbound approach		150 (-10)	210
	Westbound approach		60 (+10)	170 (+10)
14	W Burnside Street and 5th Avenue	Signalized		
	Southbound approach		90 (+10)	190
	Eastbound approach		80	130
	Westbound approach		180 (+10)	180 (+30)
15	W Burnside Street and 4th Avenue	Signalized		
	Northbound approach		190 (-10)	210 (+10)
	Eastbound approach		200 (+10)	150 (+10)
	Westbound approach		140 (+20)	210 (+40)
16	W Burnside Street and 3rd Avenue	Signalized		
	Southbound approach		190	230
	Eastbound approach		90 (+10)	160 (+10)
	Westbound approach		130 (-100)	140 (-90)
17	W Burnside Street and 2nd Avenue	Signalized		
	Northbound approach		240	220
	Eastbound approach		170	230 (+10)
	Westbound approach		210 (-10)	170 (-50)
18	E Burnside Street and SE MLK Blvd	Signalized		
	Southbound approach		120	210 (+40)
	Eastbound approach		160 (-150)	260 (-10)
19	E Burnside Street and SE Grand Avenue	Signalized		
	Northbound approach		260	260 (+10)
	Eastbound approach		140 (+90)	100
20	SW Oak Street and SW Broadway	Signalized		
	Southbound approach		120	180 (+10)
	Westbound approach		80	100



**Table 7. 2045 No-Build Intersection Queuing**

			2045 No-Build Conditions	
			AM Peak Hour	PM Peak Hour
	Intersection, Approach	Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
21	SW Oak Street and SW 6th Avenue	Signalized		
	Northbound approach		140 (+10)	170 (-10)
	Westbound approach		40 (-10)	40
22	SW Oak Street and SW 5th Avenue	Signalized		
	Southbound approach		100	110 (+10)
	Westbound approach		90	110
23	SW Oak Street and SW 4th Avenue	Signalized		
	Northbound approach		170	230 (-10)
	Westbound approach		90 (-10)	90
24	SW Oak Street and SW 3rd Avenue	Signalized		
	Southbound approach		120	160
	Westbound approach		130	130 (+20)
25	SW Oak Street and SW 2nd Avenue	Signalized		
	Northbound approach		180 (+10)	180 (-10)
	Westbound approach		130 (-10)	90
26	SW Oak Street and SW Naito Parkway	Signalized		
	Northbound approach		270 (+10)	180 (-60)
	Southbound approach		190 (+10)	240 (+70)

Source: Parametrix

Note: Queue lengths in red text exceed the available storage length.

Note: Differences from the Draft EIS No-Build are shown in parentheses.

### Transit Conditions

The updated 2045 No-Build traffic modeling described above using SimTraffic includes installation of Rose Lane projects that expand BAT lanes within the direct API and beyond as described below:

- Eastbound BAT lanes on W Burnside Street from Park Avenue to 2nd Avenue
- Eastbound BAT lanes on E Burnside Street from MLK Boulevard to 12th Avenue
- Westbound BAT lane on NE Couch Street from 14th Avenue to 7th Avenue

The above BAT lanes were taken into account in Metro’s regional travel model that produced transit analysis for the no-build conditions described in the *EQRB*

*Transportation Technical Report* (Multnomah County 2021c). The Metro travel model includes a complete build-out of Rose Lane projects and information on the Rose Lane project is included in Section 5.3 of that report.

*Transit No-Build Travel Times and Ridership*

Updates to the methodology analyzing transit travel times and ridership made it necessary to complete a new analysis of those outputs for the No-Build Alternative reported in Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c).

Table 8 features projected No-build travel times during the AM and PM peak hour for bus lines 12, 19 and 20 over the Burnside Bridge from W 5th Avenue to E Grand Avenue. In the future, traffic operations over the bridge would, on average function better due to reduced demand and changes to signalized intersection operations. These improvements would improve transit travel times compared to the existing conditions.

**Table 8. 2045 No-Build Transit Travel Times, PM Peak Hour**

Travel Time reported in minutes between W 2nd Avenue and E MLK Blvd

Direction (Bus Lines 12, 19, 20)	2045 No-Build Travel Times	
	Travel Times (min)	Travel Speed (mph)
Eastbound (AM Peak)	2.3	14.9
Westbound (AM Peak)	2.1	16.1
Eastbound (PM Peak)	2.3	14.9
Westbound (PM Peak)	2.0	16.8

Source: Parametrix

Note: Draft EIS No-Build was modeled using the Metro Regional Travel Demand Model and calculated for different extents and thus are not directly comparable.

Table 9 features projected No-build transit ridership for bus lines 12, 19 and 20. Bus line 20 has the highest projected ridership with an estimated 10,500 daily boardings within the Direct API and 1,200 boardings during the PM peak hour within the Direct API.

**Table 9. 2045 No-Build Transit Ridership, Daily and PM Peak Hour**

Transit Line	Daily Boardings within Direct API	PM Peak Hour Boardings within Direct API	Daily Ridership for Full Extent	PM Peak Hour Boardings Full Extent
<b>Bus</b>				
12	5,890 (+890)	700 (+25)	11,275 (+207)	1,315 (+28)
19	3,835 (+183)	550 (+23)	12,365 (+152)	1,655 (+22)
20	10,505 (+440)	1,200 (+79)	36,970 (+499)	4,190 (+88)

Source: Metro

Note: Differences from the Draft EIS No-Build are shown in parentheses.

Table 10 features projected No-Build person trips crossing the Burnside Bridge during the PM peak hour. A total of 6,893 people cross the bridge in vehicles with 2,788 of those taken on transit, a factor of 0.68 compared to auto and commercial-use vehicle person trips. In the eastbound direction 1,729 transit person trips are made, representing a factor of 0.71 to auto and commercial-use vehicle person trips while westbound features 1,059 transit trips representing a factor of 0.64 to auto and commercial-use vehicle person trips.

**Table 10. 2045 No-Build Burnside Bridge Transit Person Trip Throughput, PM Peak Hour**

Direction (Bus Lines 12, 19, 20)	2045 No-Build PM Peak Hour			
	Auto + Commercial-use Vehicle Person Trips	Transit Person Trips	Total Person Trips	Transit/Auto Person Trips
Eastbound (PM Peak Hour)	2,445	1,730	4,175	0.71
Westbound (PM Peak Hour)	1,660	1,060	2,720	0.64
Total	4,105	2,790	6,895	0.68

Sources: Metro

Note: Person throughput was not calculated for the Draft EIS No-Build

Table 11 below features projected No-Build impacts to transit reliability due to traffic operations at the intersections at either end of the Burnside Bridge.

**Table 11. 2045 No-Build, Transit Reliability Impacts**

Delay reported in seconds

Intersection	Direction (Bus Lines 12, 19, 20)	2045 No-Build		
		Average Intersection Delay (s)	95th Queue (ft)	Percent Spillback
17 Burnside/MLK	Eastbound	27	N/A	N/A
18 Burnside/2nd	Westbound	5	Through Right 170 120	0%

Source: Parametrix

Note: Transit Reliability was not calculated for the Draft EIS No-Build

### Active Transportation Conditions

There is no difference to the no-build conditions for active transportation described in the *EQRB Transportation Technical Report* (Multnomah County 2021c).

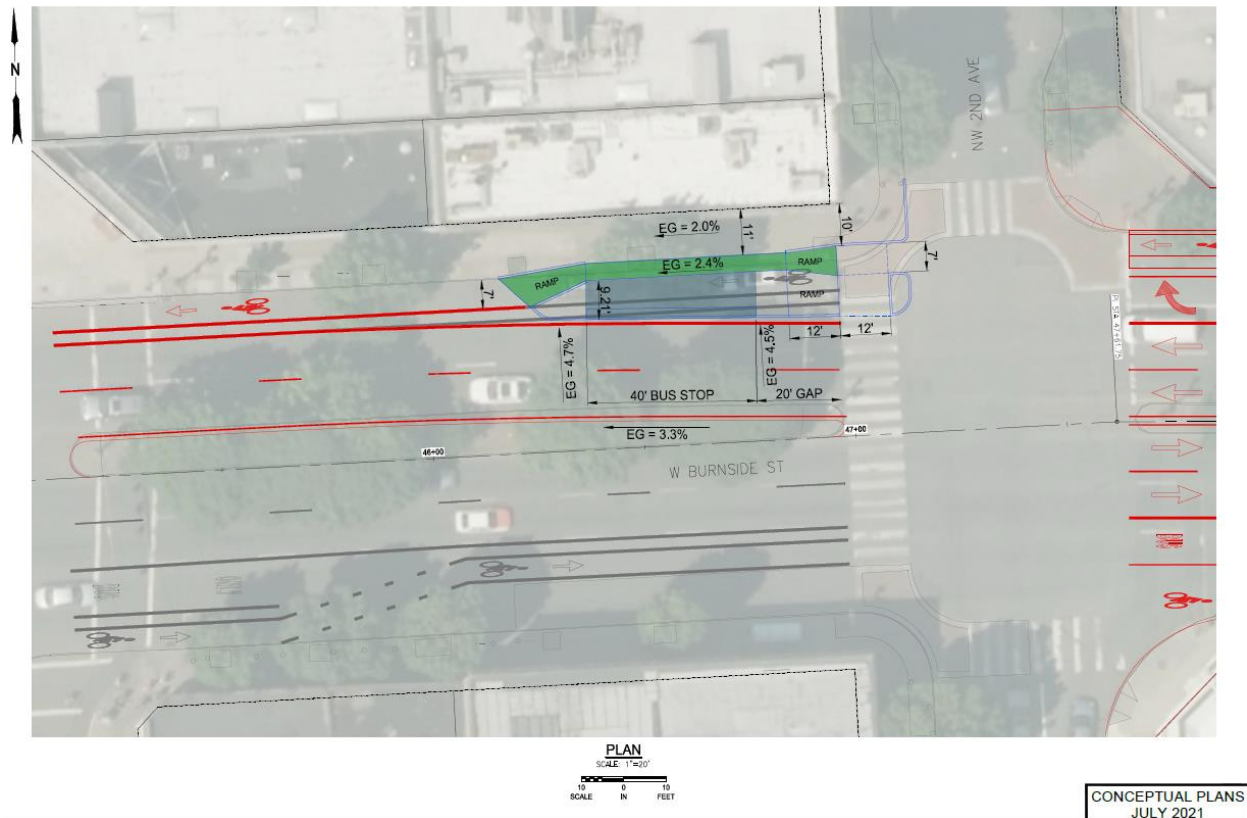
### 7.1.3 Impacts Consistent Across All Lane Options

#### Bus Stop Relocations

An existing westbound bus stop (ID 689) is located on the bridge deck approximately 350 feet east of the intersection with NW/SW 2nd Avenue. The bus stop serves TriMet bus lines 12, 19 and 20 and includes dwell space that serves as a place for buses to stop when ahead of schedule and thus improve reliability. All of the proposed lane options will feature a narrower bridge deck that will likely require the bus stop and dwell space to be relocated off of the bridge deck. Maintaining the bus stop or dwell space on the bridge will require additional width on the bridge deck.

A preliminary location for the bus stop has been identified just to the west of NW/SW 2nd Avenue, one block west of the current location. The preliminary concept plan for the relocated stop is shown in Figure 10. The design is subject to change as discussions between Multnomah County, Portland Bureau of Transportation (PBOT) and TriMet on the relocation continue and include how to best integrate multiple modes through the space at NW/SW 2nd Avenue.

**Figure 10. Preliminary Westbound Bus Stop Relocation**



This proposed location improves access to downtown and is consistent with TriMet policy on siting transit stops near protected crossing. The proposed location is further away from the Skidmore Fountain MAX station located under the Burnside Bridge on NW/SW 1st Avenue, requiring people using transit to walk further if they are making a transfer. However, few transit users transfer between bus lines 12, 19 and 20 and the MAX lines

at this location. A survey of transit riders from 2018 found that just 15 percent of people using the Skidmore Fountain MAX station make a transfer at this location. Therefore, moving the stop location will impact a very small share of TriMet riders. The 12, 19 and 20 routes near the Burnside Bridge largely run parallel to the MAX, serving a similar geography which lowers the amount of transfers between these transit lines. Additionally, there are better transfer points, namely Pioneer Square, where the majority of transfers in the downtown area occur.

The existing bus stop includes dwell space that is also subject to relocation pending on-going discussions between the County and TriMet. Two possible options are being explored. The first integrates dwell space into the bridge deck approximately where the dwell space currently exists. This option would likely require additional width on the bridge deck to accommodate. The second option is to move the dwell space east of the Burnside Bridge along NE Couch Street. Possible locations along NE Couch Street are still being examined.

## Anticipated Transit Impacts Across the 50-foot, 47-foot and 44-foot Cross Section

### *50-foot Roadway Width*

The 50-foot roadway option (Figure 5) features both general-purpose travel lanes and a bus-only travel lane that meets both TriMet (TriMet 2017). and the National Association of City Transportation Officials (NACTO)'s recommended widths within the Transit Street Design Guide (NACTO 2016). TriMet recommends a 12-foot lane and an 11-foot minimum lane width for exclusive bus-only lanes. The shy distance of 2 feet between the bus-only lane and the outside barrier provides transit vehicles with 13 feet of operating space. Meeting these recommended widths provides transit vehicles with an operating envelope that allows for safer and more reliable transit service across the Burnside Bridge.

### *47-foot Roadway Width*

The reduced roadway cross section reduces the width of the travel lanes in order to achieve the narrowed overall width. Figure 6 shows the 47-foot cross sections for all Lane Options. The general-purpose lanes are reduced by one-foot, from 11 feet to 10 feet. The bus-only lane is reduced by six inches, from 11 feet to 10.5 feet. The shy distances remain the same compared to the 50-foot roadway option.

The 10.5-foot bus-only lane is below TriMet and NACTO's recommended lane width for bus-only lanes. However, when combined with the 2-foot shy distance between the bus-only lane and the outside barrier, transit vehicles have 12.5 feet to operate within. This provides transit vehicles with an operating envelope that allows for safer and more reliable transit service across the Burnside Bridge.

### *44-foot Roadway Width*

The 44-foot roadway cross section provides the narrowest cross section for auto and transit traffic and is shown in Figure 7. The 44-foot cross section reduces the shy distance between travel lanes and the barriers separating vehicle traffic from people

walking and biking in order to achieve the narrower cross section. The travel lanes are the same width as the 47-foot cross section.

In the 44-foot cross section, the westbound mixed travel lane and the eastbound bus-only lane are 10.5 feet wide, which is below the recommended design minimum of 11 feet that stated by both NACTO and TriMet. TriMet has indicated that the narrowed cross section can accommodate both the existing bus service over the bridge and future Portland Streetcar operations. In the 44-foot cross section, the shy distance has been reduced to 1 foot, when combined with the 10.5-foot travel lane, this creates an 11.5-foot width.

The reduced width places transit vehicles into a narrower operating envelope and may lead to increased incidents of mirror strikes and sideswipe incidents, particularly in the transition zones at the end of the bridges. TriMet buses are 8.5 feet wide, and the mirrors extend to create a vehicle envelope of 10.5 feet. If a box truck is in the adjacent lane (8 feet wide and up 10 feet with mirrors) it means that the mirrors of the two vehicles could meet.

### Active Transportation Impacts

This section compares active transportation conditions for the proposed design options to conditions for the build and no-build scenarios described in Section 7 of the *EQRB Transportation Technical Report* (Multnomah County 2021c).

#### *Active Transportation Volumes*

Active transportation volumes are not expected to change from the build and no-build conditions described in the Draft EIS.

Active transportation users will include a mix of the following types of users that have unique considerations:

- Pedestrians accessing destinations on the east and west sides of the bridge: these are often pedestrians walking alone and with a dedicated trip purpose in mind.
- Recreational pedestrians: this could include walkers and runners moving alone, in pairs, or in groups. These users could also include people pushing strollers or other devices, moving at different speeds, and/or stopping at points along the bridge to view up and down the river.
- Bikes and e-bikes: regular pedal bikes are still the most prevalent form of bicycle but other bicycle types such as recumbent bikes, adaptive bikes, cargo bikes, and bikes with trailers should also be considered. The number of e-bikes is also increasing as they become more accessible. This includes personal e-bikes, e-cargo delivery bikes, and shared e-bikes that are part of the Biketown bikeshare system.
- Scooters and e-scooters: this includes personal kick-scooters as well as e-assist scooters or shared devices provided as part of the PBOT e-scooter pilot program.
- Other rolling devices: including skateboards, roller or in-line skates, Onewheels, Segways, personal mobility devices, and other rolling devices.

The volume and variety of user types requires the separation of pedestrians and bicyclists (including faster-moving rolling devices). Careful consideration should be given

to the widths and cross-section elements needed to accommodate the different widths, speed profiles, and other characteristics of these users (see next section).

With crossings at each end of the bridge, directional bike lanes on each of the bridge approaches, and elevator accesses being provided in all four quadrants of the bridge, it is much more likely that bicyclists on the bridge will mostly be traveling in the same direction, i.e., eastbound bicyclists will be on the southside of the bridge and westbound bicyclists on the northside of the bridge. Pedestrians could travel in both directions depending on their origins and destinations. For example, a pedestrian starting and ending their trip on the northside of the bridge is likely to stay on the sidewalk on the northside of the bridge. The one-way directionality of bicyclists will help to reduce potential conflicts between bicyclists and pedestrians and will allow for a single-direction bikeway design, which is typically narrower than a two-way bikeway.

### *Bicycle Level of Traffic Stress*

Bicycle Level of Traffic Stress (BLTS) for the new bridge cross-section is not expected to change from the build and no-build conditions described in the *EQRB Transportation Technical Report* (Multnomah County 2021c). BLTS addresses the level of stress felt by bicyclists from their interactions with motor vehicle traffic. It does not assess stress that results from conflicts between bicyclists and pedestrians, which are more likely in the Refined Long-span Alternative given the narrower active transportation space. Refer to the 'Bridge Cross-Section' section below for more discussion on the impacts of the narrower active transportation space.

### *Bridge Cross-Section*

A comparison of the active transportation space included in the existing cross-section, the future build scenario (included in the Draft EIS), and the refined bridge design alternatives included in this report are shown on Figure 4.

The active transportation space for the refined bridge design alternatives includes:

- 15 feet-6 inches of clear space on either side of the bridge. This is the clear space between the face of the barrier and the face of the pedestrian railing on the outside of the bridge.
- A crashworthy barrier separating active transportation users from vehicular traffic.

### *Active Transportation Cross-Section Elements*

The design within the active transportation space allocated on the bridge by the Project is ultimately the decision of the PBOT. However, the design should consider the following factors:

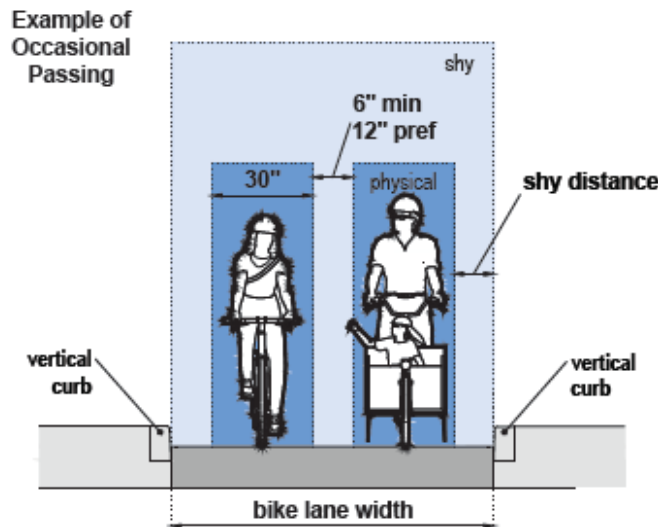
- Pedestrian Space:
  - Pedestrian Design Designation: the Burnside Bridge is classified as a 'Major City Walkway' in the Portland 2035 Transportation System Plan (PBOT 2020). It is also given a design designation as a 'Civic Main Street'.
  - Pedestrian Through Zone: the draft updated *Portland Pedestrian Design Guide* (PBOT 2021) recommends that the pedestrian through zone, i.e., the clear space

designated for pedestrian movement, be a width of 8-feet for a 'Civic Main Street'.

- Separator: the *Portland Pedestrian Design Guide* (PBOT 2021) also recommends that a 1-foot wide separator (at minimum) be used where pedestrians and bicyclists are at the same grade and need to be separated. Although the bridge is designated as a 'Civic Main Street' and connects more typical main streets on either side of the bridge, the bridge itself does not include all of the typical characteristics of a main street, e.g., active frontages, active curbside uses, etc. There may be some opportunity on the bridge to relax some of the Civic Main Street design standards. If the separator is traversable, it may be possible to include it in the 8-foot wide pedestrian space.
- Visually-impaired pedestrian delineation: in addition to the separator between pedestrians and bicyclists, the City may require a cane-detectable transverse strip be used to help guide pedestrians with vision disabilities. These strips provide a pathway for visually-impaired people to follow over the top of and should be offset from the separator into the pedestrian space.
- Bicyclist Space:
  - Bicycle Classification: the Burnside Bridge is classified as a 'Major City Bikeway' in the *Portland 2035 Transportation System Plan* (PBOT 2018).
  - The *Portland Protected Bicycle Lane Planning and Design Guide* (PBOT 2021) recommends that a directional bike lane with a peak hour volume of 150-750 bicyclists per hour requires a minimum of 6.5-feet and a preferred width of 8-feet.
  - The design should accommodate occasional passing of bicyclists in the same direction without encroaching into the pedestrian zone. Figure 11 shows passing dimensions and a bikeway width of 7.5-feet would allow for two bicyclists to pass one another with 12-inches of space between them and 18-inches of shy distance to the vertical barrier.
  - Passing is likely to be more frequent in the uphill direction given the difference in speeds between different types of bikes, e-bikes, e-scooters, and other devices. Additional width would provide for more comfortable passing conditions and reduce the likelihood of bicyclists encroaching into the pedestrian space. This is particularly a consideration as bicyclists sort themselves downstream of the intersections at the bridge approaches. Westbound bicyclists will likely sort themselves on the flatter sections of Couch Street west of NE MLK Boulevard. However, eastbound bicyclists may still be sorting themselves as the bridge goes uphill east of the SW 2nd Avenue intersection.
- Barrier:
  - The space between the active transportation space and motor vehicle traffic should include a crashworthy barrier.
  - Portland Fire & Rescue require that the barrier be designed to allow responders to quickly climb over the barrier to access the active transportation space if needed for emergency.



Figure 11. Width Requirements for Occasional Passing in a Directional Bike Lane



### Anticipated Active Transportation Impacts Across the 50-foot, 47-foot and 44-foot Cross Section

#### *50-foot Roadway Width*

The 50-foot roadway option (Figure 5) features a 14-foot wide active transportation space on either side of the bridge separated from moving traffic by a crashworthy barrier. PBOT recommends a minimum active transportation space of 17-feet including an 8-foot pedestrian space, a 1-foot delineation strip, and an 8-foot bikeway space. This option would be 3-feet short of meeting these requirements and may lead to increased incidence of pedal or handlebar strikes with the barrier and crashes or interactions between bicyclists and pedestrians, reducing the comfort of the active transportation facility compared to the 47- and 44-foot roadway widths.

#### *47-foot Roadway Width*

The 47-foot roadway option (Figure 6) features a 15.5-foot wide active transportation space on either side of the bridge separated from moving traffic by a crashworthy barrier. PBOT recommends a minimum active transportation space of 17-feet including an 8-foot pedestrian space, a 1-foot delineation strip, and an 8-foot bikeway space. This option would be 1.5-feet short of meeting these requirements and may lead to increased incidence of pedal or handlebar strikes with the barrier and crashes or interactions between bicyclists and pedestrians, reducing the comfort of the active transportation facility compared to the 44-foot roadway width, but increasing comfort compared to the 50-foot roadway width.

#### *44-foot Roadway Width*

The 44-foot roadway option (Figure 7) features a 17-foot wide active transportation space on either side of the bridge separated from moving traffic by a crashworthy barrier. This meets PBOT's recommended minimum widths for the active transportation space including an 8-foot pedestrian space, a 1-foot delineation strip, and an 8-foot bikeway space. This option may reduce the probability of pedal or handlebar strikes with the

barrier and crashes or interactions between bicyclists and pedestrians, increasing the comfort of the active transportation facility compared to the 47- and 50-foot roadway widths.

### *Active Transportation Considerations at the West Bridge Terminal*

The following points are noted about specific active transportation interactions at the west bridge terminal:

- **Portland Rescue Mission:** access to the Portland Rescue Mission's Food Distribution Center is via a door on Burnside Street, just west of the stairway to NW 1st Avenue. People waiting for service queue on the sidewalk and can take up the width of the sidewalk making it challenging for other pedestrians to pass. If the sidewalk and bikeway are both provided at sidewalk grade, these queues may spill across both facilities.
- **Pedestrian Crosswalks:** there is no difference to the build alternative described in the *EQRB Transportation Technical Report* (Multnomah County 2021c) for pedestrians at the W Burnside Street and 2nd Avenue intersection. All of the revised build alternatives will include the addition of the pedestrian crossing that is currently missing on the east leg of the intersection.
- **Bicycle Signal:** there is no difference to the build alternative described in the *EQRB Transportation Technical Report* (Multnomah County 2021c) for westbound bicyclists at the W Burnside Street and 2nd Avenue intersection. All of the revised build alternatives have a separate westbound bike lane between the sidewalk and westbound right turn lane. This creates a conflict point between westbound right-turning vehicles and westbound through bicyclists (Figure 10) and as such the design includes a bike signal for westbound bicyclists to have a separate signal phase from the westbound right-turning traffic to separate when these movements occur.
- **Bus stop location:** all of the proposed lane options will feature a narrower bridge deck that will likely require the existing westbound bus stop to be relocated from its existing location approximately 350-feet east of the W Burnside Street and 2nd Avenue intersection. A preliminary location for the bus stop is on the far side (west side) of the 2nd Avenue intersection as shown on Figure 10. The design is subject to change as discussions between Multnomah County, PBOT and TriMet continue on how to best integrate multiple modes through the space on the westside of the intersection.

The transit impacts of this change are described in the 'Bus Stop Relocations' section above. For pedestrians, although the proposed bus stop location is further away from the stair and elevator access on the bridge, relocating the bus stop has a number of advantages including space to provide a transit shelter and separate transit users and pedestrians. It also has flatter grades, is closer to the signalized crossing at 2nd Avenue, and access to the MAX stations is achieved via the upgraded sidewalk on NW 2nd Avenue and NW Couch Street. For bicyclists, the design shown on Figure 10 would include a bike lane wrapping behind the bus stop and between the bus stop and the sidewalk. The design is subject to change but will address potential conflicts between bicyclists and

transit users and bicyclists and pedestrians. The location of the bike lane behind the bus stop aligns the bike lane on both sides of 2nd Avenue.

*Active Transportation Considerations at the East Bridge Terminal*

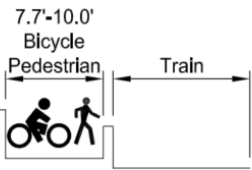

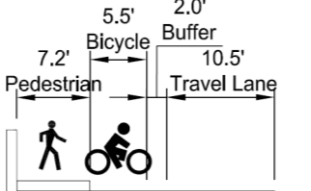

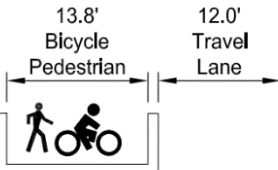

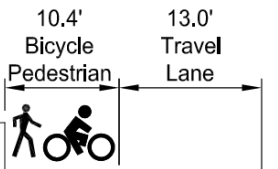

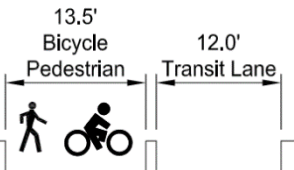

There is no difference to the build alternative for active transportation at the east bridge terminal described in the *EQRB Transportation Technical Report* (Multnomah County 2021c). EQRB is responsible for replacing the signal located at Burnside and MLK Blvd and will adhere to the previously planned Enhanced Transit Corridor (ETC) bicycle signal in the eastbound direction. The specific design of the signal will be explored during final design.

*Comparison with Other Downtown Bridges*

Table 12 includes a comparison of the active transportation space that will be provided on the Burnside Bridge with other Downtown Portland bridges including the Broadway, Steel, Morrison, Hawthorne, Tilikum Crossing, and Sellwood Bridges. The table includes a comparison of the width and measurements of the active transportation space, the existing and expected future (2040) active transportation volumes, and the operational characteristics of the active transportation space.

**Table 12: Comparison of Active Transportation Provisions on Downtown Portland Bridges**

Bridge (Sequenced North to South)	Measurements	Photo	Existing Volume (daily**)	2040 Volume (daily)	Characteristics
<p>Proposed Burnside Bridge</p>	15'-6" bicycle and pedestrian space [proposed]	N/A	Peds: 1,400 Bikes: 1,750	Peds: 2,750 Bikes: 2,950	Two-way peds / one-way bikes Vertical barrier separation from traffic
<p>Broadway Bridge</p>	8'-6" through zone; 3' buffer/railing		Peds: 1,250 Bikes: 5,500	Peds: 2,200 Bikes: 7,700	Two-way peds / one-way bikes Vertical barrier separation from traffic
<p>Steel Bridge (Top Deck)</p>	4'-6" through zone; 1' barrier [upper deck]		Peds: N/A Bikes: N/A	Peds: N/A Bikes: N/A	Two-way peds and bikes Vertical barrier separation from traffic

Bridge (Sequenced North to South)	Measurements	Photo	Existing Volume (daily)**	2040 Volume (daily)	Characteristics
 <p>Steel Bridge (Bottom Deck)</p>	<p>10' at widest; 7'-8" on moving span; 7'-2" at gate</p>		<p>Peds: 2,250 Bikes: 3,200</p>	<p>Peds: 4,050 Bikes: 4,150</p>	<p>Two-way peds and bikes Vertical barrier separation from train Bridge narrows at moving deck</p>
 <p>Existing Burnside Bridge</p>	<p>7'-2" sidewalk; 5'-5" bike lane [existing]</p>		<p>Peds: 1,400 Bikes: 1,750</p>	<p>Peds: 2,750 Bikes: 2,950</p>	<p>Two-way peds / one-way bikes Peds separated from traffic by vertical curb Buffered bike lane to separate bicyclists from traffic</p>
 <p>Morrison Bridge</p>	<p>13'-10" (9'-4" bike path and 4'-6" sidewalk) [southside]</p>		<p>Peds: 800 Bikes: 500</p>	<p>Peds: 1,650 Bikes: 700</p>	<p>Two-way peds and bikes Vertical barrier separation from traffic</p>
 <p>Hawthorne Bridge</p>	<p>10'-5"</p>		<p>Peds: 2,750 Bikes: 5,200</p>	<p>Peds: 3,350 Bikes: 6,800</p>	<p>Two-way peds / one-way bikes Peds and bikes separated from traffic by vertical curb</p>
 <p>Tilikum Crossing</p>	<p>13'-6"</p>		<p>Peds: 2,250 Bikes: 2,250</p>	<p>Peds: 4,100 Bikes: 4,200</p>	<p>Two-way peds / one-way bikes Vertical barrier separation from traffic</p>

Bridge (Sequenced North to South)	Measurements	Photo	Existing Volume (daily**)	2040 Volume (daily)	Characteristics
<p>Sellwood Bridge</p>	<p>12'-0" raised path/sidewalk                      5'-5" bike lane                      with 2' buffer*</p>		<p>Peds: N/A                      Bikes: N/A</p>	<p>Peds: N/A                      Bikes: N/A</p>	<p>Two-way peds /                      one-way bikes                      Sidewalk                      separated from                      traffic with                      vertical curb                      Buffered bike                      lane to separate                      bicyclists from                      traffic</p>

Notes:

- \* Outside buffer stripe has worn away for most of the bridge length and is basically extra width in the travel lane
- \*\* Existing volume daily volumes are based on magnified May 2019 count data

The active transportation space proposed on the Burnside Bridge is expected to operate similar to the Tilikum Crossing in that it will have directional travel on either side of the bridge, barrier separation between active transportation users and vehicular traffic, and clear designation of pedestrian and bicycling spaces. The active transportation space proposed on the Burnside Bridge (15.5-feet either side) is wider than the Tilikum Crossing (13.5-feet either side) and 2040 active transportation volumes on the Burnside Bridge (2,750 pedestrians and 2,950 bicyclists per day) are expected to be approximately 22 to 31 percent higher than existing volumes on the Tilikum Crossing (2,250 pedestrians and 2,250 bicyclists per day).

*Below Bridge Connections and ADA Access*

**EXISTING AND NO BUILD CONNECTIONS AND ACCESS**

Existing access from the bridge to 1st Avenue and the Skidmore Fountain MAX station is via stairways on the north and south sides of the bridge. On the east side of the river, there are City-owned stairs on the south side of the Burnside Bridge providing pedestrian access to the Vera Katz Eastbank Esplanade with a bike rail (a metal channel) placed next to the stairs to assist bicyclists wanting to push their bike up the stairs. There is no equivalent stairway to the Vera Katz Eastbank Esplanade on the north side of the bridge. However, there are stairs on the north side of the bridge further east to provide pedestrian access to NE 3rd Avenue.

There are currently no accessible ramps or elevators at any of these stairway locations; the project has evaluated options for addressing ADA access at these locations. Upgrades to the Vera Katz Eastbank Esplanade stairway, which is owned by the City, could also be implemented as a separate, future project by the City or others.

**BUILD OPTION CONNECTIONS AND ACCESS**

Multiple connection and access options are under consideration for the Refined Long-span Alternative. The final decision on the type of access facilities and their locations will be deferred to the final design phase of this project. The connections in the Refined Long-span Alternative include:

- Stairs on both sides of the west end of the existing bridge connect the existing bus stop on the bridge to 1st Avenue under the bridge where the existing Skidmore Fountain MAX station is located. The Draft EIS evaluated stair and ramp options at this location. The SDEIS evaluates replacing the existing stairs with ADA-accessible elevators combined with stairs and improving the sidewalks between the end of the bridge and W 1st Avenue to create a safer and more convenient surface-level (no stairs, ramps, or elevators) ADA and pedestrian connection between the bridge and 1st Avenue. An important factor is that TriMet is considering the option to permanently relocate the bus stop off the Burnside Bridge, and TriMet is studying a proposal to close the existing Skidmore Fountain MAX station located under the bridge. The potential bus stop relocation and the potential MAX station closure would substantially reduce the purpose of a stair, ramp, or elevator connection to 1st Avenue at this location. There is a possibility that the stairs would, therefore, not be replaced. In that case, the ADA, pedestrian, and bicycle access from the bridge to 1st Avenue would be via improved sidewalks connecting the west end of the bridge at 2nd Avenue to 1st Avenue just one block east. If elevators with stairs become part of the refined Preferred Alternative, that decision would be revisited during final design when the future status of the Skidmore Fountain MAX station could be more certain.
- For the stairs and elevators option, an upgraded sidewalk circulating the block along W Burnside Street, NW 2nd Avenue, and NW Couch Street would provide an ADA-compliant and accessible connection which differs from the Draft EIS Long-span Alternative.
- Currently, a stairway (owned by the City of Portland and installed via a revocable permit) connects the southern (eastbound) sidewalk on the Burnside Bridge to the Vera Katz Eastbank Esplanade approximately 50 vertical feet below it. The stairway is primarily for pedestrians because it is not ADA-accessible and requires bicyclists to carry their bikes up or down the stairs. There is no existing connection between the Vera Katz Eastbank Esplanade and the bridge's northern (westbound) sidewalk and bicycle lane. There is ADA, pedestrian, and bicycle access to the bridge approximately 1,000 feet east of these stairs at the eastern end of the bridge.

Replacing the existing bridge would require disconnecting the City-owned stairs. With the SDEIS, the existing stairway could likely be left in place and then connected to the new bridge. Replacing those stairs in kind after construction is also feasible. The Draft EIS evaluated the following range of options as potential upgrades to the existing staircase:

- Stairs and elevator on the south side of the bridge only, with a signalized mid-block crossing on the bridge connecting the north and south sidewalks and bike lanes
- Stairs and elevator on both sides of the bridge
- Ramp on the north side of the bridge, and ramp and stairs on south sides of the bridge
- Ramp and stairs on south side only, with a signalized mid-block crossing on the bridge connecting the north and south sidewalks and bike lanes

Because the cost and environmental impacts (flooding, aquatic habitat loss, vegetation loss, parkland footprint and visual intrusion) of the ramp options would be substantially greater than with any of the other connection options, and because some ADA advocates have expressed concern that long ramps would be a barrier to many people in wheelchairs or with other mobility requirements, the Refined Long-span Alternative studied in this SDEIS evaluates a refined elevators and stairs option for direct Vera Katz Eastbank Esplanade access. At the same time, bicycle advocates have expressed a preference for the convenience and reliability of ramps over elevators, and some ADA advocates have expressed concern about the safety, reliability, and sanitary nature of public elevators. In addition, the City has expressed interest in attempting to secure the funding, potentially with other partners, that would be needed to replace its existing stairs with ramps. Such ramps, or any other pedestrian, bicycle, or ADA connection to the Vera Katz Eastbank Esplanade, could be implemented as an independent project (with independent purpose) that may or may not occur simultaneously with the EQRB Project; therefore, it is possible that the EQRB Project would either not provide any direct connection to the Vera Katz Eastbank Esplanade or could connect the City's existing staircase to the new bridge. The staircase was originally installed by the City under a revocable permit from the County.

- This is different from the Draft EIS Long-span Alternative that included options for a stairway and ramp structure on the south side of the bridge or elevators and stairways. That configuration would require extending the current landing on the spur of the Vera Katz Eastbank Esplanade and result in a much larger footprint, increased cost, and potential impacts on the riverbank.
- The stairs on the north side of the bridge further east provide pedestrian access to NE 3rd Avenue and would be reconnected under the Refined Long-span Alternative.

### Access and Parking Impacts

Access at both of the east and west bridge landings is impacted consistently across all of the Build Alternatives. Table 13, Table 14, Figure 12 and Figure 13 outline the different permanent and temporary access impacts to business, right-of-way, and parking that have changed from the *EQRB Transportation Technical Report* (Multnomah County 2021c). The new design alternatives do not create new impacts to parking, both off-street and on-street on either the east or west bridge landings.

**Table 13. Access Impacts: Anticipated Door and Pedestrian Access Closures**

Short-Term (a few weeks), Long-Term (six months to a few years), and Permanent Closures

Door ID No.	East or West	Property	Door Type	Anticipated Closure	Notes
80	West	Salvation Armv	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
81	West	Salvation Armv	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
82	West	Salvation Armv	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
83	West	Salvation Armv	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
84	West	Salvation Army	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
85	West	Salvation Army	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
88	West	NBP Captain Couch LLC	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
89	West	NBP Captain Couch LLC	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
90	West	NBP Captain Couch LLC	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
91	West	NBP Captain Couch LLC	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
92	West	NBP Captain Couch LLC	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
93	West	NBP Norton House LLC	Pedestrian	Temp Closure, Short-Term	Sidewalk construction
79	East	5 MLK RPO LLC	Pedestrian	None	
94	East	Block 76 LLC (Side Yard)	Pedestrian	None	
95	East	Block 76 LLC (Side Yard)	Pedestrian	None	
96	East	5 MLK RPO LLC	Pedestrian	None	
97	East	5 MLK RPO LLC	Pedestrian	None	
99	East	NEMARNIK, DAVID P	Pedestrian	None	

Source: Parametrix

**Table 14. Access Impacts: Anticipated Parking Closures**

Short-Term (a few weeks), Long-Term (six months to a few years), and Permanent Closures

Parking ID Letter	East or West	Property	Parking Type	Anticipated Closure	Notes
U	West	Right-of Wav. NW 2nd Ave	Street	Temp Closure, Short-Term	Sidewalk Construction
V	West	Right-of Way, NW Couch St	Street	Temp Closure, Short-Term	Sidewalk Construction



Figure 12. West Burnside Access Exhibit\*

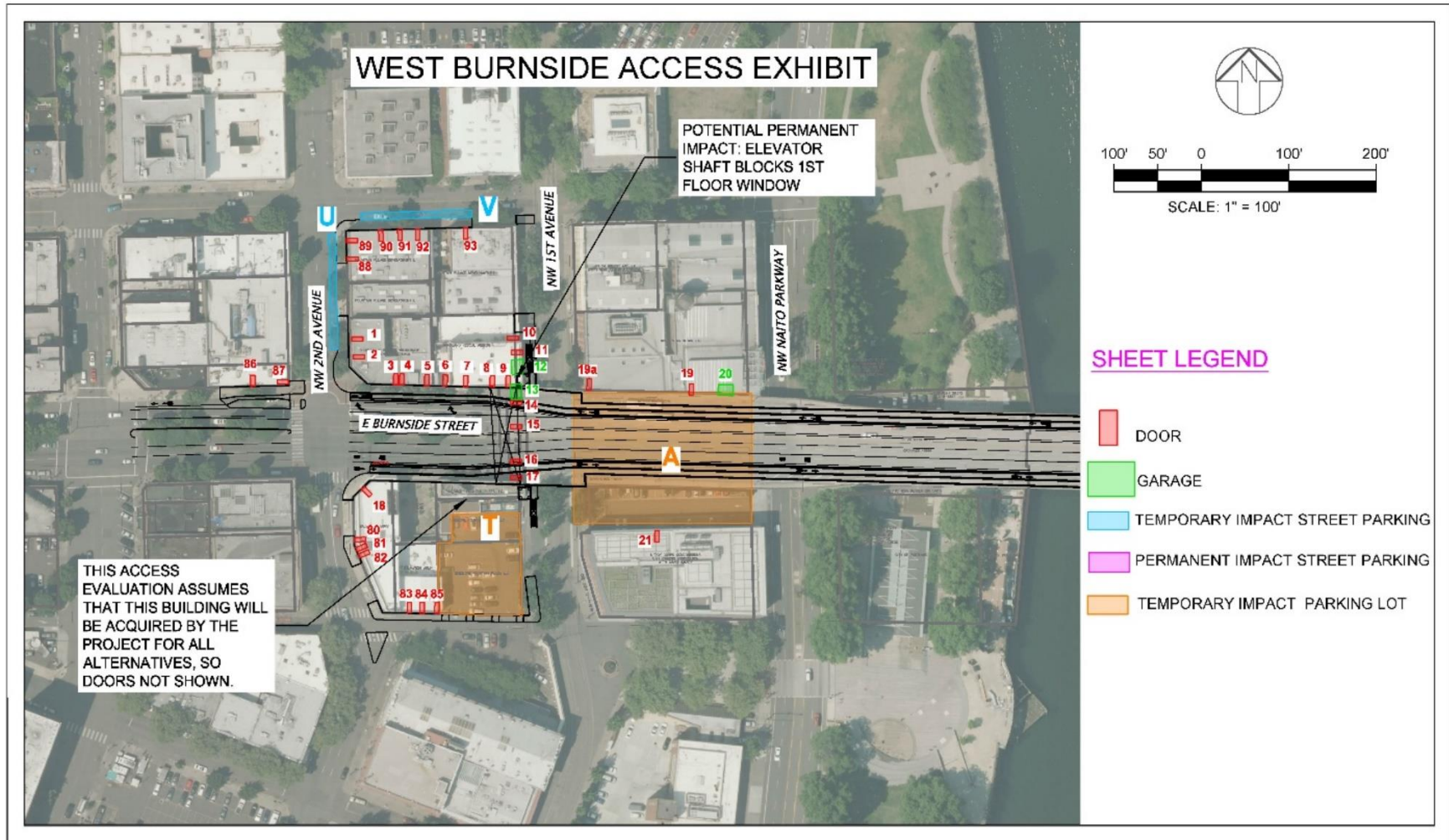
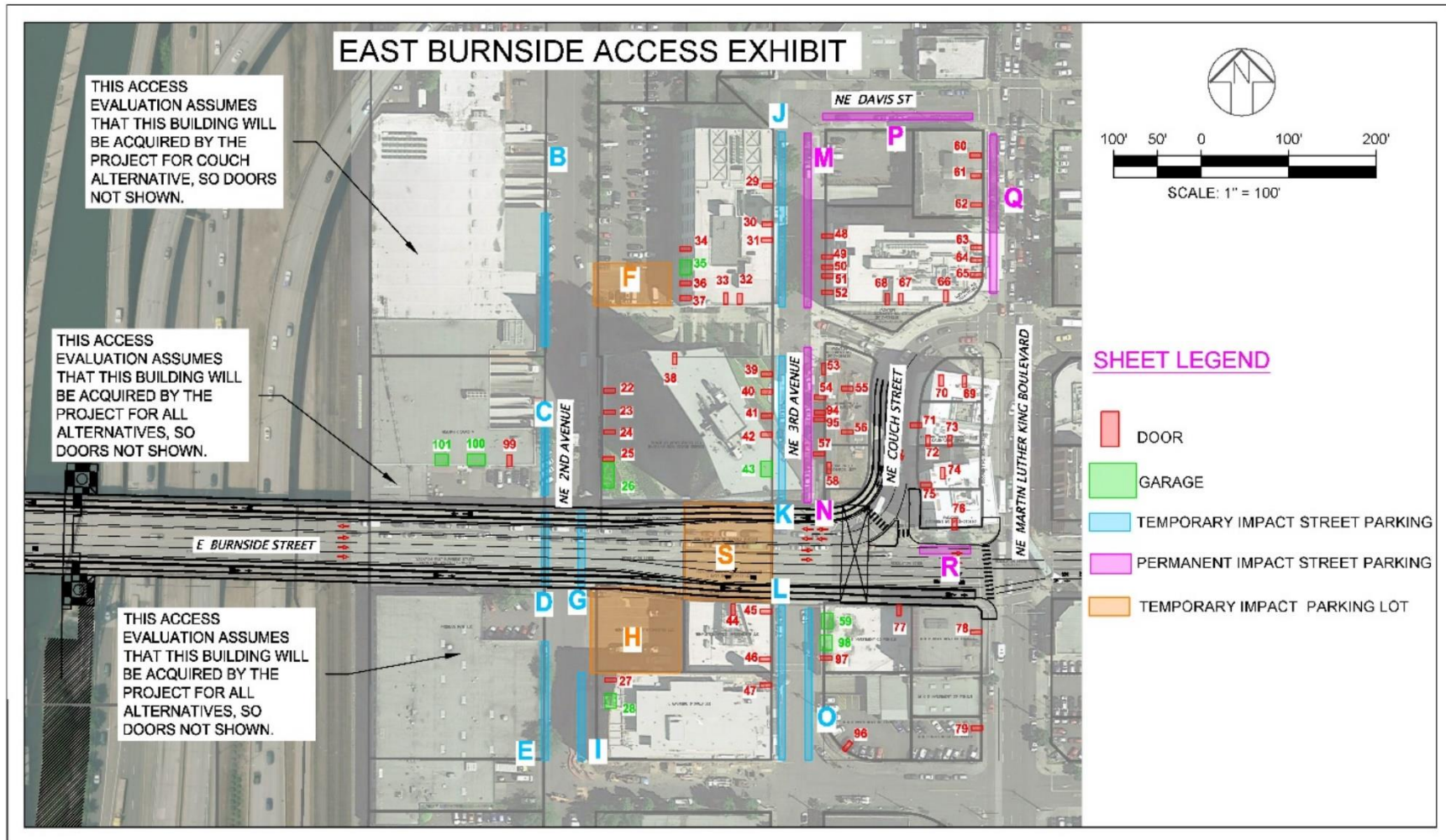


Figure 13. East Burnside Access Exhibit\*



### 7.1.4 Lane Option 1 (Balanced)

The Balanced Option consists of two westbound general-purpose lanes and two eastbound lanes, one being a general-purpose lane and one bus-only lane. This Lane Option consists of one less eastbound general-purpose lane compared to the Draft EIS Build and No-Build Alternatives.

#### Future Traffic and Freight Operations

##### *Balanced Option Compared to Draft EIS No-Build and Build Alternatives*

Table 15 displays the 2045 Balanced Option AM and PM peak hour traffic volumes across the Burnside Bridge. These results include peak hour volume demand, peak hour vehicle volume throughput, and percent of volume demand served.

Vehicle volume throughput was not reported for the Draft EIS No-Build and Build condition, so the vehicle volume throughput shown below cannot be compared to the Draft EIS No-Build and Build condition.

**Table 15. 2045 Balanced Option Burnside Bridge Traffic Volumes**

eastbound (EB), vehicles per hour (vph), westbound (WB)

Direction	AM Peak Hour			PM Peak Hour		
	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served
EB Burnside Bridge	890 (-80)	890	100%	1,385 (-20)	1,330	96%
WB Burnside Bridge	1,400	1,320	94%	1,105 (-5)	1,105	100%

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses.

The Balanced Option narrows from two eastbound general-purpose lane east of the W Burnside Street and NW/SW 2nd Avenue intersection to one eastbound general-purpose lane across the bridge.

Similar to the updated No-Build condition, only 94 percent of the westbound volume demand is served during the AM peak hour, likely due to the S-curve. During the PM peak hour, 96 percent of the eastbound volume demand is served during the peak hour, meaning 55 vehicles are unserved. This is unlike the updated No-Build condition, where 100 percent of the eastbound volume demand is served.

Table 16 displays the 2045 Balanced Option intersection traffic operations including TEV, intersection delay (in seconds), LOS for each of the study intersections, and worst movement if the intersection is unsignalized for both the AM and PM peak hours. Intersection TEV is shown for both vehicle volume demand and vehicle volume throughput.

As discussed in Section 5.2, downstream congestion from E Burnside Street and NE/SE 14th Avenue and from the metered on-ramp from NE Grand Avenue to I-84 would impact intersection operations along E Burnside Street.

SimTraffic output worksheets are included in Appendix A and Appendix B.

**Table 16. 2045 Balanced Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Balanced Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through out TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through out TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
1	NW Everett Street and NW 4th Avenue	Signalized	590 (-25)	590	10 (-1)	B	—	945 (-60)	865	33 (+12)	C	—
2	NW Everett Street and NW 3rd Avenue	Signalized	630 (-30)	630	6	A	—	1185 (-45)	1,075	30 (+19)	C	—
3	NW Couch Street and NW Broadwav	Signalized	775	775	13	B	—	1185 (-5)	1,185	29 (+6)	C	—
4	NW Couch Street and NW 6th Avenue	Signalized	285	285	10	B	—	335 (-5)	335	14 (+3)	B	—
5	NW Couch Street and NW 5th Avenue	Signalized	240	240	9 (-1)	A	—	425 (-5)	425	29 (+18)	C	—
6	NW Couch Street and NW 4th Avenue	Unsignalized	380 (-15)	380	10 (+1)	B	EB	500 (-55)	500	37 (+13)	E	EB
7	NW Couch Street and NW 3rd Avenue	Unsignalized	545 (-45)	545	16 (-5)	C	WB	760 (-80)	685	131 (+79)	F	WB
8	NW Couch Street and NW 2nd Avenue	Unsignalized	700 (-10)	700	19 (-3)	C	EB	655 (-30)	650	174 (+146)	F	WB
9	NW Couch Street and NW Naito Parkway	Signalized	1,145	1,145	18 (+1)	B	—	1495 (-15)	1,465	11 (+1)	B	—

**Table 16. 2045 Balanced Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Balanced Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through out TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through out TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
10	NE Couch Street and NE MLK Blvd	Signalized	2460 (+5)	2,395	19 (+4)	B	—	2845 (+10)	2,845	21 (+2)	C	—
11	NE Couch Street and NE Grand Avenue	Signalized	2485 (-65)	2,390	23 (+3)	C	—	2660 (-75)	2,660	22 (+7)	C	—
12	W Burnside Street and Broadway	Signalized	2400 (-30)	2,395	12 (+1)	B	—	2685 (-70)	2,685	18 (+2)	B	—
13	W Burnside Street and 6th Avenue	Signalized	2140 (-35)	2,140	5	A	—	2080 (-75)	2,080	10	B	—
14	W Burnside Street and 5th Avenue	Signalized	2120 (-30)	2,105	6 (+1)	A	—	2190 (-75)	2,190	12 (+3)	B	—
15	W Burnside Street and 4th Avenue	Signalized	2300 (-35)	2,300	11	B	—	2545 (-80)	2,520	20 (+5)	C	—
16	W Burnside Street and 3rd Avenue	Signalized	2375 (-65)	2,350	8 (-1)	A	—	2630 (-110)	2,550	24 (+10)	C	—
17	W Burnside Street and 2nd Avenue	Signalized	2590 (-80)	2,590	10 (+1)	B	—	2800 (-120)	2,795	23 (+11)	C	—
18	E Burnside Street and SE MLK Blvd	Signalized	1950 (-75)	1,950	16 (-3)	B	—	3130 (-90)	3,070	23 (+3)	C	—
19	E Burnside Street and SE Grand Avenue	Signalized	2225 (-15)	2,215	25 (+6)	C	—	2840 (-15)	2,800	23 (+6)	C	—
20	SW Oak Street and SW Broadway	Signalized	430	430	7	A	—	715	715	7	A	—

**Table 16. 2045 Balanced Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Balanced Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through out TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through out TEV (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
21	SW Oak Street and SW 6th Avenue	Signalized	345	345	10 (-1)	B	—	470 (-5)	465	12	B	—
22	SW Oak Street and SW 5th Avenue	Signalized	295	295	10	B	—	340	340	10 (-1)	B	—
23	SW Oak Street and SW 4th Avenue	Signalized	650	650	9 (+1)	A	—	850	825	15 (+4)	B	—
24	SW Oak Street and SW 3rd Avenue	Signalized	475	475	11	B	—	775 (+5)	745	11	B	—
25	SW Oak Street and SW 2nd Avenue	Signalized	695 (-5)	695	10	B	—	715	715	12	B	—
26	SW Oak Street and SW Naito Parkway	Signalized	1260 (+5)	1,260	14	B	—	1525 (+10)	1,505	10 (+1)	B	—

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses

All study intersections are anticipated to operate within City LOS standards with the exception of the following intersections, which are forecasted to operate at LOS E or worse during the PM peak:

- NW Couch Street and NW 4th Avenue (Intersection #6)
- NW Couch Street and NW 3rd Avenue (Intersection #7)
- NW Couch Street and NW 2nd Avenue (Intersection #8)

During the AM peak hour, the largest difference between the Draft EIS No-Build and Build condition and the Balanced Option is the intersection delay at E Burnside Street and SE Grand Avenue (Intersection #19), which has an intersection delay that is 6 seconds longer than the Draft EIS No-Build and Build condition.

During the PM peak hour, the largest difference between the Draft EIS No-Build and Build condition and the Balanced Option is the operations at the following locations:

- Along NW Couch Street between NW/SW 5th Avenue and NW/SW 2nd Avenue, the intersection delay increases between 13 and 146 seconds.
- Along NW Everett Street between NW/SW 4th Avenue and NW/SW 3rd Avenue, the intersection delay increases between 12 and 19 seconds.

These increases in intersection delay during the PM peak hour are due to the zipper merge in the eastbound direction along Burnside Street, where the general-purpose lanes narrow from two lanes to one lane. Delays and queuing from the zipper merge would impact the rest of the roadway system west of the bridge, including the intersections along NW Couch Street and NW Everett Street.

The 95th percentile queuing analysis is summarized in Table 17. Many of the queue lengths are less than 200 feet and are within the existing storage length between intersections. Some intersection approaches have queue lengths that exceed the existing storage length and back into an adjacent intersection. These approaches are highlighted in red in the table below.

The 95th percentile queues shown in Table 17 are for the critical movement on each approach.

Similar to the updated No-Build condition, many of the queue lengths shown are similar to or shorter than the Draft EIS No-Build and Build condition with the exception of the following locations:

- Along NW Couch Street between NW/SW 5th Avenue and NW/SW 2nd Avenue, the queuing increases between 70 and 310 feet during the PM peak hour.
- Along NW Everett Street between NW/SW 4th Avenue and NW/SW 3rd Avenue, the queuing increases between 80 and 150 feet during the PM peak hour.

The largest difference in queue length compared to the Draft EIS No-Build and Build condition is for the southbound approach at NW Couch Street and NW 3rd Avenue W Burnside Street and NW/SW 2nd Avenue (Intersection #7) where the queue length is 310 feet longer during the PM peak hour. Compared to the updated No-Build condition, some of the queue lengths for the minor approaches along NW Everett Street and NW Couch Street increased by over 100 feet. This is due to the increased congestion along



NW Couch Street between NW/SW 5th Avenue and NW/SW 2nd Avenue and along NW Everett Street between NW/SW 4th Avenue and NW/SW 3rd Avenue during the PM peak hour. Additionally, the eastbound queue lengths along W Burnside Street between NW/SW 4th Avenue and NW/SW 2nd Avenue are longer than updated No-Build during the PM peak hour. This is due to the zipper merge in the eastbound direction, where the general-purpose lanes narrow from two lanes to one lane.

**Table 17. 2045 Balanced Option Intersection Queuing**

			2045 Balanced Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
1	NW Everett Street and NW 4th Avenue	Signalized		
	Northbound approach		140 (+10)	340 (+150)
	Eastbound approach		190 (-30)	270
2	NW Everett Street and NW 3rd Avenue	Signalized		
	Southbound approach		120	240 (+80)
	Eastbound approach		90	240 (+10)
3	NW Couch Street and NW Broadway	Signalized		
	Northbound approach		70	140 (+30)
	Southbound approach		180	240 (+20)
	Eastbound approach		100 (-10)	260
	Westbound approach		130	120 (+10)
4	NW Couch Street and NW 6th Avenue	Signalized		
	Northbound approach		90	90
	Eastbound approach		60	140 (+40)
	Westbound approach		80	70
5	NW Couch Street and NW 5th Avenue	Signalized		
	Southbound approach		50	170 (+70)
	Eastbound approach		60	140 (+40)
	Westbound approach		70	130 (+50)
6	NW Couch Street and NW 4th Avenue	Unsignalized		
	Northbound approach		80	140 (+10)
	Eastbound approach		60	150 (+30)
	Westbound approach		60 (-10)	50
7	NW Couch Street and NW 3rd Avenue	Unsignalized		
	Southbound approach		60 (-20)	600 (+310)
	Eastbound approach		60	180 (+70)

**Table 17. 2045 Balanced Option Intersection Queuing**

			2045 Balanced Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Westbound approach		120 (-30)	250 (+70)
8	NW Couch Street and NW 2nd Avenue	Unsignalized		
	Northbound approach		90 (+10)	100 (+10)
	Eastbound approach		70	100
	Westbound approach		90 (-20)	370 (+250)
9	NW Couch Street and NW Naito Parkway	Signalized		
	Northbound approach		430 (+10)	250 (-90)
	Southbound approach		130	140 (+10)
	Eastbound approach		80	120 (+10)
10	NE Couch Street and NE MLK Blvd	Signalized		
	Southbound approach		250 (+20)	230 (-10)
	Westbound approach		180 (-30)	180 (+10)
11	NE Couch Street and NE Grand Avenue	Signalized		
	Northbound approach		170 (+40)	160 (+50)
	Westbound approach		240 (-10)	230 (-30)
12	W Burnside Street and Broadway	Signalized		
	Northbound approach		80 (-10)	150
	Southbound approach		210 (+10)	230 (+10)
	Eastbound approach		170 (-20)	190 (+40)
	Westbound approach		70 (+10)	220 (+10)
13	W Burnside Street and 6th Avenue	Signalized		
	Northbound approach		120 (-10)	150 (+20)
	Eastbound approach		140 (-20)	210
	Westbound approach		60 (+10)	170 (+10)
14	W Burnside Street and 5th Avenue	Signalized		
	Southbound approach		80	210 (+20)
	Eastbound approach		70 (-10)	150 (+20)
	Westbound approach		190 (+20)	170 (+20)
15	W Burnside Street and 4th Avenue	Signalized		
	Northbound approach		190 (-10)	210 (+10)
	Eastbound approach		190	210 (+70)

**Table 17. 2045 Balanced Option Intersection Queuing**

			2045 Balanced Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Westbound approach		130 (+10)	220 (+50)
16	W Burnside Street and 3rd Avenue	Signalized		
	Southbound approach		170 (-20)	240 (+10)
	Eastbound approach		80	270 (+120)
	Westbound approach		140 (-90)	160 (-70)
17	W Burnside Street and 2nd Avenue	Signalized		
	Northbound approach		230 (-10)	230 (+10)
	Eastbound approach		140 (-30)	250 (+30)
	Westbound approach		180 (-40)	190 (-30)
18	E Burnside Street and SE MLK Blvd	Signalized		
	Southbound approach		110 (-10)	180 (+10)
	Eastbound approach		190 (-120)	270
19	E Burnside Street and SE Grand Avenue	Signalized		
	Northbound approach		250 (-10)	240 (-10)
	Eastbound approach		100 (+50)	90 (-10)
20	SW Oak Street and SW Broadway	Signalized		
	Southbound approach		110 (-10)	180 (+10)
	Westbound approach		80	100
21	SW Oak Street and SW 6th Avenue	Signalized		
	Northbound approach		120 (-10)	170 (-10)
	Westbound approach		40 (-10)	40
22	SW Oak Street and SW 5th Avenue	Signalized		
	Southbound approach		100	110 (+10)
	Westbound approach		90	110
23	SW Oak Street and SW 4th Avenue	Signalized		
	Northbound approach		160 (-10)	240
	Westbound approach		100	110 (+20)
24	SW Oak Street and SW 3rd Avenue	Signalized		
	Southbound approach		120	160
	Westbound approach		130	120 (+10)
25	SW Oak Street and SW 2nd Avenue	Signalized		

**Table 17. 2045 Balanced Option Intersection Queuing**

			2045 Balanced Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Northbound approach		170	180 (-10)
	Westbound approach		120 (-20)	90
26	SW Oak Street and SW Naito Parkway	Signalized		
	Northbound approach		190 (-70)	250 (+10)
	Southbound approach		260 (+80)	180 (+10)

Source: Parametrix

Note: Queue lengths in red text exceed the available storage length.

Note: Differences from the Draft EIS No-Build are shown in parentheses

### Future Transit Conditions

Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) outlines the future build and no-build transit conditions. In that report, the Build and No-Build Alternatives were identical for the purposes of transit.

Except for the relocated bus stop described in the section above, the Balanced Option would include transit facilities for TriMet bus lines 12, 19 and 20 that are identical to the Draft EIS Build and No-Build Alternatives. However, changes to the configuration of general-purpose lanes and intersection operations at the bridgeheads will potentially impact transit due to traffic auto delay and queuing.

Compared to the updated No-Build Alternative, eastbound PM peak hour travel times increase by between six and 18 seconds while ridership for all bus lines traversing the Burnside Bridge increase. Westbound operations are projected to be similar to those under the updated No-Build Alternative.

### *Transit Travel Times*

Travel times for TriMet buses over the Burnside Bridge are reported in Table 18 and show overall change compared to the updated No-Build Alternative. The westbound travel times are slower by between six and 18 seconds, while eastbound travel times are unchanged for the AM and PM Peak hours because of the eastbound BAT lane located west of the Burnside Bridge which alleviates the transit travel times from getting impacted by the additional intersection delays forecast for auto traffic.

**Table 18. 2045 Balanced Option Transit Travel Times**

Travel Time reported in minutes between W 2nd Avenue and E MLK Blvd

Direction (Bus Lines 12, 19, 20)	2045 Balanced Option Travel Times	
	Travel Times (min)	Avg Transit Speeds (mph)
Eastbound (AM Peak)	2.3 (unch)	14.9 (unch)
Westbound (AM Peak)	2.2 (+0.1)	15.5 (-0.6)
Eastbound (PM Peak)	2.3 (unch)	14.9 (unch)
Westbound (PM Peak)	2.3 (+0.3)	14.9 (-1.9)

Source: Parametrix

Note: Differences from the Updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the Updated No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.

### Transit Ridership

Ridership on bus lines 12, 19 and 20 are projected to remain similar for routes 12 and 19 but will increase by up to one percent for route 20 across daily and peak hour boardings, as shown in Table 19 below. The table also shows the change in ridership relative to the updated No-Build Alternative.

**Table 19. 2045 Balanced Option , Projected Boardings, Daily and PM Peak Hour**

Transit Line	Daily Boardings within Direct API	PM Peak Hour Boardings within Direct API	Daily Ridership for Full Extent	PM Peak Hour Boardings Full Extent
<b>Bus</b>				
12	5,895 (+5)	700 (unch)	11,295 (+20)	1,320 (+5)
19	3,850 (+15)	555 (+5)	12,380 (+15)	1,660 (+5)
20	10,630 (+125)	1,225 (+25)	37,200 (+230)	4,240 (+50)

Sources: Metro

Note: Differences from the Updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the Updated No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.

Table 20 below shows the anticipated auto and transit person trip throughput for each direction of travel during the PM peak hour under the 2045 Balanced Option. Of the four Lane Options, Lane Option 1 is projected to have the highest proportion of person trips carried by transit.

**Table 20. 2045 Balanced Option, Future Person Trip Throughput, PM Peak Hour**

Direction (Bus Lines 12, 19, 20)	2045 Balanced Option, PM Peak Hour			
	Auto + Commercial-use Vehicle Person Trips	Transit Person Trips	Total Person Trips	Transit/Auto Person Trips
Eastbound (PM Peak Hour)	1,800 (-645)	1790 (+60)	3,590 (-585)	.99 (+0.28)
Westbound (PM Peak Hour)	1,665 (+5)	1,055 (-5)	2,720 (unch)	.63 (-0.01)
Total	3,465 (-640)	2,840 (+50)	6,310 (-585)	.82 (+0.14)

Sources: Metro

Note: Differences from the Updated No-Build are shown in parentheses

Note: (unch) notes no difference to the Updated No-Build

Note: **Red text** indicates worse performance, **blue text** indicates improved performance

*Transit Reliability*

Travel time reliability for lines 12, 19 and 20 at the intersections at either end of the Burnside Bridge will be similar to the updated No-Build Alternative based on the traffic operations analysis. Table 21 below shows the anticipated reliability impacts that the Balanced Option would experience due to auto delay and queuing at intersections.

**Table 21. 2045 Balanced Option, Transit Reliability Impacts**

Delay reported in seconds

Intersection	Direction (Bus Lines 12, 19, 20)	2045 Balanced Option		
		Average Intersection Delay (s)	95 <sup>th</sup> Queue (ft)	Percent Spillback
17	Eastbound Burnside/MLK	27 (unch)	N/A	N/A
18	Westbound Burnside/2nd	11 (+6)	Through 190 (+20) Right 160 (+40)	0% (unch)

Source: Parametrix

Note: Differences from the Updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the Updated No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.

In the westbound direction, reliability is expected to be impacted by an additional six seconds of average delay at the W Burnside Street and NW/SW 2nd Avenue intersection compared to the updated No-Build Alternative. Transit vehicles would be slowed by right-turning vehicles at the intersection of Burnside Street with 2nd Avenue consistent with the updated No-Build Alternative. In the eastbound direction, reliability is expected to remain unchanged.

### *Comparison to Other Lane Options*

Compared to Eastbound Focus, Reversible Lane and General-Purpose with Bus Priority options, the Balanced Option is anticipated to result in:

- Highest transit ridership for bus lines 12, 19 and 20. The biggest difference is between the Balanced Option and the General-Purpose with Bus Priority Option, where ridership is generally 1.5 to 2.5 percent higher.
- In the eastbound direction, transit travel times for bus lines 12, 19 and 20 are similar compared to all other Lane Options. In the westbound direction transit travel times are comparable during both the AM and PM peak across the Eastbound Focus and Reversible Lane options while being 15 percent slower than the General-Purpose with Bus Priority Option.
- In the eastbound direction reliability would be similar to all Lane Options. In the westbound direction reliability experiences an additional two seconds of delay compared to the Eastbound Focus and Reversible Lane options and six additional second of delay compare to the General-Purpose with Bus Priority Option.

### *Future Streetcar Accommodation*

The Balanced Option would not impact the Burnside Bridge's ability to accommodate a future streetcar alignment on the bridge structure. Under this alternative, operations for the streetcar across the bridge should be similar to those outlined in the *EQRB Transportation Technical Report* (Multnomah County 2021c).

### *Consistency with Local and Regional Transit Policies*

Section 4 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) summarizes state, regional and local policies and how they apply to the EQRB Project. Relevant transit policies include Comprehensive Plan policies 9.5 (support for reducing Vehicle Miles Traveled (VMT) and a mode shift to active transportation and transit), 9.6 (prioritizing active transportation and transit before low occupancy vehicles) and 9.22 (support to make transit the preferred transportation mode and implementation of transit priority and bus-only lanes outlined in Enhanced Transit Corridors Plan (PBOT 2018)). Additionally, Metro's RTP (Metro 2018) policy 4 supports facilities that increase transit speeds and reliability through the implementation of the ETC Plan (PBOT 2018).

The Balanced Option, by maintaining the eastbound bus-only lane over the bridge span, is supported by the Portland's Comprehensive Plan and Metro's RTP policies referenced above. Additionally, the ETC Plan (PBOT 2018) proposes westbound bus priority treatments that may include a bus-only lane over the bridge span. Lane Option 1 supports this future project by maintaining the two westbound general-purpose travel lanes that offer flexibility for future repurposing.

## 7.1.5 Lane Option 2 (Eastbound Focus)

The Eastbound Focus Option consists of one westbound general-purpose lane and three eastbound lanes, two of which are general-purpose lanes and one bus-only lane.

Compared to the Draft EIS Build and No-Build Alternatives, the Eastbound Focus Option features one less westbound general-purpose travel lane.

### Future Traffic and Freight Operations

#### *Eastbound Focus Option Compared to Draft EIS No-Build and Build Alternatives*

Table 22 displays the 2045 Eastbound Focus Option AM and PM peak hour traffic volumes across the Burnside Bridge. These results include peak hour volume demand, peak hour vehicle volume throughput, and percent of volume demand served.

Vehicle volume throughput was not reported for the Draft EIS No-Build and Build condition, so the vehicle volume throughput shown below cannot be compared to the Draft EIS No-Build and Build condition.

**Table 22. 2045 Eastbound Focus Option Burnside Bridge Traffic Volumes**

eastbound (EB), vehicles per hour (vph), westbound (WB)

Direction	AM Peak Hour			PM Peak Hour		
	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served
EB Burnside Bridge	965 (-5)	965	100%	1,485	1,485	100%
WB Burnside Bridge	1,345 (-55)	1,270	94%	1,055 (-55)	1,055	100%

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses.

The Eastbound Focus Option narrows from two westbound general-purpose lane west of the NE Couch Street and NE MLK Boulevard intersection to one westbound general-purpose lane across the bridge.

During the AM peak hour, 94 percent of the volume demand is served in the westbound direction, meaning 75 vehicles are unserved. This is similar to the No-Build condition, where 96 percent of the volume demand is served, despite a small decrease in vehicle volume demand for the Eastbound Focus Option. During the PM peak hour, 100 percent of volume demand is served in both directions, similar to the updated No-Build condition.

Table 23 displays the 2045 Eastbound Focus Option intersection traffic operations including TEV, intersection delay (in seconds), LOS for each of the study intersections, and worst movement if the intersection is unsignalized for both the AM and PM peak hours. Intersection TEV is shown for both the vehicle volume demand and the vehicle volume throughput.

As discussed in Section 5.2, downstream congestion from E Burnside Street and NE/SE 14th Avenue and from the metered on-ramp from NE Grand Avenue to I-84 would impact intersection operations along E Burnside Street.

SimTraffic output worksheets are included in Appendix A and Appendix B.



**Table 23. 2045 Eastbound Focus Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Eastbound Focus Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
1	NW Everett Street and NW 4th Avenue	Signalized	610 (-5)	610	11	A	—	970 (-35)	970	22 (+1)	C	—
2	NW Everett Street and NW 3rd Avenue	Signalized	650 (-10)	650	6	B	—	1225 (-5)	1,225	11	B	—
3	NW Couch Street and NW Broadway	Signalized	760 (-15)	755	13	B	—	1185 (-5)	1,185	26 (+3)	C	—
4	NW Couch Street and NW 6th Avenue	Signalized	275 (-10)	275	10	A	—	335 (-5)	335	11	B	—
5	NW Couch Street and NW 5th Avenue	Signalized	240	240	9 (-1)	B	—	425 (-5)	425	13 (+2)	B	—
6	NW Couch Street and NW 4th Avenue	Unsignalized	375 (-20)	370	10 (+1)	C	EB	495 (-60)	495	18 (-6)	C	EB
7	NW Couch Street and NW 3rd Avenue	Unsignalized	570 (-20)	565	16 (-5)	C	WB	810 (-30)	810	58 (+6)	F	WB
8	NW Couch Street and NW 2nd Avenue	Unsignalized	670 (-40)	670	18 (-4)	B	EB	630 (-55)	630	31 (+3)	D	WB
9	NW Couch Street and NW Naito Parkway	Signalized	1160 (+15)	1,155	17	B	—	1,510	1,510	11 (+1)	B	—
10	NE Couch Street and NE MLK Blvd	Signalized	2415 (-40)	2,345	19 (+4)	C	—	2795 (-40)	2,795	21 (+2)	C	—
11	NE Couch Street and NE Grand Avenue	Signalized	2490 (-60)	2,395	24 (+4)	B	—	2670 (-65)	2,670	21 (+6)	C	—

**Table 23. 2045 Eastbound Focus Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Eastbound Focus Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
12	W Burnside Street and Broadway	Signalized	2410 (-20)	2,400	11	A	—	2705 (-50)	2,705	17 (+1)	B	—
13	W Burnside Street and 6th Avenue	Signalized	2155 (-20)	2,155	5	A	—	2100 (-55)	2,100	11 (+1)	B	—
14	W Burnside Street and 5th Avenue	Signalized	2135 (-15)	2,120	6 (+1)	B	—	2210 (-55)	2,210	10 (+1)	B	—
15	W Burnside Street and 4th Avenue	Signalized	2325 (-10)	2,325	11	A	—	2580 (-45)	2,580	14 (-1)	B	—
16	W Burnside Street and 3rd Avenue	Signalized	2435 (-5)	2,415	8 (-1)	A	—	2725 (-15)	2,725	13 (-1)	B	—
17	W Burnside Street and 2nd Avenue	Signalized	2620 (-50)	2,620	9	B	—	2860 (-60)	2,860	12	B	—
18	E Burnside Street and SE MLK Blvd	Signalized	2035 (+10)	2,035	14 (-5)	C	—	3225 (+5)	3,225	17 (-3)	B	—
19	E Burnside Street and SE Grand Avenue	Signalized	2260 (+20)	2,260	25 (+6)	A	—	2880 (+25)	2,880	22 (+5)	C	—
20	SW Oak Street and SW Broadway	Signalized	420 (-10)	420	6 (-1)	B	—	715	715	8 (+1)	A	—
21	SW Oak Street and SW 6th Avenue	Signalized	340 (-5)	340	10 (-1)	B	—	470 (-5)	470	12	B	—
22	SW Oak Street and SW 5th Avenue	Signalized	295	295	10	A	—	340	340	11	B	—

**Table 23. 2045 Eastbound Focus Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Eastbound Focus Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
23	SW Oak Street and SW 4th Avenue	Signalized	650	650	8	B	—	855 (+5)	855	11	B	—
24	SW Oak Street and SW 3rd Avenue	Signalized	460 (-15)	460	11	B	—	775 (+5)	775	11	B	—
25	SW Oak Street and SW 2nd Avenue	Signalized	710 (+10)	705	10	B	—	720 (+5)	720	12	B	—
26	SW Oak Street and SW Naito Parkway	Signalized	1250 (-5)	1,250	14	A	—	1500 (-15)	1,495	9	A	—

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses

All study intersections are anticipated to operate within City LOS standards with the exception of NW Couch Street and NW 3rd Avenue (Intersection #7), which is forecasted to operate at LOS F during the PM peak.

The largest difference between the Draft EIS No-Build and Build condition and the Eastbound Focus Option is the operations at the intersections along NW Couch Street between NE Grand Avenue and NE MLK Boulevard. Along NW Couch Street between NE Grand Avenue and NE MLK Boulevard, the intersection delay increases between 2 and 4 seconds during both the AM and PM peak hours. This is due to the zipper merge in the westbound direction along NE Couch Street, where the general-purpose lanes narrow from two lanes to one lane.

The 95th percentile queuing analysis is summarized in Table 24. Many of the queue lengths are less than 200 feet and are within the existing storage length between intersections. Some intersection approaches have queue lengths that exceed the existing storage length and back into an adjacent intersection. These approaches are highlighted in red in the table below.

The 95th percentile queues shown in Table 24 are for the critical movement on each approach.

Similar to the updated No-Build condition, any of the queue lengths shown are similar to or shorter than the Draft EIS No-Build and Build condition. The largest difference in queue length compared to the Draft EIS No-Build and Build condition is for the eastbound approach at E Burnside Street and SE Grand Avenue (Intersection #19), which has a 95th percentile queue length that is 60 feet longer than the Draft EIS No-Build and Build condition during the AM peak hour. The impacts to the intersections along NW Couch Street between NE Grand Avenue and NE MLK Boulevard due to the zipper merge in the westbound direction are minimal.

**Table 24. 2045 Eastbound Focus Option Intersection Queuing**

			2045 Eastbound Focus Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
1	NW Everett Street and NW 4th Avenue	Signalized		
	Northbound approach		140 (+10)	170 (-20)
	Eastbound approach		200 (-20)	260 (-10)
2	NW Everett Street and NW 3rd Avenue	Signalized		
	Southbound approach		110 (-10)	170 (+10)
	Eastbound approach		80 (-10)	230
3	NW Couch Street and NW Broadway	Signalized		
	Northbound approach		70	110
	Southbound approach		190 (+10)	230 (+10)

**Table 24. 2045 Eastbound Focus Option Intersection Queuing**

		Signalized or Unsignalized	2045 Eastbound Focus Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach			95th Queue Length (ft.)	95th Queue Length (ft.)
	Eastbound approach		100 (-10)	260
	Westbound approach		120 (-10)	110
4	NW Couch Street and NW 6th Avenue	Signalized		
	Northbound approach		90	70 (-20)
	Eastbound approach		70 (+10)	100
	Westbound approach		70 (-10)	70
5	NW Couch Street and NW 5th Avenue	Signalized		
	Southbound approach		50	100
	Eastbound approach		60	100
	Westbound approach		70	100 (+20)
6	NW Couch Street and NW 4th Avenue	Unsignalized		
	Northbound approach		80	130
	Eastbound approach		70 (+10)	100 (-20)
	Westbound approach		60 (-10)	50
7	NW Couch Street and NW 3rd Avenue	Unsignalized		
	Southbound approach		70 (-10)	260 (-30)
	Eastbound approach		60	100 (-10)
	Westbound approach		120 (-30)	180
8	NW Couch Street and NW 2nd Avenue	Unsignalized		
	Northbound approach		80	70 (-20)
	Eastbound approach		70	90 (-10)
	Westbound approach		100 (-10)	160 (+40)
9	NW Couch Street and NW Naito Parkway	Signalized		
	Northbound approach		420	340
	Southbound approach		130	140 (+10)
	Eastbound approach		80	140 (+30)
10	NE Couch Street and NE MLK Blvd	Signalized		
	Southbound approach		250 (+20)	230 (-10)
	Westbound approach		200 (-10)	180 (+10)
11	NE Couch Street and NE Grand Avenue	Signalized		

**Table 24. 2045 Eastbound Focus Option Intersection Queuing**

			2045 Eastbound Focus Option	
			AM Peak Hour	PM Peak Hour
	Intersection, Approach	Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
5	Northbound approach		180 (+50)	150 (+40)
	Westbound approach		230 (-20)	250 (-10)
12	W Burnside Street and Broadway	Signalized		
	Northbound approach		90	150
	Southbound approach		200	220
	Eastbound approach		180 (-10)	200 (+50)
	Westbound approach		60	210
13	W Burnside Street and 6th Avenue	Signalized		
	Northbound approach		120 (-10)	140 (+10)
	Eastbound approach		160	210
	Westbound approach		60 (+10)	180 (+20)
14	W Burnside Street and 5th Avenue	Signalized		
	Southbound approach		80	190
	Eastbound approach		80	140 (+10)
	Westbound approach		170	180 (+30)
15	W Burnside Street and 4th Avenue	Signalized		
	Northbound approach		190 (-10)	210 (+10)
	Eastbound approach		190	140
	Westbound approach		110 (-10)	190 (+20)
16	W Burnside Street and 3rd Avenue	Signalized		
	Southbound approach		190	230
	Eastbound approach		100 (+20)	170 (+20)
	Westbound approach		130 (-100)	150 (-80)
17	W Burnside Street and 2nd Avenue	Signalized		
	Northbound approach		220 (-20)	230 (+10)
	Eastbound approach		160 (-10)	230 (+10)
	Westbound approach		170 (-50)	180 (-40)
18	E Burnside Street and SE MLK Blvd	Signalized		
	Southbound approach		120	200 (+30)
	Eastbound approach		160 (-150)	180 (-90)

**Table 24. 2045 Eastbound Focus Option Intersection Queuing**

			2045 Eastbound Focus Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
19	E Burnside Street and SE Grand Avenue	Signalized		
	Northbound approach		240 (-20)	240 (-10)
	Eastbound approach		110 (+60)	90 (-10)
20	SW Oak Street and SW Broadway	Signalized		
	Southbound approach		110 (-10)	170
	Westbound approach		70 (-10)	100
21	SW Oak Street and SW 6th Avenue	Signalized		
	Northbound approach		130	170 (-10)
	Westbound approach		40 (-10)	40
22	SW Oak Street and SW 5th Avenue	Signalized		
	Southbound approach		110 (+10)	100
	Westbound approach		100 (+10)	120 (+10)
23	SW Oak Street and SW 4th Avenue	Signalized		
	Northbound approach		170	240
	Westbound approach		90 (-10)	90
24	SW Oak Street and SW 3rd Avenue	Signalized		
	Southbound approach		120	170 (+10)
	Westbound approach		130	110
25	SW Oak Street and SW 2nd Avenue	Signalized		
	Northbound approach		180 (+10)	180 (-10)
	Westbound approach		130 (-10)	90
26	SW Oak Street and SW Naito Parkway	Signalized		
	Northbound approach		260	250 (+10)
	Southbound approach		180	170

Source: Parametrix

Note: Queue lengths in red text exceed the available storage length.

Note: Differences from the Draft EIS No-Build are shown in parentheses

### Future Transit Conditions

Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) outlines the future build and no-build transit conditions. In that report, the Build and No-Build Alternatives were identical for the purposes of transit. Lane Option 2 transit operations for bus lines 12, 19 and 20 crossing the Burnside Bridge would change in the westbound direction, as a result of the reduction of motor vehicle capacity.

Compared to the updated No-Build Alternative, eastbound PM peak hour travel times are relatively equivalent. Transit ridership for the three bus lines that traverse the Burnside Bridge are also largely unchanged.

### Transit Travel Times

Travel times for TriMet buses over the Burnside Bridge are reported in Table 25 and show overall change compared to the updated No-Build Alternative. Eastbound travel times are unchanged while westbound AM and PM peak transit travel times are expected to be slower by up to 18 seconds due to delays caused by the zipper merge from two westbound general-purpose lanes to one general-purpose lane.

**Table 25. 2045 Eastbound Focus Option, Future Transit Travel Times**

Travel Time reported in minutes between W 2nd Avenue and E MLK Blvd

Direction (Bus Lines 12, 19, 20)	Future Conditions, Eastbound Focus Option	
	Travel Times (min)	Avg Transit Speeds (mph)
Eastbound (AM Peak)	2.3 (unch)	14.9 (unch)
Westbound (AM Peak)	2.4 (+0.2)	13.9 (-2.2)
Eastbound (PM Peak)	2.3 (unch)	14.9 (unch)
Westbound (PM Peak)	2.3 (+0.3)	14.4 (-2.4)

Source: Parametrix

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: Red text indicates worse performance, blue text indicates improved performance.

### Transit Ridership

Ridership on bus lines 12, 19 and 20 is projected to remain relatively the same compared to the updated No-Build Alternative across all the time and geographic extents shown in Table 26. The table also shows change in ridership compared to the updated No-Build Alternative. Ridership is largely unchanged for the Eastbound Focus Option.



**Table 26. 2045 Eastbound Focus Option, Future Projected Boardings**

Transit Service	Daily Boardings within Direct API	PM Peak Hour Boardings within Direct API	Daily Ridership for Full Extent	PM Peak Hour Boardings Full Extent
<i>Bus</i>				
12	5.910 (+20)	705 (+5)	11.275 (unch)	1.315 (unch)
19	3.835 (unch)	550 (unch)	12.355 (-10)	1.655 (unch)
20	10.535 (+30)	1.205 (+5)	37.005 (+35)	4.195 (+5)

Sources: Metro

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: Red text indicates worse performance, blue text indicates improved performance.

Table 27 below shows the anticipated auto and transit person trip throughput for each direction of travel under the Eastbound Focus Option. Total person trips in both directions are largely unchanged compared to the updated No-Build Alternative under the Eastbound Focus Option. The largest change is a decrease in auto person trips that are projected to fall by 6 percent in the westbound direction. Overall, the share of transit person trips compared to auto and commercial-use vehicle person trips increases in the westbound direction to a factor of 0.68.

**Table 27. 2045 Eastbound Focus Option, Transit Person Trip Throughput, PM Peak Hour**

Direction (Bus Lines 12, 19, 20)	2045 Conditions, Eastbound Focus Option PM Peak Hour			
	Auto + Commercial- use Vehicle Person Trips	Transit Person Trips	Total Person Trips	Transit/Auto Person Trips
Eastbound (PM Peak Hour)	2,445 (unch)	1,730 (unch)	4,175 (unch)	0.71 (unch)
Westbound (PM Peak Hour)	1,560 (-100)	1,070 (+10)	2,630 (-90)	0.68 (+0.04)
Total	4,005 (-100)	2,800 (+10)	6,800 (-90)	0.70 (+0.02)

Source: Metro

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: Red text indicates worse performance, blue text indicates improved performance.

### *Transit Reliability*

Travel time reliability for lines 12, 19 and 20 would be similar to the updated No-Build Alternative based on the traffic operations analysis at either end of the Burnside Bridge.

Table 28 shows the anticipated reliability impacts that the Balanced Option would experience due to auto delay and queuing at intersections.

**Table 28. 2045 Eastbound Focus Option, Transit Reliability Impacts**

		2045 Conditions, Eastbound Focus Option			
Intersection	Direction (Bus Lines 12, 19, 20)	Average Intersection Delay (s)	95th Queue (ft)		Percent Spillback
17	Eastbound Burnside/MLK	27 (unch)	N/A		N/A
18	Westbound Burnside/2nd	9 (+4)	Through Right	180 (+10) 130 (+10)	0% (unch)

Source: Parametrix

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: Red text indicates worse performance, blue text indicates improved performance.

Travel time reliability for lines 12, 19 and 20 would remain unchanged compared to the updated No-Build Alternative for the eastbound direction. In the westbound direction, several seconds of additional delay at W. Burnside Street and 2nd Avenue intersection would occur due to minor increases in queuing vehicles.

*Comparison to Other Lane Options*

Compared to the Balanced, Reversible Lane and General-Purpose with Bus Priority options, the Eastbound Focus Option is anticipated to result in:

- Transit Ridership for bus lines 12, 19 and 20 is lower compared to the Balanced Option by .5 percent or less and is 1.5 to 2.5 percent higher compared to the General-Purpose with Bus Priority Option.
- Travel times for bus lines 12, 19 and 20 are unchanged in the eastbound direction and equivalent across all Lane Options. Westbound travel times are the slowest during the AM Peak Hour compared to all other Lane Options and performs the same in the PM Peak Hour as the Balanced and Reversible Lane Options.
- Reliability during the PM Peak Hour in the eastbound is the same as all other Lane Options. In the westbound direction, additional queuing will result in minor additional delays equivalent to the Reversible Lane Option, which are less those experienced under the Balanced Option, but more than the General-Purpose with Bus Priority Option.

*Future Streetcar Accommodation*

The Eastbound Focus Option would not impact the Burnside Bridge’s ability to accommodate the future expansion of streetcar across the bridge span. However, in the westbound direction the removal of one general-purpose lane would reduce vehicle capacity across the bridge span. Streetcar operations in the westbound direction would

be impacted due to streetcar operating in a mixed traffic environment and subject to the same delays that impact traffic operations. This would likely result in slower average operating speeds and increased frequency of delays.

#### *Consistency with Local and Regional Transit Policies*

Section 4 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) summarizes state, regional and local policies and how they apply to the EQRB project. Relevant transit policies include Comprehensive Plan policies 9.5 (support for reducing VMT and a mode shift to active transportation and transit), 9.6 (prioritizing active transportation and transit before low occupancy vehicles) and 9.22 (support to make transit the preferred transportation mode and implement transit priority and bus-only lanes outlined in the ETC Plan (PBOT 2018)). Additionally, RTP policy 4 supports facilities that increase transit speeds and reliability through the implementation of the ETC Plan (PBOT 2018).

The Eastbound Focus Option, by maintaining the eastbound bus-only lane over the bridge span, is supported by the Portland's Comprehensive Plan and Metro's RTP policies referenced above. Additionally, the ETC Plan (PBOT 2018) proposes westbound bus priority treatments that may include a bus-only lane over the bridge span. Lane Option 2 proposes removing one westbound general-purpose lane over the bridge, which would pose challenges in implementing plans for bus priority in the westbound direction in the future.

### 7.1.6 Lane Option 3 (Reversible Lane)

The Reversible Lane Option consists of one westbound general-purpose lane plus two eastbound lanes that include one general-purpose lane and one bus-only lane. A reversible lane is located in the middle of the roadway cross section and would operate in the westbound direction during the AM peak period and eastbound during the PM peak period. Outside the peak periods, the reversible lane would generally serve the direction of traffic with higher volumes. The details for the design and operations of the reversible lane are still under development.

#### Future Traffic and Freight Operations

##### *Reversible Lane Option Compared to Draft EIS No-Build and Build Alternatives*

The Reversible Lane Option was modeled with the assumption that the zipper merges would be located at the same location as the zipper merges present in the Balanced Option and the Eastbound Focus Option. If gates were to be added to aid in directing traffic to the correct lanes, the zipper merge locations would move further out from the Burnside Bridge and impact traffic operations. This would increase delay and queuing at the intersections upstream of the zipper merges on both sides of the Burnside Bridge.

Table 29 displays the 2045 Reversible Lane Option AM and PM peak hour traffic volumes across the Burnside Bridge. These results include peak hour volume demand, peak hour vehicle volume throughput, and percent of volume demand served.

Vehicle volume throughput was not reported for the Draft EIS No-Build and Build condition, so the vehicle volume throughput shown below cannot be compared to the Draft EIS No-Build and Build condition.

**Table 29. 2045 Reversible Lane Option Burnside Bridge Traffic Volumes**

eastbound (EB), vehicles per hour (vph), westbound (WB)

Direction	AM Peak Hour			PM Peak Hour		
	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served
EB Burnside Bridge	890 (-80)	890	100%	1,485	1,485	100%
WB Burnside Bridge	1,400	1,320	94%	1,055 (-55)	1,055	100%

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses.

The Reversible Lane Option narrows down to one general-purpose lane in one direction depending on the time of day. During the AM peak hour, there are two general-purpose lanes in the westbound direction and one general-purpose lane in the eastbound direction. During the PM peak hour, there are two general-purpose lanes in the eastbound direction and one general-purpose lane in the westbound direction.

Similar to the updated No-Build condition, only 94 percent of the westbound volume demand is served during the AM peak hour, likely due to the S-curve. During the PM peak hour, 100 percent of volume demand is served in both directions, similar to the updated No-Build condition.

Table 30 displays the 2045 Reversible Lane Option intersection traffic operations including TEV, intersection delay (in seconds), LOS for each of the study intersections, and worst movement if the intersection is unsignalized for both the AM and PM peak hours. Intersection TEV is shown for both vehicle volume demand and vehicle volume throughput.

As discussed in Section 5.2, downstream congestion from E Burnside Street and NE/SE 14th Avenue and from the metered on-ramp from NE Grand Avenue to I-84 would impact intersection operations along E Burnside Street.

SimTraffic output worksheets are included in Appendix A and Appendix B.

**Table 30. 2045 Reversible Lane Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Reversible Lane Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
1	NW Everett Street and NW 4th Avenue	Signalized	590 (-25)	590	10 (-1)	B	—	970 (-35)	970	22 (+1)	C	—
2	NW Everett Street and NW 3rd Avenue	Signalized	630 (-30)	630	6	A	—	1225 (-5)	1,225	11	B	—
3	NW Couch Street and NW Broadway	Signalized	775	775	13	B	—	1185 (-5)	1,185	26 (+3)	C	—
4	NW Couch Street and NW 6th Avenue	Signalized	285	285	10	B	—	335 (-5)	335	11	B	—
5	NW Couch Street and NW 5th Avenue	Signalized	240	240	9 (-1)	A	—	425 (-5)	425	13 (+2)	B	—
6	NW Couch Street and NW 4th Avenue	Unsignalized	380 (-15)	380	10 (+1)	B	EB	495 (-60)	495	18 (-6)	C	EB
7	NW Couch Street and NW 3rd Avenue	Unsignalized	545 (-45)	545	16 (-5)	C	WB	810 (-30)	810	58 (+6)	F	WB
8	NW Couch Street and NW 2nd Avenue	Unsignalized	700 (-10)	700	19 (-3)	C	EB	630 (-55)	630	31 (+3)	D	WB
9	NW Couch Street and NW Naito Parkway	Signalized	1,145	1,145	18 (+1)	B	—	1,510	1,510	11 (+1)	B	—
10	NE Couch Street and NE MLK Blvd	Signalized	2460 (+5)	2,395	19 (+4)	B	—	2795 (-40)	2,795	21 (+2)	C	—
11	NE Couch Street and NE Grand Avenue	Signalized	2485 (-65)	2,390	23 (+3)	C	—	2670 (-65)	2,670	21 (+6)	C	—

**Table 30. 2045 Reversible Lane Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Reversible Lane Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
12	W Burnside Street and Broadway	Signalized	2400 (-30)	2,395	12 (+1)	B	—	2705 (-50)	2,705	17 (+1)	B	—
13	W Burnside Street and 6th Avenue	Signalized	2140 (-35)	2,140	5	A	—	2100 (-55)	2,100	11 (+1)	B	—
14	W Burnside Street and 5th Avenue	Signalized	2120 (-30)	2,105	6 (+1)	A	—	2210 (-55)	2,210	10 (+1)	B	—
15	W Burnside Street and 4th Avenue	Signalized	2300 (-35)	2,300	11	B	—	2580 (-45)	2,580	14 (-1)	B	—
16	W Burnside Street and 3rd Avenue	Signalized	2375 (-65)	2,350	8 (-1)	A	—	2725 (-15)	2,725	13 (-1)	B	—
17	W Burnside Street and 2nd Avenue	Signalized	2590 (-80)	2,590	10 (+1)	B	—	2860 (-60)	2,860	12	B	—
18	E Burnside Street and SE MLK Blvd	Signalized	1950 (-75)	1,950	16 (-3)	B	—	3225 (+5)	3,225	17 (-3)	B	—
19	E Burnside Street and SE Grand Avenue	Signalized	2225 (-15)	2,215	25 (+6)	C	—	2880 (+25)	2,880	22 (+5)	C	—
20	SW Oak Street and SW Broadway	Signalized	430	430	7	A	—	715	715	8 (+1)	A	—
21	SW Oak Street and SW 6th Avenue	Signalized	345	345	10 (-1)	B	—	470 (-5)	470	12	B	—
22	SW Oak Street and SW 5th Avenue	Signalized	295	295	10	B	—	340	340	11	B	—

**Table 30. 2045 Reversible Lane Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 Reversible Lane Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
23	SW Oak Street and SW 4th Avenue	Signalized	650	650	9 (+1)	A	—	855 (+5)	855	11	B	—
24	SW Oak Street and SW 3rd Avenue	Signalized	475	475	11	B	—	775 (+5)	775	11	B	—
25	SW Oak Street and SW 2nd Avenue	Signalized	695 (-5)	695	10	B	—	720 (+5)	720	12	B	—
26	SW Oak Street and SW Naito Parkway	Signalized	1260 (+5)	1,260	14	B	—	1500 (-15)	1,495	9	A	—

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses.

During the AM peak hour, the Reversible Lane Option operates the same as the Balanced Option and during the PM peak hour, the Reversible Lane Option operates the same as the Eastbound Focus Option. All study intersections are anticipated to operate within City LOS standards with the exception of NW Couch Street and NW 3rd Avenue (Intersection #7), which is forecasted to operate at LOS F during the PM peak.

During the AM peak hour, the largest difference between the Draft EIS No-Build and Build condition and the Balanced Option is the intersection delay at E Burnside Street and SE Grand Avenue (Intersection #19), which has an intersection delay that is 6 seconds longer than the Draft EIS No-Build and Build condition.

During the PM peak, the largest difference between the Draft EIS No-Build and Build condition and the Eastbound Focus Option is the operations at the intersections along NW Couch Street between NE Grand Avenue and NE MLK Boulevard. Along NW Couch Street between NE Grand Avenue and NE MLK Boulevard, the intersection delay increases between 2 and 4 seconds during the PM peak hours. This is due to the zipper merge in the westbound direction along NE Couch Street, where the general-purpose lanes narrow from two lanes to one lane.

The 95th percentile queuing analysis is summarized in Table 30. Many of the queue lengths are less than 200 feet and are within the existing storage length between intersections. Some intersection approaches have queue lengths that exceed the existing storage length and back into an adjacent intersection. These approaches are highlighted in red in the table below.

The 95th percentile queues shown in Table 31 are for the critical movement on each approach.

Similar to the updated No-Build condition, any of the queue lengths shown are similar to or shorter than the Draft EIS No-Build and Build condition. During the AM peak hour, impacts to the intersections along W Burnside Street due to the zipper merge in the eastbound direction are minimal. During the PM peak hour, the impacts to the intersections along NW Couch Street between NE Grand Avenue and NE MLK Boulevard due to the zipper merge in the westbound direction are minimal.

**Table 31. 2045 Reversible Lane Option Queuing**

			2045 Reversible Lane Option	
			AM Peak Hour	PM Peak Hour
	Intersection, Approach	Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
1	NW Everett Street and NW 4th Avenue	Signalized		
	Northbound approach		140 (+10)	170 (-20)
	Eastbound approach		190 (-30)	260 (-10)
2	NW Everett Street and NW 3rd Avenue	Signalized		
	Southbound approach		120	170 (+10)
	Eastbound approach		90	230



**Table 31. 2045 Reversible Lane Option Queuing**

			2045 Reversible Lane Option	
			AM Peak Hour	PM Peak Hour
	Intersection, Approach	Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
3	NW Couch Street and NW Broadway	Signalized		
	Northbound approach		70	110
	Southbound approach		180	230 (+10)
	Eastbound approach		100 (-10)	260
	Westbound approach		130	110
4	NW Couch Street and NW 6th Avenue	Signalized		
	Northbound approach		90	70 (-20)
	Eastbound approach		60	100
	Westbound approach		80	70
5	NW Couch Street and NW 5th Avenue	Signalized		
	Southbound approach		50	100
	Eastbound approach		60	100
	Westbound approach		70	100 (+20)
6	NW Couch Street and NW 4th Avenue	Unsignalized		
	Northbound approach		80	130
	Eastbound approach		60	100 (-20)
	Westbound approach		60 (-10)	50
7	NW Couch Street and NW 3rd Avenue	Unsignalized		
	Southbound approach		60 (-20)	260 (-30)
	Eastbound approach		60	100 (-10)
	Westbound approach		120 (-30)	180
8	NW Couch Street and NW 2nd Avenue	Unsignalized		
	Northbound approach		90 (+10)	70 (-20)
	Eastbound approach		70	90 (-10)
	Westbound approach		90 (-20)	160 (+40)
9	NW Couch Street and NW Naito Parkway	Signalized		
	Northbound approach		430 (+10)	340
	Southbound approach		130	140 (+10)
	Eastbound approach		80	140 (+30)
10	NE Couch Street and NE MLK Blvd	Signalized		
	Southbound approach		250 (+20)	230 (-10)

**Table 31. 2045 Reversible Lane Option Queuing**

		Signalized or Unsignalized	2045 Reversible Lane Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach			95th Queue Length (ft.)	95th Queue Length (ft.)
	Westbound approach		180 (-30)	180 (+10)
11	NE Couch Street and NE Grand Avenue	Signalized		
	Northbound approach		170 (+40)	150 (+40)
	Westbound approach		240 (-10)	250 (-10)
12	W Burnside Street and Broadwav	Signalized		
	Northbound approach		80 (-10)	150
	Southbound approach		210 (+10)	220
	Eastbound approach		170 (-20)	200 (+50)
	Westbound approach		70 (+10)	210
13	W Burnside Street and 6th Avenue	Signalized		
	Northbound approach		120 (-10)	140 (+10)
	Eastbound approach		140 (-20)	210
	Westbound approach		60 (+10)	180 (+20)
14	W Burnside Street and 5th Avenue	Signalized		
	Southbound approach		80	190
	Eastbound approach		70 (-10)	140 (+10)
	Westbound approach		190 (+20)	180 (+30)
15	W Burnside Street and 4th Avenue	Signalized		
	Northbound approach		190 (-10)	210 (+10)
	Eastbound approach		190	140
	Westbound approach		130 (+10)	190 (+20)
16	W Burnside Street and 3rd Avenue	Signalized		
	Southbound approach		170 (-20)	230
	Eastbound approach		80	170 (+20)
	Westbound approach		140 (-90)	150 (-80)
17	W Burnside Street and 2nd Avenue	Signalized		
	Northbound approach		230 (-10)	230 (+10)
	Eastbound approach		140 (-30)	230 (+10)
	Westbound approach		180 (-40)	180 (-40)
18	E Burnside Street and SE MLK Blvd	Signalized		
	Southbound approach		110 (-10)	200 (+30)

**Table 31. 2045 Reversible Lane Option Queuing**

			2045 Reversible Lane Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Eastbound approach		190 (-120)	180 (-90)
19	E Burnside Street and SE Grand Avenue	Signalized		
	Northbound approach		250 (-10)	240 (-10)
	Eastbound approach		100 (+50)	90 (-10)
20	SW Oak Street and SW Broadwav	Signalized		
	Southbound approach		110 (-10)	170
	Westbound approach		80	100
21	SW Oak Street and SW 6th Avenue	Signalized		
	Northbound approach		120 (-10)	170 (-10)
	Westbound approach		40 (-10)	40
22	SW Oak Street and SW 5th Avenue	Signalized		
	Southbound approach		100	100
	Westbound approach		90	120 (+10)
23	SW Oak Street and SW 4th Avenue	Signalized		
	Northbound approach		160 (-10)	240
	Westbound approach		100	90
24	SW Oak Street and SW 3rd Avenue	Signalized		
	Southbound approach		120	170 (+10)
	Westbound approach		130	110
25	SW Oak Street and SW 2nd Avenue	Signalized		
	Northbound approach		170	180 (-10)
	Westbound approach		120 (-20)	90
26	SW Oak Street and SW Naito Parkwav	Signalized		
	Northbound approach		190 (-70)	250 (+10)
	Southbound approach		260 (+80)	170

Source: Parametrix

Note: Queue lengths in red text exceed the available storage length.

Note: Differences from the Draft EIS No-Build are shown in parentheses.

### Future Transit Conditions

Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) outlines the future build and no-build transit conditions. In that report, the Build and No-Build Alternatives were identical for the purposes of transit. The Reversible Lane Option transit operations for bus lines 12, 19 and 20 crossing the Burnside Bridge would be similar to those described in that report for the peak direction during peak hour operations. The reversible lane would produce a similar cross-section in the peak direction, with two general-purpose lanes in the westbound direction during the AM peak hour and two general-purpose lanes in the eastbound direction in the PM peak hour.

Compared to the updated No-Build Alternative, eastbound PM peak hour travel times are relatively equivalent. Transit ridership for the three bus lines that traverse the Burnside Bridge are also largely unchanged.

#### *Transit Travel Times*

Travel times for TriMet buses over the Burnside Bridge are reported in Table 32 and show overall change compared to the updated No-Build Alternative. Eastbound travel times are unchanged while westbound PM Peak transit travel times are expected to increase by up to 18 seconds.

**Table 32. 2045 Reversible Lane Option, Transit Travel Times**

Travel Time reported in minutes between W 2nd Avenue and E MLK Blvd

Direction (Bus Lines 12, 19, 20)	2045 Reversible Lane Option Travel Times	
	Travel Times (min)	Avg Transit Speeds (mph)
Eastbound (AM Peak)	2.3 (unch)	14.9 (unch)
Westbound (AM Peak)	2.2 (+0.1)	15.5 (-0.6)
Eastbound (PM Peak)	2.3 (unch)	14.9 (unch)
Westbound (PM Peak)	2.3 (+0.3)	14.4 (-2.4)

Source: Parametrix

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: Red text indicates worse performance, blue text indicates improved performance.

#### *Transit Ridership*

Ridership on bus lines 12, 19 and 20 is projected to remain relatively the same compared to the updated No-Build Alternative across all the time and geographic extents shown in Table 33. The table also shows change in ridership compared to the updated No-Build Alternative. The largest projected change in ridership occurs on Line 20, which is projected to gain less than one tenth of one percent of daily boardings within the Direct API.

**Table 33. 2045 Reversible Lane Option Transit Ridership, Daily and PM Peak Hour**

Transit Service	Daily Boardings within Direct API	PM Peak Hour Boardings within Direct API	Daily Ridership for Full Extent	PM Peak Hour Boardings Full Extent
<i>Bus</i>				
12	5.910 (+20)	705 (+5)	11.275 (unch)	1.315 (unch)
19	3.835 (unch)	550 (unch)	12.355 (-10)	1.655 (unch)
20	10.535 (+30)	1.205 (+5)	37.005 (+35)	4.200 (+10)

Sources: Metro

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.

Table 34 shows the anticipated auto and transit person trip throughput for each direction of travel under the Reversible Lane Option. Total person trips in both directions are largely unchanged compared to the updated No-Build Alternative. The largest change is a decrease in auto person trips that are projected to fall by 6 percent in the westbound direction. Overall, the share of transit person trips compared to auto and commercial-use vehicle person trips increases in the westbound direction to a factor of 0.68.

**Table 34. 2045 Reversible Lane Option, Transit Person Trip Throughput, PM Peak Hour**

Direction (Bus Lines 12, 19, 20)	2045, Reversible Lane Option PM Peak Hour			
	Auto + Commercial-use Vehicle Person Trips	Transit Person Trips	Total Person Trips	Transit/Auto Person Trips
Eastbound (PM Peak Hour)	2,445 (unch)	1,730 (unch)	4,170 (-5)	.71 (unch)
Westbound (PM Peak Hour)	1,560 (-100)	1,065 (+05)	2,630 (+10)	.68 (+0.05)
Total	4,005 (-100)	2,795 (+5)	6,800 (-95)	.70 (+0.02)

Sources: Metro

Note: Differences from the Draft EIS No-Build are shown in parentheses.

Note: (unch) notes no difference to the Draft EIS No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.

### *Transit Reliability*

Travel time reliability for lines 12, 19 and 20 will be similar to the updated No-Build Alternative based on the traffic operations analysis. Table 35 shows the anticipated reliability impacts that Lane Option 3 would experience due to auto delay and queuing at the intersections at either end of the Burnside Bridge.

**Table 35. 2045 Reversible Lane Option, Transit Reliability Impacts**

		2045 Conditions, Reversible Lane Option		
Intersection	Direction (Bus Lines 12, 19, 20)	Average Intersection Delay (s)	95th Queue (ft)	Percent Spillback
17 Burnside/MLK	Eastbound	27 (unch)	N/A	N/A
18 Burnside/2nd	Westbound	9 (+4)	Through 180 (+10) Right 130 (+10)	0% (unch)

Source: Parametrix

Note: Differences from the updated No-Build are shown in parentheses

Note: (unch) notes no difference to the updated No-Build

Note: Red text indicates worse performance, blue text indicates improved performance

Travel time reliability for lines 12, 19 and 20 remain unchanged compared to the No-Build Alternative in the eastbound direction. In the westbound direction, operations at W. Burnside Street and 2nd Avenue would experience four additional seconds of average delay due to increased vehicle traffic queuing.

In the AM peak hour, the reversible lane would provide two general-purpose lanes, providing westbound capacity identical to the updated No-Build Alternative. This would help maintain intersection operations at the Couch Street intersections with NE MLK Boulevard and NE Grand Avenue that would likely maintain transit reliability due to relatively unchanged intersection LOS, auto queuing and delay (shown in Table 30 and Table 31).

*Comparison to Other Lane Options*

Compared to the Balanced, Eastbound Focus and General-Purpose with Bus Priority options, the Reversible Lane Option is anticipated to result in:

- Transit Ridership for bus lines 12, 19 and 20 is lower compared to the Balanced Option by .5 percent or less and is 1.5 to 2.5 percent higher compared to the General-Purpose with Bus Priority Option.
- Travel times for bus lines 12, 19 and 20 performs equivalent to all other Lane Options in the eastbound direction while westbound PM Peak performance is equal to the Balanced and Eastbound Focus Options, but westbound AM Peak performance is equal to the Balanced Option but faster than the Eastbound Focus Option.
- Reliability in both the westbound and eastbound directions would be equivalent to the Eastbound Focus Options while also an improvement of several seconds compared to the Balanced Option in the westbound direction.

### *Future Streetcar Accommodation*

The Reversible Lane Option would not impact the Burnside Bridge's ability to accommodate the future expansion of streetcar across the bridge span. However, the reversible lane option would reduce westbound vehicle capacity during the PM peak period when the reversible lane is switched to provide additional capacity in the eastbound direction. During this time, the westbound direction would experience reduced capacity across the bridge span and thus likely experience increased delay and queuing. Streetcar operations in the westbound direction would be impacted due to streetcar operating in a mixed traffic environment and subject to the same delays that impact overall motor vehicle operations.

### *Consistency with Local and Regional Transit Policies*

Section 4 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) summarizes state, regional and local policies and how they apply to the EQRB Project. Relevant transit policies include Comprehensive Plan policies 9.5 (support for reducing VMT and a mode shift to active transportation and transit), 9.6 (prioritizing active transportation and transit before low occupancy vehicles) and 9.22 (support to make transit the preferred transportation mode and implement transit priority and bus-only lanes outlined in the ETC Plan (PBOT 2018)). Additionally, RTP policy 4 supports facilities that increase transit speeds and reliability through the implementation of the ETC Plan (PBOT 2018).

The Reversible Lane Option, by maintaining the eastbound bus-only lane over the bridge span, is supported by the Portland's Comprehensive Plan and Metro's RTP policies referenced above. Additionally, the ETC Plan (PBOT 2018) proposes westbound bus priority treatments that may include a bus-only lane over the bridge span. The Reversible Lane Option's proposed reversible lane configuration would result in only one general-purpose travel lane in the westbound direction outside of the AM peak hours. This may pose challenges in implementing plans for bus priority in the westbound direction in the future.

## 7.1.7 Lane Option 4 (General-Purpose with Bus Priority)

The General-Purpose with Bus Priority Option consists of two westbound general-purpose lanes and two eastbound general-purpose lanes. The existing bus-only lane is not present in this option but bus priority access (e.g., queue bypass) in the eastbound direction is integrated into the design at each end of the bridge. This is made possible by the additional available width where the bridge span meets the surface street grid. In this area, the cross section widens to match the street grid and can thus accommodate more lanes compared to the bridge span itself.

### Future Traffic and Freight Operations

#### *General-Purpose with Bus Priority Option Compared to Draft EIS No-Build and Build Alternatives*

Table 36 displays the 2045 General-Purpose with Bus Priority Option AM and PM peak hour traffic volumes across the Burnside Bridge. These results include peak hour volume

demand, peak hour vehicle volume throughput, and percent of volume demand is served.

Vehicle volume throughout was not reported for the Draft EIS No-Build and Build condition, so the vehicle volume throughput shown below cannot be compared to the Draft EIS No-Build and Build condition.

**Table 36. 2045 General-Purpose with Bus Priority Option Burnside Bridge Traffic Volumes**

eastbound (EB), vehicles per hour (vph), westbound (WB)

Direction	AM Peak Hour			PM Peak Hour		
	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served	Vehicle Volume Demand (vph)	Vehicle Volume Throughput (vph)	Percent Served
EB Burnside Bridge	965 (-5)	965	100%	1,485 (-10)	1,485	100%
WB Burnside Bridge	1,400	1,345	96%	1,105 (-5)	1,105	100%

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses.

Bridge operations for Lane Option 4 (General-Purpose with Bus Priority) are the same as the updated No-Build condition. The percent served for both directions and peak hours is 100 percent, except in the westbound direction during the AM peak hour. During the AM peak hour, 96 percent of the volume demand is served in the westbound direction, meaning 55 vehicles are unserved, likely due to the S-curve.

Table 37 displays the 2045 General-Purpose with Bus Priority Option intersection traffic operations including TEV, intersection delay (in seconds), LOS for each of the study intersections, and worst movement if the intersection is unsignalized for both the AM and PM peak hours. Intersection TEV is shown for both vehicle volume demand and vehicle volume throughput.

As discussed in Section 5.2, downstream congestion from E Burnside Street/14th Avenue and from the metered on-ramp from NE Grand Avenue to I-84 would impact intersection operations along E Burnside Street.

SimTraffic output worksheets are included in Appendix A and Appendix B.



**Table 37. 2045 General-Purpose with Bus Priority Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 General-Purpose with Bus Priority Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
1	NW Everett Street and NW 4th Avenue	Signalized	610 (-5)	610	10 (-1)	B	—	975 (-30)	975	22 (+1)	C	—
2	NW Everett Street and NW 3rd Avenue	Signalized	650 (-10)	650	6	A	—	1,220 (-10)	1,220	11	B	—
3	NW Couch Street and NW Broadway	Signalized	775	775	14 (+1)	B	—	1,185 (-5)	1,185	23	C	—
4	NW Couch Street and NW 6th Avenue	Signalized	290 (+5)	285	10	B	—	335 (-5)	335	10 (-1)	B	—
5	NW Couch Street and NW 5th Avenue	Signalized	245 (+5)	245	10	B	—	425 (-5)	425	12 (+1)	B	—
6	NW Couch Street and NW 4th Avenue	Unsignalized	385 (-10)	385	10 (+1)	B	EB	495 (-60)	495	18 (-6)	C	EB
7	NW Couch Street and NW 3rd Avenue	Unsignalized	585 (-5)	585	17 (-4)	C	WB	820 (-20)	820	47 (-5)	E	WB
8	NW Couch Street and NW 2nd Avenue	Unsignalized	710	690	22	C	EB	670 (-15)	670	28	D	WB
9	NW Couch Street and NW Naito Parkway	Signalized	1,145	1,145	17	B	—	1,505 (-5)	1,505	10	B	—
10	NE Couch Street and NE MLK Blvd	Signalized	2,450 (-5)	2,360	19 (+4)	B	—	2,825 (-10)	2,825	21 (+2)	C	—
11	NE Couch Street and NE Grand Avenue	Signalized	2,490 (-60)	2,365	25 (+5)	C	—	2,680 (-55)	2,680	21 (+6)	C	—

**Table 37. 2045 General-Purpose with Bus Priority Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 General-Purpose with Bus Priority Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
12	W Burnside Street and Broadway	Signalized	2,420	2,420	12 (+1)	B	—	2,715 (-40)	2,715	17 (+1)	B	—
13	W Burnside Street and 6th Avenue	Signalized	2,160 (-15)	2,160	5	A	—	2,110 (-45)	2,110	10	B	—
14	W Burnside Street and 5th Avenue	Signalized	2,140 (-10)	2,140	6 (+1)	A	—	2,220 (-45)	2,220	10 (+1)	B	—
15	W Burnside Street and 4th Avenue	Signalized	2,320 (-15)	2,320	11	B	—	2,580 (-45)	2,580	15	B	—
16	W Burnside Street and 3rd Avenue	Signalized	2,435 (-5)	2,415	8 (-1)	A	—	2,730 (-10)	2,730	13 (-1)	B	—
17	W Burnside Street and 2nd Avenue	Signalized	2,665 (-5)	2,665	9	A	—	2,905 (-15)	2,905	10 (-2)	B	—
18	E Burnside Street and SE MLK Blvd	Signalized	2,015 (-10)	2,015	14 (-5)	B	—	3,205 (-15)	3,205	21 (+1)	C	—
19	E Burnside Street and SE Grand Avenue	Signalized	2,260 (+20)	2,260	26 (+7)	C	—	2,885 (+30)	2,885	22 (+5)	C	—
20	SW Oak Street and SW Broadway	Signalized	430	430	7	A	—	715	715	8 (+1)	A	—
21	SW Oak Street and SW 6th Avenue	Signalized	345	345	11	B	—	470 (-5)	470	12	B	—
22	SW Oak Street and SW 5th Avenue	Signalized	295	295	10	B	—	340	340	11	B	—

**Table 37. 2045 General-Purpose with Bus Priority Option Intersection Traffic Operations**

volume per hour (vph), level of service (LOS)

Study Intersection		Signalized or Unsignalized	2045 General-Purpose with Bus Priority Option									
			AM Peak Hour					PM Peak Hour				
			Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)	Demand TEV (vph)	Through put (vph)	Delay (s)	LOS	Worst Movement (if Unsignalized)
23	SW Oak Street and SW 4th Avenue	Signalized	650	650	9 (+1)	A	—	855 (+5)	855	11	B	—
24	SW Oak Street and SW 3rd Avenue	Signalized	470 (-5)	470	11	B	—	775 (+5)	775	12 (+1)	B	—
25	SW Oak Street and SW 2nd Avenue	Signalized	700	700	10	B	—	720 (+5)	720	12	B	—
26	SW Oak Street and SW Naito Parkway	Signalized	1,255	1,255	14	B	—	1,520 (+5)	1,520	9	A	—

Source: Parametrix

Note: Differences from the Draft EIS No-Build are shown in parentheses.

Similar to the Draft EIS No-Build and Build condition and the updated No Build condition discussed above, all study intersections are anticipated to operate within City LOS standards with the exception of NW Couch Street and NW 3rd Avenue (Intersection #7), which is forecasted to operate at LOS E during the PM peak. Both the General-Purpose with Bus Priority Option and the updated No-Build condition have two general-purpose lanes in both directions, so the intersection operations for general-purpose traffic are the same.

The 95th percentile queuing analysis is summarized in Table 38. Many of the queue lengths are less than 200 feet and are within the existing storage length between intersections. Some intersection approaches have queue lengths that exceed the existing storage length and back into an adjacent intersection. These approaches are highlighted in red in the table below.

The 95th percentile queues shown in Table 38 are for the critical movement on each approach.

Though the General-Purpose with Bus Priority Option does not provide a BAT lane across the Burnside Bridge, it would provide a bus-only queue jump lane for the eastbound approach at E Burnside Street and NE/SE MLK Boulevard (Intersection #18). The 95th percentile queue length for the eastbound approach during the PM peak hour is 260 feet. This queue length is for the eastbound through movement, meaning that the bus queue jump would need to be designed to be at least 260 feet long to allow buses to avoid the 95th percentile queue and get into the bus-only queue jump lane without additional delay. There is downstream congestion along E Burnside Street and NE Grand Avenue that would impact intersection operations at E Burnside Street and NE/SE MLK Boulevard (Intersection #18) and E Burnside Street and NE/SE Grand Avenue (Intersection #19). This means that the queue lengths for the eastbound approach may be longer than what is shown in Table 38 and that a 260-foot long bus-only queue jump lane may not be adequate.

**Table 38. 2045 General-Purpose with Bus Priority Option Queuing**

			2045 General-Purpose with Bus Priority Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
1	NW Everett Street and NW 4th Avenue	Signalized		
	Northbound approach		140 (+10)	190
	Eastbound approach		190 (-30)	260 (-10)
2	NW Everett Street and NW 3rd Avenue	Signalized		
	Southbound approach		120	170 (+10)
	Eastbound approach		80 (-10)	220 (-10)
3	NW Couch Street and NW Broadway	Signalized		

**Table 38. 2045 General-Purpose with Bus Priority Option Queuing**

			2045 General-Purpose with Bus Priority Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Northbound approach		80 (+10)	110
	Southbound approach		190 (+10)	210 (-10)
	Eastbound approach		100 (-10)	260
	Westbound approach		130	110
4	NW Couch Street and NW 6th Avenue	Signalized		
	Northbound approach		80 (-10)	80 (-10)
	Eastbound approach		60	100
	Westbound approach		80	60 (-10)
5	NW Couch Street and NW 5th Avenue	Signalized		
	Southbound approach		60 (+10)	100
	Eastbound approach		50 (-10)	100
	Westbound approach		70	90 (+10)
6	NW Couch Street and NW 4th Avenue	Unsignalized		
	Northbound approach		80	120 (-10)
	Eastbound approach		70 (+10)	100 (-20)
	Westbound approach		60 (-10)	60 (+10)
7	NW Couch Street and NW 3rd Avenue	Unsignalized		
	Southbound approach		70 (-10)	270 (-20)
	Eastbound approach		60	110
	Westbound approach		130 (-20)	180
8	NW Couch Street and NW 2nd Avenue	Unsignalized		
	Northbound approach		80	90
	Eastbound approach		70	100
	Westbound approach		110	130 (+10)
9	NW Couch Street and NW Naito Parkway	Signalized		
	Northbound approach		420	340
	Southbound approach		130	130
	Eastbound approach		80	110
10	NE Couch Street and NE MLK Blvd	Signalized		
	Southbound approach		250 (+20)	230 (-10)

**Table 38. 2045 General-Purpose with Bus Priority Option Queuing**

			2045 General-Purpose with Bus Priority Option	
			AM Peak Hour	PM Peak Hour
	Intersection, Approach	Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Westbound approach		170 (-40)	180 (+10)
11	NE Couch Street and NE Grand Avenue	Signalized		
	Northbound approach		190 (+60)	130 (+20)
	Westbound approach		240 (-10)	230 (-30)
12	W Burnside Street and Broadway	Signalized		
	Northbound approach		90	150
	Southbound approach		200	210 (-10)
	Eastbound approach		180 (-10)	200 (+50)
	Westbound approach		70 (+10)	210
13	W Burnside Street and 6th Avenue	Signalized		
	Northbound approach		120 (-10)	150 (+20)
	Eastbound approach		150 (-10)	210
	Westbound approach		60 (+10)	170 (+10)
14	W Burnside Street and 5th Avenue	Signalized		
	Southbound approach		90 (+10)	190
	Eastbound approach		80	130
	Westbound approach		180 (+10)	180 (+30)
15	W Burnside Street and 4th Avenue	Signalized		
	Northbound approach		190 (-10)	210 (+10)
	Eastbound approach		200 (+10)	150 (+10)
	Westbound approach		140 (+20)	210 (+40)
16	W Burnside Street and 3rd Avenue	Signalized		
	Southbound approach		190	230
	Eastbound approach		90 (+10)	160 (+10)
	Westbound approach		130 (-100)	140 (-90)
17	W Burnside Street and 2nd Avenue	Signalized		
	Northbound approach		240	220
	Eastbound approach		170	230 (+10)
	Westbound approach		210 (-10)	170 (-50)
18	E Burnside Street and SE MLK Blvd	Signalized		

**Table 38. 2045 General-Purpose with Bus Priority Option Queuing**

			2045 General-Purpose with Bus Priority Option	
			AM Peak Hour	PM Peak Hour
Intersection, Approach		Signalized or Unsignalized	95th Queue Length (ft.)	95th Queue Length (ft.)
	Southbound approach		120	210 (+40)
	Eastbound approach		160 (-150)	260 (-10)
19	E Burnside Street and SE Grand Avenue	Signalized		
	Northbound approach		260	260 (+10)
	Eastbound approach		140 (+90)	100
20	SW Oak Street and SW Broadwav	Signalized		
	Southbound approach		120	180 (+10)
	Westbound approach		80	100
21	SW Oak Street and SW 6th Avenue	Signalized		
	Northbound approach		140 (+10)	170 (-10)
	Westbound approach		40 (-10)	40
22	SW Oak Street and SW 5th Avenue	Signalized		
	Southbound approach		100	110 (+10)
	Westbound approach		90	110
23	SW Oak Street and SW 4th Avenue	Signalized		
	Northbound approach		170	230 (-10)
	Westbound approach		90 (-10)	90
24	SW Oak Street and SW 3rd Avenue	Signalized		
	Southbound approach		120	160
	Westbound approach		130	130 (+20)
25	SW Oak Street and SW 2nd Avenue	Signalized		
	Northbound approach		180 (+10)	180 (-10)
	Westbound approach		130 (-10)	90
26	SW Oak Street and SW Naito Parkwav	Signalized		
	Northbound approach		270 (+10)	180 (-60)
	Southbound approach		190 (+10)	240 (+70)

Source: Parametrix

Note: Queue lengths in red text exceed the available storage length.

Note: Differences from the Draft EIS No-Build are shown in parentheses

### Future Transit Conditions

Section 7.2.1 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) outlines the future build and no-build transit conditions. In that report, the Build and No-Build Alternatives were identical for the purposes of transit. Transit operations for bus lines 12, 19 and 20 crossing the Burnside Bridge would be impacted in the eastbound direction as the existing bus-only lane would be removed to accommodate two eastbound general-purpose lanes. The removal of the eastbound bus-only lane would force eastbound buses into mixed traffic. To offset bus potential delays over the bridge span, bus queue jumps would be installed at the two bridgehead intersections of Burnside Street/Grand Avenue and Burnside Street/SW 2nd Avenue. The final length of each of the queue jumps is not yet finalized.

The changes to the configuration of eastbound lanes would affect transit operations most heavily during in the PM peak hour, described in detail below. Overall, compared to the updated No-Build Alternative, the General-Purpose with Bus Priority Option is projected to result in slower transit operations across the bridge and reduced transit ridership on lines 12, 19 and 20.

### Transit Travel Times

Travel times for TriMet buses over the Burnside Bridge are reported in Table 39 and show overall change compared to the updated No-Build Alternative. Bus performance under this Lane Option is the same as the updated No-Build Alternative due to improved traffic operations across the bridge and at intersections that do not negatively impact transit operations even with the removal of a bus-only lane.

**Table 39. 2045 General-Purpose with Bus Priority Option, Transit Travel Times**

Travel Time reported in minutes between W 2nd Avenue and E MLK Blvd

Direction (Bus Lines 12, 19, 20)	2045 Conditions, General-Purpose with Bus Priority Option Travel Times	
	Travel Times (min)	Avg Transit Speeds (mph)
Eastbound (AM Peak)	2.3 (unch)	14.9 (unch)
Westbound (AM Peak)	2.1 (unch)	16.1 (unch)
Eastbound (PM Peak)	2.3 (unch)	14.9 (unch)
Westbound (PM Peak)	2.0 (unch)	16.8 (unch)

Source: Parametrix

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.



### Transit Ridership

Ridership on Bus lines 12, 19 and 20 is projected to decrease compared to the updated No-Build Alternative for all times and geographic extents shown in Table 40. Within the Direct API ridership on all lines is expected to decrease by between 4 and 6 percent. Ridership for the full extent of the three lines is expected to decline by between 1 and 2 percent. Ridership is likely impacted by improved general-purpose traffic operations across the bridge. Table 42 shows that vehicle queuing would spillback from the MLK intersection and impact transit vehicles' ability to access transit priority treatments at the intersection, resulting in lower ridership due to these reliability issues.

**Table 40. 2045 General-Purpose with Bus Priority Option, Transit Ridership, Daily and PM Peak Hour**

Transit Service	Daily Boardings within Direct API	PM Peak Hour Boardings within Direct API	Daily Ridership for Full Extent	PM Peak Hour Boardings Full Extent
<b>Bus</b>				
12	5,555 (-335)	675 (-25)	11,010 (-265)	1,285 (-30)
19	3,610 (-225)	525 (-25)	12,170 (-195)	1,630 (-25)
20	9,995 (-510)	1,115 (-85)	36,395 (-575)	4,100 (-90)

Sources: Metro

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.

Table 41 shows the anticipated auto and transit person trip throughput for the PM peak hour for each direction of travel under the General-Purpose with Bus Priority Option. Auto person trips are expected to stay the same compared to the updated No-Build Alternative. while transit person trips would fall by approximately 9 percent in the eastbound direction and 1.5 percent in the westbound direction. This decrease in person trips taken on transit would reduce transits overall share of trips across the bridge to a factor of .63 compared to auto and commercial-use vehicle person trips.

**Table 41. 2045 General-Purpose with Bus Priority Option, Transit Person Trip Throughput, PM Peak Hour**

Direction (Bus Lines 12, 19, 20)	2045 Conditions, General-Purpose with Bus Priority Option PM Peak Hour			
	Auto + Commercial-use Vehicle Person Trips	Transit Person Trips	Total Person Trips	Transit/Auto Person Trips
Eastbound (PM Peak Hour)	2,445 (unch)	1,570 (-160)	4,015 (-160)	.64 (-0.07)
Westbound (PM Peak Hour)	1,660 (unch)	1,020 (-40)	2,680 (-40)	.62 (-0.02)
Total	4,105 (unch)	2,590 (-200)	6,695 (-200)	.63 (-0.05)

Sources: Metro

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

Note: **Red text** indicates worse performance, **blue text** indicates improved performance.

### Transit Reliability

Reliability is shown in Table 42 due to auto delay and queuing at the intersections at either end of the Burnside Bridge. Reliability for lines 12, 19 and 20 would be unchanged compared to the updated No-Build Alternative.

**Table 42. 2045 General-Purpose with Bus Priority Option, Transit Reliability Impacts**

		2045 Conditions, General-Purpose with Bus Priority Option		
Intersection	Direction (Bus Lines 12, 19, 20)	Average Intersection Delay (s)	95 <sup>th</sup> Queue (ft)	Percent Spillback
17 Burnside/MLK	Eastbound	27 (unch)	N/A	N/A
18 Burnside/2nd	Westbound	5 (unch)	Through 170 (unch) Right 120 (unch)	0% (unch)

Source: Parametrix

Note: Differences from the updated No-Build are shown in parentheses.

Note: (unch) notes no difference to the updated No-Build.

### Comparison to Other Lane Options

Compared to the Balanced, Eastbound Focus and Reversible Lane options, the General-Purpose with Bus Priority Option is anticipated to result in:

- Transit Ridership for bus lines 12, 19 and 20 is projected to be the lowest of the four Lane Options. The ridership is projected to be between 1.5 and 2.5 percent lower compared to the other Lane Options.
- Travel times for bus lines 12, 19 and 20 are unchanged and are projected to be a minor improvement of several seconds over all other Lane Options.
- In the westbound and eastbound directions, the General-Purpose with Bus Priority Option reliability would perform better compared to all other Lane Options.

### Future Streetcar Accommodation

The General-Purpose with Bus Priority Option would not impact the Burnside Bridge's ability to accommodate the future expansion of streetcar across the bridge span. However, removing the bus-only lane in the eastbound direction would place the streetcar in mixed traffic in the eastbound direction. This is anticipated to add delay to eastbound travel and likely reduce overall reliability that would impede streetcar operations over the bridge span.

### *Consistency with Local and Regional Transit Policies*

Section 4 of the *EQRB Transportation Technical Report* (Multnomah County 2021c) summarizes state, regional and local policies and how they apply to the Earthquake Ready Burnside Bridge project. Relevant transit policies include Comprehensive Plan policies 9.5 (support for reducing VMT and a mode shift to active transportation and transit), 9.6 (prioritizing active transportation and transit before low occupancy vehicles) and 9.22 (support to make transit the preferred transportation mode and implement transit priority and bus-only lanes outlined in the ETC Plan (PBOT 2018)). Additionally, RTP policy 4 supports facilities that increase transit speeds and reliability through the implementation of the ETC Plan (PBOT 2018).

The General-Purpose with Bus Priority Option is not supported by the referenced policies above because of the removal of the bus-only lane. Bus queue jumps are integrated at both ends of the bridge span in the eastbound direction, but the facilities do not prioritize transit to the same degree as the existing bus-only lane as supported in the ETC Plan (PBOT 2018).

#### 7.1.8 Safety Analysis

The crash analysis is conducted on the bridge and at the intersections of Burnside/2nd Street, Burnside/MLK and Couch/MLK. The analysis conducted for the bridge itself is called the mid-span assessment.

As shown in Figure 5, Figure 6, and Figure 7, there are three optional roadway widths under consideration: 50-foot, 47-foot, and 44-foot options. Within each optional roadway width, there are four optional lane configurations with different lane widths, shoulder widths, and resulting offset to barriers. These features influence the number of crashes that may occur. As such, the following summarizes the forecast number and severity of crashes under each optional roadway width and each optional lane configuration.

The different roadway widths on the bridge, do not influence safety performance at the safety study intersections because of no difference in their geometry. The overall safety performance of an alternative is the sum of the study intersection safety performances plus the mid-span safety performance.

The following summarizes the intersection safety performances, safety performance of mid-span and the overall safety performance (i.e., intersections plus mid-span) for each optional lane cross-section under each optional roadway width.

#### Intersection Assessment

The results of the intersection crash prediction analysis are shown in Table 43. The roadway width and optional lane and shoulder widths on the bridge do not influence safety performance in the study intersections. Safety performance at the intersections changes as a function of the traffic volumes using the intersections; and traffic volumes at the intersections change as a function of the direction and number of lanes on the bridge.

Table 43 shows the number of predicted crashes, fatal and injury crashes, and property damage only crashes at each intersection over 20 years for the no build condition, Draft

EIS Long Span Alternative, plus the four optional lane configurations on the bridge. As shown:

- The study intersections in the No-Build, Draft EIS Long-span and the General-Purpose with Bus Priority Option alternatives have similar geometric and traffic volume conditions, hence no substantial difference in the number of crashes.
- Each intersection in the Balanced, Eastbound Focus and Reversible Lane options are predicted to have up to one less fatal and injury crash and up to three fewer property damage only crashes compared to the No-Build Alternative. This difference is because of lower traffic volumes compared to the No-Build Alternative.
- There is no substantial difference in number of intersection crashes between the Balanced, Eastbound Focus and Reversible Lane options.

**Table 43. 2026-2045 Intersection Safety Analysis – Crashes**

Alternatives	NW 2nd Avenue/W. Burnside Street			NE MLK Boulevard/E. Burnside Street			NE Couch Street/NE MLK Boulevard		
	Total Crashes	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes	Fatal and Injury Crashes	Property Damage Only Crashes
No-Build Existing Cross Section	134.0	48.4	85.6	121.6	46.4	75.2	111.0	43.8	67.2
Build Draft EIS Long-Span Cross Section	134.0	48.4	85.6	121.6	46.4	75.2	111.0	43.8	67.2
Balanced: 2 WB (GP) plus 2 EB (1 GP and 1 bus-only lane)	132.1	47.9	84.3	120.4	45.8	74.6	110.1	43.2	66.9
EB Focus: 1 WB (GP) plus 3 EB (2 GP and 1 bus-only)	130.0	47.3	82.7	121.2	46.1	75.1	110.8	43.5	67.3
Reversible Lane	131.3	47.7	83.7	120.9	46.0	74.9	110.5	43.4	67.1
GP with Bus Priority: 2 WB GP plus 2 EB GP	134.0	48.4	85.6	121.6	46.4	75.2	111.0	43.8	67.2

GP – General-Purpose, EB – Eastbound, WB – Westbound

### Mid-Span Assessment

The proposed bridge includes a barrier separating the roadway and the adjacent pedestrian and bicycle facility. This barrier will prevent motor-vehicle/pedestrian and

motor vehicle/bicycle crashes. Because of this, the mid-span assessment focusses on motor vehicle crashes within the barrier and pedestrian and bicycle crashes predicted in the HSM method are not included in the following analysis. A qualitative discussion on pedestrian and bicyclist safety is presented in Section 7.1.3. However, the barrier is a fixed object for motorists and will influence the number of motor vehicle crashes on the roadway.

There is a bus-only lane in the eastbound direction on Burnside Bridge for all the scenarios except the General-Purpose with Bus Priority Option. Bus-only lanes are not a variable in the HSM Predictive Method and at the time of this study, the FHWA CMF Clearinghouse does not have a CMF for bus-only lanes. Potential safety benefits of the bus-only lanes include providing space for motorists to swerve into if needed; and removing buses from stop and go traffic thus reducing the potential for bus/vehicle crashes in congested conditions. The safety benefit for bus-only lane is similar to the safety benefits of shoulders, as such, the width of the bus-only lane was incorporated into the fixed object offset distance parameter in the IHSDM model and in the shoulder width CMF presented in Table 3. An average of actual shoulder width and bus-only lane width along both the directions of roadway were used in the model.

Under each roadway width (i.e., 50-foot, 47-foot, or 44-foot), the Draft EIS Long-span Alternative has the lowest predicted crash frequency, and the General-Purpose with Bus Priority Option has the highest predicted number of crashes. The Balanced, Eastbound Focus and Reversible Lane options have similar safety performance under all three roadway widths over the 20-year period. The major differences between the alternatives that influence the predicted crashes are, annual average daily traffic, lane width, shoulder width and the average offset distance between the general-purpose lane and the roadside barrier. General-Purpose with Bus Priority Option has the smallest average offset distance to the roadside barrier; hence the crash frequency is higher than the Balanced, Eastbound Focus and Reversible Lane options in all optional roadway widths.

The following provides a summary of safety performance on the bridge under each roadway width option.

#### *50-Foot Roadway Width*

Table 44 shows the predicted crashes and crash rates on the bridge under each optional 50-foot cross-section for the 20-year period between 2026-2045. The results of the crash forecast analysis show:

- The Draft EIS Long-span Alternative may have 1.5 more fatal and injury crashes and nearly 6 property damage only crashes than the No-Build Alternative because:
  - The roadside barrier has an average offset from the edge of the general-purpose lane of 7.5 feet. The No-Build scenario does not have roadside barrier, and any fixed objects on the bridge are on average 20 feet from the general-purpose lane. The reduced offset to fixed objects will increase fixed object crashes.
  - The No-Build Alternative has 10 feet to 10.5 feet lane widths and the Draft EIS Long Span Alternative has 11 feet lane widths. As shown in Table 3, the CMF for 10 feet to 10.5 feet versus 11 feet is 1.01. This 1 percent

difference in crashes due to lane width has minor impact on crashes between the two scenarios.

- The Balanced, Eastbound Focus and Reversible Lane options are predicted to have approximately three more fatal and injury crashes over 20 years as compared to the No-Build alternative. It is estimated there will be 10 to 12 more property damage only crashes over 20 years as compared to the No-Build Alternative. In the Reversible Lane concept, details of the transition to/from the general-purpose or reversible lane still need to be developed. The predicted crashes are higher than the No-Build scenario because:
  - The roadside barrier in these alternatives is 7.5 feet on average as compared to an average of 20 feet in the No-Build Alternative thus increasing the number of crashes.
  - The alternatives have one less general-purpose lane than the No-Build Alternative thus increasing traffic density; however, this may be off-set somewhat by slightly lower ADT volumes (2 to 4 percent, respectively).
- There are no substantial differences in crash rates and number of crashes between the Balanced, Eastbound Focus and Reversible Lane options.
- In the General-Purpose with Bus Priority Option the average offset to the roadside barrier is only 2 feet which is the smallest offset of all scenarios. This option would have the greatest increase in crashes (10.4 fatal and injury and 29.1 property damage only) as compared to the No-Build Alternative.

**Table 44. Mid-Span Estimated Safety Performance for 20 years (2026 - 2045) – 50-Foot Roadway**

Alternative	Total (All Severities)		Fatal and Injury Crashes		Property Damage Only Crashes	
	Crashes	Crash Rate (crashes/milli on veh-miles)	Crashes	Crash Rate (crashes/milli on veh-miles)	Crashes	Crash Rate (crashes/milli on veh-miles)
No-Build Existing Cross Section	67.2	0.675	19.2	0.193	48.0	0.482
Build Draft EIS Long-Span Cross Section	74.5	0.748	20.7	0.208	53.8	0.541
Balanced: 2 WB (GP) plus 2 EB (1 GP and 1 bus-only lane)	80.1	0.837	21.9	0.229	58.2	0.608
EB Focus: 1 WB (GP) plus 3 EB (2 GP and 1 bus-only)	81.9	0.842	22.4	0.230	59.5	0.612
Reversible Lane	81.5	0.841	22.3	0.230	59.2	0.611
GP with Bus Priority: 2 WB GP plus 2 EB GP	106.7	1.072	29.6	0.298	77.1	0.774

GP – General-Purpose, EB – Eastbound, WB – Westbound

*47-Foot Roadway Width*

Table 45 shows the predicted crashes and crash rates on the bridge under each optional 47-foot cross-section for the 20-year period between 2026-2045. Safety performance of the Draft EIS Alternative is not changed. In summary:

- The Balanced, Eastbound Focus and Reversible Lane options are predicted to have three to four more fatal and injury crashes over 20 years as compared to the No-Build Alternative. It is estimated there will be eleven to thirteen more property damage only crashes over 20 years as compared to the No-Build Alternative. The predicted crashes are higher than the No-Build scenario because of the smaller average offset distance to the roadside barrier and one less general-purpose lane.
- There are no substantial differences in crash rates and number of crashes between the Balanced, Eastbound Focus and Reversible Lane options. In the Reversible Lane concept, details of the transition to/from the general-purpose or reversible lane still need to be developed.

- The General-Purpose with Bus Priority Option would have the greatest increase in crashes (10.7 fatal and injury and 29.9 property damage only) as compared to the No-Build Alternative because of the relatively small offset distance to the roadside barrier.

**Table 45. Mid-Span Estimated Safety Performance for 20 years (2026 - 2045) – 47-Foot Roadway**

Alternative	Total (All Severities)		Fatal and Injury Crashes		Property Damage Only Crashes	
	Crashes	Crash Rate (crashes/million veh-miles)	Crashes	Crash Rate (crashes/million veh-miles)	Crashes	Crash Rate (crashes/million veh-miles)
No-Build Existing Cross-Section	67.2	0.675	19.2	0.193	48.0	0.482
Build Draft EIS Long-Span Cross Section	74.5	0.748	20.7	0.208	53.8	0.541
Balanced: 2 WB (GP) plus 2 EB (1 GP and 1 bus-only lane)	81.7	0.853	22.3	0.233	59.4	0.620
EB Focus: 1 WB (GP) plus 3 EB (2 GP and 1 bus-only)	83.5	0.859	22.8	0.235	60.7	0.624
Reversible Lane	83.1	0.857	22.7	0.234	60.4	0.623
GP with Bus Priority: 2 WB GP plus 2 EB GP	107.8	1.082	29.9	0.301	77.9	0.782

GP – General-Purpose, EB – Eastbound, WB – Westbound

#### 44-Foot Roadway Width

Table 46 show the predicted crashes and crash rates on the bridge for 20 years for a 44-foot bridge width. The trend in crash frequency between the alternatives are similar to the previous cross-sectional bridge-widths. Overall, the findings are:

- Over 20 years, the Balanced, Eastbound Focus and Reversible Lane options are predicted to have 5 to 6 more fatal and injury crashes and 16 to 18 more property damage only crashes as compared to the No-Build Alternative. This increase in crashes is because of the narrower average offset distance to roadside barrier and one less general-purpose lane. In the Reversible Lane concept, details of the transition to/from the general-purpose or reversible lane still need to be developed.
- The greatest increase in crashes (12.0 fatal and injury and 32.2 property damage only) in the General-Purpose with Bus Priority Option as compared to the No-Build Alternative.



**Table 46. Mid-Span Estimated Safety Performance for 20 years (2026 - 2045) – 44-Foot Roadway**

Alternative	Total (All Severities)		Fatal and Injury Crashes		Property Damage Only Crashes	
	Crashes	Crash Rate (crashes/million veh-miles)	Crashes	Crash Rate (crashes/million veh-miles)	Crashes	Crash Rate (crashes/million veh-miles)
No-Build Existing Cross-Section	67.2	0.675	19.2	0.193	48.0	0.482
Build Draft EIS Long-Span	74.5	0.748	20.7	0.208	53.8	0.541
Balanced: 2 WB (GP) plus 2 EB (1 GP and 1 bus-only lane)	88.5	0.924	24.2	0.253	64.3	0.671
EB Focus: 1 WB (GP) plus 3 EB (2 GP and 1 bus-only)	90.4	0.930	24.7	0.254	65.7	0.676
Reversible Lane	90.0	0.928	24.6	0.254	65.4	0.675
GP with Bus Priority: 2 WB GP plus 2 EB GP	112.5	1.130	31.2	0.314	81.3	0.816

GP – General-Purpose, EB – Eastbound, WB - Westbound

### Overall (Intersection Plus Mid-Span) Safety Performance

Table 47, Table 48, and Table 49 present the summary of the predicted crashes (total, fatal and injury, and property damage only) on the bridge plus at the intersections within the safety API for the 50-foot, 47-foot and 44-foot bridge roadway widths, respectively. In all cases for the Reversible Lane concept, details of the transition to/from the general-purpose or reversible lane still need to be developed. The comparison analysis of the overall crashes for the three bridge cross-section options are summarized below:

- The Draft EIS Long-span Alternative will have more crashes than the No-Build scenario because of the narrower average offset distance to the roadside barrier and the fixed object from the general-purpose lanes. The barrier separating the roadway and the adjacent pedestrian and bicycle facility would prevent motor-vehicle/pedestrian and motor vehicle/bicycle crashes.
- Under each bridge width scenario (i.e., 50-foot, 47-foot, and 44-foot), the General-Purpose with Bus Priority Option will have the highest number of crashes because of the narrow average offset distance between the general-purpose lane and the roadside barrier compared to other options.

- Under each bridge width scenario (i.e., 50-foot, 47-foot, and 44-foot), there are no substantial differences in crash rates and number of crashes between the Balanced, Eastbound Focus and Reversible Lane options.
- There is no substantial difference in intersection geometry between the three bridge widths. For all Lane Options, the predicted crash at the intersections is the same for different bridge widths.
- The study area (intersections plus bridge) is forecast to have the lowest number of crashes under the 50-foot bridge width scenario and any Lane Option scenario.
- Under the 47-foot bridge width scenario, all Lane Options for the study area (intersections plus bridge) will have less than one additional fatal and injury crashes and approximately one more property damage only crashes compared to the 50-foot cross-section.
- Under the 44-foot bridge width, the Balanced, Eastbound Focus and Reversible Lane options, the study area (intersection plus bridge) is forecast to have two more fatal and injury crashes and six more property damage only crashes over the 20-year period. Under the General-Purpose with Bus Priority Option, there could be less than two additional fatal and injury crashes and approximately four more property damage only crashes compared to the 50-foot bridge width.

**Table 47. Overall Estimated Performance Over 20 Years (Mid-Span and Intersection) – 50-foot Roadway Width**

Alternative	Total (All Severities)	Fatal and Injury Crashes	Property Damage Only Crashes
No-Build Existing Cross Section	433.8	157.8	276.0
Build Draft EIS Long-Span Cross Section	441.1	159.3	281.8
Balanced: 2 WB (GP) plus 2 EB (1 GP and 1 bus-only lane)	442.7	158.8	284.0
EB Focus: 1 WB (GP) plus 3 EB (2 GP and 1 bus-only)	443.9	159.3	284.6
Reversible Lane	444.2	159.4	284.9
GP with Bus Priority: 2 WB GP plus 2 EB GP	473.3	168.2	305.1

GP – General-Purpose, EB – Eastbound, WB - Westbound

**Table 48. Overall Estimated Performance Over 20 Years (Mid-Span and Intersection) – 47-foot Roadway Width**

Alternative	Total (All Severities)	Fatal and Injury Crashes	Property Damage Only Crashes
No-Build Existing Cross Section	433.8	157.8	276.0
Build Draft EIS Long-Span Cross Section	441.1	159.3	281.8
Balanced: 2 WB (GP) plus 2 EB (1 GP and 1 bus-only lane)	444.3	159.2	285.2
EB Focus: 1 WB (GP) plus 3 EB (2 GP and 1 bus-only)	445.5	159.7	285.8
Reversible Lane	445.8	159.8	286.1
GP with Bus Priority: 2 WB GP plus 2 EB GP	474.4	168.5	305.9

GP – General-Purpose, EB – Eastbound, WB - Westbound

**Table 49. Overall Estimated Performance Over 20 Years (Mid-Span and Intersection) – 44-foot Roadway Width**

Alternative	Total (All Severities)	Fatal and Injury Crashes	Property Damage Only Crashes
No-Build Existing Cross Section	433.8	157.8	276.0
Build Draft EIS Long-Span Cross-Section	441.1	159.3	281.8
Balanced: 2 WB (GP) plus 2 EB (1 GP and 1 bus-only lane)	451.1	161.1	290.1
EB Focus: 1 WB (GP) plus 3 EB (2 GP and 1 bus-only)	452.4	161.6	290.8
Reversible Lane	452.7	161.7	291.1
GP with Bus Priority: 2 WB GP plus 2 EB GP	479.1	169.8	309.3

GP – General-Purpose, EB – Eastbound, WB - Westbound

It is worth also noting that the proposed bridge would be designed to a 25-mile-per-hour design and operating speed. Lower travel speeds on the bridge would yield less severe crashes than have occurred historically on the bridge. The results of the safety analyses are included in Appendix C.

### Lane Option 3 (Reversible Lane) Considerations

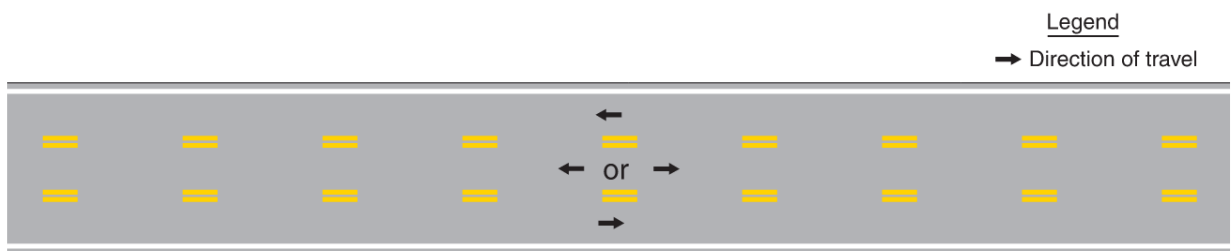
Existing reversible lanes around North America were studied to understand what options are available for reversible lane control. The *Manual on Uniform Traffic Control Devices*

for *Streets and Highways (MUTCD)* (FHWA 2009) was reviewed in conjunction. Because the proposed Burnside Bridge is assumed to have a 25-mph speed limit, emphasis was placed on researching reversible lane control options for lower speed facilities (35 mph or less). Based on this research, reversible lanes on lower speed facilities are typically controlled by pavement markings, signage, and signals.

*Pavement Markings*

Broken double yellow lane lines are used for delineation through the reversible lane segment, per MUTCD Section 3B.03 and Figure 3B-6. Figure 14 shows lane markings for a reversible lane.

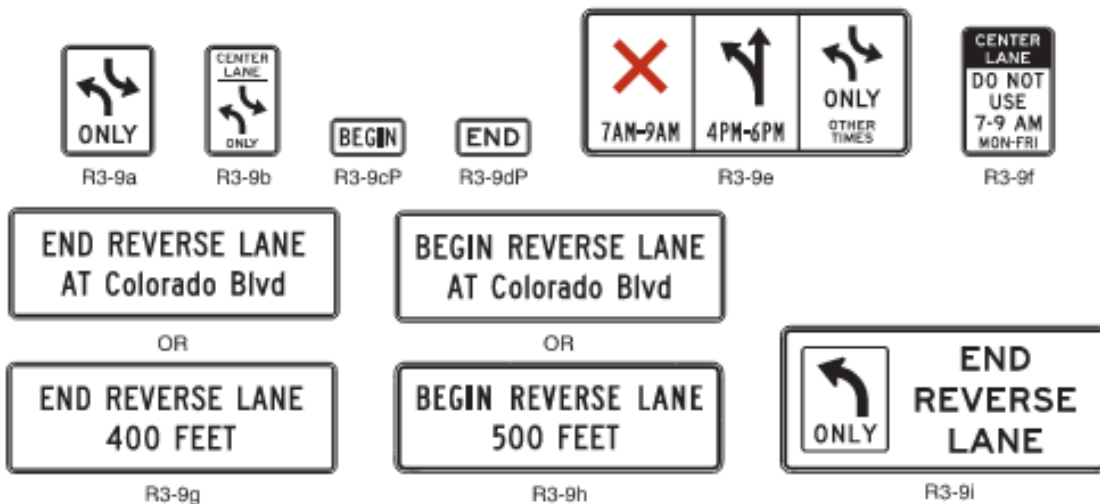
**Figure 14. Reversible Lane Pavement Marking Example**



*Signage*

Signage used for reversible lane control is used to inform driver of how to navigate the reversible lane. It can be either static (fixed messages) or dynamic (changeable messages). Some examples of these signs and guidance to their application are found in MUTCD Figure 2B-6 and Section 2B.26. These signs can either be mounted overhead, or post-mounted on the side of the road. Overhead signs are placed directly over the reversible lane to permit or prohibit the use of the lane. Post-mounted signs can only be used to supplement overhead signs or signals. Figure 15 shows examples of MUTCD approved signage for reversible lanes.

**Figure 15. Reversible Lane Control Sign Examples**



### *Signals*

Lane-use control signals are special signals that are placed directly over the reversible lane to permit or prohibit the use of the lane (instead of reversible lane control signs). This signal displays either a downward green arrow when use is allowed, a yellow X when the lane is about to close, or a red X when use is not allowed. Many reversible lane corridors that allow left turns also use two-way left turn arrow indications on the lane-use control signals; however, this does not apply to the Burnside Bridge because there are no left turns. Non-reversible lanes immediately adjacent to the reversible lane must also have lane-use control signals. Figure 16 shows traffic control overhead signals for reversible lanes.

**Figure 16. Lane-Use Control Signal Examples**



Lane-use control signals should be placed at the beginning and end of each transition zone (where vehicles transition into and out of the reversible lane). It is recommended in MUTCD Section 2B.26 that overhead signs for reversible lane control be located at intervals of no greater than a quarter mile and MUTCD Section 4M recommends frequent spacing for lane use control signals. It is also highly recommended that at least two lane-use control signals be always visible for added safety and driver comfort in utilizing the reversible lane.

Due to adverse weather conditions during the year in Portland (including heavy fog and heavy rain) that reduce visibility to a quarter mile or less, it is recommended that lane-use control signals be no further than 500-600 feet apart on the Burnside Bridge to ensure the visibility. For Burnside Bridge, this means a total of 7 overhead sign structures with lane-use control signals in each direction (two sign structures for each transition zone and 3 more sign structures for the approximate 2,000 feet between transition zones).

### *Other Considerations - Gates*

Gates are used on some reversible lane applications around North America, such the I-5 express lanes in Seattle, the Lions Gate Bridge in Vancouver, British Columbia, and Angus L. MacDonald Bridge in Halifax, Nova Scotia. Figure 17 shows an example of gates used for control traffic access to a reversible lane. Gates are typically used on reversible lane facilities with posted speeds of 40 mph or higher. Most reversible lane facilities with posted speeds below 40 mph do not have gates, but two locations were found with approximate 30 mph posted speeds that have gates. The Lions Gate Bridge has gates in the northbound direction, but not the southbound direction. The gates start

approximately 300 feet before the reversible lane transition zone. The gates include 6 feet of additional roadway width in the median (for gate and barrier width, and driver shy distance). The Angus L. MacDonald Bridge has gates in both directions that start 150 feet to 200 feet before the reversible lane transition zone and require approximately 8 feet of additional roadway width in the median.

**Figure 17. Reversible Lane Gates Example**



Even though the posted speed is assumed to be 25 mph, gates are recommended to be included in both directions for the Burnside Bridge reversible lane. There is no local, permanent precedent for reversible lanes in Oregon. Gates would provide the only physical warning to drivers who are unfamiliar with reversible lanes. This is especially important if heavy fog or heavy rain limit visibility of overhead lane use control signals, which is possible on the Burnside Bridge. The location of gates would need further consideration because it potentially impacts bridge width and/or traffic operations in both directions.

*Other Considerations - Moveable Barriers*

Moveable barriers are used for some reversible lane applications around North America, such as the Golden Gate Bridge and the San Diego Coronado Bridge. These typically are on roadway facilities with posted speeds of 40 mph or higher. These typically have 11-foot wide lanes and at least 4 feet of extra width for the barrier system (2-foot barrier, and 1 foot on each side). The barrier needs additional length beyond the reversible lane ends to taper blunt barrier ends away from traffic and store the barrier transfer machine. Figure 18 shows an example of a barrier used on the Golden Gate Bridge.

**Figure 18. Reversible Lane Movable Barrier Example**



Moveable barriers, such as the example shown in Figure 19, were considered for Burnside Bridge, but were dismissed for the following reasons.

- The posted speed on Burnside Bridge is anticipated to be lowered to 25 mph.
- There is no space to store the barrier transfer machine on either side of the bridge.
- There is no space to taper the blunt end of the moveable barrier at W Burnside Street/NW 2nd Avenue intersection.
- The PM peak hour westbound cross section (one 10.5-ft lane) with moveable barrier provides far less than the 20-foot minimum width required by Portland Fire & Rescue (exclusive of shoulders).

**Figure 19. Reversible Lane Movable Barrier Transfer Machine Example**



*Reversible Lane Operations for Burnside Bridge*

For the traffic analysis in this document, it was assumed that the Burnside Bridge reversible lane would potentially operate with the following schedule:

- 2 westbound general-purpose lanes from 5:00 AM to 10:00 AM
- 2 eastbound general-purpose lanes from 10:00 AM to 5:00 AM

The images below show the anticipated striping layout for both transition zones. The black arrows show traffic flow that does not change during the day, the pink arrows show the reversible lane flow during the AM peak period, and the blue arrows show the reversible lane flow during the PM peak period. Figure 20 and Figure 21 show the transition zones highlighted in green.

Figure 20. Striping Layout for West Transition Zone

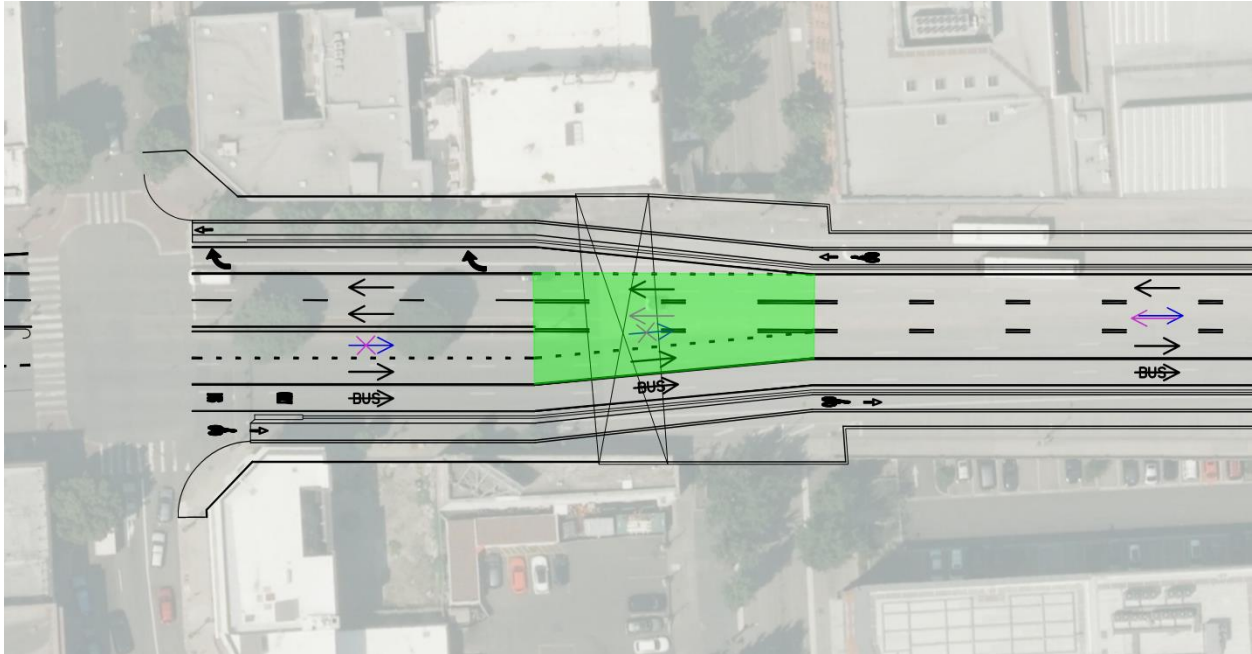
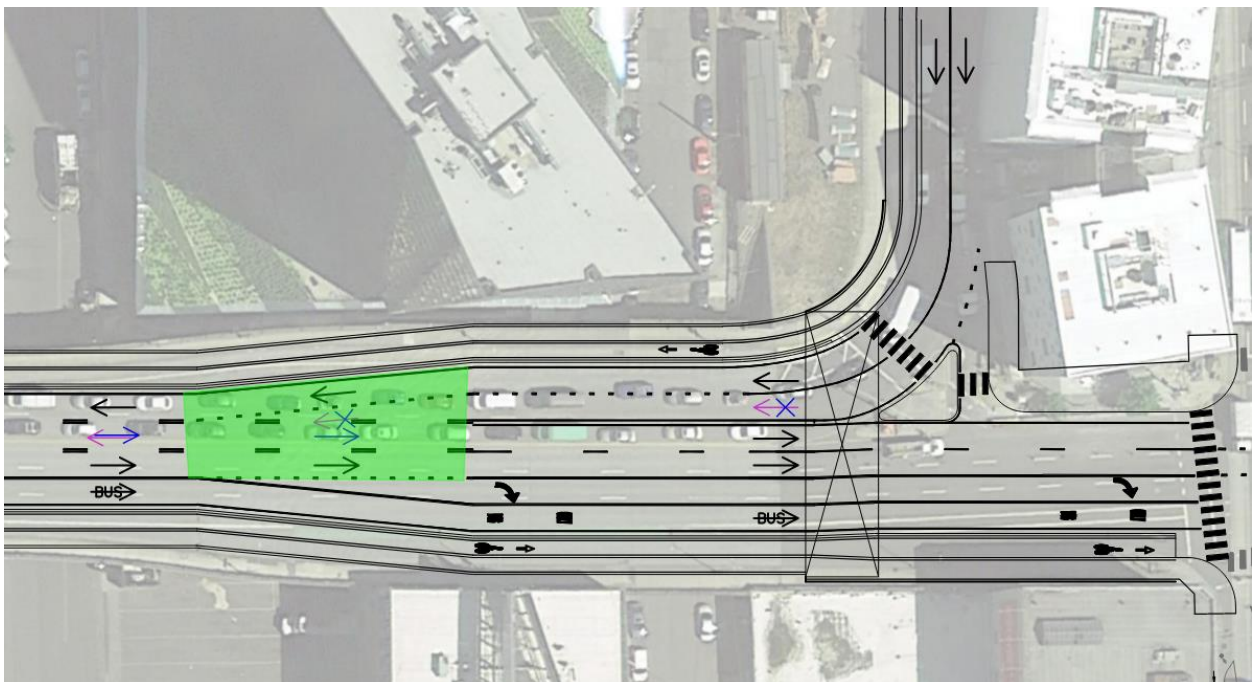


Figure 21. Striping Layout for East Transition Zone





### *Reversible Lane Literature Review*

A brief literature review related to reversible lane safety performance was conducted using the Transportation Research Board's (TRB) database (TRID). TRID is a combined database from TRB's Transportation Research Information Services (TRIS) and Organization for Economic Co-operation and Development's (OECD) Joint Transport Research Centre's International Transport Research Documentation (ITRD) Database.

There is limited research about reversible lanes on arterial streets which are bridges. Much of the research about the safety performance of reversible lanes relates to freeways, which are access controlled, or urban and suburban arterials where left turn movements to and from cross-streets or property access points need to be managed as part of the reversible lane performance. *NCHRP Synthesis 340: Convertible Roadways and Lanes*, (NCHRP, 2004) explains that there are "three primary crash types associated with reversible lanes on arterial roadways:

1. Left turns in front of traffic moving in the same direction. These accidents occur when drivers are unclear about which lanes have been reversed and they conflict with traffic in the adjacent left lane(s).
2. Left turns into the direction reversible roadway. These accidents occur when drivers are required to cross fewer or more lanes (because the lanes have been reversed) than they would in nonreversible conditions.
3. Left-turning traffic is struck from the opposing traffic or from behind in a reversible lane. The accidents occur where left turns have been prohibited owing to the implementation of reversible operations."

None of these conditions will occur on the Burnside Bridge. The research further explains that on freeways because access is more strictly controlled, "crash risks are associated with head-on crashes and conflicts that could be encountered at segment entry and exit ramps." This may demonstrate a need to focus on the design and operation of the transitions to/from the reversible or general-purpose lanes.

In research about reversible lanes in Washington DC, the authors found that reversible lanes in the district had higher crash rates and proportion of crashes during reversible lane operation than comparable roads without reversible lanes. However, the authors also cited, the lack of overhead reversible lane control signals, and vehicle turning movements to and from cross-streets as contributing to crashes on the reversible lane corridors. (*Reversible Lane Operation for Arterial Roadways: The Washington, DC, USA Experience*, ITE, 2011)

Another study, *Traffic Safety Meta-Analysis of Reversible Lanes*, (Accident Analysis and Prevention, Volume 148, Issue 0, 2020) found that crashes do increase on streets with reversible lanes; however, the study streets had "some level of private access and public intersections". The study also found that crashes will decrease with left-turn restrictions and delineators. On the other hand, the research cited that crashes increase with dynamic or static traffic control; however, this was not a statistically significant result.

Given there would be no turning movements into or out of the reversible lane on the Burnside Bridge, the risks associated with turning crashes to and from the reversible lane are eliminated. Broadly speaking, crashes decrease as road system complexity is reduced. Design and implementation of the entry and exit transitions, as well as the

dynamic and static signage will influence driver expectations, behaviors, and safety performance of the reversible lanes.

## 8 Potential Mitigation

Potential mitigation measures to address permanent and temporary impacts during construction were identified and summarized in Section 8 of the *EQRB Transportation Technical Report* (Multnomah County 2021c). The mitigations outlined in this section address impacts identified for each of the Lane Options. Each of the Lane Options impacts the various transportation modes differently and the mitigations proposed below address permanent impacts.

The four Lane Options analyzed within this supplemental memorandum have a greater variety of transportation impacts compared to the Draft EIS Build and No-Build Alternatives. A summary of the proposed mitigation measures is provided in Table 50. No mitigations are being proposed to address traffic or freight impacts.

**Table 50. Proposed Mitigation Measures**

Mode	Balanced	Eastbound Focus	Reversible Lane	General-Purpose with Bus Priority
Traffic	No proposed mitigations			
Freight	No proposed mitigations			
Transit	<ul style="list-style-type: none"> <li>Relocate the existing WB bus stop and dwell space off the bridge deck or provide additional width on the bridge deck to accommodate the stop and dwell space</li> </ul>	<ul style="list-style-type: none"> <li>WB Bus Queue Jump on NE Couch Street at MLK Boulevard and Grand Avenue</li> <li>Relocate the existing WB bus stop and dwell space off the bridge deck or provide additional width on the bridge deck to accommodate the stop and dwell space</li> </ul>	<ul style="list-style-type: none"> <li>WB Bus Queue Jump on NE Couch Street at MLK Boulevard and Grand Avenue</li> <li>Relocate the existing WB bus stop and dwell space off the bridge deck or provide additional width on the bridge deck to accommodate the stop and dwell space</li> </ul>	<ul style="list-style-type: none"> <li>Extend the EB Bus Queue Jump at NE MLK Boulevard westward to avoid conflict with queuing through traffic</li> <li>Relocate the existing WB bus stop and dwell space off the bridge deck or provide additional width on the bridge deck to accommodate the stop and dwell space</li> </ul>
Active Transportation	Ensure that there are mode-specific pavement markings on both the sidewalk and separated bike lanes to reinforce which space is for each mode and mitigate the narrower space for active transportation.			
Safety	The fatal and injury crashes could be reduced by adding additional shoulder width to both directions of travel. See below for specific shoulder widths for each of the Lane Options and bridge widths.			The fatal and injury crashes could be reduced by increasing shoulder width to a total of 6-feet in both directions of travel for all three bridge widths.
	In addition, the optional countermeasure to reduce the crash frequency are: <ul style="list-style-type: none"> <li>Reduce the speed limit on the bridge to 25 mph.</li> <li>Wider lane line markings and/or raised marking with materials that provide better retroreflectivity while raining and/or at night. Non-reflective domes or reflective raised pavement markers might give the same pseudo rumble strip effect.</li> <li>Stripe with a solid line to prevent lane changes on the bridge.</li> <li>Reflective tabs or reflective tape on the barriers for nighttime delineation.</li> </ul>			

EB (eastbound, WB (westbound)

## 8.1 Lane Option 1 (Balanced)

The following proposed mitigations address impacts identified for the Balanced Option.

### 8.1.1 Transit

The westbound TriMet bus stop and dwell space that is currently located on the bridge deck should be relocated or the bridge deck should be widened to accommodate the needed space for the bus stop and dwell space.

## 8.1.2 Active Transportation

Mode-specific pavement markings should be included for both the sidewalk and separated bike lanes on the bridge to reinforce which space is for each mode and mitigate the narrower space for active transportation.

## 8.1.3 Safety

For the number of fatal and injury crashes on the bridge in Lane Option 1 (Balanced) to be comparable to the No-Build Alternative, the shoulder width (i.e., offset to barrier rail) can be increased to a total of 3 feet in both directions on the 50-foot bridge width and 4 feet in both directions on the 47-foot and 44-foot bridge width. The increase in shoulder width can be done by either expanding the bridge width or acquiring space from the bike lane and sidewalk. Table 50 presents a summary of optional countermeasures to reduce the crash frequency but additional analysis is required to implement them.

The results of the analysis are presented in Appendix C.

The mitigation recommendations for the intersections are the same as provided in the Draft EIS.

## 8.2 Lane Option 2 (Eastbound Focus)

The following proposed mitigations address impacts identified for Eastbound Focus Option.

### 8.2.1 Transit

Westbound Bus Queue Jumps on NE Couch Street at the intersections with MLK Boulevard and Grand Avenue. Lane Option 2 removes a westbound general-purpose travel lane which would impact transit travel times and reliability. Installing queue jumps in the westbound direction would allow TriMet buses to avoid some delay caused by auto vehicle queuing at these intersections. A Rose Lane project that includes a BAT lane from NE 12th Street to Grand Avenue is already proposed for this section of Couch Street.

The westbound TriMet bus stop and dwell space that is currently located on the bridge deck should be relocated or the bridge deck should be widened to accommodate the needed space for the bus stop and dwell space.

### 8.2.2 Active Transportation

Mode-specific pavement markings should be included for both the sidewalk and separated bike lanes on the bridge to reinforce which space is for each mode and mitigate the narrower space for active transportation.

### 8.2.3 Safety

In Lane Option 2 (Eastbound Focus), the number of fatal and injury crashes on the bridge would be comparable to the No-Build condition by increasing its shoulder width (i.e., offset to barrier rail). The shoulder width can be increased to a total of 3 feet in both

directions on the 50-foot bridge width and 4 feet in both directions on the 47-foot and 44-foot bridge width. The increase in shoulder width can be done by either expanding the bridge width or acquiring space from the bike lane and sidewalk. Table 50 presents a summary of optional countermeasures to reduce the crash frequency but additional analysis is required to implement them.

The results of the analysis are presented in Appendix C.

The mitigation recommendations for the intersections are same as provided in the Draft EIS.

## 8.3 Lane Option 3 (Reversible Lane)

The following proposed mitigations address impacts identified for Reversible Lane.

### 8.3.1 Transit

Westbound Bus Queue Jumps on NE Couch Street at the intersections with MLK Boulevard and Grand Avenue. Lane Option 3 includes a reversible lane that adds capacity during peak hour travel to the peak direction. In the non-peak direction of travel, capacity is thus reduced. Installing queue jumps in the westbound direction would allow TriMet buses to avoid some delay caused by auto vehicle queuing at these intersections. A Rose Lane project that includes a BAT lane from NE 12th Street to Grand Avenue is already proposed for this section of Couch Street.

The westbound TriMet bus stop and dwell space that is currently located on the bridge deck should be relocated or the bridge deck should be widened to accommodate the needed space for the bus stop and dwell space.

### 8.3.2 Active Transportation

Mode-specific pavement markings should be included for both the sidewalk and separated bike lanes on the bridge to reinforce which space is for each mode and mitigate the narrower space for active transportation.

### 8.3.3 Safety

The number of fatal and injury crashes on the bridge in Lane Option 3 (reversible lane) will be comparable to the No-Build if the shoulder widths are increased to a total of 3 feet in both directions on the 50-foot bridge width and 4 feet in both directions on the 47-foot and 44-foot bridge width. The increase in shoulder width (i.e., offset to barrier rail) can be done by either expanding the bridge width or acquiring space from the bike lane and sidewalk. Table 50 presents a summary of optional countermeasures to reduce the crash frequency but additional analysis is required to implement them.

The results of the analysis are presented in Appendix C.

The mitigation recommendations for the intersections are same as provided in the Draft EIS.

## 8.4 Lane Option 4 (General-Purpose with Bus Priority)

The following proposed mitigations address impacts identified for the General-Purpose with Bus Priority.

### 8.4.1 Transit

Extend the eastbound bus queue jump at the eastern bridgehead at the intersection with NE MLK Boulevard. The queue jump is meant to speed up bus operations and separates buses from through and right turning vehicles. The traffic operations analysis shows that the 95th percentile queue length for right turning vehicles will reach up to 550 feet. As the queue jump is currently designed, the right turn queue would block transit vehicles, impacting their speed and reliability. Extending the queue jump beyond 550 feet would require the bridge deck to be wider for the length of the queue jump.

The westbound TriMet bus stop and dwell space that is currently located on the bridge deck should be relocated or the bridge deck should be widened to accommodate the needed space for the bus stop and dwell space.

### 8.4.2 Active Transportation

Mode-specific pavement markings should be included for both the sidewalk and separated bike lanes on the bridge to reinforce which space is for each mode and mitigate the narrower space for active transportation.

### 8.4.3 Safety

For the number of fatal and injury crashes on the bridge in the General-Purpose with Bus Priority to be comparable to the No-Build condition, the shoulder width would need to be increased to a total of 6 feet in both directions of travel for all the three bridge widths (i.e., 50-foot, 47-foot, and 44-foot). The increase in shoulder width can be done by either expanding the bridge width or acquiring space from the bike lane and sidewalk. Table 50 presents a summary of optional countermeasures to reduce the crash frequency but additional analysis is required to implement them.

The results of the analysis are presented in Appendix C.

The mitigation recommendations for the intersections are the same as provided in the Draft EIS.

## 9 Agency Coordination

Final design for the project would include an extensive public involvement and agency coordination effort, including local jurisdictions and neighborhoods within the project area.

At the appropriate time, agencies and organizations would be notified of the intent to prepare a Final EIS through the Federal Register and other project outreach activities. Interested organizations would have the opportunity to review and comment on the

transportation analysis through the course of the Project, including during the public comment period as the Final EIS is developed.

During the transportation impacts analysis, the following agencies have been and would continue to be contacted for data and other information related to transportation:

- Metro Regional Government
- Oregon Department of Transportation
- City of Portland, Bureau of Transportation and Bureau of Parks and Recreation
- TriMet
- Portland Streetcar, Inc.

## 10 Preparers

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Lewis Kelley	HDR	M.S. Urban and Regional Planning	10
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Emily Welter	Parametrix	B.E. in Civil Engineering	6
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2021c EQRB Transportation Technical Report. <https://www.multco.us/earthquake-ready-burnside-bridge/project-library>.

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# Appendix A. SimTraffic Operations Worksheets



SimTraffic Performance Report

1: NW 4th Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.3	0.5	0.4	0.3	0.3	0.5	0.3	0.5	0.5	0.4
Total Del/Veh (s)	8.7	9.8	9.3	9.6	10.2	10.2	9.1	9.6	10.4	10.3	9.8

1: NW 4th Ave & NW Everett St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.8	9.3	12.4	10.4	12.8	10.3	11.9	12.7	11.5	12.0	11.5

2: NW 3rd Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.3	3.4	3.9	3.3	3.6	3.7	3.8	4.1	3.2	3.6	3.6

2: NW 3rd Ave & NW Everett St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	8.2	8.1	8.4	8.1	8.8	8.1	8.4	8.0	8.2	8.3	8.3

3: NW Broadway & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.2
Total Del/Veh (s)	27.5	24.3	22.9	25.0	26.4	26.8	28.5	25.2	23.1	22.9	25.7

3: NW Broadway & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	25.1	27.0	29.8	30.7	33.9	33.9	21.9	31.0	30.4	28.8	28.8

3: NW Broadway & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	2.5	4.5	4.5	4.7	4.8	5.1	3.5	6.7	5.6	4.6

3: NW Broadway & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	7.0	20.2	12.3	10.8	10.3	8.8	6.1	9.9	7.9	8.2	10.2

SimTraffic Performance Report

4: NW 6th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.5	13.4	8.2	12.6	12.9	13.9	13.7	13.1	11.3	12.6	12.4

4: NW 6th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1
Total Del/Veh (s)	11.0	11.8	14.1	13.2	12.6	11.5	13.6	15.4	11.0	12.4	12.8

4: NW 6th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.8	8.9	9.0	7.0	8.8	8.8	6.8	8.6	10.3	8.5	8.7

4: NW 6th Ave & NW Couch St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.6	0.2
Total Del/Veh (s)	6.0	5.2	7.1	4.9	6.7	5.9	9.0	7.8	7.6	8.2	6.9

5: NW 5th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.4	5.7	7.1	6.9	5.9	8.6	8.4	6.6	6.3	8.3	7.3

5: NW 5th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.3	6.5	6.4	6.7	5.9	7.1	6.1	7.1	7.4	6.6	6.8

5: NW 5th Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Total Del/Veh (s)	11.4	9.1	10.2	7.5	10.4	8.6	8.1	7.9	11.4	8.3	9.5

5: NW 5th Ave & NW Couch St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	2.2	0.4	0.3	0.3	0.5	0.2	0.3	0.2	0.2	0.1	0.5
Total Del/Veh (s)	18.9	18.6	17.3	21.9	17.3	17.0	18.2	16.4	20.0	15.1	18.0

SimTraffic Performance Report

6: NW 4th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.0	10.1	12.1	7.8	10.3	8.5	9.1	9.4	14.0	13.2	10.3

6: NW 4th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.0	4.9	7.0	5.5	6.5	7.2	6.1	6.7	8.8	6.5	6.7

6: NW 4th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.0	2.1	2.0	2.2	1.8	2.7	1.7	1.7	2.1	2.1	2.0

7: NW 3rd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.9	14.3	13.6	14.5	13.9	11.3	14.3	13.1	12.0	20.1	13.6

7: NW 3rd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.2	18.2	13.0	25.3	16.6	15.5	20.1	15.4	15.0	14.0	17.1

7: NW 3rd Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.2	2.2	1.8	2.4	1.8	2.2	2.3	1.8	2.1	1.8	2.1

8: NW 2nd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.0	20.6	20.4	20.5	20.8	16.5	44.2	15.3	20.0	23.4	22.0

8: NW 2nd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	16.0	19.5	18.8	21.1	24.6	18.6	34.4	17.8	19.1	25.7	21.8

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8: NW 2nd Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.3	2.7	3.3	2.9	2.3	2.7	3.0	3.0	2.4	2.8	2.7

9: NW Naito Pkwy & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.1	7.1	7.7	5.5	6.7	6.3	6.8	10.4	6.4	6.9	6.9

9: NW Naito Pkwy & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.3	0.2
Total Del/Veh (s)	24.3	24.4	23.8	25.8	24.5	23.5	23.7	25.3	25.5	25.0	24.6

9: NW Naito Pkwy & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.0	8.9	6.7	8.8	9.1	8.4	7.5	7.7	8.8	8.4	8.3

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	3.0	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.3
Total Del/Veh (s)	5.8	37.9	5.8	6.2	5.9	5.9	6.1	6.0	6.3	5.8	8.4

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.6	22.1	2.6	6.5	3.0	5.2	3.0	4.6	6.2	1.5	5.6
Total Del/Veh (s)	28.6	37.5	30.5	30.1	30.8	30.2	29.7	31.9	32.1	29.5	31.1

11: NE Grand Ave & NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	299.0	702.7	58.7	199.4	318.0	270.2	225.1	96.9	171.2	304.8	269.3
Total Del/Veh (s)	44.2	66.0	39.7	43.3	44.1	44.5	45.5	41.6	41.6	46.4	45.0

11: NE Grand Ave & NE Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.6	23.6	7.1	8.6	6.6	6.8	6.7	8.0	8.1	7.6	8.8



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12: SW Broadway/NW Broadway & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.4
Total Del/Veh (s)	8.8	8.5	8.3	8.7	8.3	9.2	8.2	9.3	8.1	8.1	8.5

12: SW Broadway/NW Broadway & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.9	2.2	2.5	2.4	2.5	1.9	2.4	2.2	2.4	2.0	2.3

12: SW Broadway/NW Broadway & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	1.5	0.7	1.1	0.6	0.3	0.3	0.5	1.3	4.0	1.1
Total Del/Veh (s)	9.3	14.7	12.8	15.3	12.8	14.2	14.8	16.8	13.3	19.0	14.4

12: SW Broadway/NW Broadway & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.4	0.0	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	33.6	40.2	37.9	39.0	38.2	34.7	31.8	36.2	33.6	37.4	36.4

13: SW 6th Ave/NW 6th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.2	6.2	6.6	5.6	6.7	5.7	6.2	6.2	6.8	6.7	6.3

13: SW 6th Ave/NW 6th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.1	1.7	2.3	2.6	1.9	2.3	1.7	2.2	2.1	2.3	2.1

13: SW 6th Ave/NW 6th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.1	11.0	10.9	12.6	11.3	9.8	12.8	9.9	13.2	12.0	11.6

13: SW 6th Ave/NW 6th Ave & W Burnside St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	44.0	48.4	44.7	55.2	45.7	40.8	42.1	41.7	37.7	52.8	47.0

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14: SW 5th Ave/NW 5th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	4.0	4.0	3.2	4.1	4.3	4.3	3.7	3.5	4.6	3.9

14: SW 5th Ave/NW 5th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.7	5.8	5.8	5.5	5.4	5.2	5.8	5.8	5.3	4.8	5.5

14: SW 5th Ave/NW 5th Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	27.9	27.8	27.0	27.9	27.0	23.6	26.8	22.3	28.3	27.7	26.8

14: SW 5th Ave/NW 5th Ave & W Burnside St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.6	0.6	0.3	1.4	1.5	0.4	2.1	0.5	0.3	0.8	1.0
Total Del/Veh (s)	22.7	18.2	19.7	19.8	26.5	21.0	22.3	22.4	18.2	22.6	21.4

15: SW 4th Ave/NW 4th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0
Total Del/Veh (s)	13.6	12.7	13.3	13.5	13.3	14.0	13.7	13.8	13.6	12.6	13.4

15: SW 4th Ave/NW 4th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.2	6.0	7.1	7.4	6.5	6.7	6.5	7.4	7.0	5.7	6.8

15: SW 4th Ave/NW 4th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.3	0.1	0.3	0.0	0.1	0.0	0.1	0.1	0.1
Total Del/Veh (s)	17.5	17.4	16.7	18.7	18.6	18.8	17.2	18.3	17.1	17.8	17.8

16: SW 3rd Ave/NW 3rd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.8	2.7	2.8	2.3	2.2	2.5	2.4	2.5	2.5	2.1	2.4

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16: SW 3rd Ave/NW 3rd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	4.6	4.6	4.9	4.7	4.3	4.5	5.3	4.4	4.8	4.7

16: SW 3rd Ave/NW 3rd Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.1	0.0	0.2	0.1	0.2	0.1	0.1	0.1
Total Del/Veh (s)	25.9	24.8	25.7	25.1	26.8	23.5	24.7	23.4	25.1	24.9	25.0

17: SW 2nd Ave/NW 2nd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.5	5.4	7.0	6.0	5.0	5.5	4.7	5.3	4.9	4.4	5.3

17: SW 2nd Ave/NW 2nd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.6	7.3	8.9	7.7	7.7	8.0	7.6	8.1	7.3	7.5	7.8

17: SW 2nd Ave/NW 2nd Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.2	0.1	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.1
Total Del/Veh (s)	19.3	20.6	19.3	20.5	18.3	20.3	18.7	19.5	15.2	19.9	19.2

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	12.7	12.2	11.6	13.1	11.6	12.5	13.7	12.9	12.1	12.3	12.5

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.7	10.9	9.9	10.1	8.1	10.0	10.1	9.0	10.3	9.8	9.8

19: SE Grand Ave/NE Grand Ave & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.9	9.6	8.9	9.5	8.5	9.1	8.9	8.6	9.0	8.7	9.0

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19: SE Grand Ave/NE Grand Ave & E Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	22.0	149.9	14.0	27.1	10.2	19.0	27.2	15.2	16.3	19.0	31.4
Total Del/Veh (s)	33.7	42.8	34.6	36.5	32.2	35.0	37.5	34.0	34.9	34.2	35.4

20: SW Broadway & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.5	8.5	10.8	10.4	9.4	8.9	11.1	7.8	7.6	8.0	9.2

20: SW Broadway & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.2	5.9	5.1	6.1	5.7	5.8	5.8	5.6	6.6	6.5	5.9

21: SW 6th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.4	5.0	3.8	6.5	5.0	4.8	4.8	4.8	6.9	4.8	5.2

21: SW 6th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3
Total Del/Veh (s)	12.6	13.2	10.4	10.4	11.1	12.0	12.7	10.8	12.6	10.8	11.7

21: SW 6th Ave & SW Oak St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1
Total Del/Veh (s)	13.0	20.5	21.4	18.2	12.7	11.2	22.9	9.6	17.1	16.8	16.9

22: SW 5th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.4	8.9	9.3	9.2	8.7	10.3	12.3	10.3	10.3	10.6	9.9

22: SW 5th Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.0	8.5	8.6	9.6	9.5	9.2	9.6	9.0	7.6	9.0	9.0

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22: SW 5th Ave & SW Oak St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	34.3	35.4	31.6	24.2	28.2	25.4	36.3	34.3	23.6	23.8	30.0

23: SW 4th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.2	11.3	10.8	8.4	11.8	10.6	9.7	11.4	11.7	11.8	10.9

23: SW 4th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	8.3	7.9	7.8	8.8	7.8	6.9	8.3	8.5	8.5	8.1	8.1

24: SW 3rd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.2	12.5	16.3	14.3	13.8	16.9	15.5	16.8	17.2	17.2	15.9

24: SW 3rd Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.2	7.7	8.5	7.4	8.1	9.5	9.1	9.2	9.3	8.8	8.6

25: SW 2nd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.8	8.2	8.6	8.0	9.5	9.0	9.7	10.5	9.3	9.3	9.2

25: SW 2nd Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	10.7	11.0	9.8	11.2	10.5	10.9	10.4	9.8	9.1	10.8	10.4

26: SW Naito Pkwy & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	2.1	2.7	2.1	2.6	2.7	2.9	6.8	4.8	2.9	2.6	3.2
Total Del/Veh (s)	15.8	13.7	13.3	14.3	14.5	16.3	16.6	16.5	14.5	13.7	14.9

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26: SW Naito Pkwy & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.7	13.1	12.7	13.2	13.1	13.9	12.1	13.1	13.7	13.6	13.2

28: NE Couch Street SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	2.2	32.3	2.2	2.1	2.3	2.1	2.1	2.2	2.2	2.6	4.6

30: Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.5	2.8	3.0	3.0	2.9	3.0	2.7	2.9	2.9	2.8	2.9

30: Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.3	0.3

36: SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	9.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8
Total Del/Veh (s)	0.7	6.7	0.8	0.7	0.8	0.7	0.6	0.7	0.8	1.0	1.2

1201: SW Broadway WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1
Total Del/Veh (s)	0.6	0.5	1.1	1.1	0.9	0.9	0.5	0.4	0.3	3.3	1.0

1201: SW Broadway SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	0.9	1.0	1.0	1.0	1.0	0.9	0.9	1.0	0.9	1.0

1701: W Burnside St/Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.2	1.2	1.5	1.3	1.3	1.5	1.3	1.3	1.4	1.2	1.3

SimTraffic Performance Report

1701: W Burnside St/Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.0	3.0	4.3	4.3	4.2	4.1	4.3	4.0	4.3	4.4	4.1

1801: Burnside Bridge/E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.7	0.7	0.8	0.8	0.7	0.8	0.8	0.8	0.7	0.8	0.8

1801: Burnside Bridge/E Burnside St SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.1
Total Del/Veh (s)	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

2700: E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.7	2.5	2.8	3.4	2.2	2.4	2.9	2.8	2.0	3.1	2.7

Total Network Performance By Run

Run Number	1	2	3	4	5	6	7
Denied Del/Veh (s)	43.1	125.1	10.2	31.6	44.8	38.9	34.0
Total Del/Veh (s)	46.0	60.0	46.7	48.2	46.3	46.4	46.8

Total Network Performance By Run

Run Number	8	9	10	Avg
Denied Del/Veh (s)	16.0	25.7	42.3	41.2
Total Del/Veh (s)	47.5	46.7	47.0	48.1

SimTraffic Performance Report

1: NW 4th Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.3	0.3	0.4
Total Del/Veh (s)	9.6	9.9	9.6	9.6	9.4	9.2	8.9	9.2	10.8	9.3	9.6

1: NW 4th Ave & NW Everett St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.0	12.0	11.0	11.9	10.9	10.5	9.9	9.9	10.3	12.2	11.0

2: NW 3rd Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.4	4.7	3.5	3.8	3.6	4.1	4.0	4.1	3.4	4.4	3.9

2: NW 3rd Ave & NW Everett St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
Total Del/Veh (s)	8.3	7.6	7.9	8.6	9.6	8.0	8.4	8.4	6.3	9.0	8.3

3: NW Broadway & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	28.1	26.2	25.6	30.9	27.6	23.4	20.0	27.0	26.7	23.1	26.1

3: NW Broadway & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.8	26.0	26.4	31.9	30.4	30.2	25.7	22.6	26.7	32.8	27.5

3: NW Broadway & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.5	3.0	3.7	3.4	4.3	4.4	4.2	5.2	3.9	3.4	3.9

3: NW Broadway & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	10.5	8.2	7.9	9.8	7.7	9.8	7.8	8.6	9.3	9.1	8.9



## SimTraffic Performance Report

## 4: NW 6th Ave &amp; NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.1	11.6	11.0	14.0	12.6	13.0	17.0	8.7	12.8	13.1	12.6

## 4: NW 6th Ave &amp; NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.4	11.9	14.1	10.5	11.2	13.5	13.1	13.3	11.6	13.4	12.5

## 4: NW 6th Ave &amp; NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.6	10.1	9.7	9.7	8.5	9.3	10.1	9.6	9.5	8.2	9.4

## 4: NW 6th Ave &amp; NW Couch St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2
Total Del/Veh (s)	7.0	5.8	4.3	7.9	7.6	7.8	7.7	6.8	7.9	9.7	7.2

## 5: NW 5th Ave &amp; NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.9	7.7	7.4	7.8	9.2	8.3	8.6	8.2	8.5	7.9	7.9

## 5: NW 5th Ave &amp; NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	8.0	7.8	7.5	7.5	5.9	6.5	5.8	5.8	6.6	6.6

## 5: NW 5th Ave &amp; NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	6.9	8.2	8.8	8.6	7.8	10.2	8.5	9.3	7.3	8.3	8.4

## 5: NW 5th Ave &amp; NW Couch St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.5	0.2	0.2	0.1	0.2	0.7	0.1	0.3	0.1	0.1	0.2
Total Del/Veh (s)	16.7	17.1	18.2	20.7	15.9	16.6	16.7	16.2	14.2	15.8	16.9

## SimTraffic Performance Report

## 6: NW 4th Ave &amp; NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.9	9.0	11.5	9.6	12.2	7.3	12.4	10.0	9.4	9.5	9.9

## 6: NW 4th Ave &amp; NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.5	6.5	8.9	5.7	8.4	5.3	6.9	7.1	5.9	6.4	7.0

## 6: NW 4th Ave &amp; NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.2	2.2	1.9	2.0	2.1	1.8	2.1	2.6	2.1	2.2	2.1

## 7: NW 3rd Ave &amp; NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.1	13.0	13.5	12.2	10.8	11.0	12.8	11.1	12.1	16.7	12.8

## 7: NW 3rd Ave &amp; NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	15.7	17.9	15.6	13.6	13.5	13.7	15.2	17.0	14.0	17.6	15.5

## 7: NW 3rd Ave &amp; NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.1	1.4	2.5	2.5	2.5	1.8	2.3	2.6	1.5	2.0	2.1

## 8: NW 2nd Ave &amp; NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.8	22.6	20.5	18.6	16.7	24.2	14.9	17.4	19.8	22.9	19.3

## 8: NW 2nd Ave &amp; NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	16.3	19.2	21.8	20.1	15.5	21.6	13.9	13.5	12.4	24.9	18.1

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8: NW 2nd Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.5	2.8	3.0	2.7	2.3	2.2	2.6	2.4	2.8	2.6	2.6

9: NW Naito Pkwy & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.3	6.8	5.8	9.1	5.9	6.8	7.6	7.4	11.0	5.3	7.1

9: NW Naito Pkwy & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.4	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.2
Total Del/Veh (s)	26.8	25.5	25.7	23.3	23.7	25.2	25.1	26.8	26.4	23.6	25.2

9: NW Naito Pkwy & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.1	9.4	8.7	7.9	9.5	8.3	9.0	8.4	8.4	9.3	8.8

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	5.8	7.3	7.2	6.5	6.7	5.8	6.6	6.6	5.8	6.3	6.5

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.3	2.9	45.8	5.3	11.0	3.9	2.8	8.7	28.5	14.9	12.6
Total Del/Veh (s)	31.3	32.7	36.1	30.2	33.0	31.3	29.8	32.1	34.5	32.7	32.4

11: NE Grand Ave & NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	334.6	249.8	185.5	305.1	246.2	225.8	320.9	438.6	370.1	88.1	279.6
Total Del/Veh (s)	43.9	42.0	41.7	42.3	44.5	45.7	44.4	45.3	46.0	40.8	43.6

11: NE Grand Ave & NE Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.1	7.0	6.2	7.3	7.4	6.1	8.1	8.0	7.1	6.7	7.1

SimTraffic Performance Report

12: SW Broadway/NW Broadway & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.4	0.5	0.4	0.3	0.3	0.4	0.4	0.3	0.4	0.4
Total Del/Veh (s)	8.6	8.9	8.9	8.5	8.4	8.5	8.1	7.9	8.6	8.0	8.4

12: SW Broadway/NW Broadway & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.1	2.3	2.1	2.3	2.4	2.2	2.3	2.3	2.1	2.5	2.3

12: SW Broadway/NW Broadway & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	1.2	0.4	0.7	0.9	0.2	0.2	0.8	1.4	0.2	0.6
Total Del/Veh (s)	14.1	12.8	9.2	13.6	12.5	12.4	13.5	13.5	14.0	15.6	13.2

12: SW Broadway/NW Broadway & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	36.7	32.7	34.6	37.5	33.8	35.5	36.0	34.9	37.8	34.0	35.4

13: SW 6th Ave/NW 6th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.5	6.6	6.2	6.2	5.5	6.2	6.1	6.3	6.9	6.8	6.3

13: SW 6th Ave/NW 6th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.0	2.2	1.7	2.2	2.1	2.0	1.9	2.4	2.1	1.9	2.0

13: SW 6th Ave/NW 6th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.5	10.7	12.3	12.4	9.7	12.5	9.9	10.9	10.8	11.3	11.1

13: SW 6th Ave/NW 6th Ave & W Burnside St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	63.1	39.5	51.5	41.3	44.9	50.6	35.4	37.0	39.6	42.9	46.2

SimTraffic Performance Report

14: SW 5th Ave/NW 5th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.0	3.8	3.9	3.9	3.6	4.9	3.6	4.0	4.0	4.5	4.0

14: SW 5th Ave/NW 5th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.5	5.4	5.6	5.5	5.2	5.3	5.4	5.5	5.6	5.0	5.4

14: SW 5th Ave/NW 5th Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.4	24.1	25.2	19.1	25.6	25.4	28.3	24.9	27.9	19.4	24.7

14: SW 5th Ave/NW 5th Ave & W Burnside St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.6	2.5	0.2	0.1	1.7	1.9	0.2	0.4	0.8
Total Del/Veh (s)	19.0	25.1	22.7	20.2	16.1	22.2	20.7	24.3	25.7	21.4	22.1

15: SW 4th Ave/NW 4th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	12.8	13.0	12.9	12.3	13.5	13.2	12.8	12.5	12.5	13.0	12.9

15: SW 4th Ave/NW 4th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.3	6.6	6.4	5.9	6.3	5.7	6.6	5.9	6.2	6.4	6.2

15: SW 4th Ave/NW 4th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.2	0.4	0.2	0.1	0.1	0.2	0.2	0.3	0.2
Total Del/Veh (s)	20.1	17.9	17.9	17.6	17.2	17.4	17.4	16.4	17.4	18.8	17.8

16: SW 3rd Ave/NW 3rd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.9	2.4	1.9	2.1	2.1	2.2	2.5	2.2	2.0	2.3	2.2

## SimTraffic Performance Report

## 16: SW 3rd Ave/NW 3rd Ave &amp; W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	4.5	4.8	4.4	3.7	4.8	4.8	4.8	4.2	4.5	4.5

## 16: SW 3rd Ave/NW 3rd Ave &amp; W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.1
Total Del/Veh (s)	23.5	24.3	26.0	23.0	23.3	23.3	23.6	24.8	24.3	23.0	23.9

## 17: SW 2nd Ave/NW 2nd Ave &amp; W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	6.0	4.7	5.3	5.7	5.6	4.8	5.5	5.8	7.3	5.6

## 17: SW 2nd Ave/NW 2nd Ave &amp; W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.1	8.3	8.5	7.3	8.1	7.9	7.3	8.1	7.5	8.4	7.8

## 17: SW 2nd Ave/NW 2nd Ave &amp; W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	21.1	19.2	18.8	19.2	21.2	19.5	17.6	18.7	16.4	21.3	19.3

## 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd &amp; E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	13.3	13.2	12.7	13.0	13.6	12.8	12.6	12.6	13.6	13.1	13.1

## 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd &amp; E Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.9	8.5	9.9	9.0	8.8	8.0	8.8	8.4	8.9	8.6	8.7

## 19: SE Grand Ave/NE Grand Ave &amp; E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.3	6.8	6.2	6.7	7.5	5.9	6.6	6.0	6.7	5.6	6.4

SimTraffic Performance Report

19: SE Grand Ave/NE Grand Ave & E Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	24.2	12.2	18.6	13.3	11.8	13.1	19.1	15.0	31.6	8.4	16.8
Total Del/Veh (s)	34.0	32.2	35.4	33.9	33.9	35.7	34.7	33.6	32.7	32.7	33.9

20: SW Broadway & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.8	8.1	10.7	9.4	8.1	12.8	8.3	8.7	8.1	9.6	9.2

20: SW Broadway & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	5.7	5.3	5.9	5.9	5.4	5.7	5.7	5.4	5.1	5.7

21: SW 6th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.6	4.3	5.8	4.2	5.0	4.1	4.1	4.7	5.3	6.7	4.9

21: SW 6th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2
Total Del/Veh (s)	10.0	9.2	11.9	10.2	12.3	10.9	13.2	9.2	11.1	13.5	11.2

21: SW 6th Ave & SW Oak St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	17.7	11.5	19.2	16.6	13.7	22.3	14.9	20.0	14.1	10.1	16.1

22: SW 5th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.7	10.0	10.4	10.9	7.9	11.7	10.4	10.0	8.2	8.7	9.9

22: SW 5th Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.3	8.3	7.9	8.5	7.9	9.1	8.2	8.6	7.1	7.6	8.3

## SimTraffic Performance Report

## 22: SW 5th Ave &amp; SW Oak St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	25.3	26.7	36.4	23.7	34.5	34.9	33.1	29.7	22.2	39.9	27.3

## 23: SW 4th Ave &amp; SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.7	11.3	12.5	9.8	13.8	11.6	14.0	11.7	13.1	8.2	11.9

## 23: SW 4th Ave &amp; SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	8.4	8.2	9.0	7.0	8.1	8.6	8.1	7.6	8.5	7.6	8.1

## 24: SW 3rd Ave &amp; SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	15.5	15.2	17.8	14.6	15.8	16.4	17.6	15.6	16.7	14.0	16.0

## 24: SW 3rd Ave &amp; SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.6	9.7	9.5	8.9	8.1	9.4	9.0	8.4	9.0	9.5	9.1

## 25: SW 2nd Ave &amp; SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.6	9.6	10.5	8.4	8.8	9.4	10.3	9.0	9.6	8.5	9.3

## 25: SW 2nd Ave &amp; SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	10.6	10.6	10.7	10.4	11.1	11.2	9.9	11.1	10.0	9.6	10.5

## 26: SW Naito Pkwy &amp; SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	4.4	6.3	3.3	2.0	2.2	3.2	2.9	6.1	3.4	3.4	3.7
Total Del/Veh (s)	16.3	15.3	15.7	13.2	14.1	15.3	14.5	16.4	15.2	13.9	15.0



## SimTraffic Performance Report

## 26: SW Naito Pkwy &amp; SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.1	12.7	12.4	12.8	12.9	12.7	13.2	13.1	13.7	10.9	12.9

## 28: NE Couch Street SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	2.9	3.4	4.0	3.3	3.1	2.8	3.3	3.5	3.4	3.3	3.3

## 30: Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.5	9.0	8.9	9.1	9.3	9.1	8.8	8.7	8.9	9.4	9.0

## 30: Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2

## 36: SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.7	1.0	1.2	1.0	0.8	0.6	0.9	0.9	1.0	0.9	0.9

## 1201: SW Broadway WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	1.2	1.0	0.7	0.1	1.1	0.2	0.2	0.6	1.0	0.2	0.7

## 1201: SW Broadway SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	1.0	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9

## 1701: W Burnside St/Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	5.2	6.7	5.6	5.9	6.8	6.3	5.9	5.5	6.0	7.4	6.1

SimTraffic Performance Report

1701: W Burnside St/Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	6.9	7.1	5.6	6.5	6.2	6.5	6.3	6.1	6.8	6.5

1801: Burnside Bridge/E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.9

1801: Burnside Bridge/E Burnside St SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

2700: E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.5	1.7	1.4	1.5	1.4	1.4	1.5	1.6	1.4	1.4	1.5

Total Network Performance By Run

Run Number	1	2	3	4	5	6	7
Denied Del/Veh (s)	50.7	36.5	33.8	44.9	36.2	32.1	45.6
Total Del/Veh (s)	48.2	48.4	49.2	46.8	47.6	47.7	47.4

Total Network Performance By Run

Run Number	8	9	10	Avg
Denied Del/Veh (s)	64.7	59.8	14.8	42.0
Total Del/Veh (s)	47.4	48.1	48.0	47.9

## SimTraffic Performance Report

## 1: NW 4th Ave &amp; NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.7	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Total Del/Veh (s)	10.2	10.3	9.2	9.9	8.8	10.0	9.8	9.7	10.4	9.1	9.8

## 1: NW 4th Ave &amp; NW Everett St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.2	13.4	10.8	11.2	10.4	13.0	13.2	12.9	11.5	11.4	11.9

## 2: NW 3rd Ave &amp; NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	3.4	3.8	3.7	4.0	3.3	3.9	3.6	3.5	3.9	3.7

## 2: NW 3rd Ave &amp; NW Everett St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	8.5	7.6	8.4	9.7	8.2	9.7	8.4	7.1	8.9	8.3	8.5

## 3: NW Broadway &amp; NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2
Total Del/Veh (s)	21.1	32.2	19.1	24.2	21.8	22.0	24.7	27.6	18.5	23.4	23.1

## 3: NW Broadway &amp; NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	34.4	28.5	23.7	23.8	24.2	22.7	24.3	30.7	29.3	27.5	27.3

## 3: NW Broadway &amp; NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.7	4.1	4.8	4.2	4.0	3.6	4.2	3.5	4.0	4.4	4.0

## 3: NW Broadway &amp; NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.4	0.3
Total Del/Veh (s)	10.4	8.6	12.6	11.1	7.9	7.3	9.8	9.5	9.9	11.0	9.9

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4: NW 6th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	12.8	9.2	12.3	11.5	12.1	11.6	12.4	11.9	11.6	13.1	12.1

4: NW 6th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.5	13.3	12.3	11.9	12.3	10.6	13.8	9.1	11.2	11.4	12.0

4: NW 6th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.0	9.8	10.0	9.3	10.4	10.9	7.9	8.7	8.1	8.0	9.2

4: NW 6th Ave & NW Couch St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.4	0.2
Total Del/Veh (s)	6.9	5.9	6.2	9.7	7.3	6.4	7.6	7.6	6.3	5.9	7.0

5: NW 5th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.7	8.2	7.4	10.1	6.6	7.0	7.6	7.4	5.8	8.1	7.7

5: NW 5th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.5	5.7	6.7	6.6	6.5	7.3	7.4	6.0	6.4	5.7	6.3

5: NW 5th Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	6.6	8.2	6.6	9.3	7.5	6.5	9.4	7.3	9.4	6.8	7.9

5: NW 5th Ave & NW Couch St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.7	0.2	0.7	0.9	0.4	0.1	0.4
Total Del/Veh (s)	16.6	16.6	16.9	16.2	17.1	16.4	16.6	19.8	15.5	20.4	17.5

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6: NW 4th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.4	8.7	7.6	12.4	10.6	11.1	10.1	12.0	9.2	10.1	10.2

6: NW 4th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.9	5.5	6.0	6.8	6.1	6.3	7.4	7.7	7.3	5.3	6.6

6: NW 4th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.0	2.2	1.6	2.1	2.5	1.9	1.9	2.2	2.0	1.8	2.0

7: NW 3rd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.8	13.9	13.7	13.2	13.5	12.0	14.9	13.5	11.2	10.9	13.2

7: NW 3rd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Del/Veh (s)	13.1	16.3	17.5	18.3	15.1	12.8	21.2	14.3	16.3	15.0	16.0

7: NW 3rd Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.7	1.9	2.1	2.8	2.2	1.9	2.8	1.8	2.2	2.0	2.1

8: NW 2nd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.7	21.4	15.2	15.3	16.6	16.0	22.4	17.7	17.9	18.4	17.8

8: NW 2nd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.0	17.9	15.3	19.3	15.0	18.2	20.4	18.9	23.2	20.0	18.0

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## 8: NW 2nd Ave &amp; NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.1	2.5	2.3	2.4	2.6	2.4	2.3	2.4	2.3	2.1	2.3

## 9: NW Naito Pkwy &amp; NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.0	9.3	8.1	7.4	8.5	6.7	6.3	7.3	7.9	5.7	7.5

## 9: NW Naito Pkwy &amp; NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.2	0.1	0.2	0.4	0.1	0.1	0.2	0.2	0.4	0.2
Total Del/Veh (s)	25.5	23.8	24.7	25.2	24.9	24.4	24.8	23.4	25.8	24.7	24.7

## 9: NW Naito Pkwy &amp; NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.8	8.8	8.0	7.9	8.5	7.6	8.7	8.6	9.3	8.3	8.5

## 10: NE Martin Luther King Jr Blvd &amp; NE Couch Street/NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.1	0.5	0.3	0.4	0.5	0.3	0.3	0.0	0.3
Total Del/Veh (s)	7.1	10.3	7.2	8.3	8.5	9.4	9.4	7.2	7.2	8.3	8.3

## 10: NE Martin Luther King Jr Blvd &amp; NE Couch Street/NE Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.6	5.0	2.4	1.8	7.3	1.6	11.0	6.7	1.8	6.1	4.5
Total Del/Veh (s)	30.5	34.0	31.6	31.4	33.1	30.1	32.7	30.2	29.9	34.7	31.8

## 11: NE Grand Ave &amp; NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	256.4	306.4	409.0	282.7	110.8	250.9	374.2	266.0	312.1	181.1	277.4
Total Del/Veh (s)	45.8	43.5	41.9	44.4	42.3	42.2	44.2	44.7	47.8	44.7	44.1

## 11: NE Grand Ave &amp; NE Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.1	9.1	6.5	9.0	5.8	9.2	7.6	7.4	7.8	6.5	7.6

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12: SW Broadway/NW Broadway & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.4
Total Del/Veh (s)	8.0	7.7	8.4	8.6	7.6	8.7	8.3	9.0	9.3	7.9	8.3

12: SW Broadway/NW Broadway & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.4	2.1	2.2	2.3	2.0	1.7	1.8	2.0	1.9	1.9	2.0

12: SW Broadway/NW Broadway & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.0	0.1	2.0	0.5	0.3	0.2	0.1	2.0	1.9	0.6	0.9
Total Del/Veh (s)	13.9	9.2	12.8	13.7	12.0	12.1	11.7	12.8	14.1	8.8	12.1

12: SW Broadway/NW Broadway & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.2	0.1	0.0	0.1	0.0	0.2	0.0	0.0	0.3	0.1
Total Del/Veh (s)	36.0	34.1	38.2	36.0	36.8	35.3	34.5	32.5	36.6	37.2	35.8

13: SW 6th Ave/NW 6th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.5	6.7	6.4	6.7	7.1	6.2	6.9	6.4	6.0	6.7	6.6

13: SW 6th Ave/NW 6th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.0	1.6	1.5	2.1	2.0	1.8	2.0	1.9	1.8	1.8	1.9

13: SW 6th Ave/NW 6th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.7	10.8	14.3	11.2	10.9	9.9	9.7	11.8	11.0	11.9	11.3

13: SW 6th Ave/NW 6th Ave & W Burnside St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	44.5	34.9	51.3	42.7	55.2	33.0	25.1	43.6	51.3	32.4	44.7

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14: SW 5th Ave/NW 5th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	4.5	3.8	3.6	3.6	4.3	3.7	3.8	4.2	4.0	3.9

14: SW 5th Ave/NW 5th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	5.3	5.6	5.1	5.1	5.2	5.1	4.6	5.4	5.0	5.1

14: SW 5th Ave/NW 5th Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	22.4	22.5	25.2	26.3	20.6	22.9	30.8	22.6	22.6	22.9	23.8

14: SW 5th Ave/NW 5th Ave & W Burnside St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	1.7	0.5	0.6	1.2	0.7	0.6	0.1	1.3	2.9	1.0
Total Del/Veh (s)	25.4	24.3	20.6	24.9	25.4	21.5	19.0	18.4	19.4	27.1	22.1

15: SW 4th Ave/NW 4th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	13.2	12.4	13.1	13.0	11.9	12.6	12.4	13.3	13.8	12.9	12.9

15: SW 4th Ave/NW 4th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.5	5.7	5.7	6.0	5.7	6.0	6.2	5.5	5.6	6.0	5.8

15: SW 4th Ave/NW 4th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.2	0.4	0.2	0.2	0.4	0.1	0.1	0.1	0.2	0.2
Total Del/Veh (s)	19.1	19.6	17.0	17.1	17.2	16.6	18.0	16.7	18.7	17.8	17.8

16: SW 3rd Ave/NW 3rd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.3	2.4	2.6	2.7	2.4	2.4	2.1	2.2	2.3	2.7	2.4



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16: SW 3rd Ave/NW 3rd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.6	4.4	4.6	4.7	4.4	4.2	4.5	4.4	4.2	4.4	4.5

16: SW 3rd Ave/NW 3rd Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.1
Total Del/Veh (s)	23.3	25.8	25.3	24.4	25.1	23.6	24.5	27.2	24.5	25.2	24.9

17: SW 2nd Ave/NW 2nd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	5.2	5.4	5.6	5.7	5.1	5.7	4.7	6.0	5.5	5.4

17: SW 2nd Ave/NW 2nd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.2	7.7	7.4	7.7	6.9	7.4	8.0	7.4	7.7	7.1	7.4

17: SW 2nd Ave/NW 2nd Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	18.6	18.9	21.4	17.3	18.2	18.2	18.4	18.0	19.1	19.0	18.7

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.1
Total Del/Veh (s)	11.6	12.5	12.6	11.8	11.9	12.4	12.3	11.0	12.8	11.9	12.1

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.0	9.0	8.7	10.1	9.0	8.8	9.2	8.6	9.5	9.6	9.1

19: SE Grand Ave/NE Grand Ave & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.2	7.0	7.1	7.6	5.3	7.1	6.4	7.2	5.7	6.9	6.8

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19: SE Grand Ave/NE Grand Ave & E Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	17.2	27.7	7.3	19.7	13.9	13.3	16.2	15.5	33.8	8.2	17.3
Total Del/Veh (s)	34.0	37.1	33.2	34.3	36.3	33.0	36.9	34.0	36.8	31.0	34.7

20: SW Broadway & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.1	8.5	6.8	6.8	7.7	8.7	9.8	8.9	8.2	8.7	8.2

20: SW Broadway & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	6.0	5.8	5.5	5.3	5.5	5.0	5.5	5.9	5.6	5.5

21: SW 6th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.5	4.9	5.4	3.6	4.8	5.5	5.1	4.7	4.7	6.3	5.0

21: SW 6th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.5	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3
Total Del/Veh (s)	12.2	9.7	13.5	11.5	11.2	12.1	10.7	11.4	11.4	10.5	11.5

21: SW 6th Ave & SW Oak St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1
Total Del/Veh (s)	13.1	17.4	13.1	16.7	17.7	13.3	14.7	19.3	15.0	21.5	16.4

22: SW 5th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.7	10.6	8.5	11.8	11.3	8.1	11.0	11.1	8.5	9.2	10.1

22: SW 5th Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.8	8.7	8.3	8.2	8.5	11.3	8.6	6.8	9.7	7.3	8.7

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22: SW 5th Ave & SW Oak St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.8	0.1	0.1	0.1	0.1	0.1	0.2
Total Del/Veh (s)	36.9	29.1	28.5	22.9	22.0	26.2	28.8	29.9	29.9	24.6	28.6

23: SW 4th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.5	9.9	10.0	12.2	12.5	8.8	11.7	11.2	10.1	12.4	11.2

23: SW 4th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	8.1	7.8	6.7	7.8	8.3	7.6	7.6	7.6	7.8	7.7	7.7

24: SW 3rd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	15.6	12.4	12.9	12.7	15.0	14.4	14.0	14.0	13.9	11.6	13.7

24: SW 3rd Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.2	9.9	8.5	8.9	9.8	9.4	8.8	8.6	9.5	8.9	9.1

25: SW 2nd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	10.2	9.8	9.2	8.5	10.1	9.9	11.8	9.4	9.4	10.4	9.9

25: SW 2nd Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	11.0	10.3	10.6	10.7	10.0	10.6	11.6	9.2	10.7	11.5	10.7

26: SW Naito Pkwy & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	4.4	3.0	2.4	4.0	2.7	3.4	3.8	3.0	3.1	1.7	3.2
Total Del/Veh (s)	16.4	15.3	15.8	14.5	13.3	14.5	15.2	14.7	14.4	14.4	14.9

## SimTraffic Performance Report

## 26: SW Naito Pkwy &amp; SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.9	13.5	13.4	11.3	13.4	11.7	12.5	13.2	13.3	13.2	13.0

## 27: SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.6	3.9	0.2	0.2	0.3	1.0	0.2	0.6	0.2	1.3	0.9
Total Del/Veh (s)	4.5	7.4	4.0	3.6	5.7	6.2	4.6	4.2	4.0	5.6	5.0

## 28: NE Couch Street SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.3	0.0	0.1	0.2	0.1	0.3	0.3	0.1	0.1	0.2
Total Del/Veh (s)	7.9	14.1	6.2	6.7	10.4	9.8	9.0	7.7	7.1	10.9	9.0

## 30: Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.4	5.0	5.1	4.7	4.8	5.1	5.2	5.2	5.5	5.2	5.1

## 30: Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.8	9.7	8.1	7.0	9.0	9.4	7.6	7.6	7.7	9.0	8.3

## 1201: SW Broadway WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1
Total Del/Veh (s)	1.8	0.1	1.4	2.2	0.7	0.3	1.1	0.6	1.5	0.8	1.1

## 1201: SW Broadway SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	1.0	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9	1.0

## 1701: W Burnside St/Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.6	1.5	1.6	1.5	1.4	1.4	1.4	1.4	1.6	1.5	1.5

SimTraffic Performance Report

1701: W Burnside St/Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.9	0.0	0.0	0.3	0.2	0.1	0.2	0.1	0.2	0.2
Total Del/Veh (s)	14.1	18.3	14.2	13.4	14.2	15.5	15.7	14.6	14.2	14.4	14.9

1801: Burnside Bridge/E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.5	0.6	0.5	0.5	0.6	0.5	0.6	0.6	0.5	0.6	0.6

1801: Burnside Bridge/E Burnside St SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.8	1.1	0.8	0.7	1.0	1.0	0.8	0.7	0.8	1.0	0.9

2700: E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.6	1.9	2.1	1.7	2.1	1.8	2.0	1.8	1.8	1.6	1.9

Total Network Performance By Run

Run Number	1	2	3	4	5	6	7
Denied Del/Veh (s)	36.9	47.3	58.7	41.8	18.0	35.9	55.2
Total Del/Veh (s)	50.5	54.5	49.8	50.3	51.2	50.9	51.7

Total Network Performance By Run

Run Number	8	9	10	Avg
Denied Del/Veh (s)	39.6	48.1	25.2	40.8
Total Del/Veh (s)	49.7	51.3	50.5	51.1

SimTraffic Performance Report

1: NW 4th Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	33.8	90.4	47.0	67.6	35.9	30.8	65.4	10.5	5.2	43.6
Total Del/Veh (s)	26.3	29.0	27.2	26.3	25.8	26.3	30.1	23.9	21.4	26.4

1: NW 4th Ave & NW Everett St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.0	15.4	12.9	12.0	11.5	14.0	12.9	11.2	11.5	12.6

2: NW 3rd Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	11.3	13.7	11.6	11.7	11.2	12.5	12.6	11.3	10.3	11.8

2: NW 3rd Ave & NW Everett St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2
Total Del/Veh (s)	8.1	9.8	9.1	9.1	9.2	9.8	9.6	9.0	8.7	9.1

3: NW Broadway & NW Couch St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.7	10.4	13.0	59.4	27.4	3.4	33.0	3.0	49.2	23.2
Total Del/Veh (s)	47.9	58.6	59.2	67.2	75.9	49.2	72.3	44.8	68.3	61.3

3: NW Broadway & NW Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	28.6	25.4	27.4	29.8	30.9	29.5	40.7	42.7	27.9	31.7

3: NW Broadway & NW Couch St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.0	3.8	3.6	5.2	5.0	3.9	6.3	4.0	4.4	4.5

3: NW Broadway & NW Couch St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.3	0.3	0.2	0.2	2.4	0.2	0.2	0.5
Total Del/Veh (s)	8.5	9.4	7.9	11.1	9.1	10.1	27.4	10.1	12.4	11.8

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4: NW 6th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.9	14.0	11.9	12.9	12.7	13.1	14.1	12.4	12.9	13.1

4: NW 6th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	12.9	12.7	9.6	10.7	12.7	11.0	14.2	12.2	10.0	11.9

4: NW 6th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.0	7.0	7.2	9.2	8.5	7.1	9.8	6.9	5.6	7.4

4: NW 6th Ave & NW Couch St NW, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1
Total Del/Veh (s)	5.7	5.4	4.8	12.5	8.3	6.2	6.1	7.0	5.5	6.8

5: NW 5th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	8.7	8.8	15.0	9.5	8.6	7.7	7.4	8.9	9.8	9.6

5: NW 5th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.7	12.3	20.5	9.9	9.7	8.6	9.4	10.7	10.8	11.3

5: NW 5th Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	10.5	11.9	16.0	11.8	11.2	9.9	10.1	10.9	13.2	11.8

5: NW 5th Ave & NW Couch St SE, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.2	0.5	0.2	0.2	0.2	0.2
Total Del/Veh (s)	20.6	17.7	17.3	20.8	17.9	17.9	17.6	17.0	22.1	18.9

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6: NW 4th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.5	18.9	14.8	15.8	22.8	18.3	20.4	18.3	16.7	17.9

6: NW 4th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.2	19.3	13.3	14.2	14.0	19.3	15.9	14.1	13.5	14.9

6: NW 4th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.1	3.1	3.3	3.2	3.5	3.4	3.8	3.3	3.0	3.2

7: NW 3rd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	57.9	22.7	33.0	22.8	24.1	17.6	20.9	43.5	24.8	31.0

7: NW 3rd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	9.2	0.0	5.2	0.0	0.5	4.0	0.0	0.4	0.0	2.2
Total Del/Veh (s)	93.8	22.0	52.0	25.8	42.4	48.3	48.8	47.0	32.5	46.6

7: NW 3rd Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.3	5.4	9.9	7.4	10.7	14.3	14.4	19.7	8.8	12.8

8: NW 2nd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	21.9	23.1	20.7	37.8	22.1	19.8	28.6	17.3	22.5	23.5

8: NW 2nd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	37.2	29.4	32.3	24.8	24.3	25.0	25.1	31.6	23.4	28.3



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8: NW 2nd Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.5	2.5	2.8	4.0	3.9	3.1	3.0	3.1	2.6	3.2

9: NW Naito Pkwy & NW Couch St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
Total Del/Veh (s)	7.4	9.8	8.6	12.7	9.1	11.2	12.6	12.4	12.9	10.8

9: NW Naito Pkwy & NW Couch St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.5	0.5	0.3	0.3	0.3	0.4	0.3	0.3	0.4
Total Del/Veh (s)	14.5	13.3	13.1	12.2	12.2	12.6	13.6	13.0	13.8	13.2

9: NW Naito Pkwy & NW Couch St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.5	5.9	7.8	6.9	6.7	6.9	7.6	7.3	7.3	7.1

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.8	7.2	8.6	6.8	7.8	8.4	7.6	6.0	7.6	7.4

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	8.5	6.4	9.0	10.0	10.6	8.4	22.2	13.5	16.6	11.7
Total Del/Veh (s)	29.5	27.8	29.4	29.9	29.4	29.8	32.4	31.6	33.4	30.3

11: NE Grand Ave & NE Couch St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	267.8	200.4	21.0	291.7	48.1	185.8	235.5	125.0	70.0	162.4
Total Del/Veh (s)	47.9	46.8	39.8	46.6	43.5	46.7	46.6	51.0	45.4	46.1

11: NE Grand Ave & NE Couch St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	7.5	7.5	6.9	7.0	6.0	7.0	5.7	6.6	6.8

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12: SW Broadway/NW Broadway & W Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.4
Total Del/Veh (s)	7.7	9.3	9.6	11.2	9.2	8.8	9.3	9.3	8.6	9.2

12: SW Broadway/NW Broadway & W Burnside St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
Total Del/Veh (s)	10.0	9.5	10.2	10.7	10.0	9.5	10.3	11.1	10.2	10.2

12: SW Broadway/NW Broadway & W Burnside St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.9	22.5	21.4	21.2	24.3	19.6	18.0	23.1	21.7	22.1

12: SW Broadway/NW Broadway & W Burnside St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.1	0.2	0.1	0.4	0.1	0.8	0.3	0.3	0.3
Total Del/Veh (s)	34.7	32.1	29.6	33.9	33.6	34.9	40.8	33.0	35.4	34.2

13: SW 6th Ave/NW 6th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.3	0.0	0.0	0.2	0.0	0.1
Total Del/Veh (s)	8.8	9.4	10.8	11.2	10.2	10.1	10.4	10.3	10.1	10.2

13: SW 6th Ave/NW 6th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Total Del/Veh (s)	7.7	7.5	11.2	9.5	8.0	9.1	9.8	10.2	9.4	9.2

13: SW 6th Ave/NW 6th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.2	13.7	12.6	15.0	14.8	11.6	14.2	13.9	14.0	13.6

13: SW 6th Ave/NW 6th Ave & W Burnside St NW, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	50.1	48.1	45.4	35.8	50.6	65.3	46.8	52.3	41.9	47.8

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14: SW 5th Ave/NW 5th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	6.6	7.8	7.9	8.2	7.6	6.4	8.3	8.8	8.4	7.8

14: SW 5th Ave/NW 5th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.7	4.0	8.4	5.4	5.2	5.5	5.5	5.2	5.3	5.5

14: SW 5th Ave/NW 5th Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	33.4	42.9	49.3	38.3	37.7	36.1	34.0	34.5	37.0	38.5

14: SW 5th Ave/NW 5th Ave & W Burnside St SE, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	2.3	1.9	3.3	1.2	0.1	0.2	0.4	1.8	1.7	1.5
Total Del/Veh (s)	28.5	25.5	36.8	17.6	28.3	29.6	27.4	29.0	28.3	28.1

15: SW 4th Ave/NW 4th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	9.5	10.3	8.9	9.5	8.7	9.2	9.2	8.6	9.1	9.2

15: SW 4th Ave/NW 4th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.3	13.6	16.6	13.4	13.2	14.3	14.6	12.2	14.4	14.0

15: SW 4th Ave/NW 4th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	2.5	2.2	3.3	6.7	4.2	1.7	3.3	1.0	1.8	3.0
Total Del/Veh (s)	23.5	24.9	21.9	23.7	22.8	24.2	24.2	23.1	25.7	23.8

16: SW 3rd Ave/NW 3rd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	5.1	5.8	4.7	4.7	5.3	5.3	6.0	4.5	5.2

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16: SW 3rd Ave/NW 3rd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.8	5.6	6.8	5.9	6.2	5.4	6.1	5.6	5.5	6.0

16: SW 3rd Ave/NW 3rd Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.3	0.2	0.4	0.1	0.3	0.5	0.6	0.1	0.3
Total Del/Veh (s)	36.7	29.6	33.7	32.1	32.0	32.3	35.0	34.0	29.5	32.8

17: SW 2nd Ave/NW 2nd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	6.0	6.8	7.0	5.4	5.7	7.3	6.8	6.8	5.6	6.4

17: SW 2nd Ave/NW 2nd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	5.6	6.2	5.7	4.4	5.4	6.0	5.2	5.5	5.4

17: SW 2nd Ave/NW 2nd Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	27.9	24.8	25.6	25.0	26.9	27.3	24.7	23.8	23.7	25.5

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.1	0.1
Total Del/Veh (s)	16.6	16.0	15.3	15.7	16.2	15.1	15.0	15.6	15.8	15.7

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1
Total Del/Veh (s)	12.8	12.2	13.9	13.6	15.3	12.6	13.7	14.4	13.4	13.6

19: SE Grand Ave/NE Grand Ave & E Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.2	3.9	3.6	3.8	3.5	3.3	4.2	3.6	3.3	3.6

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19: SE Grand Ave/NE Grand Ave & E Burnside St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	35.0	29.0	40.1	9.9	15.3	13.8	14.3	30.5	12.2	22.4
Total Del/Veh (s)	39.5	42.7	41.8	35.4	38.2	39.9	39.4	40.0	38.7	39.5

20: SW Broadway & SW Oak St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Total Del/Veh (s)	12.1	13.6	11.1	12.0	10.7	12.3	13.8	11.0	14.5	12.5

20: SW Broadway & SW Oak St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	7.1	5.6	6.4	7.1	6.8	6.6	6.4	6.8	6.5

21: SW 6th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	3.7	4.7	5.9	5.6	4.2	3.2	3.6	4.0	4.4

21: SW 6th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.7	0.3	0.3	0.2	0.5	0.3	0.4	0.3	0.4
Total Del/Veh (s)	13.6	14.1	13.1	12.1	12.3	15.0	14.5	13.1	13.3	13.5

21: SW 6th Ave & SW Oak St NW, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.3	0.1	0.2
Total Del/Veh (s)	20.6	17.5	13.8	20.4	22.7	17.7	10.6	24.6	21.4	19.0

22: SW 5th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.6	14.0	11.4	11.8	11.3	13.5	14.0	13.7	12.3	12.7

22: SW 5th Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.4	7.3	8.8	10.7	7.2	8.5	8.8	9.2	9.0	8.8

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22: SW 5th Ave & SW Oak St SE, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.9	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2
Total Del/Veh (s)	30.4	30.0	39.4	40.9	21.4	22.1	26.1	35.3	21.1	28.0

23: SW 4th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.3	8.0	7.7	6.6	10.1	7.7	7.7	6.9	8.1	7.9

23: SW 4th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.5	0.6	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4
Total Del/Veh (s)	10.8	11.8	10.7	10.7	10.4	10.5	11.4	11.1	10.7	10.9

24: SW 3rd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	10.4	8.4	7.9	9.0	8.6	9.4	8.7	9.0	10.1	9.1

24: SW 3rd Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.1	13.1	13.1	14.0	11.5	11.8	11.8	11.6	11.6	12.3

25: SW 2nd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.6	8.5	7.3	7.4	10.3	8.8	9.1	8.2	8.5	8.6

25: SW 2nd Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.2
Total Del/Veh (s)	11.5	11.6	11.7	13.0	12.2	13.4	12.5	12.4	12.4	12.3

26: SW Naito Pkwy & SW Oak St NB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.1	1.6	1.9	1.3	1.4	0.8	1.0	1.7	1.2	1.3
Total Del/Veh (s)	10.9	10.5	11.0	9.3	10.9	9.7	10.1	10.4	9.8	10.3

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26: SW Naito Pkwy & SW Oak St SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	8.2	8.7	9.1	8.6	9.5	8.3	8.1	8.7	7.7	8.6

28: NE Couch Street SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.2	2.2	2.7	2.4	2.4	2.3	2.3	2.2	2.4	2.4

30: Burnside Bridge EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	5.0	5.4	4.3	5.0	5.0	5.2	5.6	4.9	5.1

30: Burnside Bridge WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

35: NE Couch Street SW, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.5	0.5	0.7	0.5	0.5	0.6	0.5	0.5	0.6	0.5

1201: SW Broadway WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	0.7	0.5	0.5	1.3	0.9	0.3	0.1	0.4	0.8	0.6

1201: SW Broadway SB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	0.9	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.0

1701: W Burnside St/Burnside Bridge EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.7	2.1	2.0	1.7	1.8	1.8	2.0	2.1	1.9	1.9

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1701: W Burnside St/Burnside Bridge WB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.5	3.2	3.5	3.3	3.4	3.4	3.3	3.4	3.5	3.4

1801: Burnside Bridge/E Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.9	3.0	2.9	2.5	3.0	3.0	3.1	3.3	3.5	3.0

1801: Burnside Bridge/E Burnside St SW, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

2700: E Burnside St EB, Performance by run number

Run Number	1	2	3	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.8	6.2	6.2	5.8	6.5	6.1	6.5	6.7	6.8	6.4

Total Network Performance By Run

Run Number	1	2	3	5	6	7	8
Denied Del/Veh (s)	33.6	29.1	12.3	35.8	11.2	22.6	31.6
Total Del/Veh (s)	56.7	54.6	56.9	54.8	54.6	55.0	58.8

Total Network Performance By Run

Run Number	9	10	Avg
Denied Del/Veh (s)	18.1	12.4	23.0
Total Del/Veh (s)	56.5	56.0	56.0



SimTraffic Performance Report

1: NW 4th Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	24.6	37.0	25.2	141.7	163.0	9.9	89.9	11.3	479.9	110.5
Total Del/Veh (s)	23.1	25.5	24.9	42.3	43.3	23.2	35.5	24.6	58.9	32.4

1: NW 4th Ave & NW Everett St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	3.4	3.0	0.0	0.0	0.0	27.7	3.6
Total Del/Veh (s)	12.9	12.4	13.3	60.3	61.4	10.7	16.1	15.8	103.0	33.2

2: NW 3rd Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.1	1.6	0.0	0.0	0.0	0.4	5.0	0.7
Total Del/Veh (s)	13.0	12.3	12.7	27.9	31.9	14.0	22.0	15.1	39.8	20.3

2: NW 3rd Ave & NW Everett St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.2	0.9	252.8	257.8	0.4	118.0	11.5	370.2	111.7
Total Del/Veh (s)	12.7	9.3	14.1	90.0	96.2	13.4	62.9	32.9	146.1	47.8

3: NW Broadway & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	1.1	36.6	32.8	41.9	4.9	30.4	5.3	38.7	57.5	27.6
Total Del/Veh (s)	49.0	79.6	66.4	83.9	50.4	73.4	54.2	83.8	63.7	67.5

3: NW Broadway & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Del/Veh (s)	39.5	25.8	32.5	37.8	34.3	25.1	49.9	34.5	33.6	34.8

3: NW Broadway & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	3.6	6.3	5.0	22.1	4.3	6.8	5.2	5.7	5.8	7.2

3: NW Broadway & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.3	50.6	0.2	3.1	0.3	0.2	6.1	6.9
Total Del/Veh (s)	10.7	11.8	14.0	41.5	10.1	31.3	14.1	11.6	28.5	19.5

SimTraffic Performance Report

4: NW 6th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.5	12.8	13.0	109.6	12.2	16.1	15.2	15.4	15.6	23.0

4: NW 6th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.9	12.1	11.1	12.8	10.2	10.1	13.4	14.2	13.6	11.8

4: NW 6th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.9	9.2	8.7	8.1	8.3	7.5	8.7	8.5	7.5	8.5

4: NW 6th Ave & NW Couch St NW, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.6	0.2	0.3	0.1	0.2	0.1	0.3	0.3	0.1	0.3
Total Del/Veh (s)	7.2	7.1	7.5	6.6	8.4	6.6	6.3	8.4	5.1	7.0

5: NW 5th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	22.9	0.0	0.0	0.0	0.0	0.8	2.2
Total Del/Veh (s)	21.4	9.5	11.6	143.0	10.1	10.3	10.2	13.1	37.6	27.4

5: NW 5th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	32.8	0.0	0.0	0.0	0.0	0.0	2.7
Total Del/Veh (s)	17.2	8.9	12.3	126.1	9.9	11.1	11.4	18.0	39.5	24.8

5: NW 5th Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	1.4	0.2	3.2	474.7	0.2	0.2	0.2	0.2	8.7	57.4
Total Del/Veh (s)	37.7	11.7	30.9	155.8	21.0	11.1	12.1	15.4	47.8	36.6

5: NW 5th Ave & NW Couch St SE, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.2	0.4	0.2	0.2	0.1	1.1	0.4	0.4	0.3
Total Del/Veh (s)	18.9	15.8	17.3	24.2	22.1	17.3	20.4	22.8	16.2	19.3

SimTraffic Performance Report

6: NW 4th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.2
Total Del/Veh (s)	17.1	18.9	18.7	127.7	13.6	17.3	41.4	19.4	77.3	37.3

6: NW 4th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.3	11.6	5.2	43.2	14.2	14.8	21.2	13.8	56.7	18.9

6: NW 4th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.3	3.0	2.6	29.2	4.8	2.8	4.1	3.1	15.8	7.2

7: NW 3rd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	58.4	31.3	63.1	144.4	43.8	43.9	129.5	61.0	92.5	72.2

7: NW 3rd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	5.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Del/Veh (s)	75.6	32.4	136.3	148.8	176.6	78.8	174.4	162.4	216.1	131.1

7: NW 3rd Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	72.5	12.4	71.5	118.9	155.3	63.3	106.4	94.1	208.8	95.0

8: NW 2nd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.5	20.9	19.2	28.4	27.8	37.5	43.5	20.1	26.2	26.9

8: NW 2nd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	3.1	9.2	0.0	0.7	1.6	19.7	4.1
Total Del/Veh (s)	24.0	17.4	116.4	222.8	258.3	34.3	239.5	228.0	379.3	174.0

SimTraffic Performance Report

8: NW 2nd Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.9	3.1	7.7	10.3	6.3	3.5	6.8	9.8	9.0	6.6

9: NW Naito Pkwy & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	8.7	14.4	9.4	12.8	12.6	12.6	9.3	12.2	12.4	11.5

9: NW Naito Pkwy & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.3	0.4	0.4
Total Del/Veh (s)	12.7	14.1	12.8	13.3	12.6	12.6	13.1	11.7	15.3	13.2

9: NW Naito Pkwy & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.4	7.3	6.6	10.8	7.8	6.6	7.1	6.3	13.3	8.1

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	7.7	7.5	7.0	8.2	8.7	8.0	8.6	9.1	7.7	8.1

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	17.2	8.2	10.2	10.0	13.5	7.3	9.2	17.0	14.4	11.9
Total Del/Veh (s)	33.2	29.2	28.6	30.0	31.4	29.0	28.0	30.2	30.4	30.0

11: NE Grand Ave & NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	46.3	242.7	105.8	61.5	106.1	146.4	89.3	129.3	15.0	106.0
Total Del/Veh (s)	47.1	49.0	48.1	42.2	42.6	45.7	43.8	45.0	40.4	44.9

11: NE Grand Ave & NE Couch St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.9	8.5	7.2	8.4	6.9	8.1	6.7	8.7	8.1	7.8

SimTraffic Performance Report

12: SW Broadway/NW Broadway & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.4	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.4
Total Del/Veh (s)	9.2	9.1	7.9	13.0	9.2	8.8	9.7	8.6	9.8	9.5

12: SW Broadway/NW Broadway & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
Total Del/Veh (s)	10.3	10.1	9.5	9.7	10.0	10.7	9.4	10.5	8.8	9.9

12: SW Broadway/NW Broadway & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.6	0.0	0.0	0.0	0.2	0.4	0.4	0.0	0.3	0.2
Total Del/Veh (s)	23.5	22.9	20.5	30.8	21.5	24.5	27.0	17.7	20.7	23.2

12: SW Broadway/NW Broadway & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.3	0.6	0.8	0.4	0.1	0.3	0.2	0.3
Total Del/Veh (s)	33.0	33.6	35.1	40.2	31.7	43.3	35.0	34.4	42.2	36.6

13: SW 6th Ave/NW 6th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1
Total Del/Veh (s)	9.9	9.8	10.5	18.1	10.2	10.1	9.3	9.4	11.5	11.1

13: SW 6th Ave/NW 6th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
Total Del/Veh (s)	7.8	9.2	6.0	9.9	6.9	10.0	7.7	11.2	6.1	8.4

13: SW 6th Ave/NW 6th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.5	11.1	12.5	14.4	10.6	11.7	15.8	12.8	12.1	12.6

13: SW 6th Ave/NW 6th Ave & W Burnside St NW, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	31.0	54.2	56.1	37.6	41.6	45.3	76.9	39.2	53.5	50.0

SimTraffic Performance Report

14: SW 5th Ave/NW 5th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.3	7.1	8.7	19.6	11.3	7.1	7.6	8.2	12.0	10.1

14: SW 5th Ave/NW 5th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.7	7.9	4.4	6.0	5.0	6.6	4.8	7.3	4.1	5.7

14: SW 5th Ave/NW 5th Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	1.1	0.7	0.2	0.0	0.0	0.0	0.1	0.2
Total Del/Veh (s)	49.2	37.3	51.3	107.5	59.3	33.6	40.6	50.3	64.1	53.3

14: SW 5th Ave/NW 5th Ave & W Burnside St SE, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	2.6	0.2	2.0	1.7	1.0	0.1	0.2	2.0	1.4	1.3
Total Del/Veh (s)	29.5	27.0	30.7	25.0	33.3	30.1	30.2	28.5	36.2	30.0

15: SW 4th Ave/NW 4th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.5	0.8	0.2	0.2	0.0	0.0	0.6	0.3
Total Del/Veh (s)	21.9	9.4	20.8	33.5	20.0	12.4	11.7	11.4	27.2	18.9

15: SW 4th Ave/NW 4th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.2	14.1	13.4	28.1	14.4	13.0	14.1	14.9	16.9	15.7

15: SW 4th Ave/NW 4th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	1.5	3.3	1.7	39.4	2.5	1.9	34.5	3.7	11.7	10.7
Total Del/Veh (s)	24.4	24.7	25.9	39.4	26.4	26.2	26.3	25.0	29.3	27.2

16: SW 3rd Ave/NW 3rd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	23.1	9.2	21.4	24.6	22.0	19.7	16.3	16.8	27.4	20.1

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16: SW 3rd Ave/NW 3rd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.9	9.1	8.7	18.7	9.2	9.3	8.4	8.6	8.5	9.8

16: SW 3rd Ave/NW 3rd Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.8	0.2	2.9	15.9	2.5	0.9	1.3	2.1	5.9	3.3
Total Del/Veh (s)	51.8	38.6	52.9	69.1	63.6	53.8	56.5	53.9	73.0	56.1

17: SW 2nd Ave/NW 2nd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	3.1	1.0	12.0	7.4	6.5	5.3	4.6	1.9	7.9	5.5
Total Del/Veh (s)	30.4	21.6	28.1	38.6	36.5	35.0	34.1	34.8	37.1	32.9

17: SW 2nd Ave/NW 2nd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.8	8.7	10.1	23.9	10.4	9.6	9.3	10.5	9.6	11.1

17: SW 2nd Ave/NW 2nd Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	26.8	26.7	25.6	42.6	26.4	26.4	25.8	24.6	25.9	28.0

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	15.4	15.0	15.3	15.9	15.8	15.9	15.5	15.4	15.9	15.6

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.0	11.9	12.5	11.4	13.1	12.1	11.8	12.5	12.2	12.3

19: SE Grand Ave/NE Grand Ave & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	5.3	4.5	5.3	4.3	4.5	4.4	5.0	4.5	4.8

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19: SE Grand Ave/NE Grand Ave & E Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	19.7	36.9	24.0	27.9	18.0	14.4	8.0	45.3	43.6	26.7
Total Del/Veh (s)	38.3	40.2	36.9	38.2	37.0	35.6	34.8	39.6	42.4	38.1

20: SW Broadway & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.9	13.2	9.3	9.8	9.9	11.8	12.3	12.0	11.1	11.1

20: SW Broadway & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	6.8	6.3	7.0	6.2	6.5	6.7	5.9	6.2	6.5

21: SW 6th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.9	4.6	4.8	5.1	5.7	5.2	3.1	5.0	5.0	4.6

21: SW 6th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.3	0.3	0.4	0.2	0.5	0.3	0.5	0.3	0.4
Total Del/Veh (s)	13.1	13.0	14.7	12.9	14.0	13.9	13.9	12.5	13.6	13.5

21: SW 6th Ave & SW Oak St NW, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Total Del/Veh (s)	17.8	14.8	16.4	15.1	21.5	19.5	13.5	18.3	16.8	17.5

22: SW 5th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.1	11.9	13.8	12.5	11.1	12.2	12.0	11.5	12.5	12.2

22: SW 5th Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.4	8.4	9.2	8.6	8.2	8.7	8.6	9.1	7.6	8.5



SimTraffic Performance Report

22: SW 5th Ave & SW Oak St SE, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Total Del/Veh (s)	38.4	27.9	28.9	16.3	36.3	33.9	29.4	27.3	30.3	29.1

23: SW 4th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	15.3	0.0	0.0	0.0	0.0	0.0	1.5
Total Del/Veh (s)	9.8	5.9	8.1	75.3	9.8	8.9	9.0	7.1	8.8	15.0

23: SW 4th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.4	0.4	0.8	323.8	0.5	0.4	0.5	0.4	6.5	38.7
Total Del/Veh (s)	10.4	11.6	12.3	42.2	10.3	11.7	12.1	10.0	17.2	14.7

24: SW 3rd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.3	9.3	7.3	9.0	7.7	8.5	10.1	9.0	7.0	8.6

24: SW 3rd Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	11.3	12.1	11.3	11.8	12.0	13.4	12.8	11.8	11.7	12.0

25: SW 2nd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	8.7	9.0	8.6	9.3	8.5	8.6	11.0	9.1	8.1	9.0

25: SW 2nd Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	12.0	12.7	11.9	12.6	12.0	12.5	12.2	11.4	11.5	12.1

26: SW Naito Pkwy & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	1.1	1.1	1.3	1.2	2.1	1.5	1.0	1.3	1.0	1.3
Total Del/Veh (s)	9.9	9.8	11.0	10.2	10.4	11.7	10.1	11.2	9.8	10.5

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26: SW Naito Pkwy & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	7.9	9.1	8.9	8.6	9.2	9.6	9.2	9.4	9.9	9.1

28: NE Couch Street SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.2	3.3	3.4	3.5	3.8	3.5	3.8	4.0	3.6	3.6

30: Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.7	0.2	1.7	0.9	1.6	0.0	0.1	0.0	0.6
Total Del/Veh (s)	16.7	15.7	13.9	16.1	15.9	16.7	14.9	15.7	15.9	15.7

30: Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

36: NE Couch Street SW, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1
Total Del/Veh (s)	1.1	1.1	1.1	1.0	1.2	1.1	1.3	1.2	1.1	1.1

1201: SW Broadway WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	1.8	0.1	0.2	0.3	0.2	0.3	0.4
Total Del/Veh (s)	0.2	0.4	0.3	5.7	0.5	0.9	1.0	2.3	0.7	1.4

1201: SW Broadway SB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	1.0	1.0	1.1	1.0	1.0	1.0	0.9	1.0	1.0

1701: W Burnside St/Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.3
Total Del/Veh (s)	16.0	15.8	15.4	15.8	16.3	17.3	16.4	17.4	17.1	16.4

SimTraffic Performance Report

1701: W Burnside St/Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.6	4.5	4.4	56.9	4.8	4.7	4.9	5.0	4.6	10.2

1801: Burnside Bridge/E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.3	1.3	1.2	1.3	1.3	1.3	1.4	1.3	1.4	1.3

1801: Burnside Bridge/E Burnside St SW, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

2700: E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.0	3.3	2.8	3.0	2.9	3.2	3.3	3.1	3.0	3.1

Total Network Performance By Run

Run Number	1	2	3	4	5	7	8	
Denied Del/Veh (s)		11.6	31.8	18.0	66.3	34.5	19.5	23.6
Total Del/Veh (s)		67.6	61.5	67.8	107.7	80.1	69.2	75.6

Total Network Performance By Run

Run Number	9	10	Avg
Denied Del/Veh (s)	23.7	55.9	31.7
Total Del/Veh (s)	73.6	95.2	77.5

SimTraffic Performance Report

1: NW 4th Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	70.1	68.7	14.4	24.5	34.4	7.7	189.7	8.8	4.7	35.7	47.6
Total Del/Veh (s)	30.3	29.7	24.6	26.2	25.2	22.2	32.2	24.6	19.1	28.8	26.4

1: NW 4th Ave & NW Everett St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.4	12.4	12.1	11.8	10.5	11.5	12.1	11.5	11.8	11.1	11.7

2: NW 3rd Ave & NW Everett St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	13.1	14.7	11.9	11.7	11.9	11.4	13.8	12.0	10.3	13.2	12.5

2: NW 3rd Ave & NW Everett St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2
Total Del/Veh (s)	8.8	9.0	9.7	9.3	8.2	8.5	8.8	8.9	9.3	8.3	8.9

3: NW Broadway & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	81.4	100.2	56.9	3.9	0.9	14.0	134.8	2.6	15.0	1.0	42.6
Total Del/Veh (s)	95.1	100.0	83.4	45.5	47.5	61.0	97.8	54.3	63.3	45.8	69.8

3: NW Broadway & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	25.1	40.9	28.6	41.3	30.1	34.5	34.0	26.6	27.4	29.2	31.9

3: NW Broadway & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.6	6.9	3.3	3.0	3.3	3.6	5.7	5.4	4.8	3.7	4.4

3: NW Broadway & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	11.3	0.2	0.4	0.2	0.2	4.1	0.3	0.4	0.2	1.8
Total Del/Veh (s)	9.8	36.0	10.3	12.5	8.6	7.0	31.0	11.6	9.6	8.1	14.7

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4: NW 6th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.9	19.4	11.6	12.5	12.6	13.5	15.4	12.1	13.8	11.8	13.6

4: NW 6th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.7	12.5	9.9	13.2	12.2	9.3	14.0	15.7	10.7	9.6	12.0

4: NW 6th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.1	10.4	7.0	7.1	7.9	6.8	9.2	7.8	7.6	5.3	7.9

4: NW 6th Ave & NW Couch St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.1	0.5	0.1	0.2
Total Del/Veh (s)	8.2	4.4	6.5	5.4	6.7	6.4	7.4	5.8	6.5	4.9	6.3

5: NW 5th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.2	10.3	9.5	8.2	8.1	11.4	8.5	10.6	11.2	8.3	9.7

5: NW 5th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.9	8.2	10.1	10.5	8.5	12.0	10.6	12.1	30.7	9.9	12.4

5: NW 5th Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.5	0.2	0.3
Total Del/Veh (s)	11.2	9.5	9.6	14.6	10.1	13.3	12.3	13.2	35.6	10.2	13.6

5: NW 5th Ave & NW Couch St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.5	0.3	0.5	0.6	0.2	0.3	0.2	0.1	0.9	0.1	0.4
Total Del/Veh (s)	16.8	17.9	20.3	20.9	16.5	19.5	20.3	16.9	20.4	20.9	19.1

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6: NW 4th Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	25.2	19.6	15.6	13.5	19.4	17.7	14.6	18.8	17.8	19.4	18.4

6: NW 4th Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.7	13.3	14.5	10.3	12.0	7.5	10.5	15.4	10.1	14.2	12.1

6: NW 4th Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.4	3.9	3.2	2.8	3.2	3.3	3.3	2.7	3.1	3.5	3.4

7: NW 3rd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	16.1	39.2	25.3	22.4	29.7	16.8	24.4	32.1	43.0	23.8	26.6

7: NW 3rd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	4.5	0.0	1.1	0.0	0.0	1.4	13.2	0.6	2.1
Total Del/Veh (s)	37.0	133.9	74.3	48.0	38.3	22.3	53.9	44.4	87.8	34.7	57.5

7: NW 3rd Ave & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.1	31.7	14.0	6.1	18.6	4.6	10.3	8.6	14.6	9.9	12.8

8: NW 2nd Ave & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	21.2	25.1	23.7	19.3	14.1	12.8	15.4	19.6	17.5	18.5	18.8

8: NW 2nd Ave & NW Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.3	96.6	28.9	27.0	11.3	17.4	15.9	30.8	32.0	19.5	30.5

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8: NW 2nd Ave & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.1	4.0	3.6	3.2	2.6	2.4	2.3	4.2	2.6	2.2	3.0

9: NW Naito Pkwy & NW Couch St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1
Total Del/Veh (s)	15.6	17.7	16.2	19.1	16.9	11.3	13.6	12.6	12.9	15.3	15.2

9: NW Naito Pkwy & NW Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.4	0.2	0.2	0.4	0.4	0.3	0.3	0.3	0.4	0.3
Total Del/Veh (s)	13.4	13.1	13.9	12.4	12.6	12.1	13.3	13.5	12.6	12.8	13.0

9: NW Naito Pkwy & NW Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.4	6.7	6.5	7.2	7.5	6.8	7.1	6.8	6.3	7.7	7.0

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.5	7.7	8.8	6.7	6.5	8.4	6.9	7.5	7.9	6.6	7.7

10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	7.1	7.8	6.6	11.1	13.7	11.9	3.9	14.0	4.1	7.8	8.8
Total Del/Veh (s)	29.9	28.2	29.1	28.5	31.3	30.8	27.4	32.1	28.5	30.4	29.6

11: NE Grand Ave & NE Couch St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	53.9	236.6	80.2	349.0	295.7	46.1	265.7	191.9	39.5	24.5	161.5
Total Del/Veh (s)	37.3	47.1	42.1	49.7	49.1	41.3	46.9	44.9	40.7	39.4	43.8

11: NE Grand Ave & NE Couch St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.4	7.6	6.6	7.2	7.3	7.6	6.4	7.4	8.2	7.0	7.4

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## 12: SW Broadway/NW Broadway &amp; W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4
Total Del/Veh (s)	9.4	9.2	8.4	9.0	8.5	8.8	9.0	8.5	9.3	8.8	8.9

## 12: SW Broadway/NW Broadway &amp; W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	10.3	9.7	10.2	11.0	10.3	10.2	11.1	10.0	10.1	9.9	10.3

## 12: SW Broadway/NW Broadway &amp; W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	21.6	19.4	27.1	24.1	22.8	20.0	20.6	25.7	23.7	21.1	22.6

## 12: SW Broadway/NW Broadway &amp; W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.4	1.2	0.3
Total Del/Veh (s)	34.1	45.3	32.1	33.8	33.5	29.6	43.6	32.7	35.0	31.6	35.3

## 13: SW 6th Ave/NW 6th Ave &amp; W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1
Total Del/Veh (s)	10.6	9.8	10.0	10.4	9.9	10.3	11.5	11.1	10.1	11.3	10.5

## 13: SW 6th Ave/NW 6th Ave &amp; W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.1
Total Del/Veh (s)	9.5	5.8	9.9	10.6	8.8	9.5	12.0	9.5	8.5	9.7	9.4

## 13: SW 6th Ave/NW 6th Ave &amp; W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.9	12.8	11.6	11.5	13.5	11.9	15.7	10.9	13.1	13.9	12.9

## 13: SW 6th Ave/NW 6th Ave &amp; W Burnside St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	39.3	50.0	35.0	42.3	33.2	47.3	49.3	58.0	44.0	43.3	46.5



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14: SW 5th Ave/NW 5th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.6	8.7	7.8	8.6	7.3	7.2	8.0	7.4	8.0	7.7	7.8

14: SW 5th Ave/NW 5th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.7	4.5	8.0	7.5	4.1	5.9	8.1	5.1	5.6	6.5	6.0

14: SW 5th Ave/NW 5th Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	39.9	29.0	36.8	44.4	34.8	39.0	46.2	36.7	58.8	41.3	40.7

14: SW 5th Ave/NW 5th Ave & W Burnside St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	1.0	0.2	3.2	2.9	0.1	0.5	0.5	0.9	3.6	3.5	1.7
Total Del/Veh (s)	29.7	24.0	27.0	29.8	31.3	23.8	24.4	31.5	27.9	31.9	28.1

15: SW 4th Ave/NW 4th Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.0	8.7	9.5	8.6	9.5	8.5	8.9	9.0	9.4	9.3	9.0

15: SW 4th Ave/NW 4th Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	12.0	11.2	12.0	10.9	9.3	12.3	12.0	10.8	10.7	13.3	11.5

15: SW 4th Ave/NW 4th Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	2.6	7.1	5.0	2.4	5.5	6.3	2.6	2.9	2.2	18.6	5.6
Total Del/Veh (s)	25.1	26.4	22.5	23.7	23.5	24.6	24.3	22.2	22.1	24.6	23.9

16: SW 3rd Ave/NW 3rd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	6.3	5.8	4.5	4.3	4.4	5.3	5.4	5.8	4.4	5.1

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16: SW 3rd Ave/NW 3rd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.0	7.8	7.9	6.6	7.3	7.0	6.3	7.7	8.6	7.6	7.4

16: SW 3rd Ave/NW 3rd Ave & W Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.4	0.2	0.3	0.3	0.2	0.1	0.4	0.2	0.2	0.2
Total Del/Veh (s)	30.8	38.8	34.4	32.5	35.8	30.4	33.0	31.5	35.2	34.3	33.8

17: SW 2nd Ave/NW 2nd Ave & W Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0
Total Del/Veh (s)	7.6	7.8	7.6	6.8	6.8	7.0	7.7	7.3	7.9	7.4	7.4

17: SW 2nd Ave/NW 2nd Ave & W Burnside St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.0	9.2	9.5	9.1	8.5	10.6	10.0	9.0	10.0	8.4	9.4

17: SW 2nd Ave/NW 2nd Ave & W Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	22.8	27.5	25.3	27.6	23.3	27.0	24.7	26.8	25.9	22.9	25.4

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	10.1	11.0	10.3	9.4	10.1	9.5	10.4	11.0	10.1	10.1	10.2

18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.5	14.6	14.4	13.6	13.6	15.6	11.1	13.5	12.4	12.3	13.6

19: SE Grand Ave/NE Grand Ave & E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	4.3	3.6	4.5	4.2	4.2	4.0	4.5	4.6	4.5	4.3

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19: SE Grand Ave/NE Grand Ave & E Burnside St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	15.7	26.9	12.0	23.3	30.9	22.0	13.6	10.0	41.5	23.1	22.1
Total Del/Veh (s)	33.2	37.7	37.7	38.1	39.5	37.3	39.9	35.8	43.3	38.9	38.1

20: SW Broadway & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	11.3	12.9	12.3	11.7	11.5	14.3	12.8	11.7	10.2	11.5	12.0

20: SW Broadway & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.1	5.8	6.3	6.0	6.3	6.6	6.3	6.3	6.8	6.6	6.3

21: SW 6th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	4.0	4.5	4.5	3.2	3.9	3.9	4.5	3.7	5.7	4.3

21: SW 6th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.3	0.6	0.5	0.3	0.4	0.3	0.2	0.3	0.3	0.4	0.3
Total Del/Veh (s)	13.6	12.8	14.5	14.1	14.4	11.8	15.1	14.1	12.2	14.1	13.7

21: SW 6th Ave & SW Oak St NW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.5	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2
Total Del/Veh (s)	18.0	25.3	18.8	19.6	12.7	25.7	12.2	18.8	23.0	23.5	20.4

22: SW 5th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.2	13.8	13.2	12.6	15.0	13.6	13.4	12.6	12.6	12.7	13.3

22: SW 5th Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.1	7.6	9.0	7.8	8.4	8.8	7.8	8.7	9.5	8.2	8.3

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22: SW 5th Ave & SW Oak St SE, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	36.3	34.8	29.7	29.7	30.3	22.0	28.5	41.8	38.7	34.9	33.1

23: SW 4th Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.8	8.7	8.3	8.0	8.0	8.4	7.6	7.3	8.6	8.6	8.1

23: SW 4th Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.7	0.4	0.8	0.4	0.4	0.5	0.4	0.5	0.4	0.5	0.5
Total Del/Veh (s)	11.0	10.9	11.4	10.9	11.4	11.4	11.1	10.1	12.0	12.4	11.3

24: SW 3rd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.1	8.5	9.1	8.5	6.8	7.4	7.7	8.6	8.4	8.6	8.2

24: SW 3rd Ave & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	12.0	12.7	11.7	13.0	11.9	12.6	13.2	12.0	12.4	11.4	12.3

25: SW 2nd Ave & SW Oak St WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	9.0	8.8	9.2	9.2	10.0	9.6	11.3	8.7	9.8	9.0	9.5

25: SW 2nd Ave & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2
Total Del/Veh (s)	12.5	11.9	12.3	12.2	11.8	12.0	11.8	12.5	11.4	10.9	11.9

26: SW Naito Pkwy & SW Oak St NB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.8	1.2	1.2	1.2	0.8	2.0	1.3	1.4	1.6	1.4	1.3
Total Del/Veh (s)	9.5	10.7	8.8	10.4	8.7	11.1	10.4	10.3	8.1	10.7	9.9

SimTraffic Performance Report

26: SW Naito Pkwy & SW Oak St SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	8.3	8.3	8.3	8.4	7.3	9.4	8.9	8.2	7.2	9.6	8.4

28: NE Couch Street SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.0	3.3	3.1	2.5	2.6	2.8	3.0	2.9	2.9	2.7	2.9

30: Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.5	8.2	7.6	7.7	7.4	7.3	8.4	8.3	7.5	7.9	7.8

30: Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.1	3.8	3.9	3.3	3.3	3.3	3.5	4.0	3.6	3.2	3.6

36: NE Couch Street SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	0.7	0.8	0.7	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.6

1201: SW Broadway WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.3	0.2
Total Del/Veh (s)	0.8	0.3	5.7	0.3	0.9	1.2	0.3	0.6	0.1	0.4	1.1

1201: SW Broadway SB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.9	1.1	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.0	1.0

1701: W Burnside St/Burnside Bridge EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Total Del/Veh (s)	2.3	2.2	2.1	2.0	2.0	2.0	2.4	2.2	2.2	2.2	2.1

SimTraffic Performance Report

1701: W Burnside St/Burnside Bridge WB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.0	0.1	0.0	0.1
Total Del/Veh (s)	11.5	10.7	10.7	10.3	10.3	10.3	10.4	11.5	10.6	9.9	10.6

1801: Burnside Bridge/E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.9	1.1	0.9	0.9	0.9	1.1	1.3	1.2	1.0	1.0	1.0

1801: Burnside Bridge/E Burnside St SW, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2

2700: E Burnside St EB, Performance by run number

Run Number	1	2	3	4	5	6	7	8	9	10	Avg
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.2	3.0	2.3	2.1	2.1	2.3	2.8	2.9	2.5	2.6	2.5

Total Network Performance By Run

Run Number	1	2	3	4	5	6	7
Denied Del/Veh (s)	14.9	33.9	12.6	39.4	35.9	10.2	42.6
Total Del/Veh (s)	56.4	63.2	56.6	54.8	54.4	54.0	59.2

Total Network Performance By Run

Run Number	8	9	10	Avg
Denied Del/Veh (s)	21.2	11.0	10.2	23.3
Total Del/Veh (s)	55.7	56.9	54.3	56.6

# Appendix B. SimTraffic Queuing Worksheets





Queuing and Blocking Report

Intersection: 1: NW 4th Ave & NW Everett St

Movement	EB	NB
Directions Served	LT	TR
Maximum Queue (ft)	219	173
Average Queue (ft)	122	75
95th Queue (ft)	194	138
Link Distance (ft)	209	458
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: NW 3rd Ave & NW Everett St

Movement	EB	EB	SB	SB
Directions Served	T	R	LT	T
Maximum Queue (ft)	93	73	146	65
Average Queue (ft)	34	30	66	15
95th Queue (ft)	77	63	116	46
Link Distance (ft)	211	211	207	207
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: NW Broadway & NW Couch St

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	120	155	106	211	151
Average Queue (ft)	52	68	29	101	43
95th Queue (ft)	99	132	77	190	110
Link Distance (ft)	198	199	170	203	203
Upstream Blk Time (%)		0		2	0
Queuing Penalty (veh)		0		0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 4: NW 6th Ave & NW Couch St

Movement	EB	WB	NB	NW
Directions Served	LT	TR	LT	>
Maximum Queue (ft)	81	107	99	124
Average Queue (ft)	25	36	37	32
95th Queue (ft)	61	81	82	92
Link Distance (ft)	199	177	164	106
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW 5th Ave & NW Couch St

Movement	EB	WB	SB	SE
Directions Served	TR	<LT	LT	>
Maximum Queue (ft)	69	88	72	155
Average Queue (ft)	20	34	24	63
95th Queue (ft)	54	72	57	130
Link Distance (ft)	177	210	191	118
Upstream Blk Time (%)				2
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NW 4th Ave & NW Couch St

Movement	EB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	79	72	101
Average Queue (ft)	31	31	29
95th Queue (ft)	65	62	75
Link Distance (ft)	210	217	166
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 7: NW 3rd Ave & NW Couch St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	77	168	86	66
Average Queue (ft)	31	72	26	16
95th Queue (ft)	63	131	68	50
Link Distance (ft)	217	200	465	465
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: NW 2nd Ave & NW Couch St

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	89	134	102	100
Average Queue (ft)	34	56	40	40
95th Queue (ft)	71	106	80	84
Link Distance (ft)	200	461	168	168
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: NW Naito Pkwy & NW Couch St

Movement	EB	NB	NB	SB	SB	B900	B900
Directions Served	LR	L	T	T	TR	T	T
Maximum Queue (ft)	108	125	429	117	94	81	6
Average Queue (ft)	45	56	288	87	32	15	0
95th Queue (ft)	81	125	416	130	73	55	5
Link Distance (ft)	461		808	41	41	98	98
Upstream Blk Time (%)					22	5	0
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)	100						
Storage Blk Time (%)	1				30		
Queuing Penalty (veh)	5				15		

Queuing and Blocking Report

Intersection: 10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St

Movement	WB	WB	SB	SB	SB
Directions Served	LT	T	T	T	TR
Maximum Queue (ft)	181	183	230	221	230
Average Queue (ft)	94	90	198	175	177
95th Queue (ft)	171	174	226	230	249
Link Distance (ft)	187	187	183	183	183
Upstream Blk Time (%)	4	3	31	9	22
Queuing Penalty (veh)	26	17	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 11: NE Grand Ave & NE Couch St

Movement	WB	WB	NB	NB	NB
Directions Served	T	TR	LT	T	T
Maximum Queue (ft)	246	246	190	187	156
Average Queue (ft)	217	218	77	56	42
95th Queue (ft)	234	237	188	158	127
Link Distance (ft)	197	197	189	189	189
Upstream Blk Time (%)	70	66	3	0	0
Queuing Penalty (veh)	0	0	12	1	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: SW Broadway/NW Broadway & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	T	R	TR	LT	TR
Maximum Queue (ft)	185	169	84	93	83	62	96	186	179
Average Queue (ft)	110	69	18	31	23	10	47	161	125
95th Queue (ft)	180	140	58	72	61	40	90	203	188
Link Distance (ft)	170	170		161	161		69	170	170
Upstream Blk Time (%)	1	0			0		6	14	2
Queuing Penalty (veh)	0	0			0		5	34	6
Storage Bay Dist (ft)			100			60			
Storage Blk Time (%)		2	0		1	0			
Queuing Penalty (veh)		1	0		1	0			

Queuing and Blocking Report

Intersection: 13: SW 6th Ave/NW 6th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NW
Directions Served	T	T	T	T	R	LT	R>	>
Maximum Queue (ft)	164	173	90	90	28	122	162	105
Average Queue (ft)	73	83	19	21	2	48	51	23
95th Queue (ft)	125	151	60	63	15	97	122	75
Link Distance (ft)	161	161	138	138		435	435	134
Upstream Blk Time (%)	0	0	0	0				0
Queuing Penalty (veh)	0	2	0	0				0
Storage Bay Dist (ft)					100			
Storage Blk Time (%)				0				
Queuing Penalty (veh)				0				

Intersection: 14: SW 5th Ave/NW 5th Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	SB	SE
Directions Served	T	T	R	<	T	T	LT	>
Maximum Queue (ft)	91	99	70	100	206	217	111	141
Average Queue (ft)	35	33	14	20	111	124	42	64
95th Queue (ft)	71	77	49	70	179	191	87	136
Link Distance (ft)	138	138			187	187	181	102
Upstream Blk Time (%)	0	0			0	1		4
Queuing Penalty (veh)	0	0			2	4		0
Storage Bay Dist (ft)			100	100				
Storage Blk Time (%)		0	0	0	5			
Queuing Penalty (veh)		0	0	2	0			

Intersection: 15: SW 4th Ave/NW 4th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B1500	B1500	B1500
Directions Served	T	T	T	T	R	LT	T	R	T	T	T
Maximum Queue (ft)	191	204	154	181	107	185	128	101	79	5	6
Average Queue (ft)	131	138	70	82	15	127	68	40	6	0	0
95th Queue (ft)	187	199	131	144	58	194	131	81	37	5	6
Link Distance (ft)	187	187	170	170		112	112	112	494	494	494
Upstream Blk Time (%)	1	2	0	0		15	1	0			
Queuing Penalty (veh)	3	6	1	2		25	2	0			
Storage Bay Dist (ft)					100						
Storage Blk Time (%)				6	0						
Queuing Penalty (veh)				8	0						

Queuing and Blocking Report

Intersection: 16: SW 3rd Ave/NW 3rd Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	T	T	LT	T	R
Maximum Queue (ft)	127	140	79	160	156	186	182	104
Average Queue (ft)	22	36	11	67	76	125	95	34
95th Queue (ft)	77	93	48	130	132	186	163	84
Link Distance (ft)	170	170		181	181	180	180	
Upstream Blk Time (%)	0	0		0	0	2	0	
Queuing Penalty (veh)	0	0		0	1	4	0	
Storage Bay Dist (ft)			100					100
Storage Blk Time (%)		0	0				7	0
Queuing Penalty (veh)		0	0				3	0

Intersection: 17: SW 2nd Ave/NW 2nd Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1700	B1700
Directions Served	T	T	T	T	R	LT	TR	T	T
Maximum Queue (ft)	182	190	209	235	227	244	209	41	8
Average Queue (ft)	81	93	95	122	102	144	78	2	0
95th Queue (ft)	151	165	182	212	194	236	158	20	6
Link Distance (ft)	181	181	359	359	359	199	199	662	662
Upstream Blk Time (%)	0	0				3	0		
Queuing Penalty (veh)	1	2				8	1		
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St

Movement	EB	EB	EB	SB	SB	SB
Directions Served	T	T	>	<T	T	T
Maximum Queue (ft)	148	154	144	142	128	108
Average Queue (ft)	90	96	104	68	59	49
95th Queue (ft)	151	153	152	115	101	93
Link Distance (ft)	62	62	62	194	194	194
Upstream Blk Time (%)	15	19	29	0	0	
Queuing Penalty (veh)	49	60	93	0	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 19: SE Grand Ave/NE Grand Ave & E Burnside St

Movement	EB	EB	EB	NB	NB	NB
Directions Served	L	T	T	T	T	TR
Maximum Queue (ft)	16	152	155	254	240	247
Average Queue (ft)	1	72	75	220	210	198
95th Queue (ft)	9	138	141	239	245	262
Link Distance (ft)	134	134	134	200	200	200
Upstream Blk Time (%)		1	2	57	28	26
Queuing Penalty (veh)		3	5	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 20: SW Broadway & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	95	131	132
Average Queue (ft)	43	51	58
95th Queue (ft)	80	108	115
Link Distance (ft)	200	207	207
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: SW 6th Ave & SW Oak St

Movement	WB	WB	NB	NW	NW
Directions Served	T	R	LT	R	>
Maximum Queue (ft)	50	57	166	126	101
Average Queue (ft)	11	11	74	34	15
95th Queue (ft)	38	40	135	91	64
Link Distance (ft)	226	226	188	144	144
Upstream Blk Time (%)			0	0	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 22: SW 5th Ave & SW Oak St

Movement	WB	SB	SB	SE
Directions Served	<LT	T	R	>
Maximum Queue (ft)	118	98	132	78
Average Queue (ft)	52	31	34	16
95th Queue (ft)	94	73	97	59
Link Distance (ft)	204	520	520	108
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: SW 4th Ave & SW Oak St

Movement	WB	NB	NB	NB
Directions Served	TR	LT	T	T
Maximum Queue (ft)	109	204	133	80
Average Queue (ft)	48	106	24	28
95th Queue (ft)	89	174	75	64
Link Distance (ft)	222	206	206	206
Upstream Blk Time (%)		0	0	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 24: SW 3rd Ave & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	154	116	140
Average Queue (ft)	77	43	69
95th Queue (ft)	134	93	118
Link Distance (ft)	209	491	491
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			



Queuing and Blocking Report

Intersection: 25: SW 2nd Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	164	203	133
Average Queue (ft)	71	112	44
95th Queue (ft)	133	175	98
Link Distance (ft)	472	203	203
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 26: SW Naito Pkwy & SW Oak St

Movement	NB	NB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	125	242	182	205
Average Queue (ft)	80	187	100	118
95th Queue (ft)	139	265	164	186
Link Distance (ft)		200	498	498
Upstream Blk Time (%)		11		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)	100			
Storage Blk Time (%)	3	23		
Queuing Penalty (veh)	19	30		

Intersection: 28: NE Couch Street

Movement	SB	SB
Directions Served	TR	R
Maximum Queue (ft)	109	129
Average Queue (ft)	23	37
95th Queue (ft)	125	146
Link Distance (ft)	196	196
Upstream Blk Time (%)	3	2
Queuing Penalty (veh)	18	15
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 30: Burnside Bridge

Movement	WB	WB
Directions Served	T	T
Maximum Queue (ft)	12	11
Average Queue (ft)	0	1
95th Queue (ft)	8	8
Link Distance (ft)	89	89
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 36:

Movement	SW	SW
Directions Served	R	R
Maximum Queue (ft)	77	84
Average Queue (ft)	20	36
95th Queue (ft)	66	86
Link Distance (ft)	12	12
Upstream Blk Time (%)	10	11
Queuing Penalty (veh)	69	76
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 1201: SW Broadway

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	40	9
Average Queue (ft)	3	0
95th Queue (ft)	21	9
Link Distance (ft)	145	69
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 1701: W Burnside St/Burnside Bridge

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	2	3
Average Queue (ft)	0	0
95th Queue (ft)	2	3
Link Distance (ft)	359	1879
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 1801: Burnside Bridge/E Burnside St

Movement	EB	EB	EB	SW
Directions Served	T	T	T	R
Maximum Queue (ft)	7	16	31	4
Average Queue (ft)	0	1	1	0
95th Queue (ft)	5	9	14	4
Link Distance (ft)	89	89	89	34
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2700: E Burnside St

Movement	EB	EB	EB
Directions Served	T	T	T
Maximum Queue (ft)	114	122	140
Average Queue (ft)	18	25	33
95th Queue (ft)	71	85	104
Link Distance (ft)	84	84	84
Upstream Blk Time (%)	1	1	3
Queuing Penalty (veh)	2	4	9
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 654

Queuing and Blocking Report

Intersection: 1: NW 4th Ave & NW Everett St

Movement	EB	NB
Directions Served	LT	TR
Maximum Queue (ft)	230	173
Average Queue (ft)	116	71
95th Queue (ft)	193	138
Link Distance (ft)	209	458
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: NW 3rd Ave & NW Everett St

Movement	EB	EB	SB	SB
Directions Served	T	R	LT	T
Maximum Queue (ft)	115	78	138	57
Average Queue (ft)	40	27	64	17
95th Queue (ft)	89	64	115	49
Link Distance (ft)	211	211	207	207
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: NW Broadway & NW Couch St

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	119	161	100	219	177
Average Queue (ft)	52	67	23	96	41
95th Queue (ft)	97	130	69	181	114
Link Distance (ft)	198	199	170	203	203
Upstream Blk Time (%)		0		1	0
Queuing Penalty (veh)		0		0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 4: NW 6th Ave & NW Couch St

Movement	EB	WB	NB	NW
Directions Served	LT	TR	LT	>
Maximum Queue (ft)	74	105	104	125
Average Queue (ft)	26	34	43	34
95th Queue (ft)	62	78	86	93
Link Distance (ft)	199	177	164	106
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW 5th Ave & NW Couch St

Movement	EB	WB	SB	SE
Directions Served	TR	<LT	LT	>
Maximum Queue (ft)	80	87	61	152
Average Queue (ft)	22	34	21	60
95th Queue (ft)	58	73	51	125
Link Distance (ft)	177	210	191	118
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NW 4th Ave & NW Couch St

Movement	EB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	76	75	111
Average Queue (ft)	30	30	29
95th Queue (ft)	62	61	77
Link Distance (ft)	210	217	166
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 7: NW 3rd Ave & NW Couch St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	77	159	81	75
Average Queue (ft)	31	66	23	17
95th Queue (ft)	61	120	62	53
Link Distance (ft)	217	200	465	465
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: NW 2nd Ave & NW Couch St

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	77	113	101	98
Average Queue (ft)	35	51	39	40
95th Queue (ft)	65	93	80	85
Link Distance (ft)	200	461	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: NW Naito Pkwy & NW Couch St

Movement	EB	NB	NB	SB	SB	B900	B900
Directions Served	LR	L	T	T	TR	T	T
Maximum Queue (ft)	104	125	439	125	98	96	8
Average Queue (ft)	45	62	291	88	34	16	0
95th Queue (ft)	83	131	427	130	76	59	5
Link Distance (ft)	461		808	41	41	98	98
Upstream Blk Time (%)					23	5	0
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)	100						
Storage Blk Time (%)	1				30		
Queuing Penalty (veh)	8				15		

## Queuing and Blocking Report

## Intersection: 10: NE Martin Luther King Jr Blvd &amp; NE Couch Street/NE Couch St

Movement	WB	WB	SB	SB	SB
Directions Served	LT	T	T	T	TR
Maximum Queue (ft)	201	194	236	219	238
Average Queue (ft)	90	80	198	172	180
95th Queue (ft)	182	171	229	233	250
Link Distance (ft)	187	187	183	183	183
Upstream Blk Time (%)	1	1	31	10	26
Queuing Penalty (veh)	8	4	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

## Intersection: 11: NE Grand Ave &amp; NE Couch St

Movement	WB	WB	NB	NB	NB
Directions Served	T	TR	LT	T	T
Maximum Queue (ft)	250	245	182	161	148
Average Queue (ft)	218	217	66	42	35
95th Queue (ft)	237	233	166	133	113
Link Distance (ft)	197	197	189	189	189
Upstream Blk Time (%)	68	67	0	0	0
Queuing Penalty (veh)	0	0	1	1	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

## Intersection: 12: SW Broadway/NW Broadway &amp; W Burnside St

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	T	R	TR	LT	TR
Maximum Queue (ft)	178	165	66	87	82	60	91	184	175
Average Queue (ft)	105	64	15	30	25	8	41	161	125
95th Queue (ft)	172	127	49	67	61	35	82	206	186
Link Distance (ft)	170	170		161	161		69	170	170
Upstream Blk Time (%)	1	0					3	13	1
Queuing Penalty (veh)	0	0					3	33	3
Storage Bay Dist (ft)			100			60			
Storage Blk Time (%)		2			1	0			
Queuing Penalty (veh)		1			1	1			

Queuing and Blocking Report

Intersection: 13: SW 6th Ave/NW 6th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NW
Directions Served	T	T	T	T	R	LT	R>	>
Maximum Queue (ft)	155	167	86	96	37	114	155	104
Average Queue (ft)	74	75	17	18	4	43	51	25
95th Queue (ft)	131	142	56	59	23	90	124	79
Link Distance (ft)	161	161	138	138		435	435	134
Upstream Blk Time (%)	0	0	0	0				0
Queuing Penalty (veh)	1	1	0	0				0
Storage Bay Dist (ft)					100			
Storage Blk Time (%)				0				
Queuing Penalty (veh)				0				

Intersection: 14: SW 5th Ave/NW 5th Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	SB	SE
Directions Served	T	T	R	<	T	T	LT	>
Maximum Queue (ft)	79	95	67	95	192	214	93	141
Average Queue (ft)	37	29	13	17	108	124	40	56
95th Queue (ft)	71	72	45	64	176	190	81	126
Link Distance (ft)	138	138			187	187	181	102
Upstream Blk Time (%)		0			0	0		3
Queuing Penalty (veh)		0			1	3		0
Storage Bay Dist (ft)			100	100				
Storage Blk Time (%)		0	0	0	5			
Queuing Penalty (veh)		0	0	1	0			

Intersection: 15: SW 4th Ave/NW 4th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B1500	B1500
Directions Served	T	T	T	T	R	LT	T	R	T	T
Maximum Queue (ft)	196	193	155	166	72	185	130	89	89	16
Average Queue (ft)	123	125	61	75	12	127	65	38	8	1
95th Queue (ft)	180	185	117	131	43	193	127	76	47	11
Link Distance (ft)	187	187	170	170		112	112	112	494	494
Upstream Blk Time (%)	1	1	0	0		15	1	0		
Queuing Penalty (veh)	2	3	1	1		24	2	0		
Storage Bay Dist (ft)					100					
Storage Blk Time (%)				5						
Queuing Penalty (veh)				6						



## Queuing and Blocking Report

## Intersection: 16: SW 3rd Ave/NW 3rd Ave &amp; W Burnside St

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	T	T	LT	T	R
Maximum Queue (ft)	99	119	52	151	167	182	178	110
Average Queue (ft)	15	30	8	66	79	110	92	36
95th Queue (ft)	61	82	32	125	139	170	153	88
Link Distance (ft)	170	170		181	181	180	180	
Upstream Blk Time (%)		0		0	0	0	0	
Queuing Penalty (veh)		0		0	0	1	0	
Storage Bay Dist (ft)			100					100
Storage Blk Time (%)		0					7	0
Queuing Penalty (veh)		0					3	0

## Intersection: 17: SW 2nd Ave/NW 2nd Ave &amp; W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1700
Directions Served	T	T	T	T	R	LT	TR	T
Maximum Queue (ft)	177	182	171	186	175	244	192	38
Average Queue (ft)	72	78	100	120	103	143	79	3
95th Queue (ft)	138	141	166	183	176	233	158	23
Link Distance (ft)	181	181	160	160	160	202	202	662
Upstream Blk Time (%)	0	0	1	2	2	3	0	
Queuing Penalty (veh)	1	1	3	10	8	7	0	
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

## Intersection: 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd &amp; E Burnside St

Movement	EB	EB	EB	SB	SB	SB
Directions Served	T	T	>	<T	T	T
Maximum Queue (ft)	153	125	148	124	127	102
Average Queue (ft)	100	80	103	64	57	48
95th Queue (ft)	151	136	149	106	99	91
Link Distance (ft)	62	62	62	194	194	194
Upstream Blk Time (%)	20	13	28			
Queuing Penalty (veh)	61	38	82			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

## Queuing and Blocking Report

## Intersection: 19: SE Grand Ave/NE Grand Ave &amp; E Burnside St

Movement	EB	EB	EB	NB	NB	NB
Directions Served	L	T	T	T	T	TR
Maximum Queue (ft)	10	114	111	247	241	235
Average Queue (ft)	1	50	45	215	205	197
95th Queue (ft)	5	95	93	233	234	253
Link Distance (ft)	134	134	134	195	195	195
Upstream Blk Time (%)		0	0	54	25	24
Queuing Penalty (veh)		0	0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

## Intersection: 20: SW Broadway &amp; SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	89	110	133
Average Queue (ft)	42	47	56
95th Queue (ft)	75	95	110
Link Distance (ft)	200	207	207
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

## Intersection: 21: SW 6th Ave &amp; SW Oak St

Movement	WB	WB	NB	NW	NW
Directions Served	T	R	LT	R	>
Maximum Queue (ft)	56	60	156	140	90
Average Queue (ft)	12	10	67	40	15
95th Queue (ft)	40	38	124	104	60
Link Distance (ft)	226	226	188	144	144
Upstream Blk Time (%)			0	0	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 22: SW 5th Ave & SW Oak St

Movement	WB	SB	SB	SE
Directions Served	<LT	T	R	>
Maximum Queue (ft)	105	79	120	81
Average Queue (ft)	50	26	35	18
95th Queue (ft)	92	62	99	62
Link Distance (ft)	204	520	520	108
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: SW 4th Ave & SW Oak St

Movement	WB	NB	NB	NB
Directions Served	TR	LT	T	T
Maximum Queue (ft)	121	196	91	68
Average Queue (ft)	49	102	21	25
95th Queue (ft)	96	163	62	59
Link Distance (ft)	222	206	206	206
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 24: SW 3rd Ave & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	150	118	148
Average Queue (ft)	73	45	71
95th Queue (ft)	127	97	121
Link Distance (ft)	209	491	491
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 25: SW 2nd Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	154	197	114
Average Queue (ft)	68	111	39
95th Queue (ft)	124	172	84
Link Distance (ft)	472	203	203
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 26: SW Naito Pkwy & SW Oak St

Movement	NB	NB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	125	235	207	219
Average Queue (ft)	82	183	103	117
95th Queue (ft)	141	262	171	188
Link Distance (ft)		200	498	498
Upstream Blk Time (%)		11		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)	100			
Storage Blk Time (%)	3	24		
Queuing Penalty (veh)	15	31		

Intersection: 28: NE Couch Street

Movement	SB	SB
Directions Served	TR	R
Maximum Queue (ft)	149	150
Average Queue (ft)	18	43
95th Queue (ft)	88	111
Link Distance (ft)	197	197
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 30: Burnside Bridge

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: 36:

Movement	SW	SW
Directions Served	R	R
Maximum Queue (ft)	83	78
Average Queue (ft)	25	46
95th Queue (ft)	73	80
Link Distance (ft)	4	4
Upstream Blk Time (%)	2	5
Queuing Penalty (veh)	13	36
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 1201: SW Broadway

Movement	WB
Directions Served	R
Maximum Queue (ft)	35
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	145
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

## Queuing and Blocking Report

### Intersection: 1701: W Burnside St/Burnside Bridge

Movement	EB	EB	WB	WB
Directions Served	T	T	T	T
Maximum Queue (ft)	170	174	58	155
Average Queue (ft)	92	101	3	22
95th Queue (ft)	160	166	26	93
Link Distance (ft)	160	160	2083	2083
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	2	2		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

### Intersection: 1801: Burnside Bridge/E Burnside St

Movement	EB	EB	EB	SW
Directions Served	T	T	T	R
Maximum Queue (ft)	8	8	57	14
Average Queue (ft)	0	0	13	0
95th Queue (ft)	7	8	41	10
Link Distance (ft)	96	96	96	36
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

### Intersection: 2700: E Burnside St

Movement	EB	EB	EB
Directions Served	T	T	T
Maximum Queue (ft)	95	60	111
Average Queue (ft)	15	6	22
95th Queue (ft)	59	30	77
Link Distance (ft)	77	77	77
Upstream Blk Time (%)	0	0	1
Queuing Penalty (veh)	1	0	4
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

## Network Summary

Network wide Queuing Penalty: 446

Queuing and Blocking Report

Intersection: 1: NW 4th Ave & NW Everett St

Movement	EB	NB
Directions Served	LT	TR
Maximum Queue (ft)	226	177
Average Queue (ft)	126	72
95th Queue (ft)	203	144
Link Distance (ft)	209	458
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: NW 3rd Ave & NW Everett St

Movement	EB	EB	SB	SB
Directions Served	T	R	LT	T
Maximum Queue (ft)	118	112	143	63
Average Queue (ft)	36	33	62	15
95th Queue (ft)	84	75	113	47
Link Distance (ft)	211	211	207	207
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: NW Broadway & NW Couch St

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	125	144	108	219	175
Average Queue (ft)	53	59	23	100	45
95th Queue (ft)	100	116	74	188	118
Link Distance (ft)	198	199	170	203	203
Upstream Blk Time (%)			0	2	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 4: NW 6th Ave & NW Couch St

Movement	EB	WB	NB	NW
Directions Served	LT	TR	LT	>
Maximum Queue (ft)	96	87	113	116
Average Queue (ft)	25	29	39	31
95th Queue (ft)	65	69	88	88
Link Distance (ft)	199	177	164	106
Upstream Blk Time (%)			0	1
Queuing Penalty (veh)			0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW 5th Ave & NW Couch St

Movement	EB	WB	SB	SE
Directions Served	TR	<LT	LT	>
Maximum Queue (ft)	88	93	64	148
Average Queue (ft)	21	31	21	63
95th Queue (ft)	62	70	52	127
Link Distance (ft)	177	210	191	118
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NW 4th Ave & NW Couch St

Movement	EB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	87	64	96
Average Queue (ft)	34	26	29
95th Queue (ft)	68	58	76
Link Distance (ft)	210	217	166
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			



Queuing and Blocking Report

Intersection: 7: NW 3rd Ave & NW Couch St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	72	148	78	73
Average Queue (ft)	33	66	28	18
95th Queue (ft)	61	119	66	53
Link Distance (ft)	217	200	465	465
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: NW 2nd Ave & NW Couch St

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	81	122	87	95
Average Queue (ft)	35	55	32	37
95th Queue (ft)	68	101	70	77
Link Distance (ft)	200	461	176	176
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: NW Naito Pkwy & NW Couch St

Movement	EB	NB	NB	SB	SB	B900	B900
Directions Served	LR	L	T	T	TR	T	T
Maximum Queue (ft)	100	125	435	129	95	84	9
Average Queue (ft)	44	55	279	85	34	14	0
95th Queue (ft)	78	121	418	133	79	51	6
Link Distance (ft)	461		808	41	41	98	98
Upstream Blk Time (%)					23	5	0
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)	100						
Storage Blk Time (%)	1		31				
Queuing Penalty (veh)	7		15				

Queuing and Blocking Report

Intersection: 10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St

Movement	WB	WB	SB	SB	SB
Directions Served	LT	T	T	T	TR
Maximum Queue (ft)	214	202	231	224	227
Average Queue (ft)	97	85	199	178	174
95th Queue (ft)	201	191	220	234	251
Link Distance (ft)	187	187	183	183	183
Upstream Blk Time (%)	3	1	33	10	19
Queuing Penalty (veh)	18	9	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 11: NE Grand Ave & NE Couch St

Movement	WB	WB	NB	NB	NB
Directions Served	T	TR	LT	T	T
Maximum Queue (ft)	244	246	194	178	147
Average Queue (ft)	217	218	72	49	38
95th Queue (ft)	234	234	175	143	113
Link Distance (ft)	197	197	189	189	189
Upstream Blk Time (%)	70	67	0	0	0
Queuing Penalty (veh)	0	0	2	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: SW Broadway/NW Broadway & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	T	R	TR	LT	TR
Maximum Queue (ft)	186	170	85	82	69	46	92	189	182
Average Queue (ft)	106	63	20	27	20	9	44	160	126
95th Queue (ft)	177	133	63	63	52	33	87	201	187
Link Distance (ft)	170	170		161	161		69	170	170
Upstream Blk Time (%)	1	0					4	12	3
Queuing Penalty (veh)	0	0					4	31	7
Storage Bay Dist (ft)			100			60			
Storage Blk Time (%)		2	0		0	0			
Queuing Penalty (veh)		1	0		0	0			

Queuing and Blocking Report

Intersection: 13: SW 6th Ave/NW 6th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NW
Directions Served	T	T	T	T	R	LT	R>	>
Maximum Queue (ft)	152	186	80	102	28	113	149	97
Average Queue (ft)	73	86	16	17	2	44	47	21
95th Queue (ft)	130	155	51	56	14	89	115	71
Link Distance (ft)	161	161	138	138		435	435	134
Upstream Blk Time (%)	0	1	0	0				0
Queuing Penalty (veh)	1	3	0	0				0
Storage Bay Dist (ft)					100			
Storage Blk Time (%)				0				
Queuing Penalty (veh)				0				

Intersection: 14: SW 5th Ave/NW 5th Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	SB	SE
Directions Served	T	T	R	<	T	T	LT	>
Maximum Queue (ft)	94	103	65	94	186	202	98	142
Average Queue (ft)	36	31	13	20	103	115	41	61
95th Queue (ft)	75	76	44	71	165	174	84	135
Link Distance (ft)	138	138			187	187	181	102
Upstream Blk Time (%)	0	0			0	0		4
Queuing Penalty (veh)	0	0			1	1		0
Storage Bay Dist (ft)			100	100				
Storage Blk Time (%)		0	0	0	4			
Queuing Penalty (veh)		0	0	3	0			

Intersection: 15: SW 4th Ave/NW 4th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NB	B1500
Directions Served	T	T	T	T	R	LT	T	R	T
Maximum Queue (ft)	187	195	128	134	83	184	129	99	68
Average Queue (ft)	127	131	59	70	12	124	68	40	6
95th Queue (ft)	185	191	104	114	45	190	131	76	37
Link Distance (ft)	187	187	170	170		112	112	112	494
Upstream Blk Time (%)	1	1		0		14	1	0	
Queuing Penalty (veh)	2	5		0		24	2	0	
Storage Bay Dist (ft)					100				
Storage Blk Time (%)				3					
Queuing Penalty (veh)				4					

Queuing and Blocking Report

Intersection: 16: SW 3rd Ave/NW 3rd Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	T	T	LT	T	R
Maximum Queue (ft)	116	146	84	143	153	185	174	104
Average Queue (ft)	23	37	10	68	74	127	96	35
95th Queue (ft)	77	95	40	117	127	187	156	86
Link Distance (ft)	170	170		181	181	180	180	
Upstream Blk Time (%)		0		0	0	2	0	
Queuing Penalty (veh)		0		0	0	4	0	
Storage Bay Dist (ft)			100					100
Storage Blk Time (%)		0	0				7	0
Queuing Penalty (veh)		0	0				3	0

Intersection: 17: SW 2nd Ave/NW 2nd Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1700	B1700
Directions Served	T	T	T	T	R	LT	TR	T	T
Maximum Queue (ft)	176	188	175	185	174	239	191	38	12
Average Queue (ft)	77	91	102	115	92	140	83	1	0
95th Queue (ft)	144	162	159	171	158	223	162	16	12
Link Distance (ft)	181	181	164	164	164	202	202	662	662
Upstream Blk Time (%)	0	0	0	0	0	2	0		
Queuing Penalty (veh)	0	1	1	2	2	6	0		
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St

Movement	EB	EB	EB	SB	SB	SB
Directions Served	T	T	>	<T	T	T
Maximum Queue (ft)	144	140	145	158	138	108
Average Queue (ft)	81	92	101	67	61	50
95th Queue (ft)	146	150	148	120	112	94
Link Distance (ft)	62	62	62	194	194	194
Upstream Blk Time (%)	15	18	29	0	0	
Queuing Penalty (veh)	47	57	94	0	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 19: SE Grand Ave/NE Grand Ave & E Burnside St

Movement	EB	EB	EB	NB	NB	NB
Directions Served	L	T	T	T	T	TR
Maximum Queue (ft)	16	139	134	248	244	239
Average Queue (ft)	1	55	54	219	208	200
95th Queue (ft)	8	112	107	236	243	258
Link Distance (ft)	134	134	134	199	199	199
Upstream Blk Time (%)		0	0	55	26	25
Queuing Penalty (veh)		0	1	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 20: SW Broadway & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	90	119	139
Average Queue (ft)	40	46	56
95th Queue (ft)	74	95	109
Link Distance (ft)	200	207	207
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: SW 6th Ave & SW Oak St

Movement	WB	WB	NB	NW	NW
Directions Served	T	R	LT	R	>
Maximum Queue (ft)	46	55	156	105	97
Average Queue (ft)	10	9	68	33	15
95th Queue (ft)	36	36	126	87	58
Link Distance (ft)	226	226	188	144	144
Upstream Blk Time (%)			0	0	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 22: SW 5th Ave & SW Oak St

Movement	WB	SB	SB	SE
Directions Served	<LT	T	R	>
Maximum Queue (ft)	116	91	144	98
Average Queue (ft)	49	28	38	21
95th Queue (ft)	95	66	110	69
Link Distance (ft)	204	520	520	108
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: SW 4th Ave & SW Oak St

Movement	WB	NB	NB	NB
Directions Served	TR	LT	T	T
Maximum Queue (ft)	120	197	122	77
Average Queue (ft)	44	100	23	27
95th Queue (ft)	90	165	73	64
Link Distance (ft)	222	206	206	206
Upstream Blk Time (%)	0	0	0	
Queuing Penalty (veh)	0	0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 24: SW 3rd Ave & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	153	106	134
Average Queue (ft)	68	44	70
95th Queue (ft)	125	93	116
Link Distance (ft)	209	491	491
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 25: SW 2nd Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	151	197	150
Average Queue (ft)	69	114	43
95th Queue (ft)	125	178	99
Link Distance (ft)	472	203	203
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 26: SW Naito Pkwy & SW Oak St

Movement	NB	NB	SB	SB	B2601
Directions Served	L	T	T	TR	T
Maximum Queue (ft)	125	238	179	200	3
Average Queue (ft)	80	182	97	113	0
95th Queue (ft)	140	257	156	180	3
Link Distance (ft)		200	498	498	808
Upstream Blk Time (%)		10			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	3	23			
Queuing Penalty (veh)	17	30			

Intersection: 27:

Movement	SW	SW
Directions Served	R	R
Maximum Queue (ft)	111	99
Average Queue (ft)	62	62
95th Queue (ft)	113	93
Link Distance (ft)	12	12
Upstream Blk Time (%)	35	42
Queuing Penalty (veh)	238	284
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 28: NE Couch Street

Movement	SB	SB
Directions Served	TR	R
Maximum Queue (ft)	240	248
Average Queue (ft)	99	113
95th Queue (ft)	241	250
Link Distance (ft)	197	197
Upstream Blk Time (%)	2	3
Queuing Penalty (veh)	11	19
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 30: Burnside Bridge

Movement	WB	WB
Directions Served	T	T
Maximum Queue (ft)	154	147
Average Queue (ft)	115	110
95th Queue (ft)	162	148
Link Distance (ft)	96	96
Upstream Blk Time (%)	15	14
Queuing Penalty (veh)	98	96
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 1201: SW Broadway

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	52	5
Average Queue (ft)	4	0
95th Queue (ft)	26	5
Link Distance (ft)	145	69
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		



## Queuing and Blocking Report

### Intersection: 1701: W Burnside St/Burnside Bridge

Movement	WB
Directions Served	T
Maximum Queue (ft)	128
Average Queue (ft)	8
95th Queue (ft)	72
Link Distance (ft)	2077
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

### Intersection: 1801: Burnside Bridge/E Burnside St

Movement	EB	EB	EB	SW	SW
Directions Served	T	T	T	R	R
Maximum Queue (ft)	12	16	30	67	68
Average Queue (ft)	1	1	1	25	28
95th Queue (ft)	12	11	17	58	58
Link Distance (ft)	96	96	96	25	25
Upstream Blk Time (%)		0		6	8
Queuing Penalty (veh)		0		44	53
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

### Intersection: 2700: E Burnside St

Movement	EB	EB	EB
Directions Served	T	T	T
Maximum Queue (ft)	102	120	138
Average Queue (ft)	15	24	28
95th Queue (ft)	64	85	95
Link Distance (ft)	80	80	80
Upstream Blk Time (%)	1	1	3
Queuing Penalty (veh)	2	4	9
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

## Network Summary

Network wide Queuing Penalty: 1268
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## Queuing and Blocking Report

### Intersection: 1: NW 4th Ave & NW Everett St

Movement	EB	NB
Directions Served	LT	TR
Maximum Queue (ft)	256	219
Average Queue (ft)	221	101
95th Queue (ft)	262	186
Link Distance (ft)	209	458
Upstream Blk Time (%)	41	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

### Intersection: 2: NW 3rd Ave & NW Everett St

Movement	EB	EB	SB	SB
Directions Served	T	R	LT	T
Maximum Queue (ft)	229	145	198	109
Average Queue (ft)	135	65	104	25
95th Queue (ft)	223	121	169	73
Link Distance (ft)	211	211	207	207
Upstream Blk Time (%)	1	0	0	
Queuing Penalty (veh)	5	0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

### Intersection: 3: NW Broadway & NW Couch St

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	231	128	138	229	178
Average Queue (ft)	170	54	45	120	62
95th Queue (ft)	259	107	108	211	143
Link Distance (ft)	198	199	170	203	203
Upstream Blk Time (%)	32	0	0	3	1
Queuing Penalty (veh)	0	0	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 4: NW 6th Ave & NW Couch St

Movement	EB	WB	NB	NW
Directions Served	<LT	TR	LT	>
Maximum Queue (ft)	133	77	102	90
Average Queue (ft)	50	28	37	24
95th Queue (ft)	99	64	82	69
Link Distance (ft)	199	177	164	106
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW 5th Ave & NW Couch St

Movement	EB	WB	SB	SE
Directions Served	TR	<LT	LT	>
Maximum Queue (ft)	116	106	117	149
Average Queue (ft)	45	45	50	60
95th Queue (ft)	96	86	97	124
Link Distance (ft)	177	210	191	118
Upstream Blk Time (%)	0			1
Queuing Penalty (veh)	0			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NW 4th Ave & NW Couch St

Movement	EB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	127	66	145
Average Queue (ft)	52	26	55
95th Queue (ft)	97	56	121
Link Distance (ft)	210	217	166
Upstream Blk Time (%)	0		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 7: NW 3rd Ave & NW Couch St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	141	196	293	262
Average Queue (ft)	52	86	125	71
95th Queue (ft)	111	175	268	207
Link Distance (ft)	217	200	465	465
Upstream Blk Time (%)		3		
Queuing Penalty (veh)		4		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: NW 2nd Ave & NW Couch St

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	117	167	80	112
Average Queue (ft)	51	67	29	45
95th Queue (ft)	96	131	66	89
Link Distance (ft)	200	461	168	168
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: NW Naito Pkwy & NW Couch St

Movement	EB	NB	NB	SB	SB	B900	B900
Directions Served	LR	L	T	T	TR	T	T
Maximum Queue (ft)	136	117	415	120	111	105	64
Average Queue (ft)	61	37	194	98	51	29	3
95th Queue (ft)	108	94	338	133	102	84	26
Link Distance (ft)	461		808	41	41	98	98
Upstream Blk Time (%)				25	10	1	0
Queuing Penalty (veh)				0	0	0	0
Storage Bay Dist (ft)		100					
Storage Blk Time (%)		1	13				
Queuing Penalty (veh)		4	4				

Queuing and Blocking Report

Intersection: 10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St

Movement	WB	WB	SB	SB	SB
Directions Served	LT	T	T	T	TR
Maximum Queue (ft)	198	206	217	220	218
Average Queue (ft)	90	75	198	195	190
95th Queue (ft)	176	169	206	216	227
Link Distance (ft)	187	187	182	182	182
Upstream Blk Time (%)	1	0	54	30	29
Queuing Penalty (veh)	4	2	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 11: NE Grand Ave & NE Couch St

Movement	WB	WB	NB	NB	NB
Directions Served	T	TR	LT	T	T
Maximum Queue (ft)	247	243	151	135	140
Average Queue (ft)	217	213	73	68	63
95th Queue (ft)	233	229	132	123	120
Link Distance (ft)	197	197	189	189	189
Upstream Blk Time (%)	70	57	0	0	0
Queuing Penalty (veh)	0	0	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: SW Broadway/NW Broadway & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	T	R	TR	LT	TR
Maximum Queue (ft)	191	180	106	187	203	85	153	202	206
Average Queue (ft)	124	77	22	167	174	51	79	164	155
95th Queue (ft)	197	148	66	204	208	109	147	213	214
Link Distance (ft)	177	177		161	161		78	170	170
Upstream Blk Time (%)	1	0		9	12		11	16	9
Queuing Penalty (veh)	0	0		52	66		17	57	31
Storage Bay Dist (ft)			100			60			
Storage Blk Time (%)		3	0		20	1			
Queuing Penalty (veh)		1	0		27	7			

Queuing and Blocking Report

Intersection: 13: SW 6th Ave/NW 6th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NW
Directions Served	T	T	T	T	R	LT	R>	>
Maximum Queue (ft)	203	194	161	168	137	141	189	109
Average Queue (ft)	136	109	81	98	24	58	63	24
95th Queue (ft)	205	182	163	172	93	113	148	78
Link Distance (ft)	161	161	138	138		435	435	134
Upstream Blk Time (%)	4	2	2	3	0			0
Queuing Penalty (veh)	16	7	10	19	0			0
Storage Bay Dist (ft)					100			
Storage Blk Time (%)				10				
Queuing Penalty (veh)				6				

Intersection: 14: SW 5th Ave/NW 5th Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	SB	SE
Directions Served	T	T	R	<	T	T	LT	>
Maximum Queue (ft)	152	156	93	97	189	196	187	144
Average Queue (ft)	71	67	22	19	85	98	120	64
95th Queue (ft)	122	128	63	68	165	175	193	136
Link Distance (ft)	138	138			190	190	181	102
Upstream Blk Time (%)	0	0			0	0	5	5
Queuing Penalty (veh)	1	1			1	2	9	0
Storage Bay Dist (ft)			100	100				
Storage Blk Time (%)		2	0	0	3			
Queuing Penalty (veh)		2	0	0	0			

Intersection: 15: SW 4th Ave/NW 4th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1500	B1500
Directions Served	T	T	T	T	R	LT	R	T	T
Maximum Queue (ft)	170	169	191	224	150	204	178	311	22
Average Queue (ft)	91	96	119	139	46	180	87	102	1
95th Queue (ft)	141	149	186	208	133	212	151	240	11
Link Distance (ft)	190	190	182	182		111	111	493	493
Upstream Blk Time (%)	0	0	1	3		49	5		
Queuing Penalty (veh)	0	0	7	17		170	17		
Storage Bay Dist (ft)					100				
Storage Blk Time (%)				23	0				
Queuing Penalty (veh)				23	0				

Queuing and Blocking Report

Intersection: 16: SW 3rd Ave/NW 3rd Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	T	T	LT	T	R
Maximum Queue (ft)	190	198	125	154	161	222	212	110
Average Queue (ft)	73	84	32	69	85	194	150	47
95th Queue (ft)	153	162	100	130	142	225	216	114
Link Distance (ft)	182	182		181	181	180	180	
Upstream Blk Time (%)	0	0		0	0	30	4	
Queuing Penalty (veh)	1	2		0	1	105	13	
Storage Bay Dist (ft)			100					100
Storage Blk Time (%)		3	0				22	0
Queuing Penalty (veh)		4	0				12	1

Intersection: 17: SW 2nd Ave/NW 2nd Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1700	B1700
Directions Served	T	T	T	T	R	LT	TR	T	T
Maximum Queue (ft)	226	226	180	203	146	242	243	26	24
Average Queue (ft)	136	140	66	91	55	128	138	1	1
95th Queue (ft)	231	232	136	165	116	210	221	13	15
Link Distance (ft)	181	181	360	360	360	199	199	662	662
Upstream Blk Time (%)	3	4				2	2		
Queuing Penalty (veh)	21	23				4	6		
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St

Movement	EB	EB	EB	SB	SB	SB
Directions Served	T	T	>	<T	T	T
Maximum Queue (ft)	165	165	153	207	230	207
Average Queue (ft)	135	134	121	121	114	103
95th Queue (ft)	149	147	158	206	205	186
Link Distance (ft)	70	70	70	194	194	194
Upstream Blk Time (%)	35	36	38	1	1	0
Queuing Penalty (veh)	172	176	187	4	3	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 19: SE Grand Ave/NE Grand Ave & E Burnside St

Movement	EB	EB	EB	NB	NB	NB
Directions Served	L	T	T	T	T	TR
Maximum Queue (ft)	94	109	111	250	241	235
Average Queue (ft)	20	45	50	221	216	199
95th Queue (ft)	60	91	96	235	235	261
Link Distance (ft)	127	127	127	202	202	202
Upstream Blk Time (%)	0	0	0	63	37	28
Queuing Penalty (veh)	0	1	0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 20: SW Broadway & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	128	174	215
Average Queue (ft)	57	84	105
95th Queue (ft)	101	152	176
Link Distance (ft)	200	182	182
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: SW 6th Ave & SW Oak St

Movement	WB	WB	NB	NW	NW
Directions Served	T	R	LT	R	>
Maximum Queue (ft)	56	48	202	133	93
Average Queue (ft)	12	9	100	45	17
95th Queue (ft)	41	34	168	107	64
Link Distance (ft)	226	226	188	144	144
Upstream Blk Time (%)			1	0	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					



Queuing and Blocking Report

Intersection: 22: SW 5th Ave & SW Oak St

Movement	WB	SB	SB	SE
Directions Served	<LT	T	R	>
Maximum Queue (ft)	127	136	125	111
Average Queue (ft)	62	48	40	21
95th Queue (ft)	110	106	102	72
Link Distance (ft)	204	375	375	107
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: SW 4th Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	106	226	197
Average Queue (ft)	50	147	83
95th Queue (ft)	88	227	166
Link Distance (ft)	234	207	207
Upstream Blk Time (%)		2	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 24: SW 3rd Ave & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	150	186	186
Average Queue (ft)	72	85	101
95th Queue (ft)	125	147	162
Link Distance (ft)	209	491	491
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 25: SW 2nd Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	104	205	161
Average Queue (ft)	45	117	81
95th Queue (ft)	88	184	144
Link Distance (ft)	472	203	203
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 26: SW Naito Pkwy & SW Oak St

Movement	NB	NB	SB	SB	B2601
Directions Served	L	T	T	TR	T
Maximum Queue (ft)	124	224	181	191	6
Average Queue (ft)	38	155	102	109	0
95th Queue (ft)	91	244	164	176	6
Link Distance (ft)		200	498	498	808
Upstream Blk Time (%)		4			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	0	15			
Queuing Penalty (veh)	0	6			

Intersection: 28: NE Couch Street

Movement	SB	SB
Directions Served	TR	R
Maximum Queue (ft)	116	131
Average Queue (ft)	21	33
95th Queue (ft)	75	94
Link Distance (ft)	196	196
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 30: Burnside Bridge

Movement	EB	EB
Directions Served	T	T
Maximum Queue (ft)	14	47
Average Queue (ft)	1	2
95th Queue (ft)	9	21
Link Distance (ft)	1882	1882
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 35: NE Couch Street

Movement	SW	SW
Directions Served	R	R
Maximum Queue (ft)	88	85
Average Queue (ft)	55	58
95th Queue (ft)	92	79
Link Distance (ft)	10	10
Upstream Blk Time (%)	6	7
Queuing Penalty (veh)	31	41
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 1201: SW Broadway

Movement	WB	SB	SB
Directions Served	R	T	T
Maximum Queue (ft)	60	9	12
Average Queue (ft)	5	0	0
95th Queue (ft)	32	6	8
Link Distance (ft)	141	78	78
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 1701: W Burnside St/Burnside Bridge

Movement	EB	EB	WB
Directions Served	T	T	T
Maximum Queue (ft)	7	7	3
Average Queue (ft)	0	0	0
95th Queue (ft)	5	7	3
Link Distance (ft)	360	360	1882
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1801: Burnside Bridge/E Burnside St

Movement	EB	EB	EB	SW
Directions Served	T	T	T	R
Maximum Queue (ft)	146	150	104	5
Average Queue (ft)	55	50	20	0
95th Queue (ft)	129	126	82	4
Link Distance (ft)	104	104	104	23
Upstream Blk Time (%)	2	1	0	
Queuing Penalty (veh)	8	7	1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2700: E Burnside St

Movement	EB	EB	EB
Directions Served	T	T	T
Maximum Queue (ft)	166	161	132
Average Queue (ft)	125	125	48
95th Queue (ft)	165	160	122
Link Distance (ft)	76	76	76
Upstream Blk Time (%)	20	20	5
Queuing Penalty (veh)	99	100	23
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1647

## Queuing and Blocking Report

## Intersection: 1: NW 4th Ave &amp; NW Everett St

Movement	EB	NB
Directions Served	LT	TR
Maximum Queue (ft)	260	313
Average Queue (ft)	216	146
95th Queue (ft)	270	344
Link Distance (ft)	209	458
Upstream Blk Time (%)	44	3
Queuing Penalty (veh)	0	9
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

## Intersection: 2: NW 3rd Ave &amp; NW Everett St

Movement	EB	EB	SB	SB
Directions Served	T	R	LT	T
Maximum Queue (ft)	234	204	217	204
Average Queue (ft)	131	99	136	74
95th Queue (ft)	239	223	240	213
Link Distance (ft)	211	211	207	207
Upstream Blk Time (%)	2	13	26	16
Queuing Penalty (veh)	6	46	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

## Intersection: 3: NW Broadway &amp; NW Couch St

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	246	137	167	221	199
Average Queue (ft)	179	60	55	135	87
95th Queue (ft)	258	117	140	238	198
Link Distance (ft)	198	199	170	203	203
Upstream Blk Time (%)	37	0	1	10	6
Queuing Penalty (veh)	0	0	2	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 4: NW 6th Ave & NW Couch St

Movement	EB	WB	NB	NW
Directions Served	<LT	TR	LT	>
Maximum Queue (ft)	168	85	103	126
Average Queue (ft)	64	29	39	33
95th Queue (ft)	141	68	87	91
Link Distance (ft)	199	177	164	106
Upstream Blk Time (%)	2			1
Queuing Penalty (veh)	2			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW 5th Ave & NW Couch St

Movement	EB	WB	SB	SE
Directions Served	TR	<LT	LT	>
Maximum Queue (ft)	142	133	172	146
Average Queue (ft)	62	54	75	61
95th Queue (ft)	141	126	170	127
Link Distance (ft)	177	210	191	118
Upstream Blk Time (%)	5	2	10	1
Queuing Penalty (veh)	5	2	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NW 4th Ave & NW Couch St

Movement	EB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	156	61	157
Average Queue (ft)	69	20	64
95th Queue (ft)	150	51	142
Link Distance (ft)	210	217	166
Upstream Blk Time (%)	4		4
Queuing Penalty (veh)	4		16
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

## Queuing and Blocking Report

## Intersection: 7: NW 3rd Ave &amp; NW Couch St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	199	206	479	489
Average Queue (ft)	79	130	295	268
95th Queue (ft)	179	246	591	600
Link Distance (ft)	217	200	465	465
Upstream Blk Time (%)	4	28	24	22
Queuing Penalty (veh)	4	33	64	60
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

## Intersection: 8: NW 2nd Ave &amp; NW Couch St

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	127	331	113	117
Average Queue (ft)	49	144	41	47
95th Queue (ft)	102	371	95	94
Link Distance (ft)	200	461	176	176
Upstream Blk Time (%)	0	5		0
Queuing Penalty (veh)	0	5		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

## Intersection: 9: NW Naito Pkwy &amp; NW Couch St

Movement	EB	NB	NB	SB	SB	B900	B900
Directions Served	LR	L	T	T	TR	T	T
Maximum Queue (ft)	147	119	430	116	112	109	56
Average Queue (ft)	61	36	202	95	51	27	5
95th Queue (ft)	116	93	347	136	100	81	42
Link Distance (ft)	461		808	41	41	98	98
Upstream Blk Time (%)				24	12	1	3
Queuing Penalty (veh)				0	0	0	0
Storage Bay Dist (ft)		100					
Storage Blk Time (%)		0	12				
Queuing Penalty (veh)		1	4				

## Queuing and Blocking Report

## Intersection: 10: NE Martin Luther King Jr Blvd &amp; NE Couch Street/NE Couch St

Movement	WB	WB	SB	SB	SB
Directions Served	LT	T	T	T	TR
Maximum Queue (ft)	198	211	220	213	212
Average Queue (ft)	93	83	198	194	188
95th Queue (ft)	181	174	208	212	229
Link Distance (ft)	187	187	182	182	182
Upstream Blk Time (%)	1	0	53	31	30
Queuing Penalty (veh)	4	3	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

## Intersection: 11: NE Grand Ave &amp; NE Couch St

Movement	WB	WB	NB	NB	NB
Directions Served	T	TR	LT	T	T
Maximum Queue (ft)	242	240	166	166	162
Average Queue (ft)	215	213	82	78	72
95th Queue (ft)	228	230	156	154	144
Link Distance (ft)	197	197	189	189	189
Upstream Blk Time (%)	67	56	0	0	0
Queuing Penalty (veh)	0	0	1	1	1
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

## Intersection: 12: SW Broadway/NW Broadway &amp; W Burnside St

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	T	R	TR	LT	TR
Maximum Queue (ft)	192	183	109	190	198	85	161	200	219
Average Queue (ft)	117	74	21	157	166	53	83	166	162
95th Queue (ft)	186	152	69	217	222	110	154	219	229
Link Distance (ft)	177	177		161	161		78	170	170
Upstream Blk Time (%)	1	0		8	10		14	22	16
Queuing Penalty (veh)	0	0		45	57		20	79	57
Storage Bay Dist (ft)			100			60			
Storage Blk Time (%)		3	0		19	2			
Queuing Penalty (veh)		1	0		25	8			



Queuing and Blocking Report

Intersection: 13: SW 6th Ave/NW 6th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NW
Directions Served	T	T	T	T	R	LT	R>	>
Maximum Queue (ft)	203	197	156	160	114	138	178	85
Average Queue (ft)	134	108	76	91	17	54	61	21
95th Queue (ft)	205	182	163	170	75	109	148	69
Link Distance (ft)	161	161	138	138		435	435	134
Upstream Blk Time (%)	4	2	2	3	0			0
Queuing Penalty (veh)	16	9	11	17	0			0
Storage Bay Dist (ft)					100			
Storage Blk Time (%)				9	0			
Queuing Penalty (veh)				5	0			

Intersection: 14: SW 5th Ave/NW 5th Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	SB	SE
Directions Served	T	T	R	<	T	T	LT	>
Maximum Queue (ft)	145	173	119	100	196	193	192	149
Average Queue (ft)	75	72	26	17	78	89	139	66
95th Queue (ft)	135	148	84	63	160	169	212	140
Link Distance (ft)	138	138			190	190	181	102
Upstream Blk Time (%)	3	3	0		1	1	15	7
Queuing Penalty (veh)	11	13	0		4	4	31	0
Storage Bay Dist (ft)			100	100				
Storage Blk Time (%)		6	0	1	4			
Queuing Penalty (veh)		4	0	4	0			

Intersection: 15: SW 4th Ave/NW 4th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1500	B1500
Directions Served	T	T	T	T	R	LT	R	T	T
Maximum Queue (ft)	212	215	199	216	150	211	177	354	193
Average Queue (ft)	118	123	122	142	51	181	91	141	38
95th Queue (ft)	213	213	199	217	143	210	165	376	245
Link Distance (ft)	190	190	182	182		111	111	493	493
Upstream Blk Time (%)	8	8	3	6		51	9	4	3
Queuing Penalty (veh)	31	34	15	29		175	31	14	9
Storage Bay Dist (ft)					100				
Storage Blk Time (%)				24	3				
Queuing Penalty (veh)				24	11				

Queuing and Blocking Report

Intersection: 16: SW 3rd Ave/NW 3rd Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	T	T	LT	T	R
Maximum Queue (ft)	229	238	125	186	187	228	224	110
Average Queue (ft)	161	170	79	96	109	202	158	43
95th Queue (ft)	266	271	169	162	164	237	236	115
Link Distance (ft)	182	182		181	181	180	180	
Upstream Blk Time (%)	10	13		2	2	60	9	
Queuing Penalty (veh)	50	68		7	11	188	29	
Storage Bay Dist (ft)			100					100
Storage Blk Time (%)		28	0				28	0
Queuing Penalty (veh)		35	1				16	1

Intersection: 17: SW 2nd Ave/NW 2nd Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1700	B1700
Directions Served	T	T	T	T	R	LT	TR	T	T
Maximum Queue (ft)	230	241	194	204	183	232	248	46	54
Average Queue (ft)	200	206	91	116	80	126	150	6	7
95th Queue (ft)	248	254	175	191	158	212	233	60	61
Link Distance (ft)	181	181	159	159	159	202	202	662	662
Upstream Blk Time (%)	37	39	3	5	1	3	3		
Queuing Penalty (veh)	222	233	12	17	5	9	9		
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St

Movement	EB	EB	EB	SB	SB	SB
Directions Served	T	T	>	<T	T	T
Maximum Queue (ft)	171	131	140	205	223	192
Average Queue (ft)	140	129	107	113	104	94
95th Queue (ft)	162	142	152	181	179	165
Link Distance (ft)	70	70	70	194	194	194
Upstream Blk Time (%)	39	34	31	0	0	0
Queuing Penalty (veh)	178	156	142	2	2	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 19: SE Grand Ave/NE Grand Ave & E Burnside St

Movement	EB	EB	EB	NB	NB	NB
Directions Served	L	T	T	T	T	TR
Maximum Queue (ft)	102	115	113	229	222	233
Average Queue (ft)	26	47	49	201	197	186
95th Queue (ft)	72	93	93	215	217	239
Link Distance (ft)	127	127	127	183	183	183
Upstream Blk Time (%)	0	0	0	63	36	32
Queuing Penalty (veh)	1	1	0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 20: SW Broadway & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	121	191	209
Average Queue (ft)	55	86	104
95th Queue (ft)	98	158	176
Link Distance (ft)	200	182	182
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: SW 6th Ave & SW Oak St

Movement	WB	WB	NB	NW	NW
Directions Served	T	R	LT	R	>
Maximum Queue (ft)	48	45	204	132	103
Average Queue (ft)	11	8	101	40	15
95th Queue (ft)	37	33	172	101	58
Link Distance (ft)	226	226	188	144	144
Upstream Blk Time (%)			1	0	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 22: SW 5th Ave & SW Oak St

Movement	WB	SB	SB	SE
Directions Served	<LT	T	R	>
Maximum Queue (ft)	140	143	122	95
Average Queue (ft)	59	46	42	18
95th Queue (ft)	111	105	103	64
Link Distance (ft)	204	375	375	107
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: SW 4th Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	118	225	211
Average Queue (ft)	53	157	89
95th Queue (ft)	111	242	188
Link Distance (ft)	234	207	207
Upstream Blk Time (%)	0	9	4
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 24: SW 3rd Ave & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	150	179	175
Average Queue (ft)	69	81	98
95th Queue (ft)	119	147	157
Link Distance (ft)	209	491	491
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 25: SW 2nd Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	106	203	162
Average Queue (ft)	47	116	78
95th Queue (ft)	88	181	137
Link Distance (ft)	472	203	203
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 26: SW Naito Pkwy & SW Oak St

Movement	NB	NB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	118	217	212	219
Average Queue (ft)	38	152	106	111
95th Queue (ft)	87	247	179	183
Link Distance (ft)		200	498	498
Upstream Blk Time (%)		4		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)	100			
Storage Blk Time (%)	0	15		
Queuing Penalty (veh)	1	6		

Intersection: 28: NE Couch Street

Movement	SB	SB
Directions Served	TR	R
Maximum Queue (ft)	146	141
Average Queue (ft)	41	60
95th Queue (ft)	113	126
Link Distance (ft)	198	198
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 30: Burnside Bridge

Movement	EB
Directions Served	T
Maximum Queue (ft)	37
Average Queue (ft)	1
95th Queue (ft)	26
Link Distance (ft)	2083
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 36: NE Couch Street

Movement	SW	SW
Directions Served	R	R
Maximum Queue (ft)	95	89
Average Queue (ft)	61	62
95th Queue (ft)	92	81
Link Distance (ft)	8	8
Upstream Blk Time (%)	9	13
Queuing Penalty (veh)	49	73
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 1201: SW Broadway

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	80	5
Average Queue (ft)	7	0
95th Queue (ft)	49	5
Link Distance (ft)	141	78
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 1701: W Burnside St/Burnside Bridge

Movement	EB	EB	WB	WB
Directions Served	T	T	T	T
Maximum Queue (ft)	246	245	163	224
Average Queue (ft)	195	195	34	39
95th Queue (ft)	232	229	341	357
Link Distance (ft)	159	159	2083	2083
Upstream Blk Time (%)	22	23		
Queuing Penalty (veh)	154	157		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1801: Burnside Bridge/E Burnside St

Movement	EB	EB	EB
Directions Served	T	T	T
Maximum Queue (ft)	66	46	58
Average Queue (ft)	4	3	34
95th Queue (ft)	37	27	51
Link Distance (ft)	90	90	90
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	1	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2700: E Burnside St

Movement	EB	EB	EB
Directions Served	T	T	T
Maximum Queue (ft)	163	111	108
Average Queue (ft)	90	59	20
95th Queue (ft)	150	108	72
Link Distance (ft)	81	81	81
Upstream Blk Time (%)	8	2	1
Queuing Penalty (veh)	38	11	4
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 2957
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## Queuing and Blocking Report

### Intersection: 1: NW 4th Ave & NW Everett St

Movement	EB	NB
Directions Served	LT	TR
Maximum Queue (ft)	255	201
Average Queue (ft)	223	94
95th Queue (ft)	258	169
Link Distance (ft)	209	458
Upstream Blk Time (%)	42	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

### Intersection: 2: NW 3rd Ave & NW Everett St

Movement	EB	EB	SB	SB
Directions Served	T	R	LT	T
Maximum Queue (ft)	221	144	196	106
Average Queue (ft)	139	63	101	25
95th Queue (ft)	225	108	171	72
Link Distance (ft)	211	211	207	207
Upstream Blk Time (%)	1	0	0	0
Queuing Penalty (veh)	5	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

### Intersection: 3: NW Broadway & NW Couch St

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	TR
Maximum Queue (ft)	234	133	160	226	203
Average Queue (ft)	179	54	43	127	75
95th Queue (ft)	264	108	113	227	179
Link Distance (ft)	198	199	170	203	203
Upstream Blk Time (%)	44	0	0	6	3
Queuing Penalty (veh)	0	0	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					



Queuing and Blocking Report

Intersection: 4: NW 6th Ave & NW Couch St

Movement	EB	WB	NB	NW
Directions Served	<LT	TR	LT	>
Maximum Queue (ft)	124	84	88	116
Average Queue (ft)	50	29	34	31
95th Queue (ft)	97	65	74	87
Link Distance (ft)	199	177	164	106
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW 5th Ave & NW Couch St

Movement	EB	WB	SB	SE
Directions Served	TR	<LT	LT	>
Maximum Queue (ft)	128	118	129	152
Average Queue (ft)	47	47	53	63
95th Queue (ft)	98	96	104	126
Link Distance (ft)	177	210	191	118
Upstream Blk Time (%)	0		1	2
Queuing Penalty (veh)	0		0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NW 4th Ave & NW Couch St

Movement	EB	WB	NB
Directions Served	LT	TR	LTR
Maximum Queue (ft)	119	50	154
Average Queue (ft)	55	20	58
95th Queue (ft)	97	48	126
Link Distance (ft)	210	217	166
Upstream Blk Time (%)			0
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 7: NW 3rd Ave & NW Couch St

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	TR
Maximum Queue (ft)	123	187	284	252
Average Queue (ft)	51	83	114	68
95th Queue (ft)	97	178	263	204
Link Distance (ft)	217	200	465	465
Upstream Blk Time (%)		6	0	0
Queuing Penalty (veh)		7	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: NW 2nd Ave & NW Couch St

Movement	EB	WB	NB	NB
Directions Served	LT	TR	LT	TR
Maximum Queue (ft)	118	165	76	80
Average Queue (ft)	44	65	24	37
95th Queue (ft)	87	155	63	74
Link Distance (ft)	200	461	175	175
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: NW Naito Pkwy & NW Couch St

Movement	EB	NB	NB	SB	SB	B900	B900
Directions Served	LR	L	T	T	TR	T	T
Maximum Queue (ft)	179	124	393	120	112	111	44
Average Queue (ft)	71	38	201	96	54	30	2
95th Queue (ft)	136	99	336	137	100	87	20
Link Distance (ft)	461		808	41	41	98	98
Upstream Blk Time (%)				24	10	1	0
Queuing Penalty (veh)				0	0	0	0
Storage Bay Dist (ft)		100					
Storage Blk Time (%)		0	13				
Queuing Penalty (veh)		2	4				

Queuing and Blocking Report

Intersection: 10: NE Martin Luther King Jr Blvd & NE Couch Street/NE Couch St

Movement	WB	WB	SB	SB	SB
Directions Served	LT	T	T	T	TR
Maximum Queue (ft)	190	181	211	219	210
Average Queue (ft)	90	77	197	196	188
95th Queue (ft)	176	164	204	212	229
Link Distance (ft)	187	187	182	182	182
Upstream Blk Time (%)	1	0	53	29	24
Queuing Penalty (veh)	3	2	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 11: NE Grand Ave & NE Couch St

Movement	WB	WB	NB	NB	NB
Directions Served	T	TR	LT	T	T
Maximum Queue (ft)	248	242	170	159	147
Average Queue (ft)	216	210	82	75	68
95th Queue (ft)	233	246	148	142	133
Link Distance (ft)	197	197	189	189	189
Upstream Blk Time (%)	66	49	0	0	0
Queuing Penalty (veh)	0	0	0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: SW Broadway/NW Broadway & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	T	R	TR	LT	TR
Maximum Queue (ft)	191	169	91	194	205	85	160	206	208
Average Queue (ft)	124	72	20	165	173	56	84	165	154
95th Queue (ft)	195	143	58	208	208	112	153	219	221
Link Distance (ft)	177	177		161	161		78	170	170
Upstream Blk Time (%)	1	0		9	12		13	20	12
Queuing Penalty (veh)	0	0		51	66		20	71	44
Storage Bay Dist (ft)			100			60			
Storage Blk Time (%)		2	0		21	2			
Queuing Penalty (veh)		1	0		27	8			

Queuing and Blocking Report

Intersection: 13: SW 6th Ave/NW 6th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	NW
Directions Served	T	T	T	T	R	LT	R>	>
Maximum Queue (ft)	202	193	157	169	118	130	178	97
Average Queue (ft)	140	119	83	99	19	56	58	23
95th Queue (ft)	207	188	165	176	81	106	140	75
Link Distance (ft)	161	161	138	138		435	435	134
Upstream Blk Time (%)	4	2	2	4	0			0
Queuing Penalty (veh)	15	7	12	22	0			0
Storage Bay Dist (ft)					100			
Storage Blk Time (%)				11	0			
Queuing Penalty (veh)				6	0			

Intersection: 14: SW 5th Ave/NW 5th Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	WB	SB	SE
Directions Served	T	T	R	<	T	T	LT	>
Maximum Queue (ft)	144	169	97	95	186	201	187	148
Average Queue (ft)	72	70	20	20	85	100	124	67
95th Queue (ft)	123	136	64	71	161	179	194	142
Link Distance (ft)	138	138			190	190	181	102
Upstream Blk Time (%)	0	0	0		0	1	6	6
Queuing Penalty (veh)	1	2	0		2	4	12	0
Storage Bay Dist (ft)			100	100				
Storage Blk Time (%)		2	0	0	4			
Queuing Penalty (veh)		2	0	1	0			

Intersection: 15: SW 4th Ave/NW 4th Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1500	B1500
Directions Served	T	T	T	T	R	LT	R	T	T
Maximum Queue (ft)	174	166	187	208	142	212	174	343	75
Average Queue (ft)	93	96	97	116	35	182	91	114	5
95th Queue (ft)	141	143	167	189	107	208	155	265	61
Link Distance (ft)	190	190	182	182		111	111	493	493
Upstream Blk Time (%)	0	0	0	2		49	6	0	
Queuing Penalty (veh)	1	1	2	9		169	20	0	
Storage Bay Dist (ft)					100				
Storage Blk Time (%)				14	0				
Queuing Penalty (veh)				16	0				

Queuing and Blocking Report

Intersection: 16: SW 3rd Ave/NW 3rd Ave & W Burnside St

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	T	T	LT	T	R
Maximum Queue (ft)	188	204	124	165	167	224	216	110
Average Queue (ft)	74	88	34	86	96	192	151	48
95th Queue (ft)	156	167	100	140	150	229	216	118
Link Distance (ft)	182	182		181	181	180	180	
Upstream Blk Time (%)	0	0		0	0	29	5	
Queuing Penalty (veh)	1	2		0	0	104	18	
Storage Bay Dist (ft)			100					100
Storage Blk Time (%)		3	0				24	0
Queuing Penalty (veh)		4	0				13	1

Intersection: 17: SW 2nd Ave/NW 2nd Ave & W Burnside St

Movement	EB	EB	WB	WB	WB	NB	NB	B1700	B1700
Directions Served	T	T	T	T	R	LT	TR	T	T
Maximum Queue (ft)	213	224	182	194	160	233	245	16	27
Average Queue (ft)	137	143	102	117	73	124	142	1	1
95th Queue (ft)	228	233	166	179	132	204	227	9	13
Link Distance (ft)	181	181	156	156	156	202	202	662	662
Upstream Blk Time (%)	3	3	1	2	0	1	2		
Queuing Penalty (veh)	20	22	2	6	1	3	6		
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 18: SE Martin Luther King Jr Blvd/NE Martin Luther King Jr Blvd & E Burnside St

Movement	EB	EB	EB	SB	SB	SB
Directions Served	T	T	>	<T	T	T
Maximum Queue (ft)	155	157	144	205	219	204
Average Queue (ft)	123	124	103	118	115	103
95th Queue (ft)	157	155	157	199	204	184
Link Distance (ft)	70	70	70	194	194	194
Upstream Blk Time (%)	23	26	24	0	1	0
Queuing Penalty (veh)	113	130	118	3	3	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 19: SE Grand Ave/NE Grand Ave & E Burnside St

Movement	EB	EB	EB	NB	NB	NB
Directions Served	L	T	T	T	T	TR
Maximum Queue (ft)	95	118	107	234	227	224
Average Queue (ft)	25	45	47	207	202	191
95th Queue (ft)	68	89	90	218	222	243
Link Distance (ft)	127	127	127	189	189	189
Upstream Blk Time (%)	0	0	0	62	34	27
Queuing Penalty (veh)	0	1	0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 20: SW Broadway & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	127	191	192
Average Queue (ft)	59	82	106
95th Queue (ft)	104	152	171
Link Distance (ft)	200	182	182
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 21: SW 6th Ave & SW Oak St

Movement	WB	WB	NB	NW	NW
Directions Served	T	R	LT	R	>
Maximum Queue (ft)	51	47	196	135	86
Average Queue (ft)	12	7	100	45	15
95th Queue (ft)	39	31	169	107	58
Link Distance (ft)	226	226	188	144	144
Upstream Blk Time (%)			0	0	0
Queuing Penalty (veh)			0	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 22: SW 5th Ave & SW Oak St

Movement	WB	SB	SB	SE
Directions Served	<LT	T	R	>
Maximum Queue (ft)	152	120	129	88
Average Queue (ft)	64	42	38	21
95th Queue (ft)	116	91	100	67
Link Distance (ft)	204	375	375	107
Upstream Blk Time (%)	0			0
Queuing Penalty (veh)	0			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 23: SW 4th Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	117	225	206
Average Queue (ft)	49	152	84
95th Queue (ft)	86	235	167
Link Distance (ft)	234	207	207
Upstream Blk Time (%)		3	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 24: SW 3rd Ave & SW Oak St

Movement	WB	SB	SB
Directions Served	LT	T	TR
Maximum Queue (ft)	139	187	204
Average Queue (ft)	64	86	104
95th Queue (ft)	112	152	168
Link Distance (ft)	209	491	491
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 25: SW 2nd Ave & SW Oak St

Movement	WB	NB	NB
Directions Served	TR	LT	T
Maximum Queue (ft)	103	194	163
Average Queue (ft)	47	113	77
95th Queue (ft)	89	177	134
Link Distance (ft)	472	203	203
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 26: SW Naito Pkwy & SW Oak St

Movement	NB	NB	SB	SB	B2601
Directions Served	L	T	T	TR	T
Maximum Queue (ft)	124	223	175	200	7
Average Queue (ft)	36	152	97	103	0
95th Queue (ft)	87	245	155	171	7
Link Distance (ft)		200	498	498	808
Upstream Blk Time (%)		4			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	100				
Storage Blk Time (%)	0	14			
Queuing Penalty (veh)	2	6			

Intersection: 28: NE Couch Street

Movement	SB	SB
Directions Served	TR	R
Maximum Queue (ft)	118	125
Average Queue (ft)	17	21
95th Queue (ft)	69	79
Link Distance (ft)	198	198
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		



## Queuing and Blocking Report

### Intersection: 30: Burnside Bridge

Movement	EB	WB	WB
Directions Served	T	T	T
Maximum Queue (ft)	3	136	137
Average Queue (ft)	0	74	84
95th Queue (ft)	3	128	135
Link Distance (ft)	2086	91	91
Upstream Blk Time (%)		3	4
Queuing Penalty (veh)		14	21
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

### Intersection: 36: NE Couch Street

Movement	SW	SW
Directions Served	R	R
Maximum Queue (ft)	86	85
Average Queue (ft)	48	54
95th Queue (ft)	88	79
Link Distance (ft)	16	16
Upstream Blk Time (%)	6	10
Queuing Penalty (veh)	32	52
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

### Intersection: 1201: SW Broadway

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	83	11
Average Queue (ft)	8	0
95th Queue (ft)	53	8
Link Distance (ft)	141	78
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 1701: W Burnside St/Burnside Bridge

Movement	EB	EB	WB
Directions Served	T	T	T
Maximum Queue (ft)	7	10	99
Average Queue (ft)	0	0	5
95th Queue (ft)	7	10	43
Link Distance (ft)	156	156	2086
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1801: Burnside Bridge/E Burnside St

Movement	EB	EB	EB	SW	SW
Directions Served	T	T	T	R	R
Maximum Queue (ft)	65	63	35	42	43
Average Queue (ft)	4	4	1	5	10
95th Queue (ft)	31	32	17	25	35
Link Distance (ft)	91	91	91	20	20
Upstream Blk Time (%)	0	0	0	1	2
Queuing Penalty (veh)	0	1	0	4	9
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2700: E Burnside St

Movement	EB	EB	EB
Directions Served	T	T	T
Maximum Queue (ft)	144	142	109
Average Queue (ft)	54	55	22
95th Queue (ft)	132	130	77
Link Distance (ft)	80	80	80
Upstream Blk Time (%)	4	4	1
Queuing Penalty (veh)	18	20	6
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1378

# Appendix C. Safety Analysis Results



*Interactive Highway Safety Design Model*

**Crash Prediction Evaluation Report**

November 5, 2021



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## Disclaimer Regarding Crash Prediction Method

### IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results. [Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	0	0	0	0	0	0	0	true	false	20.00	151.0	0.00	None	0.00	Intermediate/High	0	2.00	10.12

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	34,302
<b>Predicted Crashes</b>	
Total Crashes	67.20
Fatal and Injury Crashes	19.19
Property-Damage-Only Crashes	48.01
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	29
Percent Property-Damage-Only Crashes (%)	71
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	8.4479
FI Crash Rate (crashes/mi/yr)	2.4123
PDO Crash Rate (crashes/mi/yr)	6.0356
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	99.59
Travel Crash Rate (crashes/million veh-mi)	0.68
Travel FI Crash Rate (crashes/million veh-mi)	0.19
Travel PDO Crash Rate (crashes/million veh-mi)	0.48

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	67.199	3.3599	0.9594	2.4005	8.4479	0.68
Total			0.3977	67.199	3.3599	0.9594	2.4005	8.4479	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.13	0.2	0.00	0.0	0.13	0.2
Highway Segment	Collision with Fixed Object	1.27	1.9	6.01	8.9	7.28	10.8
Highway Segment	Collision with Other Object	0.04	0.1	0.21	0.3	0.26	0.4
Highway Segment	Other Single-vehicle Collision	0.76	1.1	1.20	1.8	1.96	2.9
Highway Segment	Collision with Pedestrian	0.60	0.9	0.00	0.0	0.60	0.9
Highway Segment	Total Single Vehicle Crashes	2.81	4.2	7.42	11.1	10.24	15.2
Highway Segment	Angle Collision	2.96	4.4	5.28	7.9	8.24	12.3
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.26	1.9	0.16	0.2	1.42	2.1
Highway Segment	Other Multi-vehicle Collision	0.92	1.4	3.25	4.8	4.16	6.2
Highway Segment	Rear-end Collision	8.37	12.5	20.54	30.6	28.90	43.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.34	2.0	1.26	1.9	2.60	3.9
Highway Segment	Sideswipe, Same Direction Collision	1.52	2.3	10.11	15.0	11.63	17.3
Highway Segment	Total Multiple Vehicle Crashes	16.38	24.4	40.59	60.4	56.96	84.8
Highway Segment	Total Highway Segment Crashes	19.19	28.6	48.01	71.4	67.20	100.0
	Total Crashes	19.19	28.6	48.01	71.4	67.20	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NW 2nd Avenue/W. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_NW2ndAve)**

Inter. No.	Title	Type	Location (Station)	Major AADT	Minor AADT	Lanes	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_NW2ndAve (v3)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+50.000	2026-2045: 5,600	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	4	Signalized	0	1	0	2,000	true	false	true	10	15	5

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_NW2ndAve)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>133.99</b>
<b>Fatal and Injury Crashes</b>	<b>48.38</b>
<b>Property-Damage-Only Crashes</b>	<b>85.62</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>36</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>64</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE MLK Boulevard/E. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Neary	Number of Buses Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_MLK (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	4+65,000	2026: 23,796; 2027: 23,638; 2028: 23,481; 2029: 23,323; 2030: 23,165; 2031: 23,008; 2032: 22,850; 2033: 22,692; 2034: 22,535; 2035: 22,377; 2036: 22,219; 2037: 22,062; 2038: 21,904; 2039: 21,746; 2040: 21,588; 2041: 21,431; 2042: 21,273; 2043: 21,115; 2044: 20,958; 2045: 20,800	2026: 17,352; 2027: 17,331; 2028: 17,310; 2029: 17,288; 2030: 17,267; 2031: 17,246; 2032: 17,225; 2033: 17,204; 2034: 17,183; 2035: 17,162; 2036: 17,140; 2037: 17,119; 2038: 17,098; 2039: 17,077; 2040: 17,056; 2041: 17,035; 2042: 17,013; 2043: 16,992; 2044: 16,971; 2045: 16,950	4	Signalized	0	1	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>121.62</b>
<b>Fatal and Injury Crashes</b>	<b>46.39</b>
<b>Property-Damage-Only Crashes</b>	<b>75.23</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>38</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>62</b>



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE Couch Street/NE MLK Boulevard**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_Couch\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_Couch_MLK (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+00.000	2026: 23,796; 2027: 23,638; 2028: 23,481; 2029: 23,323; 2030: 23,165; 2031: 23,008; 2032: 22,850; 2033: 22,692; 2034: 22,535; 2035: 22,377; 2036: 22,219; 2037: 22,062; 2038: 21,904; 2039: 21,746; 2040: 21,588; 2041: 21,431; 2042: 21,273; 2043: 21,115; 2044: 20,958; 2045: 20,800	2026: 17,352; 2027: 17,331; 2028: 17,310; 2029: 17,288; 2030: 17,267; 2031: 17,246; 2032: 17,225; 2033: 17,204; 2034: 17,183; 2035: 17,162; 2036: 17,140; 2037: 17,119; 2038: 17,098; 2039: 17,077; 2040: 17,056; 2041: 17,035; 2042: 17,013; 2043: 16,992; 2044: 16,971; 2045: 16,950	4	Signalized	0	0	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_Couch\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>110.99</b>
<b>Fatal and Injury Crashes</b>	<b>43.76</b>
<b>Property-Damage-Only Crashes</b>	<b>67.23</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>39</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>61</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge**

**Scenario: Build DEIS Long-Span**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.100.00	0.3977	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	0	0	0	0	0	0	0	true	false	7.50	151.0	0.00	None	0.00	Low	0	2.00	11.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	Local CF	0.000	21+00.000	2025	2045	Total	0.6300

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	34,302
<b>Predicted Crashes</b>	
Total Crashes	83.69
Fatal and Injury Crashes	25.17
Property-Damage-Only Crashes	58.52
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.5210
FI Crash Rate (crashes/mi/yr)	3.1643
PDO Crash Rate (crashes/mi/yr)	7.3567
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	99.59
Travel Crash Rate (crashes/million veh-mi)	0.84
Travel FI Crash Rate (crashes/million veh-mi)	0.25
Travel PDO Crash Rate (crashes/million veh-mi)	0.59

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	83.690	4.1845	1.2585	2.9260	10.5210	0.84
Total			0.3977	83.690	4.1845	1.2585	2.9260	10.5210	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.89	1.1	0.00	0.0	0.89	1.1
Highway Segment	Collision with Fixed Object	1.55	1.9	7.32	8.7	8.88	10.6
Highway Segment	Collision with Other Object	0.05	0.1	0.26	0.3	0.31	0.4
Highway Segment	Other Single-vehicle Collision	0.93	1.1	1.46	1.7	2.39	2.9
Highway Segment	Collision with Pedestrian	1.78	2.1	0.00	0.0	1.78	2.1
Highway Segment	Total Single Vehicle Crashes	5.21	6.2	9.05	10.8	14.26	17.0
Highway Segment	Angle Collision	3.61	4.3	6.43	7.7	10.04	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.54	1.8	0.20	0.2	1.74	2.1
Highway Segment	Other Multi-vehicle Collision	1.12	1.3	3.96	4.7	5.08	6.1
Highway Segment	Rear-end Collision	10.20	12.2	25.03	29.9	35.23	42.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.64	2.0	1.53	1.8	3.17	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.86	2.2	12.32	14.7	14.17	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.96	23.9	49.47	59.1	69.43	83.0
Highway Segment	Total Highway Segment Crashes	25.17	30.1	58.52	69.9	83.69	100.0
	Total Crashes	25.17	30.1	58.52	69.9	83.69	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NW 2nd Avenue/W. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_NW2ndAve)**

Inter. No.	Title	Type	Location (Station)	Major AADT	Minor AADT	Lanes	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_NW2ndAve (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+50.000	2026-2045: 5,600	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	4	Signalized	0	1	0	2,000	true	false	true	10	15	5

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_NW2ndAve)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>133.99</b>
<b>Fatal and Injury Crashes</b>	<b>48.38</b>
<b>Property-Damage-Only Crashes</b>	<b>85.62</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>36</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>64</b>



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE MLK Boulevard/E. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_MLK\_Updated)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_MLK_Updated (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	4+65.000	2026: 23,796; 2027: 23,638; 2028: 23,481; 2029: 23,323; 2030: 23,165; 2031: 23,008; 2032: 22,850; 2033: 22,692; 2034: 22,535; 2035: 22,377; 2036: 22,219; 2037: 22,062; 2038: 21,904; 2039: 21,746; 2040: 21,588; 2041: 21,431; 2042: 21,273; 2043: 21,115; 2044: 20,958; 2045: 20,800	2026: 17,352; 2027: 17,331; 2028: 17,310; 2029: 17,288; 2030: 17,267; 2031: 17,246; 2032: 17,225; 2033: 17,204; 2034: 17,183; 2035: 17,162; 2036: 17,140; 2037: 17,119; 2038: 17,098; 2039: 17,077; 2040: 17,056; 2041: 17,035; 2042: 17,013; 2043: 16,992; 2044: 16,971; 2045: 16,950	4	Signalized	0	1	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_MLK\_Updated)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>121.62</b>
<b>Fatal and Injury Crashes</b>	<b>46.39</b>
<b>Property-Damage-Only Crashes</b>	<b>75.23</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>38</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>62</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE Couch Street/NE MLK Boulevard**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_Couch\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_Couch_MLK (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+00.000	2026: 23,796; 2027: 23,638; 2028: 23,481; 2029: 23,323; 2030: 23,165; 2031: 23,008; 2032: 22,850; 2033: 22,692; 2034: 22,535; 2035: 22,377; 2036: 22,219; 2037: 22,062; 2038: 21,904; 2039: 21,746; 2040: 21,588; 2041: 21,431; 2042: 21,273; 2043: 21,115; 2044: 20,958; 2045: 20,800	2026: 17,352; 2027: 17,331; 2028: 17,310; 2029: 17,288; 2030: 17,267; 2031: 17,246; 2032: 17,225; 2033: 17,204; 2034: 17,183; 2035: 17,162; 2036: 17,140; 2037: 17,119; 2038: 17,098; 2039: 17,077; 2040: 17,056; 2041: 17,035; 2042: 17,013; 2043: 16,992; 2044: 16,971; 2045: 16,950	4	Signalized	0	0	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_Couch\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>110.99</b>
<b>Fatal and Injury Crashes</b>	<b>43.76</b>
<b>Property-Damage-Only Crashes</b>	<b>67.23</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>39</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>61</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (47 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	7.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	81.13
Fatal and Injury Crashes	24.48
Property-Damage-Only Crashes	56.66
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.1998
FI Crash Rate (crashes/mi/yr)	3.0770
PDO Crash Rate (crashes/mi/yr)	7.1227
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	0.85
Travel FI Crash Rate (crashes/million veh-mi)	0.26
Travel PDO Crash Rate (crashes/million veh-mi)	0.59

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	81.135	4.0567	1.2238	2.8329	10.1998	0.85
Total			0.3977	81.135	4.0567	1.2238	2.8329	10.1998	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.86	1.1	0.00	0.0	0.86	1.1
Highway Segment	Collision with Fixed Object	1.54	1.9	7.21	8.9	8.75	10.8
Highway Segment	Collision with Other Object	0.05	0.1	0.26	0.3	0.31	0.4
Highway Segment	Other Single-vehicle Collision	0.93	1.1	1.44	1.8	2.36	2.9
Highway Segment	Collision with Pedestrian	1.73	2.1	0.00	0.0	1.73	2.1
Highway Segment	Total Single Vehicle Crashes	5.11	6.3	8.91	11.0	14.02	17.3
Highway Segment	Angle Collision	3.50	4.3	6.21	7.7	9.71	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.49	1.8	0.19	0.2	1.68	2.1
Highway Segment	Other Multi-vehicle Collision	1.08	1.3	3.82	4.7	4.90	6.0
Highway Segment	Rear-end Collision	9.89	12.2	24.16	29.8	34.05	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.59	2.0	1.48	1.8	3.07	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.80	2.2	11.89	14.7	13.69	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.36	23.9	47.75	58.9	67.11	82.7
Highway Segment	Total Highway Segment Crashes	24.48	30.2	56.66	69.8	81.13	100.0
	Total Crashes	24.48	30.2	56.66	69.8	81.13	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (47 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	7.25	151.0	0.00	None	0.00	Low	0	0.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	104.42
Fatal and Injury Crashes	32.02
Property-Damage-Only Crashes	72.40
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	13.1264
FI Crash Rate (crashes/mi/yr)	4.0247
PDO Crash Rate (crashes/mi/yr)	9.1017
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	1.09
Travel FI Crash Rate (crashes/million veh-mi)	0.33
Travel PDO Crash Rate (crashes/million veh-mi)	0.76

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	104.415	5.2207	1.6007	3.6200	13.1264	1.09
Total			0.3977	104.415	5.2207	1.6007	3.6200	13.1264	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.72	0.7	0.77	0.7
Highway Segment	Collision with Bicycle	1.78	1.7	0.00	0.0	1.78	1.7
Highway Segment	Collision with Fixed Object	1.42	1.4	8.27	7.9	9.69	9.3
Highway Segment	Collision with Other Object	0.02	0.0	0.14	0.1	0.16	0.2
Highway Segment	Other Single-vehicle Collision	0.47	0.5	1.77	1.7	2.24	2.1
Highway Segment	Collision with Pedestrian	3.57	3.4	0.00	0.0	3.57	3.4
Highway Segment	Total Single Vehicle Crashes	7.31	7.0	10.90	10.4	18.21	17.4
Highway Segment	Angle Collision	2.10	2.0	4.86	4.7	6.96	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.68	1.6	0.25	0.2	1.93	1.8
Highway Segment	Other Multi-vehicle Collision	0.72	0.7	3.26	3.1	3.98	3.8
Highway Segment	Rear-end Collision	18.03	17.3	47.85	45.8	65.88	63.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.80	1.7	3.38	3.2	5.19	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.37	0.4	1.91	1.8	2.28	2.2
Highway Segment	Total Multiple Vehicle Crashes	24.70	23.7	61.50	58.9	86.20	82.6
Highway Segment	Total Highway Segment Crashes	32.02	30.7	72.40	69.3	104.42	100.0
	Total Crashes	32.02	30.7	72.40	69.3	104.42	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NW 2nd Avenue/W. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_NW2ndAve)**

Inter. No.	Title	Type	Location (Station)	Major AADT	Minor AADT	Lanes	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_NW2ndAve (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+50.000	2026-5,600 2045-5,600	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	4	Signalized	0	1	0	2,000	true	false	true	10	15	5

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_NW2ndAve)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>132.11</b>
<b>Fatal and Injury Crashes</b>	<b>47.86</b>
<b>Property-Damage-Only Crashes</b>	<b>84.26</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>36</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>64</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE MLK Boulevard/E. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_MLK\_Updated)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_MLK_Updated (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	4+65.000	2026: 24,025; 2027: 23,866; 2028: 23,707; 2029: 23,547; 2030: 23,388; 2031: 23,229; 2032: 23,070; 2033: 22,911; 2034: 22,751; 2035: 22,592; 2036: 22,433; 2037: 22,274; 2038: 22,114; 2039: 21,955; 2040: 21,796; 2041: 21,637; 2042: 21,478; 2043: 21,318; 2044: 21,159; 2045: 21,000	2026: 16,687; 2027: 16,666; 2028: 16,646; 2029: 16,625; 2030: 16,605; 2031: 16,585; 2032: 16,564; 2033: 16,544; 2034: 16,524; 2035: 16,503; 2036: 16,483; 2037: 16,463; 2038: 16,442; 2039: 16,422; 2040: 16,402; 2041: 16,381; 2042: 16,361; 2043: 16,341; 2044: 16,320; 2045: 16,300	4	Signalized	0	1	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_MLK\_Updated)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>120.41</b>
<b>Fatal and Injury Crashes</b>	<b>45.77</b>
<b>Property-Damage-Only Crashes</b>	<b>74.64</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>38</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>62</b>



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE Couch Street/NE MLK Boulevard**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_Couch\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_Couch_MLK (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+00.000	2026: 24,025; 2027: 23,866; 2028: 23,707; 2029: 23,547; 2030: 23,388; 2031: 23,229; 2032: 23,070; 2033: 22,911; 2034: 22,751; 2035: 22,592; 2036: 22,433; 2037: 22,274; 2038: 22,114; 2039: 21,955; 2040: 21,796; 2041: 21,637; 2042: 21,478; 2043: 21,318; 2044: 21,159; 2045: 21,000	2026: 16,687; 2027: 16,666; 2028: 16,646; 2029: 16,625; 2030: 16,605; 2031: 16,585; 2032: 16,564; 2033: 16,544; 2034: 16,524; 2035: 16,503; 2036: 16,483; 2037: 16,463; 2038: 16,442; 2039: 16,422; 2040: 16,402; 2041: 16,381; 2042: 16,361; 2043: 16,341; 2044: 16,320; 2045: 16,300	4	Signalized	0	0	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_Couch\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>110.13</b>
<b>Fatal and Injury Crashes</b>	<b>43.24</b>
<b>Property-Damage-Only Crashes</b>	<b>66.89</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>39</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>61</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (47 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	7.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	82.70
Fatal and Injury Crashes	24.92
Property-Damage-Only Crashes	57.78
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.3964
FI Crash Rate (crashes/mi/yr)	3.1326
PDO Crash Rate (crashes/mi/yr)	7.2638
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	0.85
Travel FI Crash Rate (crashes/million veh-mi)	0.26
Travel PDO Crash Rate (crashes/million veh-mi)	0.59

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	82.699	4.1349	1.2459	2.8890	10.3964	0.85
Total			0.3977	82.699	4.1349	1.2459	2.8890	10.3964	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.88	1.1	0.00	0.0	0.88	1.1
Highway Segment	Collision with Fixed Object	1.56	1.9	7.30	8.8	8.86	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.26	0.3	0.31	0.4
Highway Segment	Other Single-vehicle Collision	0.93	1.1	1.45	1.8	2.39	2.9
Highway Segment	Collision with Pedestrian	1.76	2.1	0.00	0.0	1.76	2.1
Highway Segment	Total Single Vehicle Crashes	5.19	6.3	9.03	10.9	14.21	17.2
Highway Segment	Angle Collision	3.57	4.3	6.34	7.7	9.91	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.52	1.8	0.20	0.2	1.71	2.1
Highway Segment	Other Multi-vehicle Collision	1.10	1.3	3.90	4.7	5.00	6.1
Highway Segment	Rear-end Collision	10.08	12.2	24.67	29.8	34.75	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.62	2.0	1.51	1.8	3.13	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.83	2.2	12.14	14.7	13.97	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.73	23.9	48.75	59.0	68.48	82.8
Highway Segment	Total Highway Segment Crashes	24.92	30.1	57.78	69.9	82.70	100.0
	Total Crashes	24.92	30.1	57.78	69.9	82.70	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (47 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	7.25	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	106.88
Fatal and Injury Crashes	32.78
Property-Damage-Only Crashes	74.11
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	13.4369
FI Crash Rate (crashes/mi/yr)	4.1208
PDO Crash Rate (crashes/mi/yr)	9.3161
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	1.10
Travel FI Crash Rate (crashes/million veh-mi)	0.34
Travel PDO Crash Rate (crashes/million veh-mi)	0.76

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	106.884	5.3442	1.6390	3.7052	13.4369	1.10
Total			0.3977	106.884	5.3442	1.6390	3.7052	13.4369	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.73	0.7	0.78	0.7
Highway Segment	Collision with Bicycle	1.82	1.7	0.00	0.0	1.82	1.7
Highway Segment	Collision with Fixed Object	1.42	1.3	8.35	7.8	9.78	9.1
Highway Segment	Collision with Other Object	0.02	0.0	0.14	0.1	0.16	0.2
Highway Segment	Other Single-vehicle Collision	0.47	0.4	1.78	1.7	2.26	2.1
Highway Segment	Collision with Pedestrian	3.65	3.4	0.00	0.0	3.65	3.4
Highway Segment	Total Single Vehicle Crashes	7.45	7.0	11.00	10.3	18.45	17.3
Highway Segment	Angle Collision	2.15	2.0	4.99	4.7	7.14	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.72	1.6	0.25	0.2	1.98	1.8
Highway Segment	Other Multi-vehicle Collision	0.73	0.7	3.34	3.1	4.08	3.8
Highway Segment	Rear-end Collision	18.49	17.3	49.09	45.9	67.59	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.85	1.7	3.47	3.2	5.32	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.38	0.4	1.96	1.8	2.34	2.2
Highway Segment	Total Multiple Vehicle Crashes	25.33	23.7	63.10	59.0	88.44	82.7
Highway Segment	Total Highway Segment Crashes	32.78	30.7	74.11	69.3	106.88	100.0
	Total Crashes	32.78	30.7	74.11	69.3	106.88	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NW 2nd Avenue/W. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_NW2ndAve)**

Inte r. No.	Title	Type	Locat ion (Sta. ft)	Major AAD T	Minor AADT	L eg s	Traffic Contro l	Appro ches w/Left Turn Lanes	Appro ches w/Right Turn Lanes	Appro ches w/o Right Turn on Red	Pedestr ian Volum e (crossi ngs/da y)	Ligh ted at Nigh t	Red Ligh t Came ra	Sch ool Near by	Nu mber of Bus Stops	Number of Alcohol Sales Establish ments	Max Lanes Crossed
1	Intersection_NW2ndAve (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+50.000	2026-5,200	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	4	Signalized	0	1	0	2,000	true	false	true	10	15	5

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_NW2ndAve)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>130.03</b>
<b>Fatal and Injury Crashes</b>	<b>47.30</b>
<b>Property-Damage-Only Crashes</b>	<b>82.73</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>36</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>64</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE MLK Boulevard/E. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_MLK\_Updated)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_MLK_Updated (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	4+65.000	2026: 24,139; 2027: 23,979; 2028: 23,819; 2029: 23,659; 2030: 23,500; 2031: 23,340; 2032: 23,180; 2033: 23,020; 2034: 22,860; 2035: 22,700; 2036: 22,540; 2037: 22,380; 2038: 22,220; 2039: 22,060; 2040: 21,900; 2041: 21,740; 2042: 21,580; 2043: 21,420; 2044: 21,260; 2045: 21,100	2026: 16,942; 2027: 16,922; 2028: 16,901; 2029: 16,880; 2030: 16,860; 2031: 16,839; 2032: 16,819; 2033: 16,798; 2034: 16,777; 2035: 16,757; 2036: 16,736; 2037: 16,715; 2038: 16,695; 2039: 16,674; 2040: 16,653; 2041: 16,633; 2042: 16,612; 2043: 16,591; 2044: 16,571; 2045: 16,550	4	Signalized	0	1	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_MLK\_Updated)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>121.20</b>
<b>Fatal and Injury Crashes</b>	<b>46.05</b>
<b>Property-Damage-Only Crashes</b>	<b>75.14</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>38</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>62</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE Couch Street/NE MLK Boulevard**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_Couch\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_Couch_MLK (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+00.000	2026: 24,139; 2027: 23,979; 2028: 23,819; 2029: 23,659; 2030: 23,500; 2031: 23,340; 2032: 23,180; 2033: 23,020; 2034: 22,860; 2035: 22,700; 2036: 22,540; 2037: 22,380; 2038: 22,220; 2039: 22,060; 2040: 21,900; 2041: 21,740; 2042: 21,580; 2043: 21,420; 2044: 21,260; 2045: 21,100	2026: 16,942; 2027: 16,922; 2028: 16,901; 2029: 16,880; 2030: 16,860; 2031: 16,839; 2032: 16,819; 2033: 16,798; 2034: 16,777; 2035: 16,757; 2036: 16,736; 2037: 16,715; 2038: 16,695; 2039: 16,674; 2040: 16,653; 2041: 16,633; 2042: 16,612; 2043: 16,591; 2044: 16,571; 2045: 16,550	4	Signalized	0	0	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_Couch\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>110.80</b>
<b>Fatal and Injury Crashes</b>	<b>43.49</b>
<b>Property-Damage-Only Crashes</b>	<b>67.31</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>39</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>61</b>



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (47 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	7.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	82.39
Fatal and Injury Crashes	24.83
Property-Damage-Only Crashes	57.55
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.3570
FI Crash Rate (crashes/mi/yr)	3.1215
PDO Crash Rate (crashes/mi/yr)	7.2355
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	0.85
Travel FI Crash Rate (crashes/million veh-mi)	0.26
Travel PDO Crash Rate (crashes/million veh-mi)	0.59

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	82.385	4.1193	1.2415	2.8778	10.3570	0.85
Total			0.3977	82.385	4.1193	1.2415	2.8778	10.3570	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.88	1.1	0.00	0.0	0.88	1.1
Highway Segment	Collision with Fixed Object	1.55	1.9	7.29	8.8	8.84	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.26	0.3	0.31	0.4
Highway Segment	Other Single-vehicle Collision	0.93	1.1	1.45	1.8	2.38	2.9
Highway Segment	Collision with Pedestrian	1.75	2.1	0.00	0.0	1.75	2.1
Highway Segment	Total Single Vehicle Crashes	5.17	6.3	9.01	10.9	14.18	17.2
Highway Segment	Angle Collision	3.56	4.3	6.31	7.7	9.87	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.51	1.8	0.19	0.2	1.71	2.1
Highway Segment	Other Multi-vehicle Collision	1.10	1.3	3.88	4.7	4.99	6.1
Highway Segment	Rear-end Collision	10.05	12.2	24.57	29.8	34.61	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.61	2.0	1.50	1.8	3.12	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.83	2.2	12.09	14.7	13.92	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.66	23.9	48.55	58.9	68.21	82.8
Highway Segment	Total Highway Segment Crashes	24.83	30.1	57.55	69.9	82.39	100.0
	Total Crashes	24.83	30.1	57.55	69.9	82.39	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (47 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	7.25	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	106.39
Fatal and Injury Crashes	32.63
Property-Damage-Only Crashes	73.76
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	13.3745
FI Crash Rate (crashes/mi/yr)	4.1015
PDO Crash Rate (crashes/mi/yr)	9.2730
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	1.10
Travel FI Crash Rate (crashes/million veh-mi)	0.34
Travel PDO Crash Rate (crashes/million veh-mi)	0.76

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	106.388	5.3194	1.6313	3.6881	13.3745	1.10
Total			0.3977	106.388	5.3194	1.6313	3.6881	13.3745	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.72	0.7	0.78	0.7
Highway Segment	Collision with Bicycle	1.82	1.7	0.00	0.0	1.82	1.7
Highway Segment	Collision with Fixed Object	1.42	1.3	8.34	7.8	9.76	9.2
Highway Segment	Collision with Other Object	0.02	0.0	0.14	0.1	0.16	0.2
Highway Segment	Other Single-vehicle Collision	0.47	0.4	1.78	1.7	2.25	2.1
Highway Segment	Collision with Pedestrian	3.63	3.4	0.00	0.0	3.63	3.4
Highway Segment	Total Single Vehicle Crashes	7.42	7.0	10.98	10.3	18.40	17.3
Highway Segment	Angle Collision	2.14	2.0	4.96	4.7	7.10	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.71	1.6	0.25	0.2	1.97	1.8
Highway Segment	Other Multi-vehicle Collision	0.73	0.7	3.33	3.1	4.06	3.8
Highway Segment	Rear-end Collision	18.40	17.3	48.84	45.9	67.24	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.84	1.7	3.45	3.2	5.29	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.38	0.4	1.95	1.8	2.32	2.2
Highway Segment	Total Multiple Vehicle Crashes	25.21	23.7	62.78	59.0	87.99	82.7
Highway Segment	Total Highway Segment Crashes	32.63	30.7	73.76	69.3	106.39	100.0
	Total Crashes	32.63	30.7	73.76	69.3	106.39	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NW 2nd Avenue/W. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_NW2ndAve)**

Inte r. No.	Title	Type	Locat ion (Sta. ft)	Major AAD T	Minor AADT	L eg s	Traffic Contro l	Appro ches w/Left Turn Lanes	Appro ches w/Right Turn Lanes	Appro ches w/o Right Turn on Red	Pedestr ian Volum e (crossi ngs/da y)	Ligh ted at Nigh t	Red Lig ht Came ra	Sch ool Near by	Nu mber of Bus Stops	Number of Alcohol Sales Establish ments	Max Lanes Cross ed
1	Intersection_NW2ndAve (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+50,000	2026-5,400 2045-5,400	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	4	Signalized	0	1	0	2,000	true	false	true	10	15	5

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_NW2ndAve)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>131.31</b>
<b>Fatal and Injury Crashes</b>	<b>47.65</b>
<b>Property-Damage-Only Crashes</b>	<b>83.67</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>36</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>64</b>

***Interactive Highway Safety Design Model***  
**Crash Prediction Evaluation Report**

**NE MLK Boulevard/E. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_MLK (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	4+65,000	2026: 24,025; 2027: 23,866; 2028: 23,707; 2029: 23,547; 2030: 23,388; 2031: 23,229; 2032: 23,070; 2033: 22,911; 2034: 22,751; 2035: 22,592; 2036: 22,433; 2037: 22,274; 2038: 22,114; 2039: 21,955; 2040: 21,796; 2041: 21,637; 2042: 21,478; 2043: 21,318; 2044: 21,159; 2045: 21,000	2026: 16,891; 2027: 16,871; 2028: 16,850; 2029: 16,829; 2030: 16,809; 2031: 16,788; 2032: 16,768; 2033: 16,747; 2034: 16,727; 2035: 16,706; 2036: 16,685; 2037: 16,665; 2038: 16,644; 2039: 16,624; 2040: 16,603; 2041: 16,582; 2042: 16,562; 2043: 16,541; 2044: 16,521; 2045: 16,500	4	Signalized	0	1	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>120.90</b>
<b>Fatal and Injury Crashes</b>	<b>45.98</b>
<b>Property-Damage-Only Crashes</b>	<b>74.92</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>38</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>62</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE Couch Street/NE MLK Boulevard**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_Couch\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_Couch_MLK (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+00.000	2026: 24,025; 2027: 23,866; 2028: 23,707; 2029: 23,547; 2030: 23,388; 2031: 23,229; 2032: 23,070; 2033: 22,911; 2034: 22,751; 2035: 22,592; 2036: 22,433; 2037: 22,274; 2038: 22,114; 2039: 21,955; 2040: 21,796; 2041: 21,637; 2042: 21,478; 2043: 21,318; 2044: 21,159; 2045: 21,000	2026: 16,891; 2027: 16,871; 2028: 16,850; 2029: 16,829; 2030: 16,809; 2031: 16,788; 2032: 16,768; 2033: 16,747; 2034: 16,727; 2035: 16,706; 2036: 16,685; 2037: 16,665; 2038: 16,644; 2039: 16,624; 2040: 16,603; 2041: 16,582; 2042: 16,562; 2043: 16,541; 2044: 16,521; 2045: 16,500	4	Signalized	0	0	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_Couch\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>110.52</b>
<b>Fatal and Injury Crashes</b>	<b>43.42</b>
<b>Property-Damage-Only Crashes</b>	<b>67.10</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>39</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>61</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (47 feet bridge width)**

**Scenario: Alternative 4**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.100.00	0.3977	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	0	0	0	0	0	0	0	true	false	2.00	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	34,302
<b>Predicted Crashes</b>	
Total Crashes	121.05
Fatal and Injury Crashes	36.41
Property-Damage-Only Crashes	84.64
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	15.2175
FI Crash Rate (crashes/mi/yr)	4.5768
PDO Crash Rate (crashes/mi/yr)	10.6406
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	99.59
Travel Crash Rate (crashes/million veh-mi)	1.22
Travel FI Crash Rate (crashes/million veh-mi)	0.37
Travel PDO Crash Rate (crashes/million veh-mi)	0.85

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	121.048	6.0524	1.8203	4.2321	15.2175	1.22
Total			0.3977	121.048	6.0524	1.8203	4.2321	15.2175	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.02	0.0
Highway Segment	Collision with Bicycle	1.29	1.1	0.00	0.0	1.29	1.1
Highway Segment	Collision with Fixed Object	2.25	1.9	10.59	8.7	12.84	10.6
Highway Segment	Collision with Other Object	0.07	0.1	0.38	0.3	0.45	0.4
Highway Segment	Other Single-vehicle Collision	1.35	1.1	2.11	1.7	3.45	2.9
Highway Segment	Collision with Pedestrian	2.58	2.1	0.00	0.0	2.58	2.1
Highway Segment	Total Single Vehicle Crashes	7.54	6.2	13.09	10.8	20.63	17.0
Highway Segment	Angle Collision	5.23	4.3	9.30	7.7	14.53	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	2.22	1.8	0.29	0.2	2.51	2.1
Highway Segment	Other Multi-vehicle Collision	1.62	1.3	5.72	4.7	7.34	6.1
Highway Segment	Rear-end Collision	14.75	12.2	36.20	29.9	50.96	42.1
Highway Segment	Sideswipe, Opposite Direction Collision	2.37	2.0	2.22	1.8	4.58	3.8
Highway Segment	Sideswipe, Same Direction Collision	2.69	2.2	17.82	14.7	20.50	16.9
Highway Segment	Total Multiple Vehicle Crashes	28.87	23.9	71.55	59.1	100.42	83.0
Highway Segment	Total Highway Segment Crashes	36.41	30.1	84.64	69.9	121.05	100.0
	Total Crashes	36.41	30.1	84.64	69.9	121.05	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NW 2nd Avenue/W. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_NW2ndAve)**

Inter. No.	Title	Type	Location (Station)	Major AADT	Minor AADT	Lanes	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_NW2ndAve (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+50.000	2026-2045: 5,600	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	4	Signalized	0	1	0	2,000	true	false	true	10	15	5

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_NW2ndAve)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>133.99</b>
<b>Fatal and Injury Crashes</b>	<b>48.38</b>
<b>Property-Damage-Only Crashes</b>	<b>85.62</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>36</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>64</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE MLK Boulevard/E. Burnside Street**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Neighbory	Number of Buses Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_MLK (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	4+65,000	2026: 23,796; 2027: 23,638; 2028: 23,481; 2029: 23,323; 2030: 23,165; 2031: 23,008; 2032: 22,850; 2033: 22,692; 2034: 22,535; 2035: 22,377; 2036: 22,219; 2037: 22,062; 2038: 21,904; 2039: 21,746; 2040: 21,588; 2041: 21,431; 2042: 21,273; 2043: 21,115; 2044: 20,958; 2045: 20,800	2026: 17,352; 2027: 17,331; 2028: 17,310; 2029: 17,288; 2030: 17,267; 2031: 17,246; 2032: 17,225; 2033: 17,204; 2034: 17,183; 2035: 17,162; 2036: 17,140; 2037: 17,119; 2038: 17,098; 2039: 17,077; 2040: 17,056; 2041: 17,035; 2042: 17,013; 2043: 16,992; 2044: 16,971; 2045: 16,950	4	Signalized	0	1	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>121.62</b>
<b>Fatal and Injury Crashes</b>	<b>46.39</b>
<b>Property-Damage-Only Crashes</b>	<b>75.23</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>38</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>62</b>

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**NE Couch Street/NE MLK Boulevard**

**Scenario: No Build**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Table 1. Evaluation Intersection (Intersection\_Couch\_MLK)**

Int. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	Intersection_Couch_MLK (v2)	Urban/Suburban Arterial Intersection Four-Legged Signalized	2+00.000	2026: 23,796; 2027: 23,638; 2028: 23,481; 2029: 23,323; 2030: 23,165; 2031: 23,008; 2032: 22,850; 2033: 22,692; 2034: 22,535; 2035: 22,377; 2036: 22,219; 2037: 22,062; 2038: 21,904; 2039: 21,746; 2040: 21,588; 2041: 21,431; 2042: 21,273; 2043: 21,115; 2044: 20,958; 2045: 20,800	2026: 17,352; 2027: 17,331; 2028: 17,310; 2029: 17,288; 2030: 17,267; 2031: 17,246; 2032: 17,225; 2033: 17,204; 2034: 17,183; 2035: 17,162; 2036: 17,140; 2037: 17,119; 2038: 17,098; 2039: 17,077; 2040: 17,056; 2041: 17,035; 2042: 17,013; 2043: 16,992; 2044: 16,971; 2045: 16,950	4	Signalized	0	0	0	2,000	true	false	false	5	10	4

**Table 2. Predicted Intersection Crash Rates and Frequencies Summary (Intersection\_Couch\_MLK)**

<b>First Year of Analysis</b>	<b>2026</b>
<b>Last Year of Analysis</b>	<b>2045</b>
<b>Predicted Crashes</b>	
<b>Total Crashes</b>	<b>110.99</b>
<b>Fatal and Injury Crashes</b>	<b>43.76</b>
<b>Property-Damage-Only Crashes</b>	<b>67.23</b>
<b>Percent of Total Predicted Crashes</b>	
<b>Percent Fatal and Injury Crashes (%)</b>	<b>39</b>
<b>Percent Property-Damage-Only Crashes (%)</b>	<b>61</b>



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (44 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	6.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	83.76
Fatal and Injury Crashes	25.27
Property-Damage-Only Crashes	58.49
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.5294
FI Crash Rate (crashes/mi/yr)	3.1765
PDO Crash Rate (crashes/mi/yr)	7.3529
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	0.88
Travel FI Crash Rate (crashes/million veh-mi)	0.26
Travel PDO Crash Rate (crashes/million veh-mi)	0.61

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	83.757	4.1878	1.2634	2.9245	10.5294	0.88
Total			0.3977	83.757	4.1878	1.2634	2.9245	10.5294	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.89	1.1	0.00	0.0	0.89	1.1
Highway Segment	Collision with Fixed Object	1.59	1.9	7.44	8.9	9.03	10.8
Highway Segment	Collision with Other Object	0.05	0.1	0.27	0.3	0.32	0.4
Highway Segment	Other Single-vehicle Collision	0.95	1.1	1.48	1.8	2.44	2.9
Highway Segment	Collision with Pedestrian	1.78	2.1	0.00	0.0	1.78	2.1
Highway Segment	Total Single Vehicle Crashes	5.28	6.3	9.20	11.0	14.48	17.3
Highway Segment	Angle Collision	3.62	4.3	6.41	7.7	10.03	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.54	1.8	0.20	0.2	1.74	2.1
Highway Segment	Other Multi-vehicle Collision	1.12	1.3	3.94	4.7	5.06	6.0
Highway Segment	Rear-end Collision	10.21	12.2	24.94	29.8	35.16	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.64	2.0	1.53	1.8	3.17	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.86	2.2	12.27	14.7	14.13	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.99	23.9	49.29	58.9	69.28	82.7
Highway Segment	Total Highway Segment Crashes	25.27	30.2	58.49	69.8	83.76	100.0
	Total Crashes	25.27	30.2	58.49	69.8	83.76	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (44 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	6.25	151.0	0.00	None	0.00	Low	0	0.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	108.82
Fatal and Injury Crashes	33.37
Property-Damage-Only Crashes	75.46
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	13.6806
FI Crash Rate (crashes/mi/yr)	4.1946
PDO Crash Rate (crashes/mi/yr)	9.4860
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	1.14
Travel FI Crash Rate (crashes/million veh-mi)	0.35
Travel PDO Crash Rate (crashes/million veh-mi)	0.79

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	108.823	5.4411	1.6683	3.7728	13.6806	1.14
Total			0.3977	108.823	5.4411	1.6683	3.7728	13.6806	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.75	0.7	0.80	0.7
Highway Segment	Collision with Bicycle	1.86	1.7	0.00	0.0	1.86	1.7
Highway Segment	Collision with Fixed Object	1.48	1.4	8.62	7.9	10.10	9.3
Highway Segment	Collision with Other Object	0.02	0.0	0.15	0.1	0.17	0.2
Highway Segment	Other Single-vehicle Collision	0.49	0.5	1.84	1.7	2.33	2.1
Highway Segment	Collision with Pedestrian	3.72	3.4	0.00	0.0	3.72	3.4
Highway Segment	Total Single Vehicle Crashes	7.62	7.0	11.36	10.4	18.98	17.4
Highway Segment	Angle Collision	2.19	2.0	5.06	4.7	7.25	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.75	1.6	0.26	0.2	2.01	1.8
Highway Segment	Other Multi-vehicle Collision	0.75	0.7	3.40	3.1	4.14	3.8
Highway Segment	Rear-end Collision	18.79	17.3	49.87	45.8	68.66	63.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.88	1.7	3.52	3.2	5.41	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.39	0.4	1.99	1.8	2.37	2.2
Highway Segment	Total Multiple Vehicle Crashes	25.75	23.7	64.10	58.9	89.84	82.6
Highway Segment	Total Highway Segment Crashes	33.37	30.7	75.46	69.3	108.82	100.0
	Total Crashes	33.37	30.7	75.46	69.3	108.82	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (44 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	6.25	151.0	0.00	None	0.00	Low	0	1.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	85.37
Fatal and Injury Crashes	25.72
Property-Damage-Only Crashes	59.65
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.7324
FI Crash Rate (crashes/mi/yr)	3.2339
PDO Crash Rate (crashes/mi/yr)	7.4985
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	0.88
Travel FI Crash Rate (crashes/million veh-mi)	0.27
Travel PDO Crash Rate (crashes/million veh-mi)	0.61

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	85.371	4.2686	1.2862	2.9824	10.7324	0.88
Total			0.3977	85.371	4.2686	1.2862	2.9824	10.7324	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.91	1.1	0.00	0.0	0.91	1.1
Highway Segment	Collision with Fixed Object	1.61	1.9	7.54	8.8	9.15	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.27	0.3	0.32	0.4
Highway Segment	Other Single-vehicle Collision	0.96	1.1	1.50	1.8	2.46	2.9
Highway Segment	Collision with Pedestrian	1.82	2.1	0.00	0.0	1.82	2.1
Highway Segment	Total Single Vehicle Crashes	5.35	6.3	9.32	10.9	14.67	17.2
Highway Segment	Angle Collision	3.69	4.3	6.54	7.7	10.23	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.57	1.8	0.20	0.2	1.77	2.1
Highway Segment	Other Multi-vehicle Collision	1.14	1.3	4.03	4.7	5.17	6.1
Highway Segment	Rear-end Collision	10.41	12.2	25.47	29.8	35.88	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.67	2.0	1.56	1.8	3.23	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.89	2.2	12.53	14.7	14.43	16.9
Highway Segment	Total Multiple Vehicle Crashes	20.37	23.9	50.33	59.0	70.70	82.8
Highway Segment	Total Highway Segment Crashes	25.72	30.1	59.65	69.9	85.37	100.0
	Total Crashes	25.72	30.1	59.65	69.9	85.37	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Burnside Bridge (44 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	6.25	151.0	0.00	None	0.00	Low	0	1.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	111.40
Fatal and Injury Crashes	34.16
Property-Damage-Only Crashes	77.23
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	14.0041
FI Crash Rate (crashes/mi/yr)	4.2948
PDO Crash Rate (crashes/mi/yr)	9.7093
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	1.15
Travel FI Crash Rate (crashes/million veh-mi)	0.35
Travel PDO Crash Rate (crashes/million veh-mi)	0.79

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	111.397	5.5698	1.7082	3.8617	14.0041	1.15
Total			0.3977	111.397	5.5698	1.7082	3.8617	14.0041	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.76	0.7	0.81	0.7
Highway Segment	Collision with Bicycle	1.90	1.7	0.00	0.0	1.90	1.7
Highway Segment	Collision with Fixed Object	1.48	1.3	8.71	7.8	10.19	9.1
Highway Segment	Collision with Other Object	0.02	0.0	0.15	0.1	0.17	0.2
Highway Segment	Other Single-vehicle Collision	0.49	0.4	1.86	1.7	2.35	2.1
Highway Segment	Collision with Pedestrian	3.81	3.4	0.00	0.0	3.81	3.4
Highway Segment	Total Single Vehicle Crashes	7.76	7.0	11.47	10.3	19.23	17.3
Highway Segment	Angle Collision	2.24	2.0	5.20	4.7	7.44	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.79	1.6	0.26	0.2	2.06	1.8
Highway Segment	Other Multi-vehicle Collision	0.77	0.7	3.49	3.1	4.25	3.8
Highway Segment	Rear-end Collision	19.27	17.3	51.16	45.9	70.44	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.93	1.7	3.62	3.2	5.54	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.40	0.4	2.04	1.8	2.44	2.2
Highway Segment	Total Multiple Vehicle Crashes	26.40	23.7	65.77	59.0	92.17	82.7
Highway Segment	Total Highway Segment Crashes	34.16	30.7	77.23	69.3	111.40	100.0
	Total Crashes	34.16	30.7	77.23	69.3	111.40	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



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**Burnside Bridge (44 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	6.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	85.05
Fatal and Injury Crashes	25.63
Property-Damage-Only Crashes	59.41
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.6917
FI Crash Rate (crashes/mi/yr)	3.2224
PDO Crash Rate (crashes/mi/yr)	7.4694
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	0.88
Travel FI Crash Rate (crashes/million veh-mi)	0.26
Travel PDO Crash Rate (crashes/million veh-mi)	0.61

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	85.048	4.2524	1.2816	2.9708	10.6917	0.88
Total			0.3977	85.048	4.2524	1.2816	2.9708	10.6917	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.91	1.1	0.00	0.0	0.91	1.1
Highway Segment	Collision with Fixed Object	1.60	1.9	7.52	8.8	9.12	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.27	0.3	0.32	0.4
Highway Segment	Other Single-vehicle Collision	0.96	1.1	1.50	1.8	2.46	2.9
Highway Segment	Collision with Pedestrian	1.81	2.1	0.00	0.0	1.81	2.1
Highway Segment	Total Single Vehicle Crashes	5.34	6.3	9.30	10.9	14.63	17.2
Highway Segment	Angle Collision	3.67	4.3	6.52	7.7	10.19	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.56	1.8	0.20	0.2	1.76	2.1
Highway Segment	Other Multi-vehicle Collision	1.14	1.3	4.01	4.7	5.15	6.1
Highway Segment	Rear-end Collision	10.37	12.2	25.36	29.8	35.73	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.66	2.0	1.55	1.8	3.22	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.89	2.2	12.48	14.7	14.37	16.9
Highway Segment	Total Multiple Vehicle Crashes	20.29	23.9	50.12	58.9	70.41	82.8
Highway Segment	Total Highway Segment Crashes	25.63	30.1	59.41	69.9	85.05	100.0
	Total Crashes	25.63	30.1	59.41	69.9	85.05	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Burnside Bridge (44 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	6.25	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	110.88
Fatal and Injury Crashes	34.00
Property-Damage-Only Crashes	76.88
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	13.9392
FI Crash Rate (crashes/mi/yr)	4.2747
PDO Crash Rate (crashes/mi/yr)	9.6645
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	1.14
Travel FI Crash Rate (crashes/million veh-mi)	0.35
Travel PDO Crash Rate (crashes/million veh-mi)	0.79

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	110.880	5.5440	1.7002	3.8438	13.9392	1.14
Total			0.3977	110.880	5.5440	1.7002	3.8438	13.9392	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.76	0.7	0.81	0.7
Highway Segment	Collision with Bicycle	1.89	1.7	0.00	0.0	1.89	1.7
Highway Segment	Collision with Fixed Object	1.48	1.3	8.69	7.8	10.17	9.2
Highway Segment	Collision with Other Object	0.02	0.0	0.15	0.1	0.17	0.2
Highway Segment	Other Single-vehicle Collision	0.49	0.4	1.85	1.7	2.35	2.1
Highway Segment	Collision with Pedestrian	3.79	3.4	0.00	0.0	3.79	3.4
Highway Segment	Total Single Vehicle Crashes	7.73	7.0	11.45	10.3	19.18	17.3
Highway Segment	Angle Collision	2.23	2.0	5.17	4.7	7.40	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.79	1.6	0.26	0.2	2.05	1.8
Highway Segment	Other Multi-vehicle Collision	0.76	0.7	3.47	3.1	4.23	3.8
Highway Segment	Rear-end Collision	19.18	17.3	50.90	45.9	70.08	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.92	1.7	3.60	3.2	5.52	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.39	0.4	2.03	1.8	2.42	2.2
Highway Segment	Total Multiple Vehicle Crashes	26.27	23.7	65.43	59.0	91.70	82.7
Highway Segment	Total Highway Segment Crashes	34.00	30.7	76.88	69.3	110.88	100.0
	Total Crashes	34.00	30.7	76.88	69.3	110.88	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



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**Burnside Bridge (44 feet bridge width)**

**Scenario: Alternative 4**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.1000	0.3977	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	0	0	0	0	0	0	0	true	false	1.00	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	34,302
<b>Predicted Crashes</b>	
Total Crashes	121.05
Fatal and Injury Crashes	36.41
Property-Damage-Only Crashes	84.64
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	15.2175
FI Crash Rate (crashes/mi/yr)	4.5768
PDO Crash Rate (crashes/mi/yr)	10.6406
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	99.59
Travel Crash Rate (crashes/million veh-mi)	1.22
Travel FI Crash Rate (crashes/million veh-mi)	0.37
Travel PDO Crash Rate (crashes/million veh-mi)	0.85

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	121.048	6.0524	1.8203	4.2321	15.2175	1.22
Total			0.3977	121.048	6.0524	1.8203	4.2321	15.2175	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.02	0.0
Highway Segment	Collision with Bicycle	1.29	1.1	0.00	0.0	1.29	1.1
Highway Segment	Collision with Fixed Object	2.25	1.9	10.59	8.7	12.84	10.6
Highway Segment	Collision with Other Object	0.07	0.1	0.38	0.3	0.45	0.4
Highway Segment	Other Single-vehicle Collision	1.35	1.1	2.11	1.7	3.45	2.9
Highway Segment	Collision with Pedestrian	2.58	2.1	0.00	0.0	2.58	2.1
Highway Segment	Total Single Vehicle Crashes	7.54	6.2	13.09	10.8	20.63	17.0
Highway Segment	Angle Collision	5.23	4.3	9.30	7.7	14.53	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	2.22	1.8	0.29	0.2	2.51	2.1
Highway Segment	Other Multi-vehicle Collision	1.62	1.3	5.72	4.7	7.34	6.1
Highway Segment	Rear-end Collision	14.75	12.2	36.20	29.9	50.96	42.1
Highway Segment	Sideswipe, Opposite Direction Collision	2.37	2.0	2.22	1.8	4.58	3.8
Highway Segment	Sideswipe, Same Direction Collision	2.69	2.2	17.82	14.7	20.50	16.9
Highway Segment	Total Multiple Vehicle Crashes	28.87	23.9	71.55	59.1	100.42	83.0
Highway Segment	Total Highway Segment Crashes	36.41	30.1	84.64	69.9	121.05	100.0
	Total Crashes	36.41	30.1	84.64	69.9	121.05	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	7.50	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	79.68
Fatal and Injury Crashes	24.04
Property-Damage-Only Crashes	55.64
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.0172
FI Crash Rate (crashes/mi/yr)	3.0219
PDO Crash Rate (crashes/mi/yr)	6.9952
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	0.83
Travel FI Crash Rate (crashes/million veh-mi)	0.25
Travel PDO Crash Rate (crashes/million veh-mi)	0.58

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	79.682	3.9841	1.2019	2.7822	10.0172	0.83
Total			0.3977	79.682	3.9841	1.2019	2.7822	10.0172	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.85	1.1	0.00	0.0	0.85	1.1
Highway Segment	Collision with Fixed Object	1.51	1.9	7.08	8.9	8.60	10.8
Highway Segment	Collision with Other Object	0.05	0.1	0.25	0.3	0.30	0.4
Highway Segment	Other Single-vehicle Collision	0.91	1.1	1.41	1.8	2.32	2.9
Highway Segment	Collision with Pedestrian	1.70	2.1	0.00	0.0	1.70	2.1
Highway Segment	Total Single Vehicle Crashes	5.02	6.3	8.75	11.0	13.77	17.3
Highway Segment	Angle Collision	3.44	4.3	6.10	7.7	9.54	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.46	1.8	0.19	0.2	1.65	2.1
Highway Segment	Other Multi-vehicle Collision	1.06	1.3	3.75	4.7	4.82	6.0
Highway Segment	Rear-end Collision	9.72	12.2	23.73	29.8	33.45	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.56	2.0	1.45	1.8	3.01	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.77	2.2	11.68	14.7	13.45	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.02	23.9	46.89	58.9	65.91	82.7
Highway Segment	Total Highway Segment Crashes	24.04	30.2	55.64	69.8	79.68	100.0
	Total Crashes	24.04	30.2	55.64	69.8	79.68	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



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**Crash Prediction Evaluation Report**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	7.50	151.0	0.00	None	0.00	Low	0	0.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6200

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	102.29
Fatal and Injury Crashes	31.36
Property-Damage-Only Crashes	70.93
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	12.8593
FI Crash Rate (crashes/mi/yr)	3.9428
PDO Crash Rate (crashes/mi/yr)	8.9165
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	1.07
Travel FI Crash Rate (crashes/million veh-mi)	0.33
Travel PDO Crash Rate (crashes/million veh-mi)	0.74

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	102.290	5.1145	1.5682	3.5463	12.8593	1.07
Total			0.3977	102.290	5.1145	1.5682	3.5463	12.8593	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.70	0.7	0.76	0.7
Highway Segment	Collision with Bicycle	1.75	1.7	0.00	0.0	1.75	1.7
Highway Segment	Collision with Fixed Object	1.39	1.4	8.11	7.9	9.49	9.3
Highway Segment	Collision with Other Object	0.02	0.0	0.14	0.1	0.16	0.2
Highway Segment	Other Single-vehicle Collision	0.46	0.5	1.73	1.7	2.19	2.1
Highway Segment	Collision with Pedestrian	3.49	3.4	0.00	0.0	3.49	3.4
Highway Segment	Total Single Vehicle Crashes	7.16	7.0	10.68	10.4	17.84	17.4
Highway Segment	Angle Collision	2.06	2.0	4.76	4.7	6.82	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.65	1.6	0.24	0.2	1.89	1.8
Highway Segment	Other Multi-vehicle Collision	0.70	0.7	3.19	3.1	3.90	3.8
Highway Segment	Rear-end Collision	17.67	17.3	46.87	45.8	64.54	63.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.77	1.7	3.31	3.2	5.08	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.36	0.4	1.87	1.8	2.23	2.2
Highway Segment	Total Multiple Vehicle Crashes	24.20	23.7	60.25	58.9	84.45	82.6
Highway Segment	Total Highway Segment Crashes	31.36	30.7	70.93	69.3	102.29	100.0
	Total Crashes	31.36	30.7	70.93	69.3	102.29	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Crash Prediction Evaluation Report**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	7.50	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	81.22
Fatal and Injury Crashes	24.47
Property-Damage-Only Crashes	56.75
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.2103
FI Crash Rate (crashes/mi/yr)	3.0766
PDO Crash Rate (crashes/mi/yr)	7.1337
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	0.83
Travel FI Crash Rate (crashes/million veh-mi)	0.25
Travel PDO Crash Rate (crashes/million veh-mi)	0.58

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	81.218	4.0609	1.2236	2.8373	10.2103	0.83
Total			0.3977	81.218	4.0609	1.2236	2.8373	10.2103	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.86	1.1	0.00	0.0	0.86	1.1
Highway Segment	Collision with Fixed Object	1.53	1.9	7.17	8.8	8.70	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.26	0.3	0.31	0.4
Highway Segment	Other Single-vehicle Collision	0.92	1.1	1.43	1.8	2.35	2.9
Highway Segment	Collision with Pedestrian	1.73	2.1	0.00	0.0	1.73	2.1
Highway Segment	Total Single Vehicle Crashes	5.09	6.3	8.87	10.9	13.96	17.2
Highway Segment	Angle Collision	3.51	4.3	6.22	7.7	9.73	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.49	1.8	0.19	0.2	1.68	2.1
Highway Segment	Other Multi-vehicle Collision	1.08	1.3	3.83	4.7	4.92	6.1
Highway Segment	Rear-end Collision	9.90	12.2	24.23	29.8	34.13	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.59	2.0	1.48	1.8	3.07	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.80	2.2	11.92	14.7	13.72	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.38	23.9	47.88	59.0	67.26	82.8
Highway Segment	Total Highway Segment Crashes	24.47	30.1	56.75	69.9	81.22	100.0
	Total Crashes	24.47	30.1	56.75	69.9	81.22	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



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**Crash Prediction Evaluation Report**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	7.50	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6200

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	104.71
Fatal and Injury Crashes	32.11
Property-Damage-Only Crashes	72.60
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	13.1634
FI Crash Rate (crashes/mi/yr)	4.0370
PDO Crash Rate (crashes/mi/yr)	9.1265
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	1.08
Travel FI Crash Rate (crashes/million veh-mi)	0.33
Travel PDO Crash Rate (crashes/million veh-mi)	0.75

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	104.709	5.2355	1.6056	3.6298	13.1634	1.08
Total			0.3977	104.709	5.2355	1.6056	3.6298	13.1634	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.71	0.7	0.76	0.7
Highway Segment	Collision with Bicycle	1.79	1.7	0.00	0.0	1.79	1.7
Highway Segment	Collision with Fixed Object	1.40	1.3	8.18	7.8	9.58	9.1
Highway Segment	Collision with Other Object	0.02	0.0	0.14	0.1	0.16	0.2
Highway Segment	Other Single-vehicle Collision	0.47	0.4	1.75	1.7	2.21	2.1
Highway Segment	Collision with Pedestrian	3.58	3.4	0.00	0.0	3.58	3.4
Highway Segment	Total Single Vehicle Crashes	7.29	7.0	10.78	10.3	18.07	17.3
Highway Segment	Angle Collision	2.11	2.0	4.88	4.7	6.99	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.69	1.6	0.25	0.2	1.94	1.8
Highway Segment	Other Multi-vehicle Collision	0.72	0.7	3.28	3.1	4.00	3.8
Highway Segment	Rear-end Collision	18.12	17.3	48.09	45.9	66.21	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.81	1.7	3.40	3.2	5.21	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.37	0.4	1.92	1.8	2.29	2.2
Highway Segment	Total Multiple Vehicle Crashes	24.82	23.7	61.82	59.0	86.64	82.7
Highway Segment	Total Highway Segment Crashes	32.11	30.7	72.60	69.3	104.71	100.0
	Total Crashes	32.11	30.7	72.60	69.3	104.71	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	7.50	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	80.91
Fatal and Injury Crashes	24.39
Property-Damage-Only Crashes	56.52
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	10.1716
FI Crash Rate (crashes/mi/yr)	3.0656
PDO Crash Rate (crashes/mi/yr)	7.1060
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	0.83
Travel FI Crash Rate (crashes/million veh-mi)	0.25
Travel PDO Crash Rate (crashes/million veh-mi)	0.58

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	80.911	4.0455	1.2193	2.8262	10.1716	0.83
Total			0.3977	80.911	4.0455	1.2193	2.8262	10.1716	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.86	1.1	0.00	0.0	0.86	1.1
Highway Segment	Collision with Fixed Object	1.53	1.9	7.15	8.8	8.68	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.26	0.3	0.31	0.4
Highway Segment	Other Single-vehicle Collision	0.92	1.1	1.42	1.8	2.34	2.9
Highway Segment	Collision with Pedestrian	1.72	2.1	0.00	0.0	1.72	2.1
Highway Segment	Total Single Vehicle Crashes	5.08	6.3	8.84	10.9	13.92	17.2
Highway Segment	Angle Collision	3.49	4.3	6.20	7.7	9.69	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.49	1.8	0.19	0.2	1.68	2.1
Highway Segment	Other Multi-vehicle Collision	1.08	1.3	3.81	4.7	4.90	6.1
Highway Segment	Rear-end Collision	9.87	12.2	24.13	29.8	33.99	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.58	2.0	1.48	1.8	3.06	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.80	2.2	11.87	14.7	13.67	16.9
Highway Segment	Total Multiple Vehicle Crashes	19.31	23.9	47.68	58.9	66.99	82.8
Highway Segment	Total Highway Segment Crashes	24.39	30.1	56.52	69.9	80.91	100.0
	Total Crashes	24.39	30.1	56.52	69.9	80.91	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	7.50	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6200

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	104.22
Fatal and Injury Crashes	31.96
Property-Damage-Only Crashes	72.26
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	13.1024
FI Crash Rate (crashes/mi/yr)	4.0181
PDO Crash Rate (crashes/mi/yr)	9.0843
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	1.07
Travel FI Crash Rate (crashes/million veh-mi)	0.33
Travel PDO Crash Rate (crashes/million veh-mi)	0.74

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	104.223	5.2112	1.5981	3.6131	13.1024	1.07
Total			0.3977	104.223	5.2112	1.5981	3.6131	13.1024	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.71	0.7	0.76	0.7
Highway Segment	Collision with Bicycle	1.78	1.7	0.00	0.0	1.78	1.7
Highway Segment	Collision with Fixed Object	1.39	1.3	8.17	7.8	9.56	9.2
Highway Segment	Collision with Other Object	0.02	0.0	0.14	0.1	0.16	0.2
Highway Segment	Other Single-vehicle Collision	0.47	0.4	1.74	1.7	2.21	2.1
Highway Segment	Collision with Pedestrian	3.56	3.4	0.00	0.0	3.56	3.4
Highway Segment	Total Single Vehicle Crashes	7.27	7.0	10.76	10.3	18.03	17.3
Highway Segment	Angle Collision	2.10	2.0	4.86	4.7	6.96	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.68	1.6	0.25	0.2	1.93	1.8
Highway Segment	Other Multi-vehicle Collision	0.72	0.7	3.26	3.1	3.98	3.8
Highway Segment	Rear-end Collision	18.03	17.3	47.85	45.9	65.88	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.80	1.7	3.38	3.2	5.18	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.37	0.4	1.91	1.8	2.28	2.2
Highway Segment	Total Multiple Vehicle Crashes	24.70	23.7	61.50	59.0	86.20	82.7
Highway Segment	Total Highway Segment Crashes	31.96	30.7	72.26	69.3	104.22	100.0
	Total Crashes	31.96	30.7	72.26	69.3	104.22	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 4**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	0	0	0	0	0	0	0	true	false	2.00	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	34,302
<b>Predicted Crashes</b>	
Total Crashes	119.85
Fatal and Injury Crashes	36.05
Property-Damage-Only Crashes	83.80
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	15.0668
FI Crash Rate (crashes/mi/yr)	4.5315
PDO Crash Rate (crashes/mi/yr)	10.5353
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	99.59
Travel Crash Rate (crashes/million veh-mi)	1.20
Travel FI Crash Rate (crashes/million veh-mi)	0.36
Travel PDO Crash Rate (crashes/million veh-mi)	0.84

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	119.850	5.9925	1.8023	4.1902	15.0668	1.20
Total			0.3977	119.850	5.9925	1.8023	4.1902	15.0668	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.02	0.0
Highway Segment	Collision with Bicycle	1.28	1.1	0.00	0.0	1.28	1.1
Highway Segment	Collision with Fixed Object	2.22	1.9	10.49	8.7	12.71	10.6
Highway Segment	Collision with Other Object	0.07	0.1	0.38	0.3	0.45	0.4
Highway Segment	Other Single-vehicle Collision	1.33	1.1	2.09	1.7	3.42	2.9
Highway Segment	Collision with Pedestrian	2.55	2.1	0.00	0.0	2.55	2.1
Highway Segment	Total Single Vehicle Crashes	7.46	6.2	12.96	10.8	20.42	17.0
Highway Segment	Angle Collision	5.17	4.3	9.21	7.7	14.38	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	2.20	1.8	0.28	0.2	2.48	2.1
Highway Segment	Other Multi-vehicle Collision	1.60	1.3	5.67	4.7	7.27	6.1
Highway Segment	Rear-end Collision	14.61	12.2	35.85	29.9	50.45	42.1
Highway Segment	Sideswipe, Opposite Direction Collision	2.34	2.0	2.20	1.8	4.54	3.8
Highway Segment	Sideswipe, Same Direction Collision	2.66	2.2	17.64	14.7	20.30	16.9
Highway Segment	Total Multiple Vehicle Crashes	28.58	23.9	70.84	59.1	99.43	83.0
Highway Segment	Total Highway Segment Crashes	36.05	30.1	83.80	69.9	119.85	100.0
	Total Crashes	36.05	30.1	83.80	69.9	119.85	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



**Interactive Highway Safety Design Model  
Crash Prediction Evaluation Report  
Mitigation - Shoulder Width**



*Interactive Highway Safety Design Model*  
**Crash Prediction Evaluation Report**

**Mitigation - Shoulder Width**

**Burnside Bridge (47 feet and 44 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	9.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	75.89
Fatal and Injury Crashes	22.89
Property-Damage-Only Crashes	53.00
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	9.5405
FI Crash Rate (crashes/mi/yr)	2.8781
PDO Crash Rate (crashes/mi/yr)	6.6624
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	0.79
Travel FI Crash Rate (crashes/million veh-mi)	0.24
Travel PDO Crash Rate (crashes/million veh-mi)	0.55

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	75.890	3.7945	1.1447	2.6498	9.5405	0.79
Total			0.3977	75.890	3.7945	1.1447	2.6498	9.5405	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.81	1.1	0.00	0.0	0.81	1.1
Highway Segment	Collision with Fixed Object	1.44	1.9	6.74	8.9	8.19	10.8
Highway Segment	Collision with Other Object	0.05	0.1	0.24	0.3	0.29	0.4
Highway Segment	Other Single-vehicle Collision	0.86	1.1	1.34	1.8	2.21	2.9
Highway Segment	Collision with Pedestrian	1.62	2.1	0.00	0.0	1.62	2.1
Highway Segment	Total Single Vehicle Crashes	4.78	6.3	8.34	11.0	13.12	17.3
Highway Segment	Angle Collision	3.28	4.3	5.81	7.7	9.08	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.40	1.8	0.18	0.2	1.57	2.1
Highway Segment	Other Multi-vehicle Collision	1.01	1.3	3.57	4.7	4.59	6.0
Highway Segment	Rear-end Collision	9.26	12.2	22.60	29.8	31.85	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.49	2.0	1.38	1.8	2.87	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.68	2.2	11.12	14.7	12.80	16.9
Highway Segment	Total Multiple Vehicle Crashes	18.11	23.9	44.66	58.9	62.77	82.7
Highway Segment	Total Highway Segment Crashes	22.89	30.2	53.00	69.8	75.89	100.0
	Total Crashes	22.89	30.2	53.00	69.8	75.89	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (47 feet and 44 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	9.25	151.0	0.00	None	0.00	Low	0	0.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	95.60
Fatal and Injury Crashes	29.31
Property-Damage-Only Crashes	66.29
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	12.0181
FI Crash Rate (crashes/mi/yr)	3.6849
PDO Crash Rate (crashes/mi/yr)	8.3332
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	1.00
Travel FI Crash Rate (crashes/million veh-mi)	0.31
Travel PDO Crash Rate (crashes/million veh-mi)	0.69

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	95.599	4.7799	1.4656	3.3143	12.0181	1.00
Total			0.3977	95.599	4.7799	1.4656	3.3143	12.0181	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.66	0.7	0.70	0.7
Highway Segment	Collision with Bicycle	1.63	1.7	0.00	0.0	1.63	1.7
Highway Segment	Collision with Fixed Object	1.30	1.4	7.58	7.9	8.87	9.3
Highway Segment	Collision with Other Object	0.02	0.0	0.13	0.1	0.15	0.2
Highway Segment	Other Single-vehicle Collision	0.43	0.5	1.62	1.7	2.05	2.1
Highway Segment	Collision with Pedestrian	3.27	3.4	0.00	0.0	3.27	3.4
Highway Segment	Total Single Vehicle Crashes	6.70	7.0	9.98	10.4	16.68	17.4
Highway Segment	Angle Collision	1.92	2.0	4.45	4.7	6.37	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.54	1.6	0.23	0.2	1.76	1.8
Highway Segment	Other Multi-vehicle Collision	0.66	0.7	2.98	3.1	3.64	3.8
Highway Segment	Rear-end Collision	16.51	17.3	43.81	45.8	60.32	63.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.65	1.7	3.10	3.2	4.75	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.34	0.4	1.75	1.8	2.08	2.2
Highway Segment	Total Multiple Vehicle Crashes	22.62	23.7	56.31	58.9	78.92	82.6
Highway Segment	Total Highway Segment Crashes	29.31	30.7	66.29	69.3	95.60	100.0
	Total Crashes	29.31	30.7	66.29	69.3	95.60	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (47 feet and 44 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	9.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	77.35
Fatal and Injury Crashes	23.31
Property-Damage-Only Crashes	54.05
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	9.7244
FI Crash Rate (crashes/mi/yr)	2.9302
PDO Crash Rate (crashes/mi/yr)	6.7943
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	0.80
Travel FI Crash Rate (crashes/million veh-mi)	0.24
Travel PDO Crash Rate (crashes/million veh-mi)	0.56

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	77.353	3.8677	1.1654	2.7023	9.7244	0.80
Total			0.3977	77.353	3.8677	1.1654	2.7023	9.7244	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.82	1.1	0.00	0.0	0.82	1.1
Highway Segment	Collision with Fixed Object	1.46	1.9	6.83	8.8	8.29	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.24	0.3	0.29	0.4
Highway Segment	Other Single-vehicle Collision	0.87	1.1	1.36	1.8	2.23	2.9
Highway Segment	Collision with Pedestrian	1.65	2.1	0.00	0.0	1.65	2.1
Highway Segment	Total Single Vehicle Crashes	4.85	6.3	8.45	10.9	13.30	17.2
Highway Segment	Angle Collision	3.34	4.3	5.93	7.7	9.27	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.42	1.8	0.18	0.2	1.60	2.1
Highway Segment	Other Multi-vehicle Collision	1.03	1.3	3.65	4.7	4.68	6.1
Highway Segment	Rear-end Collision	9.43	12.2	23.07	29.8	32.51	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.51	2.0	1.41	1.8	2.93	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.72	2.2	11.36	14.7	13.07	16.9
Highway Segment	Total Multiple Vehicle Crashes	18.46	23.9	45.60	59.0	64.06	82.8
Highway Segment	Total Highway Segment Crashes	23.31	30.1	54.05	69.9	77.35	100.0
	Total Crashes	23.31	30.1	54.05	69.9	77.35	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (47 feet and 44 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	9.25	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	97.86
Fatal and Injury Crashes	30.01
Property-Damage-Only Crashes	67.85
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	12.3024
FI Crash Rate (crashes/mi/yr)	3.7729
PDO Crash Rate (crashes/mi/yr)	8.5295
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	1.01
Travel FI Crash Rate (crashes/million veh-mi)	0.31
Travel PDO Crash Rate (crashes/million veh-mi)	0.70

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	97.860	4.8930	1.5006	3.3924	12.3024	1.01
Total			0.3977	97.860	4.8930	1.5006	3.3924	12.3024	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.67	0.7	0.71	0.7
Highway Segment	Collision with Bicycle	1.67	1.7	0.00	0.0	1.67	1.7
Highway Segment	Collision with Fixed Object	1.30	1.3	7.65	7.8	8.95	9.1
Highway Segment	Collision with Other Object	0.02	0.0	0.13	0.1	0.15	0.2
Highway Segment	Other Single-vehicle Collision	0.43	0.4	1.63	1.7	2.07	2.1
Highway Segment	Collision with Pedestrian	3.34	3.4	0.00	0.0	3.34	3.4
Highway Segment	Total Single Vehicle Crashes	6.82	7.0	10.07	10.3	16.89	17.3
Highway Segment	Angle Collision	1.97	2.0	4.56	4.7	6.54	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.58	1.6	0.23	0.2	1.81	1.8
Highway Segment	Other Multi-vehicle Collision	0.67	0.7	3.06	3.1	3.73	3.8
Highway Segment	Rear-end Collision	16.93	17.3	44.95	45.9	61.88	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.69	1.7	3.18	3.2	4.87	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.35	0.4	1.79	1.8	2.14	2.2
Highway Segment	Total Multiple Vehicle Crashes	23.20	23.7	57.77	59.0	80.97	82.7
Highway Segment	Total Highway Segment Crashes	30.01	30.7	67.85	69.3	97.86	100.0
	Total Crashes	30.01	30.7	67.85	69.3	97.86	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (47 feet and 44 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	9.25	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	77.06
Fatal and Injury Crashes	23.23
Property-Damage-Only Crashes	53.84
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	9.6876
FI Crash Rate (crashes/mi/yr)	2.9197
PDO Crash Rate (crashes/mi/yr)	6.7678
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	0.80
Travel FI Crash Rate (crashes/million veh-mi)	0.24
Travel PDO Crash Rate (crashes/million veh-mi)	0.56

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	77.060	3.8530	1.1613	2.6917	9.6876	0.80
Total			0.3977	77.060	3.8530	1.1613	2.6917	9.6876	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.82	1.1	0.00	0.0	0.82	1.1
Highway Segment	Collision with Fixed Object	1.45	1.9	6.81	8.8	8.27	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.24	0.3	0.29	0.4
Highway Segment	Other Single-vehicle Collision	0.87	1.1	1.36	1.8	2.23	2.9
Highway Segment	Collision with Pedestrian	1.64	2.1	0.00	0.0	1.64	2.1
Highway Segment	Total Single Vehicle Crashes	4.84	6.3	8.42	10.9	13.26	17.2
Highway Segment	Angle Collision	3.33	4.3	5.90	7.7	9.23	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.42	1.8	0.18	0.2	1.60	2.1
Highway Segment	Other Multi-vehicle Collision	1.03	1.3	3.63	4.7	4.66	6.1
Highway Segment	Rear-end Collision	9.40	12.2	22.98	29.8	32.38	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.51	2.0	1.41	1.8	2.92	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.71	2.2	11.31	14.7	13.02	16.9
Highway Segment	Total Multiple Vehicle Crashes	18.39	23.9	45.41	58.9	63.80	82.8
Highway Segment	Total Highway Segment Crashes	23.23	30.1	53.84	69.9	77.06	100.0
	Total Crashes	23.23	30.1	53.84	69.9	77.06	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (47 feet and 44 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number of Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	9.25	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6200
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	97.41
Fatal and Injury Crashes	29.87
Property-Damage-Only Crashes	67.53
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	12.2453
FI Crash Rate (crashes/mi/yr)	3.7552
PDO Crash Rate (crashes/mi/yr)	8.4901
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	1.00
Travel FI Crash Rate (crashes/million veh-mi)	0.31
Travel PDO Crash Rate (crashes/million veh-mi)	0.70

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	97.406	4.8703	1.4936	3.3767	12.2453	1.00
Total			0.3977	97.406	4.8703	1.4936	3.3767	12.2453	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.66	0.7	0.71	0.7
Highway Segment	Collision with Bicycle	1.66	1.7	0.00	0.0	1.66	1.7
Highway Segment	Collision with Fixed Object	1.30	1.3	7.63	7.8	8.94	9.2
Highway Segment	Collision with Other Object	0.02	0.0	0.13	0.1	0.15	0.2
Highway Segment	Other Single-vehicle Collision	0.43	0.4	1.63	1.7	2.06	2.1
Highway Segment	Collision with Pedestrian	3.33	3.4	0.00	0.0	3.33	3.4
Highway Segment	Total Single Vehicle Crashes	6.79	7.0	10.06	10.3	16.85	17.3
Highway Segment	Angle Collision	1.96	2.0	4.54	4.7	6.50	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.57	1.6	0.23	0.2	1.80	1.8
Highway Segment	Other Multi-vehicle Collision	0.67	0.7	3.05	3.1	3.72	3.8
Highway Segment	Rear-end Collision	16.85	17.3	44.72	45.9	61.57	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.69	1.7	3.16	3.2	4.85	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.35	0.4	1.78	1.8	2.13	2.2
Highway Segment	Total Multiple Vehicle Crashes	23.08	23.7	57.48	59.0	80.56	82.7
Highway Segment	Total Highway Segment Crashes	29.87	30.7	67.53	69.3	97.41	100.0
	Total Crashes	29.87	30.7	67.53	69.3	97.41	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (47 feet and 44 feet bridge width)**

**Scenario: Alternative 4**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2.100.00	0.3977	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	0	0	0	0	0	0	0	true	false	6.00	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor		0.000	21+00.000	2025	2045	Total	0.6300
Lane Width CMF	Lane Width CMF	0.000	21+00.000	2025	2045	Total	1.0100

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	34,302
<b>Predicted Crashes</b>	
Total Crashes	88.66
Fatal and Injury Crashes	26.66
Property-Damage-Only Crashes	61.99
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	11.1456
FI Crash Rate (crashes/mi/yr)	3.3522
PDO Crash Rate (crashes/mi/yr)	7.7934
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	99.59
Travel Crash Rate (crashes/million veh-mi)	0.89
Travel FI Crash Rate (crashes/million veh-mi)	0.27
Travel PDO Crash Rate (crashes/million veh-mi)	0.62

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	88.658	4.4329	1.3332	3.0996	11.1456	0.89
Total			0.3977	88.658	4.4329	1.3332	3.0996	11.1456	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.94	1.1	0.00	0.0	0.94	1.1
Highway Segment	Collision with Fixed Object	1.65	1.9	7.76	8.7	9.40	10.6
Highway Segment	Collision with Other Object	0.05	0.1	0.28	0.3	0.33	0.4
Highway Segment	Other Single-vehicle Collision	0.99	1.1	1.54	1.7	2.53	2.9
Highway Segment	Collision with Pedestrian	1.89	2.1	0.00	0.0	1.89	2.1
Highway Segment	Total Single Vehicle Crashes	5.52	6.2	9.59	10.8	15.11	17.0
Highway Segment	Angle Collision	3.83	4.3	6.81	7.7	10.64	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.63	1.8	0.21	0.2	1.84	2.1
Highway Segment	Other Multi-vehicle Collision	1.18	1.3	4.19	4.7	5.38	6.1
Highway Segment	Rear-end Collision	10.80	12.2	26.52	29.9	37.32	42.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.73	2.0	1.62	1.8	3.36	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.97	2.2	13.05	14.7	15.02	16.9
Highway Segment	Total Multiple Vehicle Crashes	21.14	23.9	52.41	59.1	73.55	83.0
Highway Segment	Total Highway Segment Crashes	26.66	30.1	61.99	69.9	88.66	100.0
	Total Crashes	26.66	30.1	61.99	69.9	88.66	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	true	false	8.50	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	77.09
Fatal and Injury Crashes	23.25
Property-Damage-Only Crashes	53.83
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	9.6908
FI Crash Rate (crashes/mi/yr)	2.9235
PDO Crash Rate (crashes/mi/yr)	6.7673
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	0.81
Travel FI Crash Rate (crashes/million veh-mi)	0.24
Travel PDO Crash Rate (crashes/million veh-mi)	0.56

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	77.086	3.8543	1.1627	2.6915	9.6908	0.81
Total			0.3977	77.086	3.8543	1.1627	2.6915	9.6908	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.82	1.1	0.00	0.0	0.82	1.1
Highway Segment	Collision with Fixed Object	1.47	1.9	6.85	8.9	8.31	10.8
Highway Segment	Collision with Other Object	0.05	0.1	0.25	0.3	0.29	0.4
Highway Segment	Other Single-vehicle Collision	0.88	1.1	1.36	1.8	2.24	2.9
Highway Segment	Collision with Pedestrian	1.64	2.1	0.00	0.0	1.64	2.1
Highway Segment	Total Single Vehicle Crashes	4.86	6.3	8.47	11.0	13.32	17.3
Highway Segment	Angle Collision	3.33	4.3	5.90	7.7	9.23	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.42	1.8	0.18	0.2	1.60	2.1
Highway Segment	Other Multi-vehicle Collision	1.03	1.3	3.63	4.7	4.66	6.0
Highway Segment	Rear-end Collision	9.40	12.2	22.95	29.8	32.36	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.51	2.0	1.41	1.8	2.92	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.71	2.2	11.30	14.7	13.01	16.9
Highway Segment	Total Multiple Vehicle Crashes	18.40	23.9	45.37	58.9	63.76	82.7
Highway Segment	Total Highway Segment Crashes	23.25	30.2	53.83	69.8	77.09	100.0
	Total Crashes	23.25	30.2	53.83	69.8	77.09	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 1**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)	
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,373; 2027: 33,332; 2028: 33,292; 2029: 33,251; 2030: 33,210; 2031: 33,170; 2032: 33,129; 2033: 33,088; 2034: 33,048; 2035: 33,007; 2036: 32,966; 2037: 32,925; 2038: 32,885; 2039: 32,844; 2040: 32,803; 2041: 32,763; 2042: 32,722; 2043: 32,681; 2044: 32,641; 2045: 32,600	0	0	0	0	0	0	0	0	true	false	8.50	151.0	0.00	None	0.00	Low	0	0.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6200

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	32,986
<b>Predicted Crashes</b>	
Total Crashes	97.92
Fatal and Injury Crashes	30.02
Property-Damage-Only Crashes	67.90
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	12.3106
FI Crash Rate (crashes/mi/yr)	3.7746
PDO Crash Rate (crashes/mi/yr)	8.5360
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	95.77
Travel Crash Rate (crashes/million veh-mi)	1.02
Travel FI Crash Rate (crashes/million veh-mi)	0.31
Travel PDO Crash Rate (crashes/million veh-mi)	0.71

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	97.925	4.8963	1.5013	3.3950	12.3106	1.02
Total			0.3977	97.925	4.8963	1.5013	3.3950	12.3106	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.68	0.7	0.72	0.7
Highway Segment	Collision with Bicycle	1.67	1.7	0.00	0.0	1.67	1.7
Highway Segment	Collision with Fixed Object	1.33	1.4	7.76	7.9	9.09	9.3
Highway Segment	Collision with Other Object	0.02	0.0	0.13	0.1	0.15	0.2
Highway Segment	Other Single-vehicle Collision	0.44	0.5	1.66	1.7	2.10	2.1
Highway Segment	Collision with Pedestrian	3.35	3.4	0.00	0.0	3.35	3.4
Highway Segment	Total Single Vehicle Crashes	6.86	7.0	10.22	10.4	17.08	17.4
Highway Segment	Angle Collision	1.97	2.0	4.56	4.7	6.53	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.57	1.6	0.23	0.2	1.81	1.8
Highway Segment	Other Multi-vehicle Collision	0.67	0.7	3.06	3.1	3.73	3.8
Highway Segment	Rear-end Collision	16.91	17.3	44.87	45.8	61.78	63.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.69	1.7	3.17	3.2	4.86	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.35	0.4	1.79	1.8	2.14	2.2
Highway Segment	Total Multiple Vehicle Crashes	23.17	23.7	57.68	58.9	80.84	82.6
Highway Segment	Total Highway Segment Crashes	30.02	30.7	67.90	69.3	97.92	100.0
	Total Crashes	30.02	30.7	67.90	69.3	97.92	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	8.50	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	78.57
Fatal and Injury Crashes	23.68
Property-Damage-Only Crashes	54.90
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	9.8776
FI Crash Rate (crashes/mi/yr)	2.9763
PDO Crash Rate (crashes/mi/yr)	6.9013
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	0.81
Travel FI Crash Rate (crashes/million veh-mi)	0.24
Travel PDO Crash Rate (crashes/million veh-mi)	0.56

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	78.572	3.9286	1.1838	2.7448	9.8776	0.81
Total			0.3977	78.572	3.9286	1.1838	2.7448	9.8776	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.84	1.1	0.00	0.0	0.84	1.1
Highway Segment	Collision with Fixed Object	1.48	1.9	6.94	8.8	8.42	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.25	0.3	0.30	0.4
Highway Segment	Other Single-vehicle Collision	0.89	1.1	1.38	1.8	2.27	2.9
Highway Segment	Collision with Pedestrian	1.67	2.1	0.00	0.0	1.67	2.1
Highway Segment	Total Single Vehicle Crashes	4.93	6.3	8.58	10.9	13.51	17.2
Highway Segment	Angle Collision	3.39	4.3	6.02	7.7	9.41	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.44	1.8	0.18	0.2	1.63	2.1
Highway Segment	Other Multi-vehicle Collision	1.05	1.3	3.71	4.7	4.75	6.1
Highway Segment	Rear-end Collision	9.58	12.2	23.44	29.8	33.02	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.54	2.0	1.44	1.8	2.97	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.74	2.2	11.53	14.7	13.28	16.9
Highway Segment	Total Multiple Vehicle Crashes	18.75	23.9	46.32	59.0	65.07	82.8
Highway Segment	Total Highway Segment Crashes	23.68	30.1	54.90	69.9	78.57	100.0
	Total Crashes	23.68	30.1	54.90	69.9	78.57	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 2**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,885; 2027: 33,844; 2028: 33,802; 2029: 33,761; 2030: 33,720; 2031: 33,678; 2032: 33,637; 2033: 33,596; 2034: 33,554; 2035: 33,513; 2036: 33,472; 2037: 33,430; 2038: 33,389; 2039: 33,348; 2040: 33,307; 2041: 33,265; 2042: 33,224; 2043: 33,183; 2044: 33,141; 2045: 33,100	0	0	0	0	0	0	0	true	false	8.50	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6200

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,492
<b>Predicted Crashes</b>	
Total Crashes	100.24
Fatal and Injury Crashes	30.74
Property-Damage-Only Crashes	69.50
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	12.6018
FI Crash Rate (crashes/mi/yr)	3.8647
PDO Crash Rate (crashes/mi/yr)	8.7371
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	97.24
Travel Crash Rate (crashes/million veh-mi)	1.03
Travel FI Crash Rate (crashes/million veh-mi)	0.32
Travel PDO Crash Rate (crashes/million veh-mi)	0.71

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	100.242	5.0121	1.5371	3.4750	12.6018	1.03
Total			0.3977	100.242	5.0121	1.5371	3.4750	12.6018	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.68	0.7	0.73	0.7
Highway Segment	Collision with Bicycle	1.71	1.7	0.00	0.0	1.71	1.7
Highway Segment	Collision with Fixed Object	1.33	1.3	7.83	7.8	9.17	9.1
Highway Segment	Collision with Other Object	0.02	0.0	0.13	0.1	0.15	0.2
Highway Segment	Other Single-vehicle Collision	0.45	0.4	1.67	1.7	2.12	2.1
Highway Segment	Collision with Pedestrian	3.42	3.4	0.00	0.0	3.42	3.4
Highway Segment	Total Single Vehicle Crashes	6.98	7.0	10.32	10.3	17.30	17.3
Highway Segment	Angle Collision	2.02	2.0	4.67	4.7	6.70	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.62	1.6	0.24	0.2	1.85	1.8
Highway Segment	Other Multi-vehicle Collision	0.69	0.7	3.14	3.1	3.83	3.8
Highway Segment	Rear-end Collision	17.34	17.3	46.04	45.9	63.39	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.73	1.7	3.25	3.2	4.99	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.36	0.4	1.83	1.8	2.19	2.2
Highway Segment	Total Multiple Vehicle Crashes	23.76	23.7	59.18	59.0	82.94	82.7
Highway Segment	Total Highway Segment Crashes	30.74	30.7	69.50	69.3	100.24	100.0
	Total Crashes	30.74	30.7	69.50	69.3	100.24	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	8.50	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	78.27
Fatal and Injury Crashes	23.59
Property-Damage-Only Crashes	54.68
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	9.8402
FI Crash Rate (crashes/mi/yr)	2.9657
PDO Crash Rate (crashes/mi/yr)	6.8745
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	0.81
Travel FI Crash Rate (crashes/million veh-mi)	0.24
Travel PDO Crash Rate (crashes/million veh-mi)	0.56

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	78.274	3.9137	1.1796	2.7342	9.8402	0.81
Total			0.3977	78.274	3.9137	1.1796	2.7342	9.8402	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.83	1.1	0.00	0.0	0.83	1.1
Highway Segment	Collision with Fixed Object	1.48	1.9	6.92	8.8	8.40	10.7
Highway Segment	Collision with Other Object	0.05	0.1	0.25	0.3	0.30	0.4
Highway Segment	Other Single-vehicle Collision	0.89	1.1	1.38	1.8	2.26	2.9
Highway Segment	Collision with Pedestrian	1.67	2.1	0.00	0.0	1.67	2.1
Highway Segment	Total Single Vehicle Crashes	4.91	6.3	8.55	10.9	13.47	17.2
Highway Segment	Angle Collision	3.38	4.3	6.00	7.7	9.38	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.44	1.8	0.18	0.2	1.62	2.1
Highway Segment	Other Multi-vehicle Collision	1.05	1.3	3.69	4.7	4.74	6.1
Highway Segment	Rear-end Collision	9.54	12.2	23.34	29.8	32.88	42.0
Highway Segment	Sideswipe, Opposite Direction Collision	1.53	2.0	1.43	1.8	2.96	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.74	2.2	11.49	14.7	13.22	16.9
Highway Segment	Total Multiple Vehicle Crashes	18.68	23.9	46.13	58.9	64.81	82.8
Highway Segment	Total Highway Segment Crashes	23.59	30.1	54.68	69.9	78.27	100.0
	Total Crashes	23.59	30.1	54.68	69.9	78.27	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 3**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (2U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Limit	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Two-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 33,783; 2027: 33,741; 2028: 33,700; 2029: 33,659; 2030: 33,618; 2031: 33,577; 2032: 33,535; 2033: 33,494; 2034: 33,453; 2035: 33,412; 2036: 33,371; 2037: 33,329; 2038: 33,288; 2039: 33,247; 2040: 33,206; 2041: 33,165; 2042: 33,124; 2043: 33,082; 2044: 33,041; 2045: 33,000	0	0	0	0	0	0	0	true	false	8.50	151.0	0.00	None	0.00	Low	0	2.00	10.00

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6200

**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	33,391
<b>Predicted Crashes</b>	
Total Crashes	99.78
Fatal and Injury Crashes	30.60
Property-Damage-Only Crashes	69.18
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	31
Percent Property-Damage-Only Crashes (%)	69
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	12.5433
FI Crash Rate (crashes/mi/yr)	3.8466
PDO Crash Rate (crashes/mi/yr)	8.6967
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	96.95
Travel Crash Rate (crashes/million veh-mi)	1.03
Travel FI Crash Rate (crashes/million veh-mi)	0.32
Travel PDO Crash Rate (crashes/million veh-mi)	0.71

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	99.776	4.9888	1.5299	3.4589	12.5433	1.03
Total			0.3977	99.776	4.9888	1.5299	3.4589	12.5433	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.05	0.0	0.68	0.7	0.73	0.7
Highway Segment	Collision with Bicycle	1.70	1.7	0.00	0.0	1.70	1.7
Highway Segment	Collision with Fixed Object	1.33	1.3	7.82	7.8	9.15	9.2
Highway Segment	Collision with Other Object	0.02	0.0	0.13	0.1	0.15	0.2
Highway Segment	Other Single-vehicle Collision	0.45	0.4	1.67	1.7	2.11	2.1
Highway Segment	Collision with Pedestrian	3.41	3.4	0.00	0.0	3.41	3.4
Highway Segment	Total Single Vehicle Crashes	6.96	7.0	10.30	10.3	17.26	17.3
Highway Segment	Angle Collision	2.01	2.0	4.65	4.7	6.66	6.7
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.61	1.6	0.24	0.2	1.84	1.8
Highway Segment	Other Multi-vehicle Collision	0.69	0.7	3.12	3.1	3.81	3.8
Highway Segment	Rear-end Collision	17.26	17.3	45.81	45.9	63.06	63.2
Highway Segment	Sideswipe, Opposite Direction Collision	1.73	1.7	3.24	3.2	4.96	5.0
Highway Segment	Sideswipe, Same Direction Collision	0.35	0.4	1.82	1.8	2.18	2.2
Highway Segment	Total Multiple Vehicle Crashes	23.64	23.7	58.88	59.0	82.52	82.7
Highway Segment	Total Highway Segment Crashes	30.60	30.7	69.18	69.3	99.78	100.0
	Total Crashes	30.60	30.7	69.18	69.3	99.78	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

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**Mitigation - Shoulder Width**

**Burnside Bridge (50 feet bridge width)**

**Scenario: Alternative 4**

**First Year of Analysis: 2026**

**Last Year of Analysis: 2045**

**Functional Class: Arterial**

**Type of Alignment: Undivided, Multilane**

**Model Category: Urban/Suburban Arterial (4U)**

**Table 1. Evaluation Highway - Homogeneous Segments (Section 1)**

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industrial/Institutional	Number Minor Industrial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Offset (ft)	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	21+00.000	2,100.00	0.3977	2026: 34,704; 2027: 34,662; 2028: 34,619; 2029: 34,577; 2030: 34,535; 2031: 34,492; 2032: 34,450; 2033: 34,408; 2034: 34,365; 2035: 34,323; 2036: 34,281; 2037: 34,238; 2038: 34,196; 2039: 34,154; 2040: 34,112; 2041: 34,069; 2042: 34,027; 2043: 33,985; 2044: 33,942; 2045: 33,900	0	0	0	0	0	0	0	true	false	6.00	151.0	0.00	None	0.00	Low	0	2.00	10.25

**Table 2. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 1)**

Name	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
Calibration factor	0.000	21+00.000	2025	2045	Total	0.6300



**Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)**

First Year of Analysis	2026
Last Year of Analysis	2045
Evaluated Length (mi)	0.3977
Average Future Road AADT (vpd)	34,302
<b>Predicted Crashes</b>	
Total Crashes	87.78
Fatal and Injury Crashes	26.40
Property-Damage-Only Crashes	61.38
<b>Percent of Total Predicted Crashes</b>	
Percent Fatal and Injury Crashes (%)	30
Percent Property-Damage-Only Crashes (%)	70
<b>Predicted Crash Rate</b>	
Crash Rate (crashes/mi/yr)	11.0352
FI Crash Rate (crashes/mi/yr)	3.3190
PDO Crash Rate (crashes/mi/yr)	7.7162
<b>Predicted Travel Crash Rate</b>	
Total Travel (million veh-mi)	99.59
Travel Crash Rate (crashes/million veh-mi)	0.88
Travel FI Crash Rate (crashes/million veh-mi)	0.27
Travel PDO Crash Rate (crashes/million veh-mi)	0.62

**Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)**

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	21+00.000	0.3977	87.780	4.3890	1.3200	3.0690	11.0352	0.88
Total			0.3977	87.780	4.3890	1.3200	3.0690	11.0352	

**Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)**

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.0	0.01	0.0
Highway Segment	Collision with Bicycle	0.94	1.1	0.00	0.0	0.94	1.1
Highway Segment	Collision with Fixed Object	1.63	1.9	7.68	8.7	9.31	10.6
Highway Segment	Collision with Other Object	0.05	0.1	0.28	0.3	0.33	0.4
Highway Segment	Other Single-vehicle Collision	0.98	1.1	1.53	1.7	2.50	2.9
Highway Segment	Collision with Pedestrian	1.87	2.1	0.00	0.0	1.87	2.1
Highway Segment	Total Single Vehicle Crashes	5.46	6.2	9.49	10.8	14.96	17.0
Highway Segment	Angle Collision	3.79	4.3	6.75	7.7	10.54	12.0
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	1.61	1.8	0.21	0.2	1.82	2.1
Highway Segment	Other Multi-vehicle Collision	1.17	1.3	4.15	4.7	5.32	6.1
Highway Segment	Rear-end Collision	10.70	12.2	26.25	29.9	36.95	42.1
Highway Segment	Sideswipe, Opposite Direction Collision	1.72	2.0	1.61	1.8	3.33	3.8
Highway Segment	Sideswipe, Same Direction Collision	1.95	2.2	12.92	14.7	14.87	16.9
Highway Segment	Total Multiple Vehicle Crashes	20.94	23.9	51.89	59.1	72.82	83.0
Highway Segment	Total Highway Segment Crashes	26.40	30.1	61.38	69.9	87.78	100.0
	Total Crashes	26.40	30.1	61.38	69.9	87.78	100.0

**Note:** *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.