

WSDOT • City of Renton

# Renton Transit Access Study Report **FINAL**

December 2025



WSDOT • City of Renton

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# Executive Summary

The I-405 Bus Rapid Transit (BRT) Access Study was initiated to address transit reliability and congestion challenges near the future Renton Transit Center, to be located off the I-405 corridor at Rainier Avenue S and S Grady Way. This diversion from managed lanes will cause delay and reliability issues for BRT buses traveling to and from I-405 to access the Renton Transit Center. The study was funded by the Legislature and facilitated by WSDOT in collaboration with the City of Renton, Sound Transit, and King County Metro.

## Study Approach and Purpose

The Study consisted of three main engagements. The initial engagement focused on defining the Project Need and Areas of Importance. Various alternatives were presented and evaluated during the second engagement. And by the third engagement, after seeking public feedback, four concepts were discussed and each of their distinctive benefits were identified.

The Project Need as developed by the Study team are as follows:

*Improve transit system access and reliability around the I-405 and SR 167 facilities and the Renton Transit Center (Rainier Ave S / S Grady Way) consistent with the plans and visions for the project area including City of Renton, King County Metro, Sound Transit and the I-405 and SR 167 Master Plans.*

## Concept Description and Findings

Four concepts were developed and analyzed for their potential to improve transit access and overall traffic operations. These concepts are not mutually exclusive, each providing its own distinctive benefit to the area:

**Concept 1 – Operational & Transit Improvements:** This concept includes a new southbound transit priority lane, otherwise known as a transit queue jump, along Rainier Ave S, dual left-turn lanes along S Grady Way, and transit-only on-ramp to SB I-405. It was acknowledged as a practical first step to help address the Project Need. It would offer some relief from current and projected traffic congestion within the study area.

**Concept 2 – Half-Diamond Interchange at Lind Ave SW:** This concept proposes new on and off-ramps to and from the I-405 to Lind Ave SW. This remains a priority for the City of Renton as previously identified in the I-405 Master Plan. While it does not solve the Project Need identified as part of this study, it provides traffic benefits west of the study area.

**Concept 3 – Direct Transit Access at Maple Ave SW:** This concept introduces a new transit-only median access point, offering significant PM peak travel time savings. The study team elected to advance this concept to a 1 percent design to better understand its configuration and layout needs, as well as potential impacts such as right-of-way needs. The 1 percent design confirmed that constructing the ramp would require the acquisition of multiple parcels along Maple Ave SW. The initial cost estimate indicated that improvements could exceed \$200 million, in 2025 dollars. If funding is secured, a WSDOT project would construct the direct access ramps alongside mainline I-405 improvements, and a City of Renton project would complete local street improvements.

**Concept 4 – Grade Separation at SW Grady Way:** This concept would elevate S Grady Way as an overpass over Rainier Ave S to reduce congestion which has the highest AM peak transit performance among all four concepts. Discussions focused on whether an overpass aligns with the City of Renton's vision for the area. It remains part of the City of Renton's Transportation Improvement Plan given the benefits it could provide.

# Introduction

The I-405 Bus Rapid Transit (BRT) service, known as STRIDE, is scheduled to begin operations in 2028/2029. Within the I-405 corridor, STRIDE will primarily utilize the Express Toll Lanes (ETLs), connecting to in-line stations or accessing them through direct ramps. The Renton Transit Center, currently under construction, is located off the main I-405 corridor at the northeast quadrant of the Rainier Avenue S and S Grady Way intersection. Buses will be required to exit the managed lanes and use the general-purpose lane and existing on and off ramps at Rainier Avenue S. This diversion from managed lanes will cause delay and reliability issues for BRT buses traveling to and from I-405 to access the Renton Transit Center. Other vehicles utilizing this interchange currently experience substantial delays on the local roadway network, further impacting transit and other vehicles.

The City of Renton received funding to support continued discussions on potential travel time solutions through a multi-agency collaborative process.

## Overview of the Study

A study was facilitated by the WSDOT I-405 / SR 167 Program through a multi-agency collaborative process that included representatives from the City of Renton, Sound Transit and King County Metro. The Legislature appropriated funding from the motor vehicle account for this I-405 BRT access study.

The study examined potential improvements in the vicinity of the I-405 and SR 167 facilities near Sound Transit’s Renton Transit Station, located at the intersection of Rainier Avenue S and S Grady Way. Traffic data and modeling considered enhancements along the combined I-405/SR 167 corridor, incorporating planned improvements through 2050 as informed by the I-405 and SR 167 master plans. The analysis also accounted for Puget Sound Regional Council (PSRC) adopted growth targets for the broader Renton area.

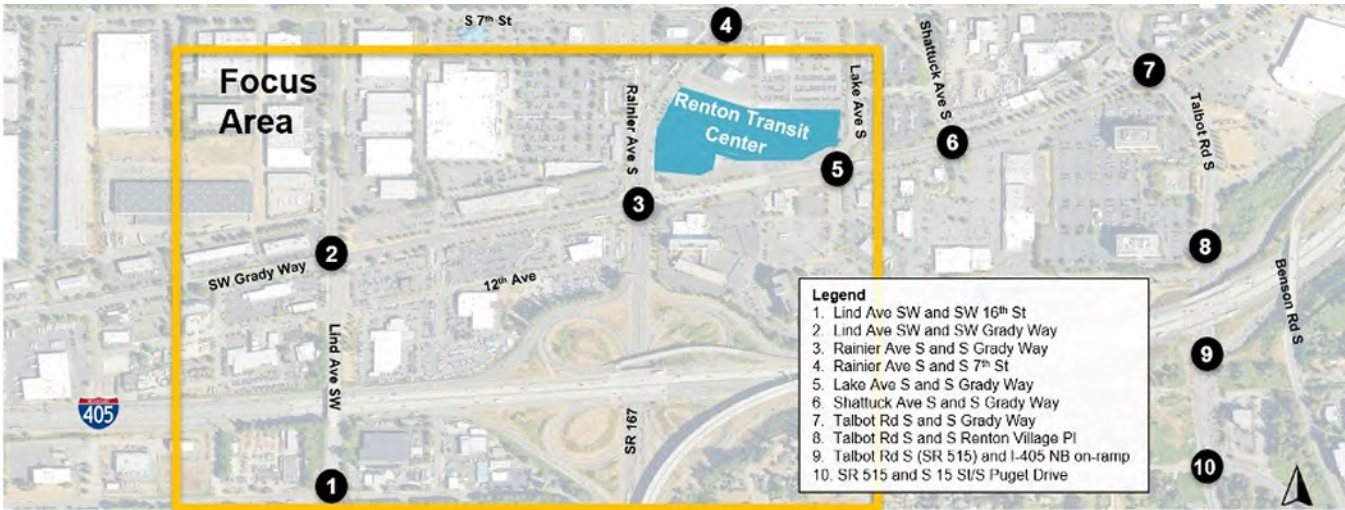


Figure 1 | Study area including existing intersections

## Existing Traffic Concerns

The existing roadway network shown in **Figure 1** experiences significant congestion during the morning and afternoon peak periods at all intersections. The intersection of Rainier Ave S / S Grady Way **3** has the highest traffic volume of all intersections and experiences the highest level of delay and queueing within the study area. This intersection is largely built out with multiple through and turn lanes. During peak conditions, queues at the Rainier Ave S / S Grady Way intersection spill back to adjacent intersections, controlling much of the traffic flow in the area. These delays impact all modes of travel, resulting in reduced reliability and increased travel times.

Other traffic movement concerns:

- Weaving between the southbound I-405 off-ramp to northbound Rainier Ave S and adjacent traffic
- Weaving between the northbound SR 167 loop ramps

## The Adopted Project Need

At the initial engagement, the Study team developed and adopted the Project Need as follows:

*Improve transit system access and reliability around the I-405 and SR 167 facilities and the Renton Transit Center (Rainier Ave S / S Grady Way) consistent with the plans and visions for the project area including City of Renton, King County Metro, Sound Transit and the I-405 and SR 167 Master Plans.*

# Study Evaluation Approach

To support a collaborative multi-agency process, engagements were organized as forums to share and discuss information as outlined in **Figure 2**. The discussions within each of these engagements are explained in greater detail below.

Engagement 0	Engagement 1	Engagement 2	Public Outreach	Engagement 3
Summer 2024	Winter 2024	Spring 2025	Summer 2025	Fall 2025
Define the Problem	Identify Metrics & Alternatives	Evaluate Alternatives	Seek Public Feedback	Identify Concept to Advance

Figure 2 | Summary of engagements

## Define the Problem

### Existing Conditions

Defining the problem began by conducting traffic analysis within the study area. The traffic analysis extended from Lind Avenue SW to Talbot Road S and from I-405 to S 7th St. Intersections were identified for traffic analysis are shown in **Figure 3**. Key intersections include Rainier Avenue S at S Grady Way and the Renton Transit Center access point intersections. Surrounding intersections were included since they could be part of potential alternatives. Existing intersection traffic modeling results are included in **Appendix A**.



Figure 3 | Existing Year 2024 Intersection LOS Results

## Planned and Future Growth

Rainier Ave S and S Grady Way are major arterials that facilitate growth and mobility within the subarea. The City of Renton has adopted the Rainier-Grady Transit Oriented Development Subarea Plan to focus growth in coordination with the new Renton Transit Center in connectivity with the Civic Core. Future traffic volumes were developed using travel demand model forecasts and City of Renton's land-use projections. Compared to the year 2023, there are expected to be over 38,000 new households (74 percent increase) and 40,000 new jobs (53 percent increase) by the year 2050 within the City of Renton. The associated traffic growth for the study area is summarized in **Figure 4**, which shows the percent changes in two-way traffic growth from 2024 to 2030 and 2050 during the AM and PM peak periods. For example, two-way traffic along SW Grady Way west of Rainier Ave S is anticipated to increase by 40 percent and 30 percent in the AM and PM, respectively, between 2024 and 2030. Future intersection traffic modeling results are included in **Appendix A**.

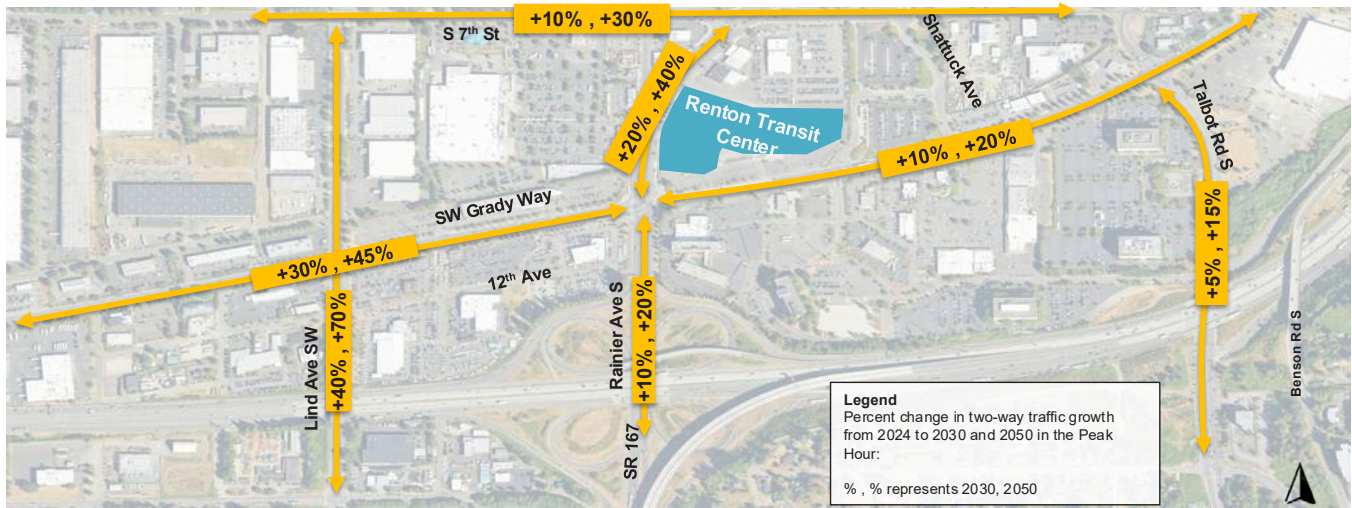


Figure 4 | 2030 and 2050 Traffic Growth

## Future Transportation Network

Two express toll lanes will be built along the I-405 between the I-405/SR 167 interchange in Renton and NE 6th Street in Bellevue, enhancing the mainline system traffic flow within the study area. In addition, Business Access and Transit (BAT) lanes are being built along Talbot Road S and SW Grady Way up to Lake Ave S. The existing BAT lane along northbound Rainier Ave S will also be extended south. The I-405 and BAT lane improvements were considered as existing features when evaluating future traffic conditions.

# Identify Metrics & Alternatives

## Areas of Importance

In advance of identifying alternatives, areas of importance within the study area were agreed upon. These areas serve as criteria to evaluate alternatives and to support prioritizing issues that alternatives could resolve.

Area of Importance	Basis of Evaluation
<p><b>Transit</b> In alignment with the Rainier/Grady Junction subarea vision, better transit connections to local and regional destinations support greater access to opportunities for people living and working in the area.</p>	<ul style="list-style-type: none"> <li>Accommodate future Sound Transit Express, light rail, King County Metro and other I-405 / SR 167 BRT operations</li> <li>Improve access and reliability around the I-405 and SR 167 facilities and the Renton Transit Center</li> </ul>
<p><b>Active transportation</b> Development of multimodal connections to provide safe connectivity between the transit center and throughout the subarea.</p>	<ul style="list-style-type: none"> <li>Enhance access to and encourage first and last-mile transit connectivity</li> <li>Create a walking and rolling-friendly environment</li> </ul>
<p><b>Master Plan/Capital Improvement Plan</b> Compatibility with the I-405 and SR 167 master plans as well as corridor partners' plans and operations for the area.</p>	<ul style="list-style-type: none"> <li>Align with the City of Renton's vision for the Rainier/Grady intersection as a central hub</li> <li>Support I-405 Master Plan commitments to accommodate BRT buses, including reconstruction of the I-405/SR 167 Interchange with flyover ramps for major traffic movements</li> <li>Coordinate with Sound Transit's Renton Transit Center development and Stride S1 Line routing</li> <li>Integrate King County Metro's current and future line operations within the study area</li> </ul>
<p><b>Phasing</b> Allows for improvements to be completed sooner.</p>	<ul style="list-style-type: none"> <li>Phase-able solutions (i.e. could be done one component at a time) to provide funding and general delivery benefits</li> <li>Partnerships between WSDOT, City of Renton, Sound Transit, King County Metro or others to advance delivery timelines</li> </ul>
<p><b>Equity</b> The immediate study area consists of five Census Tracts. Each having an Environmental Health Disparity (EHD) rank of either 9 or 10; and therefore, identified as "disadvantaged" by the federal Climate and Economic Justice Screening Tool (CEJST).</p>	<ul style="list-style-type: none"> <li>Potential environmental benefits</li> <li>Reduce burdens on disadvantaged communities</li> </ul>

## Identify alternatives

Factors such as the complexity of the improvement, overall benefits, and the required investment allow concepts to be assessed on a comparable basis. Therefore, groups were formed to evaluate concepts with similar impact levels.

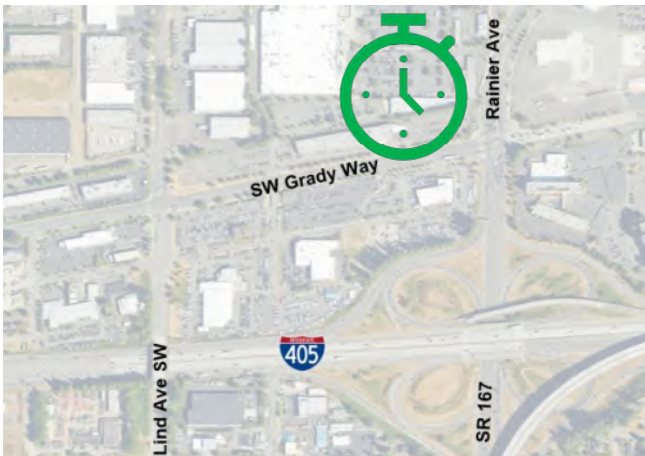
- **Group 1 – Optimize Existing Network:** Traffic network is maintained. Concepts within this group require minimal capital investment and can likely be achieved in the near-term to gain measurable benefits.
- **Group 2 – Augment Existing Network:** Traffic network is altered by adjusting certain movements. Concepts within this group require some capital investment.
- **Group 3 – Develop New General Purpose (GP) Lanes:** Traffic network is altered by providing new general-purpose lanes. Concepts within this group require major capital investment.
- **Group 4 – Develop New Transit Access:** Traffic network may be altered depending on the location of the new transit access. Concepts within this group require major capital investment.

Several ideas were identified across the four groups and presented during Engagement 1. However, some did not advance through the evaluation process for various reasons. In Group 1, certain ideas were dismissed due to minimal anticipated travel time benefits. In Group 2, the idea to provide a new access within South Renton Village did not advance because it required extensive redevelopment along an existing private road. Within Group 4, the proposed transit access at Talbot Road S was deemed infeasible due to vertical clearance constrain at the ramp crossings. Whereas the alternative to provide transit access at the existing ramps demonstrated minimal travel time benefits. Locations of concepts evaluated are included in **Appendix B**.

<b>Group 1</b> <b>Optimize Existing Network</b>	<b>Group 2</b> <b>Augment Existing Network</b>	<b>Group 3</b> <b>New GP Lanes</b>	<b>Group 4</b> <b>New Transit Access</b>
<p><b>Concepts not advanced</b></p> <ul style="list-style-type: none"> <li>• Improve southbound off-ramp access</li> <li>• Jug-handle access</li> <li>• Far-side U-turn</li> <li>• Talbot Rd access</li> </ul> <p><b>Concept advanced</b></p> <ul style="list-style-type: none"> <li>• Southbound on-ramp transit bypass lane</li> <li>• Southbound Rainier Ave transit queue jump</li> <li>• Left-turn lanes along SW Grady Way</li> </ul>	<p><b>Concepts not advanced</b></p> <ul style="list-style-type: none"> <li>• New access within South Renton Village</li> <li>• Displaced left (new left turn onto 12th Ave.)</li> </ul> <p><b>Concept advanced</b></p> <ul style="list-style-type: none"> <li>• Grade Separation at SW Grady Way</li> </ul>	<p><b>Concepts not advanced</b></p> <ul style="list-style-type: none"> <li>• None</li> </ul> <p><b>Concept advanced</b></p> <ul style="list-style-type: none"> <li>• Half-Diamond at Lind Ave SW</li> </ul>	<p><b>Concepts not advanced</b></p> <ul style="list-style-type: none"> <li>• Transit access at Talbot Rd S</li> <li>• Transit access at existing ramps</li> </ul> <p><b>Concept advanced</b></p> <ul style="list-style-type: none"> <li>• Transit access at Maple Ave SW</li> </ul>

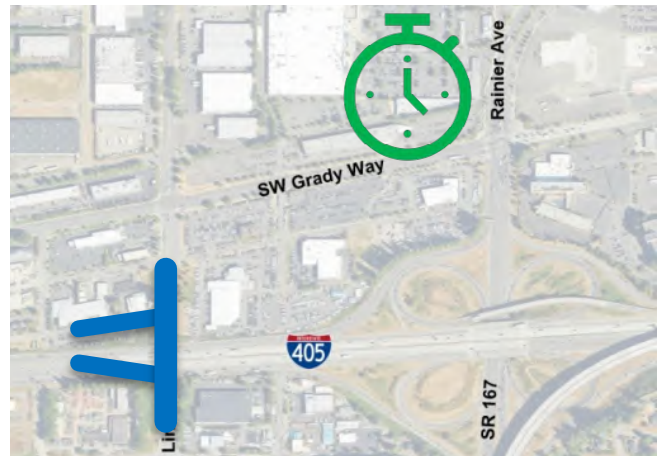
Through qualitative evaluations and engaged discussions with project stakeholders, four concepts were advanced for further evaluation. While each concept has its distinctive features, they are not mutually exclusive. Variations of these concepts were analyzed and presented during Engagement 2 and the concept with the highest anticipated traffic benefit was selected as the representative concept.

### Concept 1: Operational and Transit Improvements



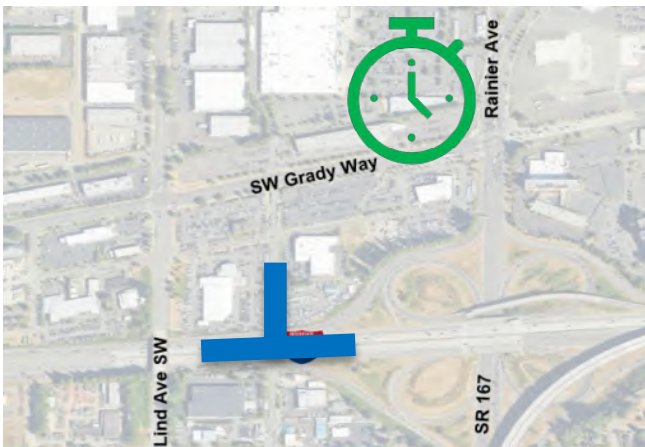
Concept 1 provides a southbound on-ramp transit bypass lane from Rainier Ave S. It also provides a southbound transit priority lane from Rainier Ave S at the intersection with SW Grady Way. This concept also adds a general-purpose left-turn lane eastbound along SW Grady Way to Rainier Ave S.

### Concept 2: Partial Interchange at Lind Ave SW



Concept 1 improvements are included. Westbound and eastbound dual left-turn lanes along SW Grady Way between Lind Ave SW and Rainier Ave S are included as well. This also adds a half-diamond interchange at Lind Ave SW with new on and off-ramps from I-405.

### Concept 3: Direct Transit Access at Maple Ave SW



Concept 1 improvements are included. This also includes a transit-only median direct access at Maple Ave SW, with a new signal at the SW Grady Way / Maple Ave SW intersection.

### Concept 4: Grade Separation at SW Grady Way



Concept 1 improvements are included. Westbound and eastbound dual left-turn lanes along SW Grady Way between Lind Ave SW and Rainier Ave S are included as well. This also includes a new overpass along SW Grady Way over Rainier Ave S.

## Evaluate Alternatives

Traffic analysis was conducted on the four concepts, focusing on intersection Level of Service (**defined in box on next page**) at the Rainier Ave S / SW Grady Way and Lind Ave SW / SW Grady Way.

**Level of Service (LOS)** is a standard performance metric used to describe operational conditions at intersections and along roadway segments. It is typically based on average control delay experienced by road users. LOS is reported on a scale from A to F, where LOS A indicates free-flow conditions with minimal delay, and LOS F represents highly congested conditions with excessive delay and unstable traffic flow. Figure 5-a and 5-b depict LOS and delay at the two intersections. For example, at the Rainier Ave S / SW Grady Way intersection, Concept 1 is anticipated to have an average delay (amongst all movements) of 66 seconds and 75 seconds, in the AM and PM peaks, respectively; and operating at a LOS E.

As shown in **Figure 5-a**, Concept 4 (Grade separation at SW Grady Way), is anticipated to improve the LOS and intersection delay. The Lind Ave SW / SW Grady Way intersection is anticipated to maintain a no-build LOS C, but would anticipate to degrade to a LOS D or LOS E for Concept 3 or Concept 2, respectively.

### Intersection Delay and LOS\*

	AM	PM
<b>Rainier Ave S / SW Grady Way Intersection</b>		
No-Build	<b>E 72</b>	<b>E 78</b>
Concept 1	<b>E 66</b>	<b>E 75</b>
Concept 2	<b>E 70</b>	<b>E 73</b>
Concept 3	<b>E 61</b>	<b>E 68</b>
Concept 4	<b>D 46</b>	<b>D 47</b>

Figure 5-a | Intersection Delay and LOS at Rainier Ave S / SW Grady Way

	AM	PM
<b>Lind Ave SW / SW Grady Way Intersection</b>		
No-Build	<b>C 23</b>	<b>C 32</b>
Concept 1	<b>C 23</b>	<b>C 32</b>
Concept 2	<b>C 34</b>	<b>E 63</b>
Concept 3	<b>C 29</b>	<b>D 41</b>
Concept 4	<b>C 23</b>	<b>C 32</b>

Figure 5-b | Intersection Delay and LOS at Lind Ave SW / SW Grady Way

\* LOS represents overall intersection average delay for all movements. Certain movements may have better or worse LOS.

The expected 2030 transit travel time improvement for the I-405 BRT is shown in **Figure 6-a**. The travel time was calculated during the AM and PM peak hours for both inbound and outbound trip to the Renton Transit Center. **Figure 6-b** shows the anticipated travel time in 2050. The origin or destination point on I-405 was the managed lane at the next adjacent interchange from SR 167, either SR 181 to the south or SR 169 to the north. As shown on Figure 6-a, in year 2030, Concept 4 (Grade separation at SW Grady Way) has the highest overall travel time savings of 13 percent in the AM peak hours; whereas Concept 3 (Direct Transit Access at Maple Ave SW) has the highest travel time savings of 24 percent in the PM Peak Hours. Figure 6-b shows that in year 2050, Concept 4 (Grade separation at SW Grady Way) has the highest travel time savings, for both the freeway and the local street travel, of 19 percent in the AM peak hours; whereas Concept 3 (Direct Transit Access at Maple Ave SW) has the highest freeway travel time savings of 53 percent in the PM peak hour, but an increase in local street travel time due to a longer route. A variation of Concept 3 was analyzed to allow Express Toll Lane (ETL) users access to the ramp instead of limiting it to transit. While this variation showed high ETL vehicle usage, it introduced delays at the direct access intersection with SW Grady Way, increasing transit travel times and causing queuing along the mainline. There are also anticipated King County Metro Rapid Ride F Line transit travel time savings. While this was not a primary study metric, it reflects potential improvements to this service.

Route	No-Build Travel Time AM (PM)		Concept 1 Change AM (PM)	Concept 2 Change AM (PM)	Concept 3 Change AM (PM)	Concept 4 Change AM (PM)	
	Freeway	Local					
I-405 NB	405 NB to Center	3.0 min (3.1 min)	1.3 min (1.5 min)	Freeway: <b>▼-2% (▼-2%)</b>	Freeway: <b>▼-3% (▼-3%)</b>	Freeway: <b>▼-42% (▼-53%)</b>	Freeway: <b>▼-2% (▼-2%)</b>
	Center to 405 NB	3.1 min (3.1 min)	2.2 min (1.8 min)	Local: <b>▼-2% (▼-7%)</b>	Local: <b>0% (▼-4%)</b>	Local: <b>▲51% (▲34%)</b>	Local: <b>▼-33% (▼-32%)</b>
I-405 SB	405 SB to Center	2.4 min (2.1 min)	1.3 min (1.5 min)	Combined: <b>▼-9% (▼-5%)</b>	Combined: <b>▼-3% (▼-2%)</b>	Combined: <b>▼-13% (▼-28%)</b>	Combined: <b>▼-19% (▼-17%)</b>
	Center to 405 SB	2.7 min (3.7 min)	2.2 min (1.8 min)	<b>+</b>	<b>+</b>	<b>++</b>	<b>++</b>

Figure 6-a | I-405 Transit Travel Time 2030 Savings

	Route	No-Build Travel Time AM (PM)		Concept 1 Change AM (PM)	Concept 2 Change AM (PM)	Concept 3 Change AM (PM)	Concept 4 Change AM (PM)
		Freeway	Local				
I-405 NB	405 NB to Center	2.9 min (2.9 min)	1.3 min (1.5 min)	Freeway: ▼-2% (▼-1%)	Freeway: ▼-3% (▼-3%)	Freeway: ▼-45% (▼-54%)	Freeway: ▼-4% (▼-4%)
	Center to 405 NB	2.9 min (2.9 min)	1.4 min (1.5 min)	Local: ▼-21% (▼-12%)	Local: ▼-4% (▼-1%)	Local: ▲37% (▲19%)	Local: ▼-45% (▼-42%)
I-405 SB	405 SB to Center	2.1 min (2.1 min)	1.3 min (1.5 min)	Combined: ▼-3% (▼-3%)	Combined: ▼-2% (▼-3%)	Combined: ▼-9% (▼-24%)	Combined: ▼-13% (▼-12%)
	Center to 405 SB	2.1 min (3.7 min)	1.4 min (1.5 min)	+	+	++	++

Figure 6-b | I-405 Transit Travel Time 2050 Savings

## Seek Public Feedback

Public outreach was conducted through targeted focus groups to gather detailed feedback, ideas, and concerns regarding the concepts. The focus groups included representatives familiar with the area who could provide unique perspectives. Four roundtable sessions were held with distinct focus groups: residents, property and business managers, transit users of related routes, and community-based organizations offering insight into the needs of overburdened or vulnerable communities. General feedback is summarized below, with notes from each of the sessions provided in **Appendix C**.

- **Concept 1 – Operational and Transit Improvements:** viewed as a viable short-term solution while funding for a larger capital project is sought.
- **Concept 2 – Half-diamond interchange at Lind Ave SW:** not considered a solution for improving access to the transit center. However, traffic improvements would be anticipated west of the study area.
- **Concept 3 – Direct transit access at Maple Ave SW:** seen by most groups as a viable long-term solution. However, there were concerns about potential right-of-way needs that would result in impacts to business owners along Maple Avenue SW.
- **Concept 4 – Grade separation at SW Grady Way:** considered a potential viable long-term solution. However, some groups noted aesthetic concerns about introducing a structure within the Rainier/Grady junction, while others noted benefits for improving active transportation within this area.

## Active Transportation



Figure 7 | Existing Rainier Ave S / SW Grady Way intersection

Design details, including active transportation improvements, would be developed as part of future efforts. These improvements are assumed to be included in all alternatives. Multiple focus group discussions highlighted the lack of active transportation investments as a concern. Additionally, the curb-to-curb distance of existing conditions was referenced as a concern. The number of people walking or rolling within this intersection is anticipated to increase upon opening of the Renton Transit Center. Opportunities for active transportation enhancements will be further evaluated for the selected concept.

# Concept Refinement

During Engagement 3, partners reviewed and discussed the individual benefits of each concept and agreed to advance Concept 3 to a 1 percent design to gain further insight on its layout and configuration needs. This step is expected to help clarify potential impacts, such as right-of-way needs. However, the study team recognized that a high degree of uncertainty would remain at this initial planning stage.

The study team acknowledged Concept 1 (Operational & Transit Improvements) as a practical first-step for implementing improvements. Elements of Concept 1 are incorporated into the three larger capital improvement projects (Concepts 2 through 4).

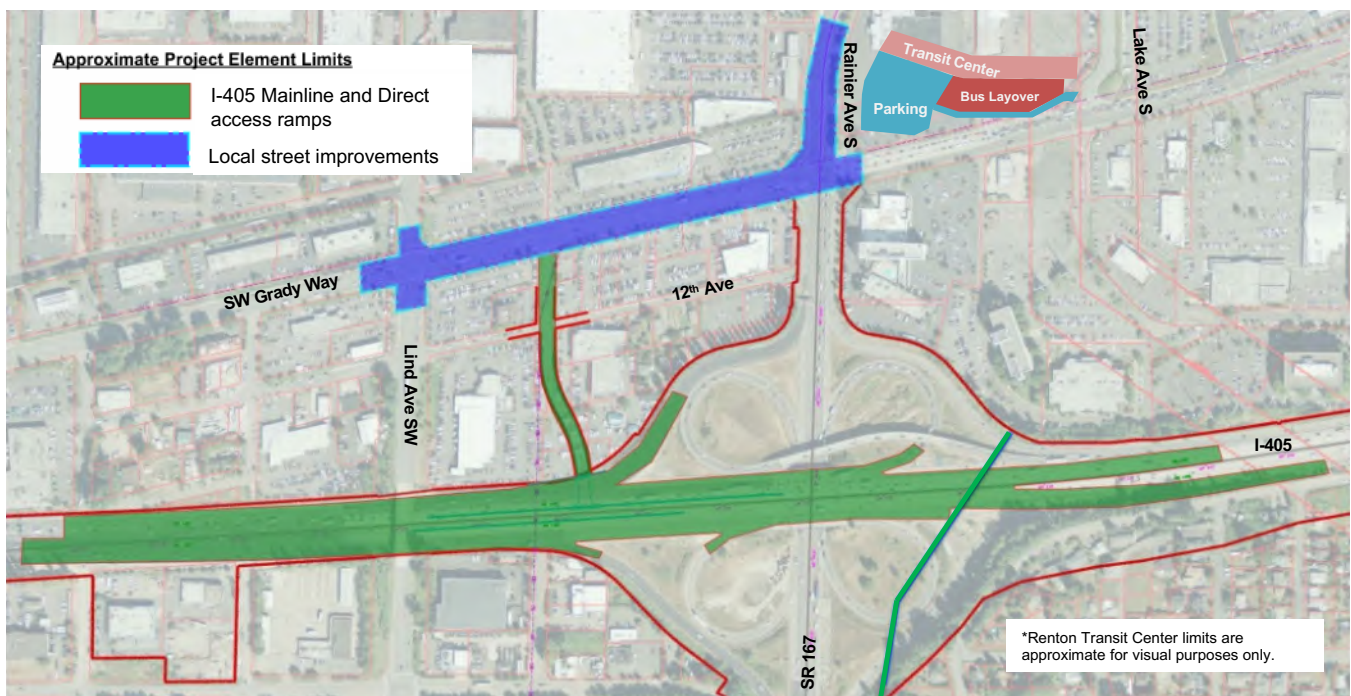


Figure 8 | 1 percent design of Concept 3

During the development of Concept 3's 1 percent design, the proposed alignment for a transit-only direct access ramp was refined. This analysis confirmed that constructing the ramp would require acquisition of multiple parcels along Maple Ave SW. Additionally, the initial cost estimate indicated that the improvements could exceed \$200 million in 2025 dollars. The 1 percent design and cost estimate are provided in **Appendix D**. If funding is secured, the City of Renton may elect to complete the local street improvements separate from mainline I-405 widening or construction of the direct transit access ramp. These approximate project element limits are shown in Figure 8.

# Summary of Concepts

Based on the evaluation and partner feedback, each of the four concepts included in this study has merit.

- **Concept 1 – Operational and Transit Improvements:** recognized as a practical first-step to address the Project Need. It would provide some relief for current and projected traffic congestion within the study area, particularly given anticipated growth and the opening of the Renton Transit Center.
- **Concept 2 – Half-diamond interchange at Lind Ave SW:** previously identified within the I-405 Master Plan and remains a priority for the City of Renton. While it does not solve the Project Need identified as part of this study, it serves a useful purpose by providing traffic benefits west of the study area.
- **Concept 3 – Direct transit access at Maple Ave SW:** offers the greatest benefits to transit during PM peak periods. The 1 percent design advanced as part of this study confirmed that the ramps would require the acquisition of multiple parcels along Maple Ave SW. The initial cost estimate indicated that improvements would exceed \$200 million in 2025 dollars. If funding is secured, The City of Renton may elect to complete the local street improvements separate from mainline I-405 widening or construction of the direct transit access ramp
- **Concept 4 – Grade separation at SW Grady Way:** provides the most benefits to transit during the AM peak periods, but it would require constructing an overpass that may not align with the City of Renton’s vision for the area. However, it remains part of City of Renton’s Transportation Improvement Plan because of the benefits it can provide.

These concepts are not mutually exclusive and each provides its own distinctive benefits that could improve traffic operations.

Appendix A  
Synchro Intersection  
Modeling Results

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2024 Existing AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2024 Existing AM Peak Hour			2024 Existing PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3050</b>	<b>42</b>	<b>D</b>	<b>3755</b>	<b>49</b>	<b>D</b>
					Northbound	<b>1255</b>	<b>23</b>	<b>C</b>	<b>1040</b>	<b>30</b>	<b>C</b>
					Left	125	109	F	125	83	F
					Through	1095	13	B	853	23	C
					Bus	5	11	B	2	19	B
					Right	30	11	B	60	19	B
					Eastbound	<b>230</b>	<b>67</b>	<b>E</b>	<b>620</b>	<b>76</b>	<b>E</b>
					Left	120	82	F	225	89	F
					Through	90	51	D	345	68	E
					Right	20	51	D	50	68	E
					Southbound	<b>795</b>	<b>33</b>	<b>C</b>	<b>1660</b>	<b>45</b>	<b>D</b>
					Left	100	82	F	280	83	F
					Through	603	26	C	1255	39	D
					Bus	2	23	C	5	25	C
					Right	90	23	C	120	25	C
					Westbound	<b>770</b>	<b>74</b>	<b>E</b>	<b>435</b>	<b>72</b>	<b>E</b>
					Left	50	152	F	50	152	F
					Through	270	72	E	185	65	E
					Right	450	67	E	200	58	E
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>1880</b>	<b>16</b>	<b>B</b>	<b>3190</b>	<b>22</b>	<b>C</b>
					Northbound	<b>315</b>	<b>18</b>	<b>B</b>	<b>705</b>	<b>28</b>	<b>C</b>
					Left	60	18	B	115	21	C
					Through	80	17	B	195	32	C
					Right	175	0	A	395	0	A
					Eastbound	<b>590</b>	<b>14</b>	<b>B</b>	<b>1040</b>	<b>21</b>	<b>C</b>
					Left	140	10	A	230	14	B
					Through	425	15	B	775	24	C
					Right	25	15	B	35	23	C
					Southbound	<b>135</b>	<b>20</b>	<b>B</b>	<b>605</b>	<b>25</b>	<b>C</b>
					Left	10	16	B	275	24	C
					Through	70	20	C	225	26	C
					Right	55	20	C	105	26	C
					Westbound	<b>840</b>	<b>18</b>	<b>B</b>	<b>840</b>	<b>19</b>	<b>B</b>
					Left	315	21	C	230	17	B
					Through	445	16	B	560	20	C
					Right	80	16	B	50	20	C
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3610</b>	<b>58</b>	<b>E</b>	<b>4510</b>	<b>79</b>	<b>E</b>
					Northbound	<b>1320</b>	<b>35</b>	<b>D</b>	<b>930</b>	<b>38</b>	<b>D</b>
					Left	295	72	E	205	88	F
					Through	1020	37	D	723	38	D
					Right	5	24	C	2	29	C
					Right	700	17	B	670	24	C
					Eastbound	<b>440</b>	<b>78</b>	<b>E</b>	<b>1170</b>	<b>180</b>	<b>F</b>
					Left	0	0	A	0	0	A
					Through	305	77	E	570	113	F
					Right	135	64	E	600	272	F
					Southbound	<b>735</b>	<b>74</b>	<b>E</b>	<b>1390</b>	<b>33</b>	<b>C</b>
					Left	65	104	F	155	125	F
					Through	520	55	D	1065	22	C
					Right	150	127	F	170	16	B
					Westbound	<b>1115</b>	<b>77</b>	<b>E</b>	<b>1020</b>	<b>74</b>	<b>E</b>
					Left	590	87	F	545	82	F
					Through	525	67	E	475	66	E
					Right	0	67	E	0	66	E
					Right	75	0	A	120	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2340</b>	<b>14</b>	<b>B</b>	<b>2630</b>	<b>16</b>	<b>B</b>
					Northbound	<b>60</b>	<b>45</b>	<b>D</b>	<b>180</b>	<b>46</b>	<b>D</b>
					Left	50	54	D	145	58	E
					Through	0	0	A	0	0	A
					Right	10	0	A	35	0	A
					Eastbound	<b>1105</b>	<b>8</b>	<b>A</b>	<b>1420</b>	<b>14</b>	<b>B</b>
					Left	15	6	A	15	8	A
					Through	995	8	A	1295	14	B
					Right	95	5	A	110	8	A
					Southbound	<b>20</b>	<b>67</b>	<b>E</b>	<b>50</b>	<b>56</b>	<b>E</b>
					Left	5	67	E	5	56	E
					Through	5	67	E	5	56	E
					Right	10	67	E	40	56	E
					Westbound	<b>1155</b>	<b>18</b>	<b>B</b>	<b>980</b>	<b>12</b>	<b>B</b>
					Left	10	6	A	10	6	A
					Through	1130	18	B	955	12	B
					Right	15	18	B	15	12	B

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2024 Existing AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2024 Existing AM Peak Hour			2024 Existing PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>2325</b>	<b>12</b>	<b>B</b>	<b>2700</b>	<b>20</b>	<b>C</b>
					Northbound	<b>100</b>	<b>50</b>	<b>D</b>	<b>220</b>	<b>48</b>	<b>D</b>
					Left	55	49	D	105	48	D
					Through	20	51	D	30	48	D
					Right	25	51	D	85	48	D
					Eastbound	<b>1010</b>	<b>15</b>	<b>B</b>	<b>1330</b>	<b>11</b>	<b>B</b>
					Left	15	27	C	15	15	B
					Through	935	14	B	1230	10	A
					Right	60	16	B	85	30	C
					Southbound	<b>60</b>	<b>51</b>	<b>D</b>	<b>230</b>	<b>50</b>	<b>D</b>
					Left	30	48	D	110	49	D
					Through	15	53	D	75	51	D
					Right	15	53	D	45	51	D
					Westbound	<b>1155</b>	<b>4</b>	<b>A</b>	<b>920</b>	<b>20</b>	<b>B</b>
					Left	20	16	B	65	35	C
					Through	1085	3	A	830	19	B
					Right	50	3	A	25	19	B
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>3455</b>	<b>34</b>	<b>C</b>	<b>3745</b>	<b>51</b>	<b>D</b>
					Northbound	<b>1780</b>	<b>32</b>	<b>C</b>	<b>950</b>	<b>41</b>	<b>D</b>
					Left	840	37	D	430	51	D
					Through	730	27	C	360	33	C
					Right	210	27	C	160	33	C
					Eastbound	<b>985</b>	<b>35</b>	<b>D</b>	<b>1450</b>	<b>65</b>	<b>E</b>
					Left	25	54	D	45	75	E
					Through	710	33	C	730	41	D
					Right	250	39	D	675	90	F
					Southbound	<b>210</b>	<b>52</b>	<b>D</b>	<b>670</b>	<b>54</b>	<b>D</b>
					Left	20	72	E	85	106	F
					Through	165	50	D	540	46	D
					Right	25	50	D	45	46	D
					Westbound	<b>480</b>	<b>33</b>	<b>C</b>	<b>675</b>	<b>33</b>	<b>C</b>
					Left	65	57	E	180	54	D
					Through	355	30	C	445	25	C
					Right	60	30	C	50	25	C
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3075</b>	<b>25</b>	<b>C</b>	<b>3495</b>	<b>43</b>	<b>D</b>
					Northbound	<b>1870</b>	<b>17</b>	<b>B</b>	<b>840</b>	<b>24</b>	<b>C</b>
					Left	170	9	A	60	25	C
					Through	1700	18	B	780	24	C
					Eastbound	<b>35</b>	<b>46</b>	<b>D</b>	<b>240</b>	<b>63</b>	<b>E</b>
					Left	5	69	E	20	87	F
					Right	30	42	D	220	61	E
					Southbound	<b>490</b>	<b>23</b>	<b>C</b>	<b>1420</b>	<b>36</b>	<b>D</b>
					Through	480	23	C	1415	36	D
					Right	10	23	C	5	36	D
					Westbound	<b>680</b>	<b>48</b>	<b>D</b>	<b>995</b>	<b>65</b>	<b>E</b>
					Left	445	53	D	805	72	E
					Through	70	39	D	40	35	C
					Right	165	40	D	150	36	D
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3480</b>	<b>3</b>	<b>A</b>	<b>3745</b>	<b>3</b>	<b>A</b>
					Northbound	<b>2525</b>	<b>4</b>	<b>A</b>	<b>1305</b>	<b>3</b>	<b>A</b>
					Through	1870	4	A	840	3	A
					Right	655	0	A	465	0	A
					Southbound	<b>955</b>	<b>1</b>	<b>A</b>	<b>2440</b>	<b>4</b>	<b>A</b>
					Left	20	25	C	120	35	C
					Through	935	1	A	2320	2	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3535</b>	<b>43</b>	<b>D</b>	<b>3745</b>	<b>21</b>	<b>C</b>
					Northbound	<b>1770</b>	<b>44</b>	<b>D</b>	<b>990</b>	<b>23</b>	<b>C</b>
					Left	5	120	F	10	73	E
					Through	1755	44	D	920	22	C
					Right	10	43	D	60	22	C
					Eastbound	<b>95</b>	<b>43</b>	<b>D</b>	<b>55</b>	<b>38</b>	<b>D</b>
					Left	80	44	D	45	38	D
					Through	10	0	A	5	0	A
					Right	5	39	D	5	34	C
					Southbound	<b>935</b>	<b>30</b>	<b>C</b>	<b>2320</b>	<b>20</b>	<b>B</b>
					Left	250	76	E	705	40	D
					Through	665	13	B	1550	11	B
					Right	20	13	B	65	11	B
					Westbound	<b>735</b>	<b>71</b>	<b>E</b>	<b>380</b>	<b>43</b>	<b>D</b>
					Left	40	50	D	35	44	D
					Through	5	0	A	5	0	A
					Right	690	73	E	340	42	D

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2024 Existing AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2024 Existing AM Peak Hour			2024 Existing PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>10</b>	<b>Lind Ave SW &amp; SW 16th St</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>	<b>975</b>	<b>9</b>	<b>A</b>	<b>1060</b>	<b>10</b>	<b>A</b>	
					Northbound	<b>240</b>	<b>6</b>	<b>A</b>	<b>335</b>	<b>9</b>	<b>A</b>
					Left	30	7	A	35	10	A
					Through	205	6	A	290	9	A
					Right	5	6	A	10	9	A
					Eastbound	<b>105</b>	<b>20</b>	<b>C</b>	<b>165</b>	<b>10</b>	<b>B</b>
					Left	30	20	B	55	10	A
					Through	20	21	C	80	10	B
					Right	55	21	C	30	10	B
					Southbound	<b>370</b>	<b>6</b>	<b>A</b>	<b>350</b>	<b>10</b>	<b>A</b>
					Left	90	7	A	95	11	B
					Through	250	6	A	215	9	A
					Right	30	6	A	40	9	A
					Westbound	<b>260</b>	<b>22</b>	<b>C</b>	<b>210</b>	<b>12</b>	<b>B</b>
					Left	25	20	B	5	10	A
					Through	70	22	C	60	12	B
					Right	165	23	C	145	12	B
<b>52</b>	<b>Maple Ave &amp; SW Grady Way</b>	<b>TWSC</b>	<b>Renton</b>	<b>HCM 6</b>		<b>1615</b>	<b>16</b>	<b>C</b>	<b>2405</b>	<b>50</b>	<b>E</b>
					Northbound	<b>30</b>	<b>16</b>	<b>C</b>	<b>35</b>	<b>50</b>	<b>E</b>
					Left	5	16	C	0	50	E
					Through	0	16	C	5	50	E
					Right	25	16	C	30	50	E
					Eastbound	<b>610</b>	<b>0</b>	<b>A</b>	<b>1445</b>	<b>1</b>	<b>A</b>
					Left	15	10	B	120	10	B
					Through	570	-		1320	-	
					Right	25	-		5	-	
					Southbound	<b>5</b>	<b>12</b>	<b>B</b>	<b>75</b>	<b>36</b>	<b>E</b>
					Left	0	12	B	15	36	E
					Through	0	12	B	0	36	E
					Right	5	12	B	60	36	E
					Westbound	<b>970</b>	<b>1</b>	<b>A</b>	<b>850</b>	<b>1</b>	<b>A</b>
					Left	60	12	B	30	20	C
					Through	830	-		780	-	
					Right	80	-		40	-	

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 No Build AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 No Build AM Peak Hour			2030 No Build PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3660</b>	<b>44</b>	<b>D</b>	<b>4435</b>	<b>63</b>	<b>E</b>
					Northbound	<b>1550</b>	<b>31</b>	<b>C</b>	<b>1300</b>	<b>36</b>	<b>D</b>
					Left	175	108	F	195	149	F
					Through	1291	21	C	998	16	B
					Bus	44	18	B	37	13	B
					Right	40	18	B	70	13	B
					Eastbound	<b>310</b>	<b>69</b>	<b>E</b>	<b>805</b>	<b>92</b>	<b>F</b>
					Left	155	87	F	295	87	F
					Through	125	51	D	405	95	F
					Right	30	51	D	105	95	F
					Southbound	<b>1005</b>	<b>41</b>	<b>D</b>	<b>1860</b>	<b>66</b>	<b>E</b>
					Left	115	82	F	285	84	F
					Through	743	36	D	1401	67	E
					Bus	37	33	C	44	34	C
					Right	110	33	C	130	34	C
					Westbound	<b>795</b>	<b>64</b>	<b>E</b>	<b>470</b>	<b>71</b>	<b>E</b>
					Left	65	87	F	70	148	F
					Through	275	62	E	200	61	E
					Right	455	62	E	200	55	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>2630</b>	<b>23</b>	<b>C</b>	<b>2630</b>	<b>23</b>	<b>C</b>
					Northbound	<b>470</b>	<b>24</b>	<b>C</b>	<b>470</b>	<b>24</b>	<b>C</b>
					Left	120	26	C	120	26	C
					Through	135	23	C	135	23	C
					Right	215	0	A	215	0	A
					Eastbound	<b>970</b>	<b>22</b>	<b>C</b>	<b>970</b>	<b>22</b>	<b>C</b>
					Left	140	11	B	140	11	B
					Through	790	24	C	790	24	C
					Right	40	24	C	40	24	C
					Southbound	<b>160</b>	<b>26</b>	<b>C</b>	<b>160</b>	<b>26</b>	<b>C</b>
					Left	10	21	C	10	21	C
					Through	90	26	C	90	26	C
					Right	60	26	C	60	26	C
					Westbound	<b>1030</b>	<b>23</b>	<b>C</b>	<b>1030</b>	<b>23</b>	<b>C</b>
					Left	355	37	D	355	37	D
					Through	590	16	B	590	16	B
					Right	85	16	B	85	16	B
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>5360</b>	<b>72</b>	<b>E</b>	<b>6385</b>	<b>78</b>	<b>E</b>
					Northbound	<b>2185</b>	<b>50</b>	<b>D</b>	<b>1865</b>	<b>62</b>	<b>E</b>
					Left	325	86	F	295	119	F
					Through	1133	54	D	878	57	E
					Bus	12	30	C	12	39	D
					Right	715	26	C	680	45	D
					Eastbound	<b>985</b>	<b>83</b>	<b>F</b>	<b>1565</b>	<b>93</b>	<b>F</b>
					Left	300	104	F	245	98	F
					Through	485	81	F	670	59	E
					Right	200	58	E	650	125	F
					Southbound	<b>925</b>	<b>108</b>	<b>F</b>	<b>1665</b>	<b>80</b>	<b>E</b>
					Left	75	131	F	155	120	F
					Through	580	67.3	E	1175	74	E
					Right	270	188	F	335	83	F
					Westbound	<b>1265</b>	<b>75</b>	<b>E</b>	<b>1290</b>	<b>78</b>	<b>E</b>
					Left	610	74	E	555	106	F
					Through	575	77	E	595	57	E
					Right	0	0	A	0	0	A
					Right	80	0	A	140	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2685</b>	<b>11</b>	<b>B</b>	<b>2935</b>	<b>18</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	54	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1310</b>	<b>13</b>	<b>B</b>	<b>1540</b>	<b>18</b>	<b>B</b>
					Left	55	11	B	20	11	B
					Through	1140	14	B	1395	18	B
					Right	115	9	A	125	10	B
					Southbound	<b>40</b>	<b>59</b>	<b>E</b>	<b>115</b>	<b>57</b>	<b>E</b>
					Left	20	59	E	25	57	E
					Through	10	59	E	10	57	E
					Right	10	59	E	80	57	E
					Westbound	<b>1270</b>	<b>5</b>	<b>A</b>	<b>1090</b>	<b>9</b>	<b>A</b>
					Left	20	3	A	10	9	A
					Through	1215	5	A	1060	9	A
					Right	35	5	A	20	9	A

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 No Build AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 No Build AM Peak Hour			2030 No Build PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>2540</b>	<b>7</b>	<b>A</b>	<b>2880</b>	<b>18</b>	<b>B</b>
					Northbound	<b>110</b>	<b>46</b>	<b>D</b>	<b>235</b>	<b>43</b>	<b>D</b>
					Left	60	45	D	115	41	D
					Through	20	47	D	30	46	D
					Right	30	47	D	90	46	D
					Eastbound	<b>1100</b>	<b>4</b>	<b>A</b>	<b>1365</b>	<b>14</b>	<b>B</b>
					Left	15	17	B	20	22	C
					Through	1068	4	A	1321	13	B
					Bus	17	9	A	24	33	C
					Right	65	9	A	90	33	C
					Southbound	<b>65</b>	<b>46</b>	<b>D</b>	<b>280</b>	<b>45</b>	<b>D</b>
					Left	35	44	D	135	42	D
					Through	15	48	D	75	47	D
					Right	15	48	D	70	47	D
					Westbound	<b>1265</b>	<b>3</b>	<b>A</b>	<b>1000</b>	<b>11</b>	<b>B</b>
					Left	20	12	B	65	47	D
					Through	1171	2	A	893	8	A
					Bus	24	12	B	17	18	B
					Right	50	12	B	25	18	B
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>3835</b>	<b>49</b>	<b>D</b>	<b>4110</b>	<b>43</b>	<b>D</b>
					Northbound	<b>1900</b>	<b>32</b>	<b>C</b>	<b>1010</b>	<b>38</b>	<b>D</b>
					Left	855	40	D	435	46	D
					Through	815	26	C	405	32	C
					Right	215	26	C	160	32	C
					Bus	15	218	F	10	121	F
					Eastbound	<b>1145</b>	<b>73</b>	<b>E</b>	<b>1595</b>	<b>41</b>	<b>D</b>
					Left	40	48	D	60	71	E
					Through	835	90	F	850	40	D
					Right	270	25	C	685	39	D
					Southbound	<b>240</b>	<b>49</b>	<b>D</b>	<b>795</b>	<b>47</b>	<b>D</b>
					Left	20	87	F	115	59	E
					Through	185	46	D	625	46	D
					Right	35	43	D	55	34	C
					Westbound	<b>550</b>	<b>49</b>	<b>D</b>	<b>710</b>	<b>49</b>	<b>D</b>
					Left	70	62	E	185	82	F
					Through	405	47	D	460	38	D
					Right	75	47	D	65	38	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3155</b>	<b>27</b>	<b>C</b>	<b>3640</b>	<b>44</b>	<b>D</b>
					Northbound	<b>1890</b>	<b>16</b>	<b>B</b>	<b>870</b>	<b>24</b>	<b>C</b>
					Left	170	9	A	65	30	C
					Through	1720	17	B	805	24	C
					Eastbound	<b>35</b>	<b>61</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	5	91	F	25	88	F
					Right	30	57	E	220	55	D
					Southbound	<b>525</b>	<b>17</b>	<b>B</b>	<b>1495</b>	<b>43</b>	<b>D</b>
					Through	503	17	B	1468	43	D
					Right	10	15	B	10	28	C
					Bus	12	14	B	17	27	C
					Westbound	<b>705</b>	<b>62</b>	<b>E</b>	<b>1030</b>	<b>57</b>	<b>E</b>
					Left	450	68	E	820	64	E
					Through	80	51	D	40	32	C
					Right	175	52	D	170	33	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3555</b>	<b>3</b>	<b>A</b>	<b>3545</b>	<b>3</b>	<b>A</b>
					Northbound	<b>2550</b>	<b>4</b>	<b>A</b>	<b>2550</b>	<b>4</b>	<b>A</b>
					Through	1890	4	A	1890	4	A
					Right	660	0	A	660	0	A
					Southbound	<b>1005</b>	<b>1</b>	<b>A</b>	<b>995</b>	<b>1</b>	<b>A</b>
					Left	25	28	C	20	27	C
					Through	980	1	A	975	1	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3610</b>	<b>47</b>	<b>D</b>	<b>3610</b>	<b>47</b>	<b>D</b>
					Northbound	<b>1785</b>	<b>43</b>	<b>D</b>	<b>1785</b>	<b>43</b>	<b>D</b>
					Left	5	123	F	5	123	F
					Through	1770	43	D	1770	43	D
					Right	10	43	D	10	43	D
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>105</b>	<b>46</b>	<b>D</b>
					Left	85	46	D	85	46	D
					Through	10	0	A	10	0	A
					Right	10	41	D	10	41	D
					Southbound	<b>975</b>	<b>32</b>	<b>C</b>	<b>975</b>	<b>32</b>	<b>C</b>
					Left	245	88	F	245	88	F
					Through	710	13	B	710	13	B
					Right	20	13	B	20	13	B
					Westbound	<b>745</b>	<b>87</b>	<b>F</b>	<b>745</b>	<b>87</b>	<b>F</b>
					Left	45	50	D	45	50	D
					Through	5	0	A	5	0	A
					Right	695	90	F	695	90	F

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 No Build AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 No Build AM Peak Hour			2030 No Build PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>10</b>	<b>Lind Ave SW &amp; SW 16th St</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>	<b>1355</b>	<b>13</b>	<b>B</b>	<b>1355</b>	<b>13</b>	<b>B</b>	
					Northbound	<b>275</b>	<b>10</b>	<b>A</b>	<b>275</b>	<b>10</b>	<b>A</b>
					Left	35	12	B	35	12	B
					Through	235	9	A	235	9	A
					Right	5	9	A	5	9	A
					Eastbound	<b>270</b>	<b>19</b>	<b>B</b>	<b>270</b>	<b>19</b>	<b>B</b>
					Left	185	19	B	185	19	B
					Through	30	18	B	30	18	B
					Right	55	18	B	55	18	B
					Southbound	<b>530</b>	<b>10</b>	<b>B</b>	<b>530</b>	<b>10</b>	<b>B</b>
					Left	95	11	B	95	11	B
					Through	390	10	B	390	10	B
					Right	45	10	B	45	10	B
					Westbound	<b>280</b>	<b>21</b>	<b>C</b>	<b>280</b>	<b>21</b>	<b>C</b>
					Left	25	17	B	25	17	B
					Through	75	22	C	75	22	C
					Right	180	23	C	180	23	C
<b>11</b>	<b>Rainier Ave &amp; Hardie Ave</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>	<b>2514</b>	<b>18</b>	<b>B</b>	<b>3009</b>	<b>13</b>	<b>B</b>	
					Northbound	<b>1517</b>	<b>16</b>	<b>B</b>	<b>1267</b>	<b>11</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1505	16	B	1255	11	B
					Right	12	10	B	12	9	A
					Eastbound	<b>75</b>	<b>72</b>	<b>E</b>	<b>45</b>	<b>71</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	10	72	E	10	71	E
					Right	65	0	A	35	0	A
					Southbound	<b>857</b>	<b>11</b>	<b>B</b>	<b>1639</b>	<b>12</b>	<b>B</b>
					Left	37	151	F	44	122	F
					Through	820	5	A	1595	9	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>81</b>	<b>F</b>	<b>58</b>	<b>74</b>	<b>E</b>
					Left	12	68	E	12	68	E
					Through	9	85	F	9	76	E
					Right	44	0	A	37	0	A
<b>52</b>	<b>Maple Ave &amp; SW Grady Way</b>	<b>TWSC</b>	<b>Renton</b>	<b>HCM6</b>	<b>2235</b>	<b>100</b>	<b>F</b>	<b>3000</b>	<b>600</b>	<b>F</b>	
					Northbound	<b>35</b>	<b>59</b>	<b>F</b>	<b>40</b>	<b>484</b>	<b>F</b>
					Left	5	59	F	5	484	F
					Through	5	59	F	5	484	F
					Right	25	59	F	30	484	F
					Eastbound	<b>1015</b>	<b>0</b>	<b>A</b>	<b>1650</b>	<b>1</b>	<b>A</b>
					Left	15	11	B	125	13	B
					Through	975	-		1520	-	
					Right	25	-		5	-	
					Southbound	<b>15</b>	<b>100</b>	<b>F</b>	<b>85</b>	<b>600</b>	<b>F</b>
					Left	5	100	F	15	600	F
					Through	5	100	F	5	600	F
					Right	5	100	F	65	600	F
					Westbound	<b>1170</b>	<b>1</b>	<b>A</b>	<b>1225</b>	<b>1</b>	<b>A</b>
					Left	65	17	C	30	25	C
					Through	1020	-		1155	-	
					Right	85	-		40	-	

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 1 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 1 AM Peak Hour			2030 Build 1 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3660</b>	<b>45</b>	<b>D</b>	<b>4435</b>	<b>63</b>	<b>E</b>
					Northbound	<b>1550</b>	<b>32</b>	<b>C</b>	<b>1300</b>	<b>36</b>	<b>D</b>
					Left	175	108	F	195	149	F
					Through	1291	22	C	998	16	B
					Bus	44	18	B	37	13	B
					Right	40	18	B	70	13	B
					Eastbound	<b>310</b>	<b>69</b>	<b>E</b>	<b>805</b>	<b>92</b>	<b>F</b>
					Left	155	87	F	295	87	F
					Through	125	51	D	405	95	F
					Right	30	51	D	105	95	F
					Southbound	<b>1005</b>	<b>41</b>	<b>D</b>	<b>1860</b>	<b>66</b>	<b>E</b>
					Left	115	82	F	285	84	F
					Through	743	36	D	1401	67	E
					Bus	37	33	C	44	34	C
					Right	110	33	C	130	34	C
					Westbound	<b>795</b>	<b>64</b>	<b>E</b>	<b>470</b>	<b>71</b>	<b>E</b>
					Left	65	87	F	70	148	F
					Through	275	62	E	200	61	E
					Right	455	62	E	200	55	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>2630</b>	<b>23</b>	<b>C</b>	<b>4230</b>	<b>32</b>	<b>C</b>
					Northbound	<b>470</b>	<b>24</b>	<b>C</b>	<b>890</b>	<b>35</b>	<b>C</b>
					Left	120	26	C	155	29	C
					Through	135	23	C	305	38	D
					Right	215	0	A	430	0	A
					Eastbound	<b>970</b>	<b>23</b>	<b>C</b>	<b>1295</b>	<b>32</b>	<b>C</b>
					Left	140	11	B	305	26	C
					Through	790	25	C	940	34	C
					Right	40	25	C	50	34	C
					Southbound	<b>160</b>	<b>26</b>	<b>C</b>	<b>820</b>	<b>31</b>	<b>C</b>
					Left	10	21	C	280	30	C
					Through	90	26	C	410	32	C
					Right	60	26	C	130	32	C
					Westbound	<b>1030</b>	<b>23</b>	<b>C</b>	<b>1225</b>	<b>32</b>	<b>C</b>
					Left	355	35	D	275	24	C
					Through	590	16	B	880	35	C
					Right	85	16	B	70	35	C
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>5360</b>	<b>66</b>	<b>E</b>	<b>6385</b>	<b>78</b>	<b>E</b>
					Northbound	<b>2185</b>	<b>55</b>	<b>D</b>	<b>1865</b>	<b>64</b>	<b>E</b>
					Left	325	114	F	295	119	F
					Through	1133	55	E	878	57	E
					Bus	12	30	C	12	39	D
					Right	715	28	C	680	50	D
					Eastbound	<b>985</b>	<b>86</b>	<b>F</b>	<b>1565</b>	<b>82</b>	<b>F</b>
					Left	300	114	F	245	98	F
					Through	485	81	F	670	59	E
					Right	200	58	E	650	100	F
					Southbound	<b>913</b>	<b>64</b>	<b>E</b>	<b>1653</b>	<b>87</b>	<b>F</b>
					Left	75	139	F	155	120	F
					Through	568	72	E	1163	106	F
					Right	270	24	C	335	7	A
					Westbound	<b>1265</b>	<b>70</b>	<b>E</b>	<b>1290</b>	<b>78</b>	<b>E</b>
					Left	610	71	E	555	106	F
					Through	575	69	E	595	57	E
					Right	80	0	A	140	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2685</b>	<b>11</b>	<b>B</b>	<b>2935</b>	<b>18</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	54	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1310</b>	<b>13</b>	<b>B</b>	<b>1540</b>	<b>18</b>	<b>B</b>
					Left	55	11	B	20	11	B
					Through	1140	14	B	1395	18	B
					Right	115	9	A	125	10	B
					Southbound	<b>40</b>	<b>59</b>	<b>E</b>	<b>115</b>	<b>57</b>	<b>E</b>
					Left	20	59	E	25	57	E
					Through	10	59	E	10	57	E
					Right	10	59	E	80	57	E
					Westbound	<b>1270</b>	<b>5</b>	<b>A</b>	<b>1090</b>	<b>9</b>	<b>A</b>
					Left	20	3	A	10	9	A
					Through	1215	5	A	1060	9	A
					Right	35	5	A	20	9	A

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 1 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 1 AM Peak Hour			2030 Build 1 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>5</b>	<b>Shattuck Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2540</b>	<b>7</b>	<b>A</b>	<b>2880</b>	<b>18</b>	<b>B</b>
					Northbound	<b>110</b>	<b>46</b>	<b>D</b>	<b>235</b>	<b>43</b>	<b>D</b>
					Left	60	45	D	115	41	D
					Through	20	47	D	30	46	D
					Right	30	47	D	90	46	D
					Eastbound	<b>1100</b>	<b>4</b>	<b>A</b>	<b>1365</b>	<b>14</b>	<b>B</b>
					Left	15	17	B	20	22	C
					Through	1068	4	A	1321	13	B
					Bus	17	9	A	24	33	C
					Right	65	9	A	90	33	C
					Southbound	<b>65</b>	<b>46</b>	<b>D</b>	<b>280</b>	<b>45</b>	<b>D</b>
					Left	35	44	D	135	42	D
					Through	15	48	D	75	47	D
					Right	15	48	D	70	47	D
					Westbound	<b>1265</b>	<b>3</b>	<b>A</b>	<b>1000</b>	<b>11</b>	<b>B</b>
					Left	20	12	B	65	47	D
					Through	1171	2	A	893	8	A
					Bus	24	12	B	17	18	B
					Right	50	12	B	25	18	B
<b>6</b>	<b>Talbot Rd S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3835</b>	<b>49</b>	<b>D</b>	<b>4110</b>	<b>43</b>	<b>D</b>
					Northbound	<b>1900</b>	<b>32</b>	<b>C</b>	<b>1010</b>	<b>38</b>	<b>D</b>
					Left	855	40	D	435	46	D
					Through	815	26	C	405	32	C
					Right	215	26	C	160	32	C
					Bus	15	218	F	10	121	F
					Eastbound	<b>1145</b>	<b>73</b>	<b>E</b>	<b>1595</b>	<b>41</b>	<b>D</b>
					Left	40	48	D	60	71	E
					Through	835	90	F	850	40	D
					Right	270	25	C	685	39	D
					Southbound	<b>240</b>	<b>49</b>	<b>D</b>	<b>795</b>	<b>47</b>	<b>D</b>
					Left	20	87	F	115	59	E
					Through	185	46	D	625	46	D
					Right	35	43	D	55	34	C
					Westbound	<b>550</b>	<b>49</b>	<b>D</b>	<b>710</b>	<b>49</b>	<b>D</b>
					Left	70	62	E	185	82	F
					Through	405	47	D	460	38	D
					Right	75	47	D	65	38	D
<b>7</b>	<b>SR 515 &amp; I-405 SB Off-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3155</b>	<b>27</b>	<b>C</b>	<b>3640</b>	<b>44</b>	<b>D</b>
					Northbound	<b>1890</b>	<b>16</b>	<b>B</b>	<b>870</b>	<b>24</b>	<b>C</b>
					Left	170	9	A	65	30	C
					Through	1720	17	B	805	24	C
					Eastbound	<b>35</b>	<b>61</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	5	91	F	25	88	F
					Right	30	57	E	220	55	D
					Southbound	<b>525</b>	<b>17</b>	<b>B</b>	<b>1495</b>	<b>43</b>	<b>D</b>
					Through	503	17	B	1468	43	D
					Right	10	15	B	10	28	C
					Bus	12	14	B	17	27	C
					Westbound	<b>705</b>	<b>62</b>	<b>E</b>	<b>1030</b>	<b>57</b>	<b>E</b>
					Left	450	68	E	820	64	E
					Through	80	51	D	40	32	C
					Right	175	52	D	170	33	C
<b>8</b>	<b>SR 515 &amp; I-405 SB On-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 6</b>		<b>3545</b>	<b>3</b>	<b>A</b>	<b>3875</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2550</b>	<b>4</b>	<b>A</b>	<b>1350</b>	<b>2</b>	<b>A</b>
					Through	1890	4	A	870	2	A
					Right	660	0	A	480	0	A
					Southbound	<b>995</b>	<b>1</b>	<b>A</b>	<b>2525</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	120	42	D
					Through	975	1	A	2405	2	A

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 1 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 1 AM Peak Hour			2030 Build 1 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3610</b>	<b>47</b>	<b>D</b>	<b>3880</b>	<b>22</b>	<b>C</b>
					Northbound	<b>1785</b>	<b>43</b>	<b>D</b>	<b>1015</b>	<b>25</b>	<b>C</b>
					Left	5	123	F	10	72	E
					Through	1770	43	D	945	25	C
					Right	10	43	D	60	25	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>37</b>	<b>D</b>
					Left	85	46	D	45	37	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	34	C
					Southbound	<b>975</b>	<b>32</b>	<b>C</b>	<b>2405</b>	<b>19</b>	<b>B</b>
					Left	245	88	F	730	35	D
					Through	710	13	B	1610	12	B
					Right	20	13	B	65	12	B
					Westbound	<b>745</b>	<b>87</b>	<b>F</b>	<b>400</b>	<b>43</b>	<b>D</b>
					Left	45	50	D	35	43	D
					Through	5	0	A	5	0	A
					Right	695	90	F	360	42	D
10	Lind Ave SW & SW 16th St	Signal	Renton	HCM 6		<b>1355</b>	<b>13</b>	<b>B</b>	<b>1555</b>	<b>12</b>	<b>B</b>
					Northbound	<b>275</b>	<b>10</b>	<b>A</b>	<b>375</b>	<b>12</b>	<b>B</b>
					Left	35	12	B	30	13	B
					Through	235	9	A	335	12	B
					Right	5	9	A	10	12	B
					Eastbound	<b>270</b>	<b>19</b>	<b>B</b>	<b>380</b>	<b>12</b>	<b>B</b>
					Left	185	19	B	225	12	B
					Through	30	18	B	105	11	B
					Right	55	18	B	50	11	B
					Southbound	<b>530</b>	<b>10</b>	<b>B</b>	<b>570</b>	<b>13</b>	<b>B</b>
					Left	95	11	B	140	15	B
					Through	390	10	B	250	11	B
					Right	45	10	B	180	11	B
					Westbound	<b>280</b>	<b>21</b>	<b>C</b>	<b>230</b>	<b>15</b>	<b>B</b>
					Left	25	17	B	5	10	B
					Through	75	22	C	65	16	B
					Right	180	23	C	160	16	B
11	Rainier Ave & Hardie Ave	Signal	Renton	HCM 2000		<b>2514</b>	<b>17</b>	<b>B</b>	<b>3009</b>	<b>13</b>	<b>B</b>
					Northbound	<b>1517</b>	<b>15</b>	<b>B</b>	<b>1267</b>	<b>11</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1505	15	B	1255	11	B
					Right	12	10	A	12	9	A
					Eastbound	<b>75</b>	<b>72</b>	<b>E</b>	<b>45</b>	<b>71</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	10	72	E	10	71	E
					Right	65	0	A	35	0	A
					Southbound	<b>857</b>	<b>12</b>	<b>B</b>	<b>1639</b>	<b>12</b>	<b>B</b>
					Left	37	170	F	44	122	F
					Through	820	5	A	1595	9	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>81</b>	<b>F</b>	<b>58</b>	<b>74</b>	<b>E</b>
					Left	12	68	E	12	68	E
					Through	9	85	F	9	76	E
					Right	44	0	A	37	0	A
52	Maple Ave & SW Grady Way	TWSC	Renton	HCM6		<b>2235</b>	<b>100</b>	<b>F</b>	<b>3000</b>	<b>&gt;180</b>	<b>F</b>
					Northbound	<b>35</b>	<b>59</b>	<b>F</b>	<b>40</b>	<b>484</b>	<b>F</b>
					Left	5	59	F	5	484	F
					Through	5	59	F	5	484	F
					Right	25	59	F	30	484	F
					Eastbound	<b>1015</b>	<b>0</b>	<b>A</b>	<b>1650</b>	<b>1</b>	<b>A</b>
					Left	15	11	B	125	13	B
					Through	975	-		1520	-	
					Right	25	-		5	-	
					Southbound	<b>15</b>	<b>100</b>	<b>F</b>	<b>85</b>	<b>600</b>	<b>F</b>
					Left	5	100	F	15	600	F
					Through	5	100	F	5	600	F
					Right	5	100	F	65	600	F
					Westbound	<b>1170</b>	<b>1</b>	<b>A</b>	<b>1225</b>	<b>1</b>	<b>A</b>
					Left	65	17	C	30	25	C
					Through	1020	-		1155	-	
					Right	85	-		40	-	

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 1B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 1B AM Peak Hour			2030 Build 1B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>5360</b>	<b>63</b>	<b>E</b>	<b>6435</b>	<b>72</b>	<b>E</b>
					Northbound	<b>2185</b>	<b>54</b>	<b>D</b>	<b>1865</b>	<b>55</b>	<b>D</b>
					Left	325	110	F	295	96	F
					Through	1133	54	D	878	52	D
					Bus	12	30	C	12	36	D
					Right	715	28	C	680	41	D
					Eastbound	<b>985</b>	<b>76</b>	<b>E</b>	<b>1615</b>	<b>89</b>	<b>F</b>
					Left	300	79	E	295	77	E
					Through	485	81	F	670	68	E
					Right	200	58	E	650	116	F
					Southbound	<b>913</b>	<b>64</b>	<b>E</b>	<b>1653</b>	<b>74</b>	<b>E</b>
					Left	75	138	F	155	120	F
					Through	568	72	E	1163	86	F
					Right	270	24	C	335	9	A
					Westbound	<b>1265</b>	<b>63</b>	<b>E</b>	<b>1290</b>	<b>70</b>	<b>E</b>
					Left	610	73	E	555	89	F
					Through	575	54	D	595	55	D
					Right	0	0	A	0	0	A
					Right	80	0	A	140	0	A

**Notes:**

1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection

2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build 2 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 2 AM Peak Hour			2030 Build 2 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3710</b>	<b>47</b>	<b>D</b>	<b>4435</b>	<b>60</b>	<b>E</b>
					Northbound	<b>1550</b>	<b>34</b>	<b>C</b>	<b>1350</b>	<b>38</b>	<b>D</b>
					Left	175	109	F	195	141	F
					Through	1291	25	C	998	21	C
					Bus	44	20	B	37	18	B
					Right	40	20	B	120	18	B
					Eastbound	<b>360</b>	<b>70</b>	<b>E</b>	<b>755</b>	<b>91</b>	<b>F</b>
					Left	205	86	F	295	100	F
					Through	125	49	D	355	85	F
					Right	30	49	D	105	85	F
					Southbound	<b>1005</b>	<b>43</b>	<b>D</b>	<b>1860</b>	<b>63</b>	<b>E</b>
					Left	115	82	F	285	84	F
					Through	743	39	D	1401	62	E
					Bus	37	35	C	44	33	C
					Right	110	35	C	130	33	C
					Westbound	<b>795</b>	<b>64</b>	<b>E</b>	<b>470</b>	<b>67</b>	<b>E</b>
					Left	65	87	F	70	120	F
					Through	275	62	E	200	61	E
					Right	455	62	E	200	55	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>3430</b>	<b>34</b>	<b>C</b>	<b>4940</b>	<b>63</b>	<b>E</b>
					Northbound	<b>1130</b>	<b>32</b>	<b>C</b>	<b>1445</b>	<b>85</b>	<b>F</b>
					Left	215	69	E	230	40	D
					Through	175	46	D	345	37	D
					Right	740	18	B	870	115	F
					Eastbound	<b>1140</b>	<b>46</b>	<b>D</b>	<b>1475</b>	<b>51</b>	<b>D</b>
					Left	100	9	A	275	33	C
					Through	765	49	D	955	55	D
					Right	275	50	D	245	56	E
					Southbound	<b>215</b>	<b>49</b>	<b>D</b>	<b>865</b>	<b>64</b>	<b>E</b>
					Left	10	92	F	280	80	E
					Through	145	46	D	455	56	E
					Right	60	46	D	130	57	E
					Westbound	<b>945</b>	<b>21</b>	<b>C</b>	<b>1155</b>	<b>50</b>	<b>D</b>
					Left	360	34	C	280	81	F
					Through	500	12	B	805	40	D
					Right	85	12	B	70	40	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>5225</b>	<b>70</b>	<b>E</b>	<b>6345</b>	<b>73</b>	<b>E</b>
					Northbound	<b>1555</b>	<b>48</b>	<b>D</b>	<b>1365</b>	<b>52</b>	<b>D</b>
					Left	235	89	F	215	106	F
					Through	798	50	D	638	49	D
					Bus	12	35	C	12	39	D
					Right	510	26	C	500	32	C
					Eastbound	<b>1480</b>	<b>81</b>	<b>F</b>	<b>2020</b>	<b>96</b>	<b>F</b>
					Left	635	82	F	540	87	F
					Through	690	86	F	855	82	F
					Right	155	51	D	625	124	F
					Southbound	<b>913</b>	<b>71</b>	<b>E</b>	<b>1658</b>	<b>61</b>	<b>E</b>
					Left	75	112	F	155	120	F
					Through	563	87	F	1163	70	E
					Right	275	29	C	340	5	A
					Westbound	<b>1265</b>	<b>81</b>	<b>F</b>	<b>1290</b>	<b>73</b>	<b>E</b>
					Left	610	90	F	555	89	F
					Through	575	73	E	595	61	E
					Right	0	0	A	0	0	A
					Right	80	0	A	140	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2700</b>	<b>11</b>	<b>B</b>	<b>2935</b>	<b>18</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	54	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1310</b>	<b>13</b>	<b>B</b>	<b>1540</b>	<b>18</b>	<b>B</b>
					Left	55	11	B	20	11	B
					Through	1140	14	B	1395	18	B
					Right	115	9	A	125	10	B
					Southbound	<b>50</b>	<b>64</b>	<b>E</b>	<b>115</b>	<b>57</b>	<b>E</b>
					Left	30	64	E	25	57	E
					Through	10	64	E	10	57	E
					Right	10	64	E	80	57	E
					Westbound	<b>1275</b>	<b>6</b>	<b>A</b>	<b>1090</b>	<b>9</b>	<b>A</b>
					Left	20	3	A	10	9	A
					Through	1215	5	A	1060	9	A
					Right	40	5	A	20	9	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build 2 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 2 AM Peak Hour			2030 Build 2 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		2540	7	A	2880	18	B
					Northbound	110	46	D	235	43	D
					Left	60	45	D	115	41	D
					Through	20	47	D	30	46	D
					Right	30	47	D	90	46	D
					Eastbound	1100	5	A	1365	14	B
					Left	15	17	B	20	22	C
					Through	1068	4	A	1321	13	B
					Bus	17	10	A	24	33	C
					Right	65	10	A	90	33	C
					Southbound	65	46	D	280	45	D
					Left	35	44	D	135	42	D
					Through	15	48	D	75	47	D
					Right	15	48	D	70	47	D
					Westbound	1265	3	A	1000	11	B
					Left	20	12	B	65	47	D
					Through	1171	2	A	893	8	A
					Bus	24	12	B	17	18	B
					Right	50	12	B	25	18	B
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		3850	49	D	4110	43	D
					Northbound	1905	32	C	1010	38	D
					Left	860	40	D	435	46	D
					Through	815	26	C	405	32	C
					Right	215	26	C	160	32	C
					Bus	15	218	F	10	121	F
					Eastbound	1155	75	E	1595	41	D
					Left	40	48	D	60	71	E
					Through	840	92	F	850	40	D
					Right	275	25	C	685	39	D
					Southbound	240	49	D	795	47	D
					Left	20	87	F	115	59	E
					Through	185	46	D	625	46	D
					Right	35	43	D	55	34	C
					Westbound	550	49	D	710	49	D
					Left	70	62	E	185	82	F
					Through	405	47	D	460	38	D
					Right	75	47	D	65	38	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		3170	27	C	3640	44	D
					Northbound	1890	16	B	870	24	C
					Left	170	9	A	65	30	C
					Through	1720	17	B	805	24	C
					Eastbound	35	61	E	245	58	E
					Left	5	91	F	25	88	F
					Right	30	57	E	220	55	D
					Southbound	535	17	B	1495	43	D
					Through	513	17	B	1468	43	D
					Right	10	15	B	10	28	C
					Bus	12	14	B	17	27	C
					Westbound	710	62	E	1030	57	E
					Left	450	68	E	820	64	E
					Through	80	51	D	40	32	C
					Right	180	52	D	170	33	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		3555	3	A	3875	4	A
					Northbound	2550	4	A	1350	2	A
					Through	1890	4	A	870	2	A
					Right	660	0	A	480	0	A
					Southbound	1005	1	A	2525	4	A
					Left	25	28	C	120	42	D
					Through	980	1	A	2405	2	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		3610	47	D	3880	22	C
					Northbound	1785	43	D	1015	25	C
					Left	5	123	F	10	72	E
					Through	1770	43	D	945	25	C
					Right	10	43	D	60	25	C
					Eastbound	105	46	D	60	37	D
					Left	85	46	D	45	37	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	34	C
					Southbound	975	32	C	2405	19	B
					Left	245	88	F	730	35	D
					Through	710	13	B	1610	12	B
					Right	20	13	B	65	12	B
					Westbound	745	87	F	400	43	D
					Left	45	50	D	35	43	D
					Through	5	0	A	5	0	A
					Right	695	90	F	360	42	D

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build 2 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 2 AM Peak Hour			2030 Build 2 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
10	Lind Ave SW & SW 16th St	Signal	Renton	HCM 6		1725	14	B	1800	20	B
					Northbound	345	12	B	435	11	B
					Left	35	11	B	30	11	B
					Through	305	12	B	395	11	B
					Right	5	12	B	10	11	B
					Eastbound	320	33	C	420	38	D
					Left	235	33	C	265	40	D
					Through	30	30	C	105	34	C
					Right	55	30	C	50	34	C
					Southbound	725	1	A	685	7	A
					Left	135	1	A	180	9	A
					Through	540	1	A	325	6	A
					Right	50	1	A	180	6	A
					Westbound	335	41	D	260	49	D
					Left	25	28	C	5	32	C
					Through	75	42	D	65	49	D
					Right	235	44	D	190	50	D
11	Rainier Ave & Hardie Ave	Signal	Renton	HCM 2000		2515	24	C	3060	18	B
					Northbound	1523	26	C	1323	22	C
					Left	0	0	A	0	0	A
					Through	1505	26	C	1305	22	C
					Right	18	16	B	18	16	B
					Eastbound	70	71	E	40	70	E
					Left	0	0	A	0	0	A
					Through	5	71	E	5	70	E
					Right	65	0	A	35	0	A
					Southbound	857	12	B	1639	12	B
					Left	37	168	F	44	124	F
					Through	820	5	A	1595	9	A
					Right	0	9	A	0	9	A
					Westbound	65	76	E	58	72	E
					Left	18	69	E	18	69	E
					Through	3	79	E	3	74	E
					Right	44	0	A	37	0	A
52	Maple Ave & SW Grady Way	TWSC	Renton	HCM6		2650	>180		3390	>180	F
					Northbound	35	239	F	45	0	A
					Left	5	239	F	10	-	
					Through	5	239	F	5	-	
					Right	25	239	F	30	-	
					Eastbound	1515	0	A	2105	1	A
					Left	15	11	B	125	12	B
					Through	1475	-		1975	-	
					Right	25	-		5	-	
					Southbound	15	285	F	90	0	A
					Left	5	285	F	15	-	
					Through	5	285	F	10	-	
					Right	5	285	F	65	-	
					Westbound	1085	2	A	1150	1	A
					Left	65	31	D	30	43	E
					Through	935	-		1080	-	
					Right	85	-		40	-	
50	Lind Ave SW & I-405 SB On-Ramp	Signal	Renton	HCM2000		2175	6	A	2085	6	A
					Northbound	1450	8	A	1400	7	A
					Left	190	57	E	125	63	E
					Through	1260	1	A	1275	1	A
					Southbound	830	3	A	820	4	A
					Through	535	3	A	575	4	A
					Right	295	0	A	245	0	A
51	Lind Ave SW & I-405 NB Off-Ramp	Signal	Renton	HCM 6		2175	18	B	2085	21	C
					Northbound	775	0	A	850	0	A
					Left	0	0	A	0	0	A
					Through	775	0	A	850	0	A
					Eastbound	865	#N/A		660	#N/A	
					Left	675	42	D	550	49	D
					Right	190	37	D	110	42	D
					Southbound	535	8	A	575	20	B
					Through	535	8	A	575	20	B
					Right	0	0	A	0	0	A

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build 2B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	LOS Standard	Approach / Movement	2030 Build 2B AM Peak Hour			2030 Build 2B PM Peak Hour		
							Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>												
2	Lind Ave SW & SW Grady Way	Signal	Renton	HCM 6	E Mitigated		<b>3000</b>	<b>45</b>	<b>D</b>	<b>4610</b>	<b>40</b>	<b>D</b>
						Northbound	<b>625</b>	<b>44</b>	<b>D</b>	<b>1065</b>	<b>58</b>	<b>E</b>
						Left	140	47	D	170	66	E
						Through	175	42	D	345	54	D
						Right	310	0	A	550	0	A
						Eastbound	<b>1140</b>	<b>68</b>	<b>E</b>	<b>1475</b>	<b>31</b>	<b>C</b>
						Left	100	9	A	275	20	B
						Through	765	74	E	955	33	C
						Right	275	75	E	245	34	C
						Southbound	<b>215</b>	<b>41</b>	<b>D</b>	<b>860</b>	<b>59</b>	<b>E</b>
						Left	10	41	D	280	76	E
						Through	145	41	D	455	51	D
						Right	60	41	D	125	51	D
						Westbound	<b>1020</b>	<b>19</b>	<b>B</b>	<b>1210</b>	<b>30</b>	<b>C</b>
						Left	360	32	C	280	40	D
						Through	575	12	B	860	26	C
						Right	85	12	B	70	26	C
3	SR 167/Rainier Ave S & SWGrady Way	Signal	WSDOT	HCM 2000	E Mitigated		<b>5310</b>	<b>62</b>	<b>E</b>	<b>6390</b>	<b>74</b>	<b>E</b>
						Northbound	<b>2060</b>	<b>47</b>	<b>D</b>	<b>1735</b>	<b>52</b>	<b>D</b>
						Left	310	90	F	275	97	F
						Through	1063	49	D	813	50	D
						Bus	12	29	C	12	36	D
						Right	675	25	C	635	36	D
						Eastbound	<b>1055</b>	<b>84</b>	<b>F</b>	<b>1700</b>	<b>86</b>	<b>F</b>
						Left	375	79	E	365	81	F
						Through	525	95	F	710	72	E
						Right	155	58	E	625	104	F
						Southbound	<b>918</b>	<b>62</b>	<b>E</b>	<b>1653</b>	<b>87</b>	<b>F</b>
						Left	75	146	F	155	120	F
						Through	568	70	E	1158	106	F
						Right	275	25	C	340	8	A
						Westbound	<b>1265</b>	<b>67</b>	<b>E</b>	<b>1290</b>	<b>71</b>	<b>E</b>
						Left	610	75	E	555	89	F
						Through	575	60	E	595	57	E
						Right	0	0	A	0	0	A
						Right	80	0	A	140	0	A
						Exc. Bus Phase	<b>12</b>	<b>90</b>	<b>F</b>	<b>12</b>	<b>86</b>	<b>F</b>
						Left	12	90	F	12	86	F
50	Lind Ave SW & I-405 SB On-Ramp	Signal	Renton	HCM2000	D		<b>1675</b>	<b>7</b>	<b>A</b>	<b>1705</b>	<b>7</b>	<b>A</b>
						Northbound	<b>950</b>	<b>11</b>	<b>B</b>	<b>1020</b>	<b>8</b>	<b>A</b>
						Left	190	50	D	125	61	E
						Through	760	1	A	895	0	A
						Southbound	<b>830</b>	<b>3</b>	<b>A</b>	<b>820</b>	<b>7</b>	<b>A</b>
						Through	535	3	A	575	7	A
						Right	295	0	A	245	0	A
51	Lind Ave SW & I-405 NB Off-Ramp	Signal	Renton	HCM 6	D		<b>1670</b>	<b>10</b>	<b>A</b>	<b>1705</b>	<b>11</b>	<b>B</b>
						Northbound	<b>775</b>	<b>0</b>	<b>A</b>	<b>850</b>	<b>0</b>	<b>A</b>
						Left	0	0	A	0	0	A
						Through	775	0	A	850	0	A
						Eastbound	<b>360</b>	<b>#N/A</b>		<b>280</b>	<b>#N/A</b>	
						Left	170	38	D	170	49	D
						Right	190	48	D	110	55	E
						Southbound	<b>535</b>	<b>0</b>	<b>A</b>	<b>575</b>	<b>7</b>	<b>A</b>
						Through	535	0	A	575	7	A
						Right	0	0	A	0	0	A

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 3 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 3 AM Peak Hour			2030 Build 3 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3670</b>	<b>45</b>	<b>D</b>	<b>4445</b>	<b>59</b>	<b>E</b>
					Northbound	<b>1560</b>	<b>32</b>	<b>C</b>	<b>1360</b>	<b>37</b>	<b>D</b>
					Left	175	107	F	195	141	F
					Through	1301	23	C	1008	20	B
					Bus	44	19	B	37	17	B
					Right	40	19	B	120	17	B
					Eastbound	<b>310</b>	<b>69</b>	<b>E</b>	<b>755</b>	<b>91</b>	<b>F</b>
					Left	155	87	F	295	100	F
					Through	125	51	D	355	85	F
					Right	30	51	D	105	85	F
					Southbound	<b>1005</b>	<b>41</b>	<b>D</b>	<b>1860</b>	<b>60</b>	<b>E</b>
					Left	115	82	F	285	84	F
					Through	743	36	D	1371	59	E
					Bus	37	33	C	44	34	C
					Right	110	33	C	160	34	C
					Westbound	<b>795</b>	<b>64</b>	<b>E</b>	<b>470</b>	<b>67</b>	<b>E</b>
					Left	65	87	F	70	120	F
					Through	275	62	E	200	61	E
					Right	455	62	E	200	55	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>2945</b>	<b>29</b>	<b>C</b>	<b>4620</b>	<b>41</b>	<b>D</b>
					Northbound	<b>645</b>	<b>36</b>	<b>D</b>	<b>1065</b>	<b>48</b>	<b>D</b>
					Left	145	37	D	180	52	D
					Through	135	36	D	285	45	D
					Right	365	0	A	600	0	A
					Eastbound	<b>1045</b>	<b>22</b>	<b>C</b>	<b>1395</b>	<b>36</b>	<b>D</b>
					Left	140	10	A	275	23	C
					Through	755	24	C	925	39	D
					Right	150	24	C	195	39	D
					Southbound	<b>225</b>	<b>36</b>	<b>D</b>	<b>935</b>	<b>41</b>	<b>D</b>
					Left	10	29	C	280	32	C
					Through	155	37	D	530	45	D
					Right	60	37	D	125	45	D
					Westbound	<b>1030</b>	<b>33</b>	<b>C</b>	<b>1225</b>	<b>44</b>	<b>D</b>
					Left	430	60	E	355	78	E
					Through	520	14	B	805	30	C
					Right	80	14	B	65	30	C
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>5335</b>	<b>61</b>	<b>E</b>	<b>6370</b>	<b>68</b>	<b>E</b>
					Northbound	<b>2035</b>	<b>48</b>	<b>D</b>	<b>1705</b>	<b>57</b>	<b>E</b>
					Left	310	84	F	270	106	F
					Through	1045	50	D	800	54	D
					Bus	0	0	A	0	0	A
					Right	680	27	C	635	41	D
					Eastbound	<b>1100</b>	<b>79</b>	<b>E</b>	<b>1725</b>	<b>79</b>	<b>E</b>
					Left	410	83	F	405	91	F
					Through	525	84	F	720	61	E
					Right	165	57	E	600	92	F
					Southbound	<b>935</b>	<b>59</b>	<b>E</b>	<b>1645</b>	<b>60</b>	<b>E</b>
					Left	75	141	F	155	120	F
					Through	570	67	E	1130	67	E
					Right	290	21	C	360	13	B
					Westbound	<b>1265</b>	<b>67</b>	<b>E</b>	<b>1295</b>	<b>76</b>	<b>E</b>
					Left	610	75	E	555	106	F
					Through	575	60	E	600	53	D
					Right	0	0	A	0	0	A
					Right	80	0	A	140	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2685</b>	<b>11</b>	<b>B</b>	<b>2950</b>	<b>18</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	54	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1310</b>	<b>13</b>	<b>B</b>	<b>1540</b>	<b>18</b>	<b>B</b>
					Left	55	11	B	20	11	B
					Through	1140	14	B	1395	19	B
					Right	115	9	A	125	11	B
					Southbound	<b>40</b>	<b>59</b>	<b>E</b>	<b>120</b>	<b>59</b>	<b>E</b>
					Left	20	59	E	30	59	E
					Through	10	59	E	10	59	E
					Right	10	59	E	80	59	E
					Westbound	<b>1270</b>	<b>5</b>	<b>A</b>	<b>1100</b>	<b>9</b>	<b>A</b>
					Left	20	3	A	10	9	A
					Through	1215	5	A	1060	9	A
					Right	35	5	A	30	9	A

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 3 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 3 AM Peak Hour			2030 Build 3 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>2540</b>	<b>7</b>	<b>A</b>	<b>2880</b>	<b>18</b>	<b>B</b>
					Northbound	<b>110</b>	<b>46</b>	<b>D</b>	<b>235</b>	<b>43</b>	<b>D</b>
					Left	60	45	D	115	41	D
					Through	20	47	D	30	46	D
					Right	30	47	D	90	46	D
					Eastbound	<b>1100</b>	<b>4</b>	<b>A</b>	<b>1365</b>	<b>14</b>	<b>B</b>
					Left	15	17	B	20	22	C
					Through	1068	4	A	1321	13	B
					Bus	17	9	A	24	32	C
					Right	65	9	A	90	32	C
					Southbound	<b>65</b>	<b>46</b>	<b>D</b>	<b>280</b>	<b>45</b>	<b>D</b>
					Left	35	44	D	135	42	D
					Through	15	48	D	75	47	D
					Right	15	48	D	70	47	D
					Westbound	<b>1265</b>	<b>3</b>	<b>A</b>	<b>1000</b>	<b>11</b>	<b>B</b>
					Left	20	12	B	65	47	D
					Through	1171	2	A	893	8	A
					Bus	24	12	B	17	18	B
					Right	50	12	B	25	18	B
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>3835</b>	<b>49</b>	<b>D</b>	<b>4120</b>	<b>43</b>	<b>D</b>
					Northbound	<b>1900</b>	<b>32</b>	<b>C</b>	<b>1015</b>	<b>38</b>	<b>D</b>
					Left	855	40	D	440	46	D
					Through	815	26	C	405	32	C
					Right	215	26	C	160	32	C
					Bus	15	218	F	10	121	F
					Eastbound	<b>1145</b>	<b>73</b>	<b>E</b>	<b>1600</b>	<b>41</b>	<b>D</b>
					Left	40	48	D	60	71	E
					Through	835	90	F	850	40	D
					Right	270	25	C	690	39	D
					Southbound	<b>240</b>	<b>49</b>	<b>D</b>	<b>795</b>	<b>47</b>	<b>D</b>
					Left	20	87	F	115	59	E
					Through	185	46	D	625	46	D
					Right	35	43	D	55	34	C
					Westbound	<b>550</b>	<b>49</b>	<b>D</b>	<b>710</b>	<b>49</b>	<b>D</b>
					Left	70	62	E	185	82	F
					Through	405	47	D	460	38	D
					Right	75	47	D	65	38	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3155</b>	<b>27</b>	<b>C</b>	<b>3655</b>	<b>44</b>	<b>D</b>
					Northbound	<b>1890</b>	<b>16</b>	<b>B</b>	<b>870</b>	<b>24</b>	<b>C</b>
					Left	170	9	A	65	30	C
					Through	1720	17	B	805	24	C
					Eastbound	<b>35</b>	<b>61</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	5	91	F	25	88	F
					Right	30	57	E	220	55	D
					Southbound	<b>525</b>	<b>17</b>	<b>B</b>	<b>1505</b>	<b>43</b>	<b>D</b>
					Through	503	17	B	1478	44	D
					Right	10	15	B	10	28	C
					Bus	12	14	B	17	27	C
					Westbound	<b>705</b>	<b>62</b>	<b>E</b>	<b>1035</b>	<b>57</b>	<b>E</b>
					Left	450	68	E	820	64	E
					Through	80	51	D	40	32	C
					Right	175	52	D	175	33	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3545</b>	<b>3</b>	<b>A</b>	<b>3880</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2550</b>	<b>4</b>	<b>A</b>	<b>1350</b>	<b>2</b>	<b>A</b>
					Through	1890	4	A	870	2	A
					Right	660	0	A	480	0	A
					Southbound	<b>995</b>	<b>1</b>	<b>A</b>	<b>2530</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	125	41	D
					Through	975	1	A	2405	2	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3610</b>	<b>47</b>	<b>D</b>	<b>3880</b>	<b>22</b>	<b>C</b>
					Northbound	<b>1785</b>	<b>43</b>	<b>D</b>	<b>1015</b>	<b>25</b>	<b>C</b>
					Left	5	123	F	10	72	E
					Through	1770	43	D	945	25	C
					Right	10	43	D	60	25	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>37</b>	<b>D</b>
					Left	85	46	D	45	37	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	34	C
					Southbound	<b>975</b>	<b>32</b>	<b>C</b>	<b>2405</b>	<b>19</b>	<b>B</b>
					Left	245	88	F	730	35	D
					Through	710	13	B	1610	12	B
					Right	20	13	B	65	12	B
					Westbound	<b>745</b>	<b>87</b>	<b>F</b>	<b>400</b>	<b>43</b>	<b>D</b>
					Left	45	50	D	35	43	D
					Through	5	0	A	5	0	A
					Right	695	90	F	360	42	D

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 3 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 3 AM Peak Hour			2030 Build 3 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>10</b>	<b>Lind Ave SW &amp; SW 16th St</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>1670</b>	<b>13</b>	<b>B</b>	<b>1935</b>	<b>16</b>	<b>B</b>
					Northbound	<b>340</b>	<b>11</b>	<b>B</b>	<b>490</b>	<b>11</b>	<b>B</b>
					Left	35	11	B	30	10	B
					Through	300	11	B	450	12	B
					Right	5	11	B	10	11	B
					Eastbound	<b>325</b>	<b>27</b>	<b>C</b>	<b>450</b>	<b>34</b>	<b>C</b>
					Left	240	27	C	295	36	D
					Through	30	24	C	105	27	C
					Right	55	24	C	50	27	C
					Southbound	<b>670</b>	<b>1</b>	<b>A</b>	<b>715</b>	<b>2</b>	<b>A</b>
					Left	120	1	A	175	4	A
					Through	490	1	A	315	2	A
					Right	60	1	A	225	2	A
					Westbound	<b>335</b>	<b>33</b>	<b>C</b>	<b>280</b>	<b>40</b>	<b>D</b>
					Left	25	22	C	5	26	C
					Through	75	33	C	65	40	D
					Right	235	35	C	210	41	D
<b>11</b>	<b>Rainier Ave &amp; Hardie Ave</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2525</b>	<b>20</b>	<b>C</b>	<b>3040</b>	<b>14</b>	<b>B</b>
					Northbound	<b>1533</b>	<b>20</b>	<b>C</b>	<b>1333</b>	<b>14</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1515	20	C	1315	14	B
					Right	18	12	B	18	11	B
					Eastbound	<b>70</b>	<b>71</b>	<b>E</b>	<b>40</b>	<b>70</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	71	E	5	70	E
					Right	65	0	A	35	0	A
					Southbound	<b>857</b>	<b>12</b>	<b>B</b>	<b>1609</b>	<b>11</b>	<b>B</b>
					Left	37	170	F	44	125	F
					Through	820	5	A	1565	8	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>76</b>	<b>E</b>	<b>58</b>	<b>72</b>	<b>E</b>
					Left	18	69	E	18	69	E
					Through	3	79	E	3	74	E
					Right	44	0	A	37	0	A
<b>52</b>	<b>Maple Ave &amp; SW Grady Way</b>	<b>TWSC</b>	<b>Renton</b>	<b>HCM6</b>		<b>2350</b>	<b>127</b>	<b>F</b>	<b>3150</b>	<b>&gt;180</b>	<b>F</b>
					Northbound	<b>35</b>	<b>79</b>	<b>F</b>	<b>35</b>	<b>297</b>	<b>F</b>
					Left	5	79	F	0	297	F
					Through	5	79	F	5	297	F
					Right	25	79	F	30	297	F
					Eastbound	<b>1130</b>	<b>0</b>	<b>A</b>	<b>1805</b>	<b>1</b>	<b>A</b>
					Left	15	11	B	125	13	B
					Through	1090	-		1675	-	
					Right	25	-		5	-	
					Southbound	<b>15</b>	<b>127</b>	<b>F</b>	<b>80</b>	<b>842</b>	<b>F</b>
					Left	5	127	F	15	842	F
					Through	5	127	F	0	842	F
					Right	5	127	F	65	842	F
					Westbound	<b>1170</b>	<b>1</b>	<b>A</b>	<b>1230</b>	<b>1</b>	<b>A</b>
					Left	65	19	C	30	29	D
					Through	1020	-		1160	-	
					Right	85	-		40	-	
<b>51</b>	<b>Lind Ave SW &amp; I-405 Direct Access Ramp</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>1860</b>	<b>10</b>	<b>A</b>	<b>2175</b>	<b>10</b>	<b>B</b>
					Northbound	<b>775</b>	<b>2</b>	<b>A</b>	<b>955</b>	<b>2</b>	<b>A</b>
					Left	35	9	A	40	9	A
					Through	605	1	A	725	2	A
					Right	135	1	A	190	2	A
					Eastbound	<b>135</b>	<b>50</b>	<b>D</b>	<b>135</b>	<b>61</b>	<b>E</b>
					Left	70	50	D	70	61	E
					Right	65	0	A	65	0	A
					Southbound	<b>785</b>	<b>11</b>	<b>B</b>	<b>910</b>	<b>10</b>	<b>B</b>
					Left	140	9	A	225	8	A
					Through	535	12	B	575	11	B
					Right	110	12	B	110	11	B
					Westbound	<b>165</b>	<b>47</b>	<b>D</b>	<b>175</b>	<b>60</b>	<b>E</b>
					Left	70	48	D	75	61	E
					Right	95	35	C	100	39	D

Notes:

1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection

2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 3B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 3B AM Peak Hour			2030 Build 3B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3660</b>	<b>45</b>	<b>D</b>	<b>4435</b>	<b>60</b>	<b>E</b>
					Northbound	<b>1550</b>	<b>32</b>	<b>C</b>	<b>1350</b>	<b>35</b>	<b>C</b>
					Left	175	108	F	195	142	F
					Through	1291	22	C	998	17	B
					Bus	44	18	B	37	15	B
					Right	40	18	B	120	15	B
					Eastbound	<b>310</b>	<b>69</b>	<b>E</b>	<b>755</b>	<b>91</b>	<b>F</b>
					Left	155	87	F	295	100	F
					Through	125	51	D	355	85	F
					Right	30	51	D	105	85	F
					Southbound	<b>1005</b>	<b>41</b>	<b>D</b>	<b>1860</b>	<b>63</b>	<b>E</b>
					Left	115	82	F	285	84	F
					Through	743	36	D	1401	62	E
					Bus	37	33	C	44	33	C
					Right	110	33	C	130	33	C
					Westbound	<b>795</b>	<b>64</b>	<b>E</b>	<b>470</b>	<b>67</b>	<b>E</b>
					Left	65	87	F	70	120	F
					Through	275	62	E	200	61	E
					Right	455	62	E	200	55	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>2630</b>	<b>26</b>	<b>C</b>	<b>4230</b>	<b>39</b>	<b>D</b>
					Northbound	<b>470</b>	<b>47</b>	<b>D</b>	<b>890</b>	<b>68</b>	<b>E</b>
					Left	120	52	D	155	101	F
					Through	129	42	D	283	50	D
					Right	221	0	A	452	0	A
					Eastbound	<b>970</b>	<b>42</b>	<b>D</b>	<b>1295</b>	<b>28</b>	<b>C</b>
					Left	140	7	A	271	25	C
					Through	790	49	D	974	29	C
					Right	40	48	D	50	29	C
					Southbound	<b>154</b>	<b>50</b>	<b>D</b>	<b>814</b>	<b>46</b>	<b>D</b>
					Left	10	44	D	280	51	D
					Through	84	50	D	404	43	D
					Right	60	50	D	130	44	D
					Westbound	<b>1036</b>	<b>4</b>	<b>A</b>	<b>1231</b>	<b>35</b>	<b>D</b>
					Left	361	10	B	281	25	C
					Through	590	0	A	880	38	D
					Right	85	0	A	70	38	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>5384</b>	<b>60</b>	<b>E</b>	<b>6459</b>	<b>71</b>	<b>E</b>
					Northbound	<b>2173</b>	<b>50</b>	<b>D</b>	<b>1853</b>	<b>55</b>	<b>D</b>
					Left	325	87	F	295	96	F
					Through	1133	54	D	878	52	D
					Bus	0	0	A	0	0	A
					Right	715	28	C	680	41	D
					Eastbound	<b>1003</b>	<b>76</b>	<b>E</b>	<b>1633</b>	<b>102</b>	<b>F</b>
					Left	318	79	E	313	77	E
					Through	485	81	F	670	68	E
					Right	200	58	E	650	149	F
					Southbound	<b>943</b>	<b>59</b>	<b>E</b>	<b>1683</b>	<b>58</b>	<b>E</b>
					Left	75	138	F	155	120	F
					Through	580	67	E	1175	64	E
					Right	288	21	C	353	8	A
					Westbound	<b>1265</b>	<b>64</b>	<b>E</b>	<b>1290</b>	<b>70</b>	<b>E</b>
					Left	610	73	E	555	89	F
					Through	575	56	E	595	56	E
					Right	0	0	A	0	0	A
					Right	80	0	A	140	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2685</b>	<b>11</b>	<b>B</b>	<b>2935</b>	<b>18</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	54	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1310</b>	<b>13</b>	<b>B</b>	<b>1540</b>	<b>18</b>	<b>B</b>
					Left	55	11	B	20	11	B
					Through	1140	14	B	1395	18	B
					Right	115	9	A	125	10	B
					Southbound	<b>40</b>	<b>59</b>	<b>E</b>	<b>115</b>	<b>57</b>	<b>E</b>
					Left	20	59	E	25	57	E
					Through	10	59	E	10	57	E
					Right	10	59	E	80	57	E
					Westbound	<b>1270</b>	<b>5</b>	<b>A</b>	<b>1090</b>	<b>9</b>	<b>A</b>
					Left	20	3	A	10	9	A
					Through	1215	5	A	1060	9	A
					Right	35	5	A	20	9	A

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 3B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 3B AM Peak Hour			2030 Build 3B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>2540</b>	<b>7</b>	<b>A</b>	<b>2880</b>	<b>18</b>	<b>B</b>
					Northbound	<b>110</b>	<b>46</b>	<b>D</b>	<b>235</b>	<b>43</b>	<b>D</b>
					Left	60	45	D	115	41	D
					Through	20	47	D	30	46	D
					Right	30	47	D	90	46	D
					Eastbound	<b>1100</b>	<b>4</b>	<b>A</b>	<b>1365</b>	<b>14</b>	<b>B</b>
					Left	15	17	B	20	22	C
					Through	1068	4	A	1321	13	B
					Bus	17	9	A	24	33	C
					Right	65	9	A	90	33	C
					Southbound	<b>65</b>	<b>46</b>	<b>D</b>	<b>280</b>	<b>45</b>	<b>D</b>
					Left	35	44	D	135	42	D
					Through	15	48	D	75	47	D
					Right	15	48	D	70	47	D
					Westbound	<b>1265</b>	<b>3</b>	<b>A</b>	<b>1000</b>	<b>11</b>	<b>B</b>
					Left	20	12	B	65	47	D
					Through	1171	2	A	893	8	A
					Bus	24	12	B	17	18	B
					Right	50	12	B	25	18	B
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>3835</b>	<b>49</b>	<b>D</b>	<b>4110</b>	<b>43</b>	<b>D</b>
					Northbound	<b>1900</b>	<b>32</b>	<b>C</b>	<b>1010</b>	<b>38</b>	<b>D</b>
					Left	855	40	D	435	46	D
					Through	815	26	C	405	32	C
					Right	215	26	C	160	32	C
					Bus	15	218	F	10	121	F
					Eastbound	<b>1145</b>	<b>73</b>	<b>E</b>	<b>1595</b>	<b>41</b>	<b>D</b>
					Left	40	48	D	60	71	E
					Through	835	90	F	850	40	D
					Right	270	25	C	685	39	D
					Southbound	<b>240</b>	<b>49</b>	<b>D</b>	<b>795</b>	<b>47</b>	<b>D</b>
					Left	20	87	F	115	59	E
					Through	185	46	D	625	46	D
					Right	35	43	D	55	34	C
					Westbound	<b>550</b>	<b>49</b>	<b>D</b>	<b>710</b>	<b>49</b>	<b>D</b>
					Left	70	62	E	185	82	F
					Through	405	47	D	460	38	D
					Right	75	47	D	65	38	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3155</b>	<b>27</b>	<b>C</b>	<b>3640</b>	<b>44</b>	<b>D</b>
					Northbound	<b>1890</b>	<b>16</b>	<b>B</b>	<b>870</b>	<b>24</b>	<b>C</b>
					Left	170	9	A	65	30	C
					Through	1720	17	B	805	24	C
					Eastbound	<b>35</b>	<b>61</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	5	91	F	25	88	F
					Right	30	57	E	220	55	D
					Southbound	<b>525</b>	<b>17</b>	<b>B</b>	<b>1495</b>	<b>43</b>	<b>D</b>
					Through	503	17	B	1468	43	D
					Right	10	15	B	10	28	C
					Bus	12	14	B	17	27	C
					Westbound	<b>705</b>	<b>62</b>	<b>E</b>	<b>1030</b>	<b>57</b>	<b>E</b>
					Left	450	68	E	820	64	E
					Through	80	51	D	40	32	C
					Right	175	52	D	170	33	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3545</b>	<b>3</b>	<b>A</b>	<b>3875</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2550</b>	<b>4</b>	<b>A</b>	<b>1350</b>	<b>2</b>	<b>A</b>
					Through	1890	4	A	870	2	A
					Right	660	0	A	480	0	A
					Southbound	<b>995</b>	<b>1</b>	<b>A</b>	<b>2525</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	120	42	D
					Through	975	1	A	2405	2	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3610</b>	<b>47</b>	<b>D</b>	<b>3880</b>	<b>22</b>	<b>C</b>
					Northbound	<b>1785</b>	<b>43</b>	<b>D</b>	<b>1015</b>	<b>25</b>	<b>C</b>
					Left	5	123	F	10	72	E
					Through	1770	43	D	945	25	C
					Right	10	43	D	60	25	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>37</b>	<b>D</b>
					Left	85	46	D	45	37	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	34	C
					Southbound	<b>975</b>	<b>32</b>	<b>C</b>	<b>2405</b>	<b>19</b>	<b>B</b>
					Left	245	88	F	730	35	D
					Through	710	13	B	1610	12	B
					Right	20	13	B	65	12	B
					Westbound	<b>745</b>	<b>87</b>	<b>F</b>	<b>400</b>	<b>43</b>	<b>D</b>
					Left	45	50	D	35	43	D
					Through	5	0	A	5	0	A
					Right	695	90	F	260	42	D

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 3B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 3B AM Peak Hour			2030 Build 3B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>10</b>	<b>Lind Ave SW &amp; SW 16th St</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>	<b>1355</b>	<b>16</b>	<b>B</b>	<b>1555</b>	<b>22</b>	<b>C</b>	
					Northbound	<b>275</b>	<b>9</b>	<b>A</b>	<b>375</b>	<b>10</b>	<b>B</b>
					Left	35	9	A	30	12	B
					Through	235	9	A	335	10	A
					Right	5	9	A	10	10	A
					Eastbound	<b>270</b>	<b>39</b>	<b>D</b>	<b>380</b>	<b>31</b>	<b>C</b>
					Left	185	39	D	225	32	C
					Through	30	37	D	105	29	C
					Right	55	37	D	50	29	C
					Southbound	<b>530</b>	<b>0</b>	<b>A</b>	<b>570</b>	<b>22</b>	<b>C</b>
					Left	95	0	A	140	26	C
					Through	390	0	A	250	20	B
					Right	45	0	A	180	20	B
					Westbound	<b>280</b>	<b>46</b>	<b>D</b>	<b>230</b>	<b>39</b>	<b>D</b>
					Left	25	35	C	5	27	C
					Through	75	48	D	65	39	D
					Right	180	48	D	160	40	D
<b>11</b>	<b>Rainier Ave &amp; Hardie Ave</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>	<b>2515</b>	<b>17</b>	<b>B</b>	<b>3060</b>	<b>14</b>	<b>B</b>	
					Northbound	<b>1523</b>	<b>14</b>	<b>B</b>	<b>1323</b>	<b>14</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1505	14	B	1305	14	B
					Right	18	10	A	18	11	B
					Eastbound	<b>70</b>	<b>71</b>	<b>E</b>	<b>40</b>	<b>70</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	71	E	5	70	E
					Right	65	0	A	35	0	A
					Southbound	<b>857</b>	<b>12</b>	<b>B</b>	<b>1639</b>	<b>12</b>	<b>B</b>
					Left	37	170	F	44	124	F
					Through	820	5	A	1595	9	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>76</b>	<b>E</b>	<b>58</b>	<b>72</b>	<b>E</b>
					Left	18	69	E	18	69	E
					Through	3	79	E	3	74	E
					Right	44	0	A	37	0	A
<b>52</b>	<b>Maple Ave &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM2000</b>	<b>2271</b>	<b>23</b>	<b>C</b>	<b>3086</b>	<b>23</b>	<b>C</b>	
					Northbound	<b>47</b>	<b>18</b>	<b>B</b>	<b>52</b>	<b>22</b>	<b>C</b>
					Left	5	0	A	5	0	A
					Through	5	22	C	5	25	C
					Right	37	18	B	42	22	C
					Eastbound	<b>1021</b>	<b>16</b>	<b>B</b>	<b>1706</b>	<b>22</b>	<b>C</b>
					Left	15	9	A	125	13	B
					Through	981	16	B	1576	23	C
					Right	25	0	A	5	0	A
					Southbound	<b>15</b>	<b>22</b>	<b>C</b>	<b>85</b>	<b>26</b>	<b>C</b>
					Left	5	0	A	15	0	A
					Through	5	22	C	5	26	C
					Right	5	0	A	65	0	A
					Westbound	<b>1188</b>	<b>29</b>	<b>C</b>	<b>1243</b>	<b>24</b>	<b>C</b>
					Left	77	18	B	42	15	B
					Through	1026	30	C	1161	25	C
					Right	85	0	A	40	0	A
<b>25</b>	<b>Lind Ave SW &amp; I-405 Direct Access Ramp</b>					<b>0</b>	<b>9</b>	<b>A</b>	<b>0</b>	<b>9</b>	<b>A</b>
					Eastbound						
					Left	6	9	A	6	9	A
					Right						
					Southbound						
					Left		9	A		9	A
					Through						
					Right						
					Westbound						
					Left						
					Right		8	A		8	A

Notes:

1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection

2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 4 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 4 AM Peak Hour			2030 Build 4 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3660</b>	<b>32</b>	<b>C</b>	<b>4435</b>	<b>54</b>	<b>D</b>
					Northbound	<b>1550</b>	<b>10</b>	<b>A</b>	<b>1350</b>	<b>25</b>	<b>C</b>
					Left	175	29	C	195	110	F
					Through	1291	8	A	998	11	B
					Bus	44	2	A	37	6	A
					Right	40	2	A	120	6	A
					Eastbound	<b>310</b>	<b>53</b>	<b>D</b>	<b>755</b>	<b>81</b>	<b>F</b>
					Left	155	66	E	295	107	F
					Through	125	40	D	355	64	E
					Right	30	40	D	105	64	E
					Southbound	<b>1005</b>	<b>41</b>	<b>D</b>	<b>1860</b>	<b>61</b>	<b>E</b>
					Left	115	76	E	285	78	E
					Through	743	38	D	1401	61	E
					Bus	37	34	C	44	32	C
					Right	110	34	C	130	32	C
					Westbound	<b>795</b>	<b>54</b>	<b>D</b>	<b>470</b>	<b>70</b>	<b>E</b>
					Left	65	75	E	70	171	F
					Through	275	52	D	200	55	E
					Right	455	52	D	200	50	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>2637</b>	<b>23</b>	<b>C</b>	<b>4270</b>	<b>33</b>	<b>C</b>
					Northbound	<b>476</b>	<b>24</b>	<b>C</b>	<b>906</b>	<b>35</b>	<b>C</b>
					Left	120	26	C	155	29	C
					Through	135	23	C	299	38	D
					Right	221	0	A	452	0	A
					Eastbound	<b>970</b>	<b>23</b>	<b>C</b>	<b>1329</b>	<b>33</b>	<b>C</b>
					Left	140	11	B	305	26	C
					Through	790	25	C	974	35	D
					Right	40	25	C	50	35	D
					Southbound	<b>155</b>	<b>26</b>	<b>C</b>	<b>809</b>	<b>31</b>	<b>C</b>
					Left	10	22	C	280	30	C
					Through	85	26	C	404	32	C
					Right	60	26	C	125	32	C
					Westbound	<b>1036</b>	<b>23</b>	<b>C</b>	<b>1226</b>	<b>32</b>	<b>C</b>
					Left	361	36	D	281	26	C
					Through	590	16	B	875	34	C
					Right	85	16	B	70	34	C
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>4366</b>	<b>46</b>	<b>D</b>	<b>5242</b>	<b>47</b>	<b>D</b>
					Northbound	<b>2185</b>	<b>40</b>	<b>D</b>	<b>1865</b>	<b>41</b>	<b>D</b>
					Left	325	89	F	295	85	F
					Through	1133	43	D	878	43	D
					Bus	12	24	C	12	30	C
					Right	715	14	B	680	20	C
					Eastbound	<b>530</b>	<b>78</b>	<b>E</b>	<b>981</b>	<b>68</b>	<b>E</b>
					Left	300	107	F	301	103	F
					Through	30	104	F	30	100	F
					Right	200	32	C	650	50	D
					Southbound	<b>919</b>	<b>31</b>	<b>C</b>	<b>1659</b>	<b>31</b>	<b>C</b>
					Left	75	44	D	155	37	D
					Through	568	22	C	1163	24	C
					Right	276	47	D	341	51	D
					Westbound	<b>720</b>	<b>57</b>	<b>E</b>	<b>725</b>	<b>66</b>	<b>E</b>
					Left	610	60	E	555	69	E
					Through	30	42	D	30	53	D
					Right	0	0	A	0	0	A
					Right	80	0	A	140	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2685</b>	<b>11</b>	<b>B</b>	<b>2950</b>	<b>19</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	54	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1310</b>	<b>15</b>	<b>B</b>	<b>1540</b>	<b>22</b>	<b>C</b>
					Left	0	0	A	0	0	A
					Through	1195	15	B	1415	22	C
					Right	115	0	A	125	0	A
					Southbound	<b>40</b>	<b>59</b>	<b>E</b>	<b>120</b>	<b>59</b>	<b>E</b>
					Left	20	59	E	30	59	E
					Through	10	59	E	10	59	E
					Right	10	59	E	80	59	E
					Westbound	<b>1270</b>	<b>3</b>	<b>A</b>	<b>1100</b>	<b>5</b>	<b>A</b>
					Left	20	3	A	10	9	A
					Through	1215	3	A	1060	6	A
					Right	35	3	A	30	6	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 4 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 4 AM Peak Hour			2030 Build 4 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>2595</b>	<b>9</b>	<b>A</b>	<b>2906</b>	<b>21</b>	<b>C</b>
					Northbound	<b>110</b>	<b>46</b>	<b>D</b>	<b>235</b>	<b>43</b>	<b>D</b>
					Left	60	45	D	115	41	D
					Through	20	47	D	30	46	D
					Right	30	47	D	90	46	D
					Eastbound	<b>1155</b>	<b>10</b>	<b>B</b>	<b>1385</b>	<b>20</b>	<b>B</b>
					Left	70	32	C	40	25	C
					Through	1068	8	A	1321	18	B
					Bus	17	15	B	24	38	D
					Right	65	15	B	90	38	D
					Southbound	<b>65</b>	<b>46</b>	<b>D</b>	<b>280</b>	<b>45</b>	<b>D</b>
					Left	35	44	D	135	42	D
					Through	15	48	D	75	47	D
					Right	15	48	D	70	47	D
					Westbound	<b>1265</b>	<b>4</b>	<b>A</b>	<b>1006</b>	<b>11</b>	<b>B</b>
					Left	20	12	B	65	47	D
					Through	1171	3	A	893	8	A
					Bus	24	17	B	23	21	C
					Right	50	17	B	25	21	C
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>3840</b>	<b>50</b>	<b>D</b>	<b>4126</b>	<b>43</b>	<b>D</b>
					Northbound	<b>1900</b>	<b>32</b>	<b>C</b>	<b>1021</b>	<b>39</b>	<b>D</b>
					Left	855	40	D	440	46	D
					Through	815	26	C	405	33	C
					Right	215	26	C	160	33	C
					Bus	15	218	F	16	69	E
					Eastbound	<b>1150</b>	<b>77</b>	<b>E</b>	<b>1600</b>	<b>39</b>	<b>D</b>
					Left	40	50	D	60	73	E
					Through	840	94	F	850	39	D
					Right	270	28	C	690	36	D
					Southbound	<b>240</b>	<b>49</b>	<b>D</b>	<b>795</b>	<b>50</b>	<b>D</b>
					Left	20	87	F	115	59	E
					Through	185	46	D	625	49	D
					Right	35	43	D	55	36	D
					Westbound	<b>550</b>	<b>49</b>	<b>D</b>	<b>710</b>	<b>49</b>	<b>D</b>
					Left	70	62	E	185	82	F
					Through	405	47	D	460	37	D
					Right	75	47	D	65	37	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3159</b>	<b>27</b>	<b>C</b>	<b>3655</b>	<b>44</b>	<b>D</b>
					Northbound	<b>1890</b>	<b>16</b>	<b>B</b>	<b>870</b>	<b>25</b>	<b>C</b>
					Left	170	9	A	65	30	C
					Through	1720	17	B	805	24	C
					Eastbound	<b>35</b>	<b>61</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	5	91	F	25	88	F
					Right	30	57	E	220	55	D
					Southbound	<b>529</b>	<b>17</b>	<b>B</b>	<b>1505</b>	<b>45</b>	<b>D</b>
					Through	507	17	B	1472	45	D
					Right	10	15	B	10	29	C
					Bus	12	14	B	23	27	C
					Westbound	<b>705</b>	<b>62</b>	<b>E</b>	<b>1035</b>	<b>57</b>	<b>E</b>
					Left	450	68	E	820	64	E
					Through	80	51	D	40	32	C
					Right	175	52	D	175	33	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3550</b>	<b>3</b>	<b>A</b>	<b>3880</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2550</b>	<b>4</b>	<b>A</b>	<b>1350</b>	<b>2</b>	<b>A</b>
					Through	1890	4	A	870	2	A
					Right	660	0	A	480	0	A
					Southbound	<b>1000</b>	<b>1</b>	<b>A</b>	<b>2530</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	125	41	D
					Through	980	1	A	2405	2	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3610</b>	<b>47</b>	<b>D</b>	<b>3880</b>	<b>22</b>	<b>C</b>
					Northbound	<b>1785</b>	<b>43</b>	<b>D</b>	<b>1015</b>	<b>25</b>	<b>C</b>
					Left	5	123	F	10	72	E
					Through	1770	43	D	945	25	C
					Right	10	43	D	60	25	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>37</b>	<b>D</b>
					Left	85	46	D	45	37	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	34	C
					Southbound	<b>975</b>	<b>32</b>	<b>C</b>	<b>2405</b>	<b>19</b>	<b>B</b>
					Left	245	88	F	730	35	D
					Through	710	13	B	1610	12	B
					Right	20	13	B	65	12	B
					Westbound	<b>745</b>	<b>87</b>	<b>F</b>	<b>400</b>	<b>43</b>	<b>D</b>
					Left	45	50	D	35	43	D
					Through	5	0	A	5	0	A
					Right	695	90	F	360	42	D

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2030 Build Alt 4 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2030 Build 4 AM Peak Hour			2030 Build 4 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>10</b>	<b>Lind Ave SW &amp; SW 16th St</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>1355</b>	<b>13</b>	<b>B</b>	<b>1555</b>	<b>12</b>	<b>B</b>
					Northbound	<b>275</b>	<b>10</b>	<b>A</b>	<b>375</b>	<b>12</b>	<b>B</b>
					Left	35	12	B	30	13	B
					Through	235	9	A	335	12	B
					Right	5	9	A	10	12	B
					Eastbound	<b>270</b>	<b>19</b>	<b>B</b>	<b>380</b>	<b>12</b>	<b>B</b>
					Left	185	19	B	225	12	B
					Through	30	18	B	105	11	B
					Right	55	18	B	50	11	B
					Southbound	<b>530</b>	<b>10</b>	<b>B</b>	<b>570</b>	<b>13</b>	<b>B</b>
					Left	95	11	B	140	15	B
					Through	390	10	B	250	11	B
					Right	45	10	B	180	11	B
					Westbound	<b>280</b>	<b>21</b>	<b>C</b>	<b>230</b>	<b>15</b>	<b>B</b>
					Left	25	17	B	5	10	B
					Through	75	22	C	65	16	B
					Right	180	23	C	160	16	B
<b>11</b>	<b>Rainier Ave &amp; Hardie Ave</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2515</b>	<b>16</b>	<b>B</b>	<b>3059</b>	<b>12</b>	<b>B</b>
					Northbound	<b>1523</b>	<b>15</b>	<b>B</b>	<b>1323</b>	<b>15</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1505	15	B	1305	15	B
					Right	18	9	A	18	11	B
					Eastbound	<b>70</b>	<b>60</b>	<b>E</b>	<b>45</b>	<b>66</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	60	E	10	66	E
					Right	65	0	A	35	0	A
					Southbound	<b>857</b>	<b>12</b>	<b>B</b>	<b>1639</b>	<b>7</b>	<b>A</b>
					Left	37	204	F	44	54	D
					Through	820	3	A	1595	6	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>62</b>	<b>E</b>	<b>52</b>	<b>69</b>	<b>E</b>
					Left	18	56	E	6	62	E
					Through	3	64	E	9	69	E
					Right	44	0	A	37	0	A
<b>52</b>	<b>Maple Ave &amp; SW Grady Way</b>	<b>TWSC</b>	<b>Renton</b>	<b>HCM6</b>		<b>2247</b>	<b>102</b>	<b>F</b>	<b>3057</b>	<b>&gt;180</b>	<b>F</b>
					Northbound	<b>35</b>	<b>59</b>	<b>F</b>	<b>40</b>	<b>603</b>	<b>F</b>
					Left	5	59	F	5	603	F
					Through	5	59	F	5	603	F
					Right	25	59	F	30	603	F
					Eastbound	<b>1021</b>	<b>0</b>	<b>A</b>	<b>1706</b>	<b>1</b>	<b>A</b>
					Left	15	11	B	125	13	B
					Through	981	-		1576	-	
					Right	25	-		5	-	
					Southbound	<b>15</b>	<b>102</b>	<b>F</b>	<b>85</b>	<b>745</b>	<b>F</b>
					Left	5	102	F	15	745	F
					Through	5	102	F	5	745	F
					Right	5	102	F	65	745	F
					Westbound	<b>1176</b>	<b>1</b>	<b>A</b>	<b>1226</b>	<b>1</b>	<b>A</b>
					Left	65	17	C	30	26	D
					Through	1026	-		1156	-	
					Right	85	-		40	-	

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 No Build AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 No Build AM Peak Hour			2050 No Build PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>4715</b>	<b>61</b>	<b>E</b>	<b>5290</b>	<b>82</b>	<b>F</b>
					Northbound	<b>1835</b>	<b>33</b>	<b>C</b>	<b>1680</b>	<b>61</b>	<b>E</b>
					Left	300	117	F	150	159	F
					Through	1431	17	B	1418	53	D
					Bus	44	14	B	37	28	C
					Right	60	14	B	75	28	C
					Eastbound	<b>570</b>	<b>89</b>	<b>F</b>	<b>1005</b>	<b>105</b>	<b>F</b>
					Left	200	89	F	295	67	E
					Through	265	90	F	570	121	F
					Right	105	90	F	140	121	F
					Southbound	<b>1375</b>	<b>67</b>	<b>E</b>	<b>2085</b>	<b>89</b>	<b>F</b>
					Left	85	93	F	285	126	F
					Through	1143	68	E	1476	91	F
					Bus	37	42	D	44	47	D
					Right	110	42	D	280	47	D
					Westbound	<b>935</b>	<b>90</b>	<b>F</b>	<b>520</b>	<b>74</b>	<b>E</b>
					Left	110	110	F	55	168	F
					Through	370	79	E	290	68	E
					Right	455	94	F	175	53	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>3420</b>	<b>33</b>	<b>C</b>	<b>4855</b>	<b>45</b>	<b>D</b>
					Northbound	<b>650</b>	<b>28</b>	<b>C</b>	<b>1120</b>	<b>44</b>	<b>D</b>
					Left	190	31	C	190	38	D
					Through	195	26	C	465	47	D
					Right	265	0	A	465	0	A
					Eastbound	<b>1225</b>	<b>39</b>	<b>D</b>	<b>1455</b>	<b>48</b>	<b>D</b>
					Left	170	14	B	320	49	D
					Through	985	43	D	1055	48	D
					Right	70	43	D	80	48	D
					Southbound	<b>210</b>	<b>28</b>	<b>C</b>	<b>950</b>	<b>36</b>	<b>D</b>
					Left	20	24	C	330	42	D
					Through	100	29	C	430	33	C
					Right	90	29	C	190	33	C
					Westbound	<b>1335</b>	<b>29</b>	<b>C</b>	<b>1330</b>	<b>49</b>	<b>D</b>
					Left	380	52	D	280	48	D
					Through	855	20	C	970	49	D
					Right	100	20	C	80	49	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>6415</b>	<b>105</b>	<b>F</b>	<b>6885</b>	<b>88</b>	<b>F</b>
					Northbound	<b>2505</b>	<b>78</b>	<b>E</b>	<b>2165</b>	<b>72</b>	<b>E</b>
					Left	390	115	F	305	97	F
					Through	1378	94	F	1128	84	F
					Bus	12	32	C	12	39	D
					Right	725	29	C	720	43	D
					Eastbound	<b>1235</b>	<b>106</b>	<b>F</b>	<b>1785</b>	<b>114</b>	<b>F</b>
					Left	300	106	F	305	136	F
					Through	725	120	F	820	89	F
					Right	210	56	E	660	134	F
					Southbound	<b>1445</b>	<b>186</b>	<b>F</b>	<b>1710</b>	<b>94</b>	<b>F</b>
					Left	140	402	F	155	122	F
					Through	815	114	F	1185	91	F
					Right	490	244	F	370	93	F
					Westbound	<b>1230</b>	<b>69</b>	<b>E</b>	<b>1225</b>	<b>72</b>	<b>E</b>
					Left	625	73	E	570	76	E
					Through	605	65	E	655	69	E
					Right	0	65	E	0	69	E
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3110</b>	<b>14</b>	<b>B</b>	<b>3220</b>	<b>19</b>	<b>B</b>
					Northbound	<b>65</b>	<b>36</b>	<b>D</b>	<b>190</b>	<b>39</b>	<b>D</b>
					Left	50	46	D	150	49	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1630</b>	<b>17</b>	<b>B</b>	<b>1680</b>	<b>21</b>	<b>C</b>
					Left	100	14	B	20	12	B
					Through	1405	18	B	1520	22	C
					Right	125	10	B	140	12	B
					Southbound	<b>45</b>	<b>59</b>	<b>E</b>	<b>140</b>	<b>62</b>	<b>E</b>
					Left	25	59	E	25	62	E
					Through	10	59	E	15	62	E
					Right	10	59	E	100	62	E
					Westbound	<b>1370</b>	<b>7</b>	<b>A</b>	<b>1210</b>	<b>9</b>	<b>A</b>
					Left	25	5	A	20	11	B
					Through	1300	7	A	1170	9	A
					Right	45	7	A	20	9	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 No Build AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 No Build AM Peak Hour			2050 No Build PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>5</b>	<b>Shattuck Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2935</b>	<b>11</b>	<b>B</b>	<b>3185</b>	<b>16</b>	<b>B</b>
					Northbound	<b>130</b>	<b>41</b>	<b>D</b>	<b>250</b>	<b>41</b>	<b>D</b>
					Left	80	40	D	125	38	D
					Through	20	42	D	30	43	D
					Right	30	42	D	95	43	D
					Eastbound	<b>1400</b>	<b>12</b>	<b>B</b>	<b>1485</b>	<b>11</b>	<b>B</b>
					Left	140	63	E	135	63	E
					Through	1239	6	A	1326	5	A
					Bus	21	14	B	24	18	B
					Right	65	14	B	95	18	B
					Southbound	<b>70</b>	<b>41</b>	<b>D</b>	<b>340</b>	<b>45</b>	<b>D</b>
					Left	35	39	D	195	46	D
					Through	15	42	D	75	44	D
					Right	20	42	D	70	44	D
					Westbound	<b>1335</b>	<b>6</b>	<b>A</b>	<b>1110</b>	<b>8</b>	<b>A</b>
					Left	20	17	B	70	42	D
					Through	1237	4	A	998	5	A
					Bus	28	20	C	17	22	C
					Right	50	20	C	25	22	C
<b>6</b>	<b>Talbot Rd S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>4457</b>	<b>55</b>	<b>D</b>	<b>4610</b>	<b>52</b>	<b>D</b>
					Northbound	<b>2072</b>	<b>41</b>	<b>D</b>	<b>1080</b>	<b>39</b>	<b>D</b>
					Left	870	52	D	440	50	D
					Through	970	33	C	455	31	C
					Right	215	33	C	175	31	C
					Bus	17	277	F	10	121	F
					Eastbound	<b>1375</b>	<b>77</b>	<b>E</b>	<b>1660</b>	<b>52</b>	<b>D</b>
					Left	140	161	F	80	67	E
					Through	940	79	E	860	57	E
					Right	295	33	C	720	44	D
					Southbound	<b>390</b>	<b>45</b>	<b>D</b>	<b>1015</b>	<b>44</b>	<b>D</b>
					Left	40	65	E	130	60	E
					Through	285	44	D	765	44	D
					Right	65	40	D	120	31	C
					Westbound	<b>620</b>	<b>52</b>	<b>D</b>	<b>855</b>	<b>74</b>	<b>E</b>
					Left	70	70	E	215	155	F
					Through	430	49	D	505	47	D
					Right	120	49	D	135	47	D
<b>7</b>	<b>SR 515 &amp; I-405 SB Off-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3395</b>	<b>27</b>	<b>C</b>	<b>3940</b>	<b>45</b>	<b>D</b>
					Northbound	<b>2010</b>	<b>16</b>	<b>B</b>	<b>950</b>	<b>25</b>	<b>C</b>
					Left	175	9	A	65	31	C
					Through	1835	17	B	885	25	C
					Eastbound	<b>40</b>	<b>63</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	10	81	F	25	86	F
					Right	30	57	E	220	55	D
					Southbound	<b>610</b>	<b>16</b>	<b>B</b>	<b>1670</b>	<b>47</b>	<b>D</b>
					Through	583	16	B	1643	47	D
					Right	15	14	B	10	28	C
					Bus	12	13	B	17	27	C
					Westbound	<b>735</b>	<b>63</b>	<b>E</b>	<b>1075</b>	<b>57</b>	<b>E</b>
					Left	455	68	E	840	64	E
					Through	90	53	D	40	32	C
					Right	190	55	D	195	34	C
<b>8</b>	<b>SR 515 &amp; I-405 SB On-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 6</b>		<b>3765</b>	<b>3</b>	<b>A</b>	<b>4155</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2680</b>	<b>4</b>	<b>A</b>	<b>1445</b>	<b>2</b>	<b>A</b>
					Through	2010	4	A	950	2	A
					Right	670	0	A	495	0	A
					Southbound	<b>1085</b>	<b>1</b>	<b>A</b>	<b>2710</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	125	42	D
					Through	1065	1	A	2585	3	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 No Build AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 No Build AM Peak Hour			2050 No Build PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3835</b>	<b>51</b>	<b>D</b>	<b>4160</b>	<b>26</b>	<b>C</b>
					Northbound	<b>1915</b>	<b>44</b>	<b>D</b>	<b>1115</b>	<b>29</b>	<b>C</b>
					Left	10	108	F	15	70	E
					Through	1895	44	D	1040	28	C
					Right	10	44	D	60	28	C
					Eastbound	<b>105</b>	<b>47</b>	<b>D</b>	<b>60</b>	<b>36</b>	<b>D</b>
					Left	85	48	D	45	36	D
					Through	10	0	A	5	0	A
					Right	10	42	D	10	33	C
					Southbound	<b>1060</b>	<b>33</b>	<b>C</b>	<b>2585</b>	<b>24</b>	<b>C</b>
					Left	250	99	F	730	42	D
					Through	785	13	B	1790	17	B
					Right	25	13	B	65	17	B
					Westbound	<b>755</b>	<b>108</b>	<b>F</b>	<b>400</b>	<b>41</b>	<b>D</b>
					Left	50	51	D	35	41	D
					Through	5	0	A	5	0	A
					Right	700	114	F	360	40	D
10	Lind Ave SW & SW 16th St	Signal	Renton	HCM 6		<b>1610</b>	<b>16</b>	<b>B</b>	<b>1790</b>	<b>13</b>	<b>B</b>
					Northbound	<b>290</b>	<b>12</b>	<b>B</b>	<b>380</b>	<b>13</b>	<b>B</b>
					Left	35	14	B	35	14	B
					Through	245	11	B	335	13	B
					Right	10	11	B	10	13	B
					Eastbound	<b>435</b>	<b>20</b>	<b>C</b>	<b>465</b>	<b>12</b>	<b>B</b>
					Left	330	21	C	310	13	B
					Through	50	16	B	105	11	B
					Right	55	17	B	50	11	B
					Southbound	<b>595</b>	<b>13</b>	<b>B</b>	<b>675</b>	<b>14</b>	<b>B</b>
					Left	110	14	B	150	17	B
					Through	435	13	B	255	13	B
					Right	50	13	B	270	13	B
					Westbound	<b>290</b>	<b>20</b>	<b>B</b>	<b>270</b>	<b>16</b>	<b>B</b>
					Left	25	15	B	5	10	B
					Through	80	21	C	65	17	B
					Right	185	21	C	200	17	B
11	Rainier Ave & Hardie Ave	Signal	Renton	HCM 2000		<b>3334</b>	<b>18</b>	<b>B</b>	<b>3474</b>	<b>13</b>	<b>B</b>
					Northbound	<b>1802</b>	<b>17</b>	<b>B</b>	<b>1667</b>	<b>11</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1790	17	B	1655	11	B
					Right	12	9	A	12	7	A
					Eastbound	<b>75</b>	<b>72</b>	<b>E</b>	<b>45</b>	<b>71</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	10	72	E	10	71	E
					Right	65	0	A	35	0	A
					Southbound	<b>1392</b>	<b>15</b>	<b>B</b>	<b>1704</b>	<b>11</b>	<b>B</b>
					Left	37	127	F	44	155	F
					Through	1355	12	B	1660	7	A
					Right	0	10	A	0	9	A
					Westbound	<b>65</b>	<b>76</b>	<b>E</b>	<b>58</b>	<b>75</b>	<b>E</b>
					Left	12	66	E	12	68	E
					Through	9	78	E	9	77	E
					Right	44	0	A	37	0	A
52	Maple Ave & SW Grady Way	TWSC	Renton	HCM6		<b>2810</b>	<b>293</b>	<b>F</b>	<b>3320</b>	<b>&gt;180</b>	<b>F</b>
					Northbound	<b>40</b>	<b>148</b>	<b>F</b>	<b>45</b>	<b>0</b>	<b>A</b>
					Left	5	148	F	5	-	
					Through	5	148	F	5	-	
					Right	30	148	F	35	-	
					Eastbound	<b>1270</b>	<b>0</b>	<b>A</b>	<b>1850</b>	<b>1</b>	<b>A</b>
					Left	15	13	B	135	14	B
					Through	1225	-		1710	-	
					Right	30	-		5	-	
					Southbound	<b>15</b>	<b>293</b>	<b>F</b>	<b>90</b>	<b>0</b>	<b>A</b>
					Left	5	293	F	15	-	
					Through	5	293	F	5	-	
					Right	5	293	F	70	-	
					Westbound	<b>1485</b>	<b>1</b>	<b>A</b>	<b>1335</b>	<b>1</b>	<b>A</b>
					Left	70	21	C	35	31	D
					Through	1325	-		1255	-	
					Right	90	-		45	-	

Notes:

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 No Build AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 No Build AM Peak Hour			2050 No Build PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS

1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection

2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 1 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 1 AM Peak Hour			2050 Build 1 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>4715</b>	<b>60</b>	<b>E</b>	<b>5290</b>	<b>81</b>	<b>F</b>
					Northbound	<b>1835</b>	<b>32</b>	<b>C</b>	<b>1680</b>	<b>60</b>	<b>E</b>
					Left	300	125	F	150	184	F
					Through	1431	15	B	1418	50	D
					Bus	44	12	B	37	25	C
					Right	60	12	B	75	25	C
					Eastbound	<b>570</b>	<b>94</b>	<b>F</b>	<b>1005</b>	<b>100</b>	<b>F</b>
					Left	200	103	F	295	66	E
					Through	265	89	F	570	114	F
					Right	105	89	F	140	114	F
					Southbound	<b>1375</b>	<b>62</b>	<b>E</b>	<b>2085</b>	<b>92</b>	<b>F</b>
					Left	85	99	F	285	148	F
					Through	1143	62	E	1476	91	F
					Bus	37	41	D	44	47	D
					Right	110	41	D	280	47	D
					Westbound	<b>935</b>	<b>90</b>	<b>F</b>	<b>520</b>	<b>74</b>	<b>E</b>
					Left	110	138	F	55	168	F
					Through	370	77	E	290	68	E
					Right	455	89	F	175	53	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>3426</b>	<b>36</b>	<b>D</b>	<b>4856</b>	<b>46</b>	<b>D</b>
					Northbound	<b>650</b>	<b>29</b>	<b>C</b>	<b>1120</b>	<b>42</b>	<b>D</b>
					Left	190	32	C	190	39	D
					Through	189	26	C	459	44	D
					Right	271	0	A	471	0	A
					Eastbound	<b>1225</b>	<b>45</b>	<b>D</b>	<b>1455</b>	<b>52</b>	<b>D</b>
					Left	170	14	B	320	45	D
					Through	985	50	D	1055	54	D
					Right	70	50	D	80	54	D
					Southbound	<b>210</b>	<b>28</b>	<b>C</b>	<b>945</b>	<b>37</b>	<b>D</b>
					Left	20	23	C	330	43	D
					Through	100	29	C	425	33	C
					Right	90	29	C	190	33	C
					Westbound	<b>1341</b>	<b>30</b>	<b>C</b>	<b>1336</b>	<b>49</b>	<b>D</b>
					Left	386	52	D	286	42	D
					Through	855	21	C	970	51	D
					Right	100	21	C	80	50	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>6537</b>	<b>95</b>	<b>F</b>	<b>7102</b>	<b>86</b>	<b>F</b>
					Northbound	<b>2505</b>	<b>86</b>	<b>F</b>	<b>2165</b>	<b>82</b>	<b>F</b>
					Left	390	163	F	305	125	F
					Through	1378	94	F	1128	84	F
					Bus	12	32	C	12	39	D
					Right	725	31	C	720	63	E
					Eastbound	<b>1241</b>	<b>121</b>	<b>F</b>	<b>1791</b>	<b>93</b>	<b>F</b>
					Left	306	108	F	311	143	F
					Through	725	145	F	820	68	E
					Right	210	57	E	660	102	F
					Southbound	<b>1439</b>	<b>111</b>	<b>F</b>	<b>1704</b>	<b>85</b>	<b>F</b>
					Left	140	302	F	155	119	F
					Through	803	120	F	1173	106	F
					Right	496	42	D	376	7	A
					Westbound	<b>1340</b>	<b>69</b>	<b>E</b>	<b>1430</b>	<b>84</b>	<b>F</b>
					Left	625	71	E	570	110	F
					Through	605	66	E	655	66	E
					Right	0	0	A	0	0	A
					Right	110	0	A	205	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3110</b>	<b>12</b>	<b>B</b>	<b>3220</b>	<b>19</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	53	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1630</b>	<b>15</b>	<b>B</b>	<b>1680</b>	<b>20</b>	<b>B</b>
					Left	100	13	B	20	12	B
					Through	1405	16	B	1520	21	C
					Right	125	9	A	140	11	B
					Southbound	<b>45</b>	<b>59</b>	<b>E</b>	<b>140</b>	<b>60</b>	<b>E</b>
					Left	25	59	E	25	60	E
					Through	10	59	E	15	60	E
					Right	10	59	E	100	60	E
					Westbound	<b>1370</b>	<b>6</b>	<b>A</b>	<b>1210</b>	<b>9</b>	<b>A</b>
					Left	25	5	A	20	9	A
					Through	1300	6	A	1170	9	A
					Right	45	6	A	20	9	A

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 1 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 1 AM Peak Hour			2050 Build 1 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>5</b>	<b>Shattuck Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2935</b>	<b>10</b>	<b>B</b>	<b>3185</b>	<b>22</b>	<b>C</b>
					Northbound	<b>130</b>	<b>45</b>	<b>D</b>	<b>250</b>	<b>44</b>	<b>D</b>
					Left	80	44	D	125	41	D
					Through	20	46	D	30	46	D
					Right	30	46	D	95	46	D
					Eastbound	<b>1400</b>	<b>11</b>	<b>B</b>	<b>1485</b>	<b>17</b>	<b>B</b>
					Left	140	54	D	135	29	C
					Through	1239	5	A	1326	14	B
					Bus	21	12	B	24	33	C
					Right	65	12	B	95	33	C
					Southbound	<b>70</b>	<b>44</b>	<b>D</b>	<b>340</b>	<b>51</b>	<b>D</b>
					Left	35	43	D	195	53	D
					Through	15	46	D	75	47	D
					Right	20	46	D	70	47	D
					Westbound	<b>1335</b>	<b>5</b>	<b>A</b>	<b>1110</b>	<b>14</b>	<b>B</b>
					Left	20	14	B	70	44	D
					Through	1237	4	A	998	11	B
					Bus	28	19	B	17	26	C
					Right	50	19	B	25	26	C
<b>6</b>	<b>Talbot Rd S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>4457</b>	<b>54</b>	<b>D</b>	<b>4610</b>	<b>50</b>	<b>D</b>
					Northbound	<b>2072</b>	<b>38</b>	<b>D</b>	<b>1080</b>	<b>38</b>	<b>D</b>
					Left	870	45	D	440	49	D
					Through	970	33	C	455	31	C
					Right	215	33	C	175	31	C
					Bus	17	277	F	10	102	F
					Eastbound	<b>1375</b>	<b>79</b>	<b>E</b>	<b>1660</b>	<b>49</b>	<b>D</b>
					Left	140	164	F	80	75	E
					Through	940	81	F	860	49	D
					Right	295	30	C	720	46	D
					Southbound	<b>390</b>	<b>47</b>	<b>D</b>	<b>1015</b>	<b>45</b>	<b>D</b>
					Left	40	65	E	130	61	E
					Through	285	46	D	765	45	D
					Right	65	41	D	120	32	C
					Westbound	<b>620</b>	<b>52</b>	<b>D</b>	<b>855</b>	<b>73</b>	<b>E</b>
					Left	70	70	E	215	155	F
					Through	430	49	D	505	45	D
					Right	120	49	D	135	45	D
<b>7</b>	<b>SR 515 &amp; I-405 SB Off-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3395</b>	<b>27</b>	<b>C</b>	<b>3940</b>	<b>45</b>	<b>D</b>
					Northbound	<b>2010</b>	<b>16</b>	<b>B</b>	<b>950</b>	<b>25</b>	<b>C</b>
					Left	175	9	A	65	31	C
					Through	1835	17	B	885	25	C
					Eastbound	<b>40</b>	<b>63</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	10	81	F	25	86	F
					Right	30	57	E	220	55	D
					Southbound	<b>610</b>	<b>16</b>	<b>B</b>	<b>1670</b>	<b>47</b>	<b>D</b>
					Through	583	16	B	1643	47	D
					Right	15	14	B	10	28	C
					Bus	12	13	B	17	27	C
					Westbound	<b>735</b>	<b>63</b>	<b>E</b>	<b>1075</b>	<b>57</b>	<b>E</b>
					Left	455	68	E	840	64	E
					Through	90	53	D	40	32	C
					Right	190	55	D	195	34	C
<b>8</b>	<b>SR 515 &amp; I-405 SB On-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 6</b>		<b>3765</b>	<b>3</b>	<b>A</b>	<b>4155</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2680</b>	<b>4</b>	<b>A</b>	<b>1445</b>	<b>2</b>	<b>A</b>
					Through	2010	4	A	950	2	A
					Right	670	0	A	495	0	A
					Southbound	<b>1085</b>	<b>1</b>	<b>A</b>	<b>2710</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	125	42	D
					Through	1065	1	A	2585	3	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 1 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 1 AM Peak Hour			2050 Build 1 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3835</b>	<b>50</b>	<b>D</b>	<b>4160</b>	<b>26</b>	<b>C</b>
					Northbound	<b>1915</b>	<b>49</b>	<b>D</b>	<b>1115</b>	<b>30</b>	<b>C</b>
					Left	10	108	F	15	69	E
					Through	1895	49	D	1040	30	C
					Right	10	48	D	60	30	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>35</b>	<b>D</b>
					Left	85	47	D	45	36	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	32	C
					Southbound	<b>1060</b>	<b>31</b>	<b>C</b>	<b>2585</b>	<b>23</b>	<b>C</b>
					Left	250	88	F	730	38	D
					Through	785	14	B	1790	17	B
					Right	25	14	B	65	17	B
					Westbound	<b>755</b>	<b>88</b>	<b>F</b>	<b>400</b>	<b>40</b>	<b>D</b>
					Left	50	51	D	35	41	D
					Through	5	0	A	5	0	A
					Right	700	92	F	360	40	D
10	Lind Ave SW & SW 16th St	Signal	Renton	HCM 6		<b>1610</b>	<b>16</b>	<b>B</b>	<b>1790</b>	<b>14</b>	<b>B</b>
					Northbound	<b>290</b>	<b>11</b>	<b>B</b>	<b>380</b>	<b>13</b>	<b>B</b>
					Left	35	14	B	35	15	B
					Through	245	11	B	335	13	B
					Right	10	11	B	10	13	B
					Eastbound	<b>435</b>	<b>22</b>	<b>C</b>	<b>465</b>	<b>13</b>	<b>B</b>
					Left	330	24	C	310	13	B
					Through	50	17	B	105	11	B
					Right	55	17	B	50	11	B
					Southbound	<b>595</b>	<b>12</b>	<b>B</b>	<b>675</b>	<b>15</b>	<b>B</b>
					Left	110	13	B	150	17	B
					Through	435	12	B	255	13	B
					Right	50	12	B	270	14	B
					Westbound	<b>290</b>	<b>20</b>	<b>C</b>	<b>270</b>	<b>17</b>	<b>B</b>
					Left	25	16	B	5	10	B
					Through	80	21	C	65	17	B
					Right	185	21	C	200	17	B
11	Rainier Ave & Hardie Ave	Signal	Renton	HCM 2000		<b>3335</b>	<b>18</b>	<b>B</b>	<b>3472</b>	<b>15</b>	<b>B</b>
					Northbound	<b>1808</b>	<b>16</b>	<b>B</b>	<b>1667</b>	<b>14</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1790	16	B	1655	14	B
					Right	18	8	A	12	9	A
					Eastbound	<b>70</b>	<b>71</b>	<b>E</b>	<b>40</b>	<b>70</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	71	E	5	70	E
					Right	65	0	A	35	0	A
					Southbound	<b>1392</b>	<b>15</b>	<b>B</b>	<b>1704</b>	<b>12</b>	<b>B</b>
					Left	37	127	F	44	118	F
					Through	1355	12	B	1660	10	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>76</b>	<b>E</b>	<b>61</b>	<b>73</b>	<b>E</b>
					Left	18	68	E	18	68	E
					Through	3	80	E	6	75	E
					Right	44	0	A	37	0	A
52	Maple Ave & SW Grady Way	TWSC	Renton	HCM6		<b>2822</b>	<b>356</b>	<b>F</b>	<b>3332</b>	<b>&gt;180</b>	<b>F</b>
					Northbound	<b>40</b>	<b>207</b>	<b>F</b>	<b>45</b>	<b>0</b>	<b>A</b>
					Left	5	207	F	5	-	
					Through	5	207	F	5	-	
					Right	30	207	F	35	-	
					Eastbound	<b>1276</b>	<b>0</b>	<b>A</b>	<b>1856</b>	<b>1</b>	<b>A</b>
					Left	15	13	B	135	15	B
					Through	1231	-		1716	-	
					Right	30	-		5	-	
					Southbound	<b>15</b>	<b>356</b>	<b>F</b>	<b>90</b>	<b>0</b>	<b>A</b>
					Left	5	356	F	15	-	
					Through	5	356	F	5	-	
					Right	5	356	F	70	-	
					Westbound	<b>1491</b>	<b>1</b>	<b>A</b>	<b>1341</b>	<b>1</b>	<b>A</b>
					Left	70	22	C	35	33	D
					Through	1331	-		1261	-	
					Right	90	-		45	-	

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.
- 3) Yellow shading indicates intersection is operating at LOS standard, while red shading indicates intersection operates below LOS standard.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 1B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 1B AM Peak Hour			2050 Build 1B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>6537</b>	<b>94</b>	<b>F</b>	<b>7177</b>	<b>83</b>	<b>F</b>
					Northbound	<b>2505</b>	<b>90</b>	<b>F</b>	<b>2165</b>	<b>82</b>	<b>F</b>
					Left	390	183	F	305	125	F
					Through	1378	94	F	1128	84	F
					Bus	12	32	C	12	39	D
					Right	725	35	C	720	63	E
					Eastbound	<b>1241</b>	<b>84</b>	<b>F</b>	<b>1866</b>	<b>82</b>	<b>F</b>
					Left	306	79	E	386	77	E
					Through	725	95	F	820	68	E
					Right	210	53	D	660	102	F
					Southbound	<b>1439</b>	<b>131</b>	<b>F</b>	<b>1704</b>	<b>85</b>	<b>F</b>
					Left	140	396	F	155	119	F
					Through	803	119	F	1173	105	F
					Right	496	75	E	376	9	A
					Westbound	<b>1340</b>	<b>67</b>	<b>E</b>	<b>1430</b>	<b>80</b>	<b>F</b>
					Left	625	85	F	570	110	F
					Through	605	51	D	655	60	E
					Right	0	0	A	0	0	A
					Right	110	0	A	205	0	A

**Notes:**

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 2 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 2 AM Peak Hour			2050 Build 2 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>4715</b>	<b>61</b>	<b>E</b>	<b>5365</b>	<b>69</b>	<b>E</b>
					Northbound	<b>1835</b>	<b>34</b>	<b>C</b>	<b>1730</b>	<b>44</b>	<b>D</b>
					Left	300	124	F	150	159	F
					Through	1431	17	B	1393	34	C
					Bus	44	13	B	37	23	C
					Right	60	13	B	150	23	C
					Eastbound	<b>570</b>	<b>94</b>	<b>F</b>	<b>1030</b>	<b>99</b>	<b>F</b>
					Left	200	103	F	395	87	F
					Through	265	89	F	495	107	F
					Right	105	89	F	140	107	F
					Southbound	<b>1375</b>	<b>62</b>	<b>E</b>	<b>2085</b>	<b>75</b>	<b>E</b>
					Left	85	99	F	285	126	F
					Through	1143	62	E	1476	72	E
					Bus	37	41	D	44	42	D
					Right	110	41	D	280	42	D
					Westbound	<b>935</b>	<b>90</b>	<b>F</b>	<b>520</b>	<b>74</b>	<b>E</b>
					Left	110	138	F	55	168	F
					Through	370	77	E	290	68	E
					Right	455	89	F	175	53	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>4370</b>	<b>50</b>	<b>D</b>	<b>5860</b>	<b>96</b>	<b>F</b>
					Northbound	<b>1440</b>	<b>42</b>	<b>D</b>	<b>1730</b>	<b>104</b>	<b>F</b>
					Left	305	89	F	265	55	E
					Through	265	44	D	535	44	D
					Right	870	25	C	930	152	F
					Eastbound	<b>1420</b>	<b>80</b>	<b>F</b>	<b>1825</b>	<b>126</b>	<b>F</b>
					Left	100	12	B	270	38	D
					Through	960	83	F	1100	132	F
					Right	360	88	F	455	152	F
					Southbound	<b>280</b>	<b>47</b>	<b>D</b>	<b>1040</b>	<b>79</b>	<b>E</b>
					Left	20	89	F	330	120	F
					Through	170	43	D	520	59	E
					Right	90	43	D	190	60	E
					Westbound	<b>1230</b>	<b>25</b>	<b>C</b>	<b>1265</b>	<b>53</b>	<b>D</b>
					Left	385	41	D	285	82	F
					Through	745	17	B	900	44	D
					Right	100	17	B	80	44	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>6380</b>	<b>85</b>	<b>F</b>	<b>7060</b>	<b>82</b>	<b>F</b>
					Northbound	<b>1775</b>	<b>61</b>	<b>E</b>	<b>1650</b>	<b>58</b>	<b>E</b>
					Left	280	117	F	235	116	F
					Through	968	60	E	853	56	E
					Bus	12	37	D	12	39	D
					Right	515	33	C	550	37	D
					Eastbound	<b>1815</b>	<b>100</b>	<b>F</b>	<b>2270</b>	<b>106</b>	<b>F</b>
					Left	715	87	F	630	91	F
					Through	935	118	F	990	104	F
					Right	165	47	D	650	123	F
					Southbound	<b>1438</b>	<b>77</b>	<b>E</b>	<b>1698</b>	<b>62</b>	<b>E</b>
					Left	140	147	F	155	119	F
					Through	803	99	F	1168	73	E
					Right	495	20	B	375	4	A
					Westbound	<b>1340</b>	<b>104</b>	<b>F</b>	<b>1430</b>	<b>93</b>	<b>F</b>
					Left	625	131	F	570	110	F
					Through	605	80	E	655	81	F
					Right	0	0	A	0	0	A
					Right	110	0	A	205	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3110</b>	<b>12</b>	<b>B</b>	<b>3235</b>	<b>19</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	53	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1630</b>	<b>15</b>	<b>B</b>	<b>1680</b>	<b>20</b>	<b>C</b>
					Left	100	13	B	20	12	B
					Through	1405	16	B	1520	21	C
					Right	125	9	A	140	11	B
					Southbound	<b>45</b>	<b>59</b>	<b>E</b>	<b>145</b>	<b>66</b>	<b>E</b>
					Left	25	59	E	30	66	E
					Through	10	59	E	15	66	E
					Right	10	59	E	100	66	E
					Westbound	<b>1370</b>	<b>6</b>	<b>A</b>	<b>1220</b>	<b>9</b>	<b>A</b>
					Left	25	4	A	20	9	A
					Through	1300	6	A	1170	9	A
					Right	45	6	A	30	9	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 2 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 2 AM Peak Hour			2050 Build 2 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>5</b>	<b>Shattuck Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>2935</b>	<b>10</b>	<b>B</b>	<b>3185</b>	<b>22</b>	<b>C</b>
					Northbound	<b>130</b>	<b>45</b>	<b>D</b>	<b>250</b>	<b>44</b>	<b>D</b>
					Left	80	44	D	125	41	D
					Through	20	46	D	30	46	D
					Right	30	46	D	95	46	D
					Eastbound	<b>1400</b>	<b>11</b>	<b>B</b>	<b>1485</b>	<b>17</b>	<b>B</b>
					Left	140	54	D	135	28	C
					Through	1239	5	A	1326	14	B
					Bus	21	12	B	24	33	C
					Right	65	12	B	95	33	C
					Southbound	<b>70</b>	<b>44</b>	<b>D</b>	<b>340</b>	<b>51</b>	<b>D</b>
					Left	35	43	D	195	53	D
					Through	15	46	D	75	47	D
					Right	20	46	D	70	47	D
					Westbound	<b>1335</b>	<b>5</b>	<b>A</b>	<b>1110</b>	<b>14</b>	<b>B</b>
					Left	20	14	B	70	44	D
					Through	1237	4	A	998	11	B
					Bus	28	19	B	17	25	C
					Right	50	19	B	25	25	C
<b>6</b>	<b>Talbot Rd S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>4457</b>	<b>56</b>	<b>E</b>	<b>4620</b>	<b>50</b>	<b>D</b>
					Northbound	<b>2072</b>	<b>38</b>	<b>D</b>	<b>1085</b>	<b>39</b>	<b>D</b>
					Left	870	45	D	445	49	D
					Through	970	33	C	455	31	C
					Right	215	33	C	175	31	C
					Bus	17	277	F	10	102	F
					Eastbound	<b>1375</b>	<b>83</b>	<b>F</b>	<b>1665</b>	<b>49</b>	<b>D</b>
					Left	140	125	F	80	75	E
					Through	940	92	F	860	49	D
					Right	295	33	C	725	46	D
					Southbound	<b>390</b>	<b>47</b>	<b>D</b>	<b>1015</b>	<b>45</b>	<b>D</b>
					Left	40	63	E	130	61	E
					Through	285	46	D	765	45	D
					Right	65	41	D	120	32	C
					Westbound	<b>620</b>	<b>52</b>	<b>D</b>	<b>855</b>	<b>73</b>	<b>E</b>
					Left	70	61	E	215	155	F
					Through	430	51	D	505	45	D
					Right	120	51	D	135	45	D
<b>7</b>	<b>SR 515 &amp; I-405 SB Off-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>3395</b>	<b>27</b>	<b>C</b>	<b>3955</b>	<b>45</b>	<b>D</b>
					Northbound	<b>2010</b>	<b>16</b>	<b>B</b>	<b>950</b>	<b>25</b>	<b>C</b>
					Left	175	9	A	65	31	C
					Through	1835	17	B	885	25	C
					Eastbound	<b>40</b>	<b>63</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	10	81	F	25	86	F
					Right	30	57	E	220	55	D
					Southbound	<b>610</b>	<b>16</b>	<b>B</b>	<b>1680</b>	<b>47</b>	<b>D</b>
					Through	583	16	B	1653	47	D
					Right	15	14	B	10	28	C
					Bus	12	13	B	17	27	C
					Westbound	<b>735</b>	<b>63</b>	<b>E</b>	<b>1080</b>	<b>57</b>	<b>E</b>
					Left	455	68	E	840	64	E
					Through	90	53	D	40	32	C
					Right	190	55	D	200	34	C
<b>8</b>	<b>SR 515 &amp; I-405 SB On-ramp</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 6</b>		<b>3765</b>	<b>3</b>	<b>A</b>	<b>4160</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2680</b>	<b>4</b>	<b>A</b>	<b>1445</b>	<b>3</b>	<b>A</b>
					Through	2010	4	A	950	3	A
					Right	670	0	A	495	0	A
					Southbound	<b>1085</b>	<b>1</b>	<b>A</b>	<b>2715</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	130	41	D
					Through	1065	1	A	2585	3	A
<b>9</b>	<b>SR 515 &amp; S Puget Dr/S 15th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 6</b>		<b>3835</b>	<b>50</b>	<b>D</b>	<b>4160</b>	<b>26</b>	<b>C</b>
					Northbound	<b>1915</b>	<b>49</b>	<b>D</b>	<b>1115</b>	<b>30</b>	<b>C</b>
					Left	10	108	F	15	69	E
					Through	1895	49	D	1040	30	C
					Right	10	48	D	60	30	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>35</b>	<b>D</b>
					Left	85	47	D	45	36	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	32	C
					Southbound	<b>1060</b>	<b>31</b>	<b>C</b>	<b>2585</b>	<b>23</b>	<b>C</b>
					Left	250	88	F	730	38	D
					Through	785	14	B	1790	17	B
					Right	25	14	B	65	17	B
					Westbound	<b>755</b>	<b>88</b>	<b>F</b>	<b>400</b>	<b>40</b>	<b>D</b>
					Left	50	51	D	35	41	D
					Through	5	0	A	5	0	A
					Right	700	92	F	360	40	D

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 2 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 2 AM Peak Hour			2050 Build 2 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
10	Lind Ave SW & SW 16th St	Signal	Renton	HCM 6		<b>2070</b>	<b>17</b>	<b>B</b>	<b>2085</b>	<b>24</b>	<b>C</b>
					Northbound	<b>365</b>	<b>17</b>	<b>B</b>	<b>450</b>	<b>14</b>	<b>B</b>
					Left	35	16	B	35	16	B
					Through	320	17	B	405	14	B
					Right	10	17	B	10	14	B
					Eastbound	<b>525</b>	<b>33</b>	<b>C</b>	<b>535</b>	<b>41</b>	<b>D</b>
					Left	420	35	C	380	45	D
					Through	50	24	C	105	29	C
					Right	55	24	C	50	29	C
					Southbound	<b>835</b>	<b>2</b>	<b>A</b>	<b>785</b>	<b>10</b>	<b>A</b>
					Left	160	3	A	190	13	B
					Through	625	2	A	325	9	A
					Right	50	2	A	270	9	A
					Westbound	<b>345</b>	<b>38</b>	<b>D</b>	<b>315</b>	<b>48</b>	<b>D</b>
					Left	25	22	C	5	27	C
					Through	80	39	D	65	47	D
					Right	240	41	D	245	50	D
11	Rainier Ave & Hardie Ave	Signal	Renton	HCM 2000		<b>3335</b>	<b>25</b>	<b>C</b>	<b>3525</b>	<b>21</b>	<b>C</b>
					Northbound	<b>1808</b>	<b>29</b>	<b>C</b>	<b>1723</b>	<b>27</b>	<b>C</b>
					Left	0	0	A	0	0	A
					Through	1790	29	C	1705	27	C
					Right	18	15	B	18	16	B
					Eastbound	<b>70</b>	<b>71</b>	<b>E</b>	<b>40</b>	<b>70</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	71	E	5	70	E
					Right	65	0	A	35	0	A
					Southbound	<b>1392</b>	<b>15</b>	<b>B</b>	<b>1704</b>	<b>12</b>	<b>B</b>
					Left	37	127	F	44	119	F
					Through	1355	12	B	1660	9	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>76</b>	<b>E</b>	<b>58</b>	<b>73</b>	<b>E</b>
					Left	18	68	E	18	68	E
					Through	3	80	E	3	75	E
					Right	44	0	A	37	0	A
52	Maple Ave & SW Grady Way	TWSC	Renton	HCM6		<b>3285</b>	<b>&gt;180</b>	<b>F</b>	<b>3765</b>	<b>&gt;180</b>	<b>F</b>
					Northbound	<b>40</b>	<b>0</b>	<b>A</b>	<b>45</b>	<b>0</b>	<b>A</b>
					Left	5	-		5	-	
					Through	5	-		5	-	
					Right	30	-		35	-	
					Eastbound	<b>1850</b>	<b>0</b>	<b>A</b>	<b>2360</b>	<b>1</b>	<b>A</b>
					Left	15	12	B	135	14	B
					Through	1805	-		2220	-	
					Right	30	-		5	-	
					Southbound	<b>15</b>	<b>0</b>	<b>A</b>	<b>90</b>	<b>0</b>	<b>A</b>
					Left	5	-		15	-	
					Through	5	-		5	-	
					Right	5	-		70	-	
					Westbound	<b>1380</b>	<b>3</b>	<b>A</b>	<b>1270</b>	<b>2</b>	<b>A</b>
					Left	70	52	F	35	67	F
					Through	1220	-		1190	-	
					Right	90	-		45	-	
50	Lind Ave SW & I-405 SB On-Ramp	Signal	Renton	HCM2000		<b>2620</b>	<b>7</b>	<b>A</b>	<b>2425</b>	<b>8</b>	<b>A</b>
					Northbound	<b>1785</b>	<b>9</b>	<b>A</b>	<b>1640</b>	<b>8</b>	<b>A</b>
					Left	240	57	E	185	67	E
					Through	1545	2	A	1455	1	A
					Southbound	<b>965</b>	<b>3</b>	<b>A</b>	<b>1145</b>	<b>7</b>	<b>A</b>
					Through	595	3	A	675	7	A
					Right	370	0	A	470	0	A
51	Lind Ave SW & I-405 NB Off-Ramp	Signal	Renton	HCM 6		<b>2620</b>	<b>21</b>	<b>C</b>	<b>2425</b>	<b>20</b>	<b>B</b>
					Northbound	<b>980</b>	<b>1</b>	<b>A</b>	<b>1030</b>	<b>0</b>	<b>A</b>
					Left	0	0	A	0	0	A
					Through	980	1	A	1030	0	A
					Eastbound	<b>1045</b>	<b>#N/A</b>		<b>720</b>	<b>#N/A</b>	
					Left	805	41	D	610	49	D
					Right	240	35	D	110	41	D
					Southbound	<b>595</b>	<b>22</b>	<b>C</b>	<b>675</b>	<b>21</b>	<b>C</b>
					Through	595	22	C	675	21	C
					Right	0	0	A	0	0	A

Notes:

1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection

2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

3) Yellow shading indicates intersection is operating at LOS standard, while red shading indicates intersection operates below LOS standard.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 2B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 2B AM Peak Hour			2050 Build 2B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>3980</b>	<b>76</b>	<b>E</b>	<b>5505</b>	<b>85</b>	<b>F</b>
					Northbound	<b>960</b>	<b>48</b>	<b>D</b>	<b>1320</b>	<b>65</b>	<b>E</b>
					Left	215	55	D	205	77	E
					Through	265	42	D	535	60	E
					Right	480	0	A	580	0	A
					Eastbound	<b>1420</b>	<b>141</b>	<b>F</b>	<b>1825</b>	<b>131</b>	<b>F</b>
					Left	100	11	B	270	29	C
					Through	960	148	F	1100	139	F
					Right	360	155	F	455	159	F
					Southbound	<b>280</b>	<b>38</b>	<b>D</b>	<b>1040</b>	<b>75</b>	<b>E</b>
					Left	20	39	D	330	116	F
					Through	170	38	D	520	54	D
					Right	90	38	D	190	55	E
					Westbound	<b>1320</b>	<b>22</b>	<b>C</b>	<b>1320</b>	<b>42</b>	<b>D</b>
					Left	385	37	D	285	66	E
					Through	835	16	B	955	35	D
					Right	100	16	B	80	35	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>6470</b>	<b>85</b>	<b>F</b>	<b>7115</b>	<b>82</b>	<b>F</b>
					Northbound	<b>2260</b>	<b>69</b>	<b>E</b>	<b>2055</b>	<b>63</b>	<b>E</b>
					Left	370	126	F	290	113	F
					Through	1193	70	E	1068	61	E
					Bus	12	34	C	12	36	D
					Right	685	38	D	685	44	D
					Eastbound	<b>1420</b>	<b>97</b>	<b>F</b>	<b>1920</b>	<b>104</b>	<b>F</b>
					Left	490	75	E	415	88	F
					Through	765	120	F	855	98	F
					Right	165	52	D	650	122	F
					Southbound	<b>1438</b>	<b>101</b>	<b>F</b>	<b>1698</b>	<b>85</b>	<b>F</b>
					Left	140	147	F	155	119	F
					Through	803	132	F	1168	106	F
					Right	495	39	D	375	8	A
					Westbound	<b>1340</b>	<b>82</b>	<b>F</b>	<b>1430</b>	<b>79</b>	<b>E</b>
					Left	625	99	F	570	100	F
					Through	605	67	E	655	65	E
					Right	0	0	A	0	0	A
					Right	110	0	A	205	0	A
					Exc. Bus Phase	<b>12</b>	<b>89</b>	<b>F</b>	<b>12</b>	<b>85</b>	<b>F</b>
					Left	12	89	F	12	85	F
<b>50</b>	<b>Lind Ave SW &amp; I-405 SB On-Ramp</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM2000</b>		<b>2135</b>	<b>8</b>	<b>A</b>	<b>2025</b>	<b>8</b>	<b>A</b>
					Northbound	<b>1300</b>	<b>11</b>	<b>B</b>	<b>1240</b>	<b>10</b>	<b>A</b>
					Left	240	52	D	185	62	E
					Through	1060	2	A	1055	0	A
					Southbound	<b>965</b>	<b>4</b>	<b>A</b>	<b>1145</b>	<b>7</b>	<b>A</b>
					Through	595	4	A	675	7	A
					Right	370	0	A	470	0	A
<b>51</b>	<b>Lind Ave SW &amp; I-405 NB Off-Ramp</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>2135</b>	<b>11</b>	<b>B</b>	<b>2025</b>	<b>11</b>	<b>B</b>
					Northbound	<b>980</b>	<b>0</b>	<b>A</b>	<b>1030</b>	<b>0</b>	<b>A</b>
					Left	0	0	A	0	0	A
					Through	980	0	A	1030	0	A
					Eastbound	<b>560</b>	<b>#N/A</b>		<b>320</b>	<b>#N/A</b>	
					Left	320	37	D	210	50	D
					Right	240	45	D	110	55	D
					Southbound	<b>595</b>	<b>0</b>	<b>A</b>	<b>675</b>	<b>7</b>	<b>A</b>
					Through	595	0	A	675	7	A
					Right	0	0	A	0	0	A

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.
- 3) Yellow shading indicates intersection is operating at LOS standard, while red shading indicates intersection operates below LOS standard.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 3 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 3 AM Peak Hour			2050 Build 3 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>4655</b>	<b>60</b>	<b>E</b>	<b>5310</b>	<b>67</b>	<b>E</b>
					Northbound	<b>1815</b>	<b>34</b>	<b>C</b>	<b>1775</b>	<b>45</b>	<b>D</b>
					Left	300	122	F	150	157	F
					Through	1411	17	B	1438	36	D
					Bus	44	13	B	37	22	C
					Right	60	13	B	150	22	C
					Eastbound	<b>570</b>	<b>94</b>	<b>F</b>	<b>930</b>	<b>96</b>	<b>F</b>
					Left	200	103	F	295	73	E
					Through	265	89	F	495	107	F
					Right	105	89	F	140	107	F
					Southbound	<b>1335</b>	<b>59</b>	<b>E</b>	<b>2085</b>	<b>71</b>	<b>E</b>
					Left	85	99	F	285	126	F
					Through	1103	59	E	1446	67	E
					Bus	37	41	D	44	45	D
					Right	110	41	D	310	45	D
					Westbound	<b>935</b>	<b>90</b>	<b>F</b>	<b>520</b>	<b>74</b>	<b>E</b>
					Left	110	138	F	55	168	F
					Through	370	77	E	290	68	E
					Right	455	89	F	175	53	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>3770</b>	<b>40</b>	<b>D</b>	<b>5340</b>	<b>59</b>	<b>E</b>
					Northbound	<b>860</b>	<b>39</b>	<b>D</b>	<b>1325</b>	<b>60</b>	<b>E</b>
					Left	225	43	D	220	77	E
					Through	220	36	D	480	52	D
					Right	415	0	A	625	0	A
					Eastbound	<b>1275</b>	<b>32</b>	<b>C</b>	<b>1555</b>	<b>66</b>	<b>E</b>
					Left	170	13	B	270	30	C
					Through	940	35	C	1040	72	E
					Right	165	35	C	245	74	E
					Southbound	<b>275</b>	<b>33</b>	<b>C</b>	<b>1090</b>	<b>44</b>	<b>D</b>
					Left	20	27	C	330	41	D
					Through	165	34	C	570	45	D
					Right	90	34	C	190	46	D
					Westbound	<b>1360</b>	<b>49</b>	<b>D</b>	<b>1370</b>	<b>64</b>	<b>E</b>
					Left	525	96	F	420	125	F
					Through	740	18	B	870	37	D
					Right	95	18	B	80	37	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>6500</b>	<b>80</b>	<b>E</b>	<b>7070</b>	<b>71</b>	<b>E</b>
					Northbound	<b>2360</b>	<b>70</b>	<b>E</b>	<b>2025</b>	<b>68</b>	<b>E</b>
					Left	370	126	F	280	109	F
					Through	1300	72	E	1065	72	E
					Bus	0	0	A	0	0	A
					Right	690	37	D	680	45	D
					Eastbound	<b>1350</b>	<b>98</b>	<b>F</b>	<b>1915</b>	<b>77</b>	<b>E</b>
					Left	410	77	E	475	83	F
					Through	765	120	F	865	73	E
					Right	175	53	D	575	78	E
					Southbound	<b>1445</b>	<b>72</b>	<b>E</b>	<b>1695</b>	<b>58</b>	<b>E</b>
					Left	140	185	F	155	119	F
					Through	780	76	E	1130	68	E
					Right	525	36	D	410	8	A
					Westbound	<b>1345</b>	<b>86</b>	<b>F</b>	<b>1435</b>	<b>81</b>	<b>F</b>
					Left	610	111	F	555	103	F
					Through	625	65	E	675	67	E
					Right	0	0	A	0	0	A
					Right	110	0	A	205	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3120</b>	<b>13</b>	<b>B</b>	<b>3220</b>	<b>19</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	53	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1630</b>	<b>16</b>	<b>B</b>	<b>1680</b>	<b>20</b>	<b>B</b>
					Left	100	13	B	20	12	B
					Through	1405	16	B	1520	21	C
					Right	125	9	A	140	11	B
					Southbound	<b>50</b>	<b>61</b>	<b>E</b>	<b>140</b>	<b>60</b>	<b>E</b>
					Left	30	61	E	25	60	E
					Through	10	61	E	15	60	E
					Right	10	61	E	100	60	E
					Westbound	<b>1375</b>	<b>6</b>	<b>A</b>	<b>1210</b>	<b>9</b>	<b>A</b>
					Left	25	5	A	20	9	A
					Through	1300	6	A	1170	9	A
					Right	50	6	A	20	9	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 3 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 3 AM Peak Hour			2050 Build 3 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>2935</b>	<b>10</b>	<b>B</b>	<b>3185</b>	<b>22</b>	<b>C</b>
					Northbound	<b>130</b>	<b>45</b>	<b>D</b>	<b>250</b>	<b>44</b>	<b>D</b>
					Left	80	44	D	125	41	D
					Through	20	46	D	30	46	D
					Right	30	46	D	95	46	D
					Eastbound	<b>1400</b>	<b>11</b>	<b>B</b>	<b>1485</b>	<b>17</b>	<b>B</b>
					Left	140	54	D	135	29	C
					Through	1239	5	A	1326	14	B
					Bus	21	12	B	24	33	C
					Right	65	12	B	95	33	C
					Southbound	<b>70</b>	<b>44</b>	<b>D</b>	<b>340</b>	<b>51</b>	<b>D</b>
					Left	35	43	D	195	53	D
					Through	15	46	D	75	47	D
					Right	20	46	D	70	47	D
					Westbound	<b>1335</b>	<b>5</b>	<b>A</b>	<b>1110</b>	<b>14</b>	<b>B</b>
					Left	20	14	B	70	44	D
					Through	1237	4	A	998	11	B
					Bus	28	19	B	17	26	C
					Right	50	19	B	25	26	C
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>4477</b>	<b>54</b>	<b>D</b>	<b>4610</b>	<b>50</b>	<b>D</b>
					Northbound	<b>2082</b>	<b>38</b>	<b>D</b>	<b>1080</b>	<b>38</b>	<b>D</b>
					Left	880	46	D	440	49	D
					Through	970	33	C	455	31	C
					Right	215	33	C	175	31	C
					Bus	17	277	F	10	102	F
					Eastbound	<b>1385</b>	<b>79</b>	<b>E</b>	<b>1660</b>	<b>49</b>	<b>D</b>
					Left	140	164	F	80	75	E
					Through	940	81	F	860	49	D
					Right	305	31	C	720	46	D
					Southbound	<b>390</b>	<b>47</b>	<b>D</b>	<b>1015</b>	<b>45</b>	<b>D</b>
					Left	40	65	E	130	61	E
					Through	285	46	D	765	45	D
					Right	65	41	D	120	32	C
					Westbound	<b>620</b>	<b>52</b>	<b>D</b>	<b>855</b>	<b>73</b>	<b>E</b>
					Left	70	70	E	215	155	F
					Through	430	49	D	505	45	D
					Right	120	49	D	135	45	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3410</b>	<b>27</b>	<b>C</b>	<b>3940</b>	<b>45</b>	<b>D</b>
					Northbound	<b>2010</b>	<b>16</b>	<b>B</b>	<b>950</b>	<b>25</b>	<b>C</b>
					Left	175	9	A	65	31	C
					Through	1835	17	B	885	25	C
					Eastbound	<b>40</b>	<b>63</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	10	81	F	25	86	F
					Right	30	57	E	220	55	D
					Southbound	<b>620</b>	<b>16</b>	<b>B</b>	<b>1670</b>	<b>47</b>	<b>D</b>
					Through	593	16	B	1643	47	D
					Right	15	14	B	10	28	C
					Bus	12	13	B	17	27	C
					Westbound	<b>740</b>	<b>63</b>	<b>E</b>	<b>1075</b>	<b>57</b>	<b>E</b>
					Left	455	68	E	840	64	E
					Through	90	53	D	40	32	C
					Right	195	55	E	195	34	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3770</b>	<b>3</b>	<b>A</b>	<b>4155</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2680</b>	<b>4</b>	<b>A</b>	<b>1445</b>	<b>2</b>	<b>A</b>
					Through	2010	4	A	950	2	A
					Right	670	0	A	495	0	A
					Southbound	<b>1090</b>	<b>1</b>	<b>A</b>	<b>2710</b>	<b>4</b>	<b>A</b>
					Left	25	28	C	125	42	D
					Through	1065	1	A	2585	3	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3835</b>	<b>50</b>	<b>D</b>	<b>4160</b>	<b>26</b>	<b>C</b>
					Northbound	<b>1915</b>	<b>49</b>	<b>D</b>	<b>1115</b>	<b>30</b>	<b>C</b>
					Left	10	108	F	15	69	E
					Through	1895	49	D	1040	30	C
					Right	10	48	D	60	30	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>35</b>	<b>D</b>
					Left	85	47	D	45	36	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	32	C
					Southbound	<b>1060</b>	<b>31</b>	<b>C</b>	<b>2585</b>	<b>23</b>	<b>C</b>
					Left	250	88	F	730	38	D
					Through	785	14	B	1790	17	B
					Right	25	14	B	65	17	B
					Westbound	<b>755</b>	<b>88</b>	<b>F</b>	<b>400</b>	<b>40</b>	<b>D</b>
					Left	50	51	D	35	41	D
					Through	5	0	A	5	0	A
					Right	700	92	F	360	40	D

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 3 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 3 AM Peak Hour			2050 Build 3 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
10	Lind Ave SW & SW 16th St	Signal	Renton	HCM 6		<b>2005</b>	<b>16</b>	<b>B</b>	<b>2275</b>	<b>24</b>	<b>C</b>
					Northbound	<b>350</b>	<b>13</b>	<b>B</b>	<b>485</b>	<b>13</b>	<b>B</b>
					Left	35	13	B	35	13	B
					Through	305	13	B	440	13	B
					Right	10	13	B	10	13	B
					Eastbound	<b>505</b>	<b>37</b>	<b>D</b>	<b>570</b>	<b>57</b>	<b>E</b>
					Left	400	39	D	415	66	E
					Through	50	22	C	105	25	C
					Right	55	22	C	50	25	C
					Southbound	<b>805</b>	<b>1</b>	<b>A</b>	<b>880</b>	<b>4</b>	<b>A</b>
					Left	150	2	A	195	6	A
					Through	585	1	A	330	3	A
					Right	70	1	A	355	3	A
					Westbound	<b>345</b>	<b>30</b>	<b>C</b>	<b>340</b>	<b>39</b>	<b>D</b>
					Left	25	20	B	5	24	C
					Through	80	30	C	65	37	D
					Right	240	32	C	270	41	D
11	Rainier Ave & Hardie Ave	Signal	Renton	HCM 2000		<b>3350</b>	<b>22</b>	<b>C</b>	<b>3540</b>	<b>17</b>	<b>B</b>
					Northbound	<b>1823</b>	<b>23</b>	<b>C</b>	<b>1768</b>	<b>19</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1805	23	C	1750	19	B
					Right	18	14	B	18	11	B
					Eastbound	<b>70</b>	<b>71</b>	<b>E</b>	<b>40</b>	<b>70</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	71	E	5	70	E
					Right	65	0	A	35	0	A
					Southbound	<b>1392</b>	<b>14</b>	<b>B</b>	<b>1674</b>	<b>11</b>	<b>B</b>
					Left	37	130	F	44	121	F
					Through	1355	11	B	1630	8	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>76</b>	<b>E</b>	<b>58</b>	<b>73</b>	<b>E</b>
					Left	18	68	E	18	68	E
					Through	3	80	E	3	75	E
					Right	44	0	A	37	0	A
52	Maple Ave & SW Grady Way	TWSC	Renton	HCM6		<b>2940</b>	<b>&gt;180</b>	<b>F</b>	<b>3505</b>	<b>&gt;180</b>	<b>F</b>
					Northbound	<b>40</b>	<b>324</b>	<b>F</b>	<b>45</b>	<b>0</b>	<b>A</b>
					Left	5	324	F	5	-	
					Through	5	324	F	5	-	
					Right	30	324	F	35	-	
					Eastbound	<b>1375</b>	<b>0</b>	<b>A</b>	<b>1995</b>	<b>1</b>	<b>A</b>
					Left	20	13	B	135	15	C
					Through	1325	-		1855	-	
					Right	30	-		5	-	
					Southbound	<b>15</b>	<b>524</b>	<b>F</b>	<b>90</b>	<b>0</b>	<b>A</b>
					Left	5	524	F	15	-	
					Through	5	524	F	5	-	
					Right	5	524	F	70	-	
					Westbound	<b>1510</b>	<b>1</b>	<b>A</b>	<b>1375</b>	<b>1</b>	<b>A</b>
					Left	70	25	C	35	39	E
					Through	1350	-		1295	-	
					Right	90	-		45	-	
51	Lind Ave SW & I-405 Direct Access Ramp	Signal	Renton	HCM 6		<b>2280</b>	<b>16</b>	<b>B</b>	<b>2660</b>	<b>17</b>	<b>B</b>
					Northbound	<b>945</b>	<b>5</b>	<b>A</b>	<b>1125</b>	<b>5</b>	<b>A</b>
					Left	45	12	B	50	12	B
					Through	745	5	A	830	4	A
					Right	155	5	A	245	5	A
					Eastbound	<b>155</b>	<b>49</b>	<b>D</b>	<b>185</b>	<b>70</b>	<b>E</b>
					Left	80	51	D	95	78	E
					Right	75	32	C	90	36	D
					Southbound	<b>905</b>	<b>15</b>	<b>B</b>	<b>1115</b>	<b>13</b>	<b>B</b>
					Left	170	12	B	290	11	B
					Through	595	16	B	675	14	B
					Right	140	16	B	150	14	B
					Westbound	<b>275</b>	<b>63</b>	<b>E</b>	<b>235</b>	<b>91</b>	<b>F</b>
					Left	135	74	E	115	103	F
					Right	140	31	C	120	36	D

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.
- 3) Yellow shading indicates intersection is operating at LOS standard, while red shading indicates intersection operates below LOS standard.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 3B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 3B AM Peak Hour			2050 Build 3B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>4640</b>	<b>59</b>	<b>E</b>	<b>5290</b>	<b>68</b>	<b>E</b>
					Northbound	<b>1800</b>	<b>33</b>	<b>C</b>	<b>1755</b>	<b>43</b>	<b>D</b>
					Left	300	125	F	150	158	F
					Through	1396	15	B	1418	34	C
					Bus	44	12	B	37	22	C
					Right	60	12	B	150	22	C
					Eastbound	<b>570</b>	<b>94</b>	<b>F</b>	<b>930</b>	<b>96</b>	<b>F</b>
					Left	200	103	F	295	72	E
					Through	265	89	F	495	107	F
					Right	105	89	F	140	107	F
					Southbound	<b>1335</b>	<b>59</b>	<b>E</b>	<b>2085</b>	<b>75</b>	<b>E</b>
					Left	85	99	F	285	126	F
					Through	1103	59	E	1476	72	E
					Bus	37	41	D	44	42	D
					Right	110	41	D	280	42	D
					Westbound	<b>935</b>	<b>90</b>	<b>F</b>	<b>520</b>	<b>74</b>	<b>E</b>
					Left	110	138	F	55	168	F
					Through	370	77	E	290	68	E
					Right	455	89	F	175	53	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>3420</b>	<b>31</b>	<b>C</b>	<b>4855</b>	<b>50</b>	<b>D</b>
					Northbound	<b>650</b>	<b>50</b>	<b>D</b>	<b>1120</b>	<b>60</b>	<b>E</b>
					Left	190	61	E	190	80	E
					Through	189	38	D	430	52	D
					Right	271	0	A	500	0	A
					Eastbound	<b>1225</b>	<b>50</b>	<b>D</b>	<b>1455</b>	<b>48</b>	<b>D</b>
					Left	170	9	A	268	34	C
					Through	985	57	E	1107	51	D
					Right	70	56	E	80	51	D
					Southbound	<b>204</b>	<b>46</b>	<b>D</b>	<b>939</b>	<b>54</b>	<b>D</b>
					Left	20	41	D	330	70	E
					Through	94	47	D	419	44	D
					Right	90	48	D	190	45	D
					Westbound	<b>1341</b>	<b>6</b>	<b>A</b>	<b>1341</b>	<b>45</b>	<b>D</b>
					Left	386	18	B	291	45	D
					Through	855	1	A	970	45	D
					Right	100	1	A	80	45	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>6537</b>	<b>88</b>	<b>F</b>	<b>7188</b>	<b>78</b>	<b>E</b>
					Northbound	<b>2493</b>	<b>79</b>	<b>E</b>	<b>2153</b>	<b>65</b>	<b>E</b>
					Left	390	108	F	305	97	F
					Through	1378	94	F	1128	67	E
					Bus	0	0	A	0	0	A
					Right	725	33	C	720	48	D
					Eastbound	<b>1253</b>	<b>93</b>	<b>F</b>	<b>1884</b>	<b>113</b>	<b>F</b>
					Left	318	77	E	404	86	F
					Through	725	111	F	820	94	F
					Right	210	55	D	660	152	F
					Southbound	<b>1451</b>	<b>120</b>	<b>F</b>	<b>1721</b>	<b>58</b>	<b>E</b>
					Left	140	339	F	155	119	F
					Through	803	110	F	1173	66	E
					Right	508	76	E	393	8	A
					Westbound	<b>1340</b>	<b>66</b>	<b>E</b>	<b>1430</b>	<b>76</b>	<b>E</b>
					Left	625	79	E	570	92	F
					Through	605	53	D	655	65	E
					Right	0	0	A	0	0	A
					Right	110	0	A	205	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3110</b>	<b>12</b>	<b>B</b>	<b>3220</b>	<b>19</b>	<b>B</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	53	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1630</b>	<b>15</b>	<b>B</b>	<b>1680</b>	<b>20</b>	<b>B</b>
					Left	100	13	B	20	12	B
					Through	1405	16	B	1520	21	C
					Right	125	9	A	140	11	B
					Southbound	<b>45</b>	<b>59</b>	<b>E</b>	<b>140</b>	<b>60</b>	<b>E</b>
					Left	25	59	E	25	60	E
					Through	10	59	E	15	60	E
					Right	10	59	E	100	60	E
					Westbound	<b>1370</b>	<b>6</b>	<b>A</b>	<b>1210</b>	<b>9</b>	<b>A</b>
					Left	25	4	A	20	9	A
					Through	1300	6	A	1170	9	A
					Right	45	6	A	20	9	A

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 3B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 3B AM Peak Hour			2050 Build 3B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>2935</b>	<b>10</b>	<b>B</b>	<b>3185</b>	<b>22</b>	<b>C</b>
					Northbound	<b>130</b>	<b>45</b>	<b>D</b>	<b>250</b>	<b>44</b>	<b>D</b>
					Left	80	44	D	125	41	D
					Through	20	46	D	30	46	D
					Right	30	46	D	95	46	D
					Eastbound	<b>1400</b>	<b>11</b>	<b>B</b>	<b>1485</b>	<b>17</b>	<b>B</b>
					Left	140	54	D	135	29	C
					Through	1239	5	A	1326	14	B
					Bus	21	12	B	24	33	C
					Right	65	12	B	95	33	C
					Southbound	<b>70</b>	<b>44</b>	<b>D</b>	<b>340</b>	<b>51</b>	<b>D</b>
					Left	35	43	D	195	53	D
					Through	15	46	D	75	47	D
					Right	20	46	D	70	47	D
					Westbound	<b>1335</b>	<b>5</b>	<b>A</b>	<b>1110</b>	<b>14</b>	<b>B</b>
					Left	20	14	B	70	44	D
					Through	1237	4	A	998	11	B
					Bus	28	19	B	17	26	C
					Right	50	19	B	25	26	C
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>4457</b>	<b>56</b>	<b>E</b>	<b>4610</b>	<b>50</b>	<b>D</b>
					Northbound	<b>2072</b>	<b>38</b>	<b>D</b>	<b>1080</b>	<b>38</b>	<b>D</b>
					Left	870	45	D	440	49	D
					Through	970	33	C	455	31	C
					Right	215	33	C	175	31	C
					Bus	17	277	F	10	102	F
					Eastbound	<b>1375</b>	<b>83</b>	<b>F</b>	<b>1660</b>	<b>49</b>	<b>D</b>
					Left	140	125	F	80	75	E
					Through	940	92	F	860	49	D
					Right	295	33	C	720	46	D
					Southbound	<b>390</b>	<b>47</b>	<b>D</b>	<b>1015</b>	<b>45</b>	<b>D</b>
					Left	40	63	E	130	61	E
					Through	285	46	D	765	45	D
					Right	65	41	D	120	32	C
					Westbound	<b>620</b>	<b>52</b>	<b>D</b>	<b>855</b>	<b>73</b>	<b>E</b>
					Left	70	61	E	215	155	F
					Through	430	51	D	505	45	D
					Right	120	51	D	135	45	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3395</b>	<b>27</b>	<b>C</b>	<b>3940</b>	<b>45</b>	<b>D</b>
					Northbound	<b>2010</b>	<b>16</b>	<b>B</b>	<b>950</b>	<b>25</b>	<b>C</b>
					Left	175	9	A	65	31	C
					Through	1835	17	B	885	25	C
					Eastbound	<b>40</b>	<b>63</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	10	81	F	25	86	F
					Right	30	57	E	220	55	D
					Southbound	<b>610</b>	<b>16</b>	<b>B</b>	<b>1670</b>	<b>47</b>	<b>D</b>
					Through	583	16	B	1643	47	D
					Right	15	14	B	10	28	C
					Bus	12	13	B	17	27	C
					Westbound	<b>735</b>	<b>63</b>	<b>E</b>	<b>1075</b>	<b>57</b>	<b>E</b>
					Left	455	68	E	840	64	E
					Through	90	53	D	40	32	C
					Right	190	55	D	195	34	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3765</b>	<b>3</b>	<b>A</b>	<b>4155</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2680</b>	<b>4</b>	<b>A</b>	<b>1445</b>	<b>2</b>	<b>A</b>
					Through	2010	4	A	950	2	A
					Right	670	0	A	495	0	A
					Southbound	<b>1085</b>	<b>1</b>	<b>A</b>	<b>2710</b>	<b>4</b>	<b>A</b>
					Left	20	27	C	125	42	D
					Through	1065	1	A	2585	3	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3835</b>	<b>50</b>	<b>D</b>	<b>4160</b>	<b>26</b>	<b>C</b>
					Northbound	<b>1915</b>	<b>49</b>	<b>D</b>	<b>1115</b>	<b>30</b>	<b>C</b>
					Left	10	108	F	15	69	E
					Through	1895	49	D	1040	30	C
					Right	10	48	D	60	30	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>35</b>	<b>D</b>
					Left	85	47	D	45	36	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	32	C
					Southbound	<b>1060</b>	<b>31</b>	<b>C</b>	<b>2585</b>	<b>23</b>	<b>C</b>
					Left	250	88	F	730	38	D
					Through	785	14	B	1790	17	B
					Right	25	14	B	65	17	B
					Westbound	<b>755</b>	<b>88</b>	<b>F</b>	<b>400</b>	<b>40</b>	<b>D</b>
					Left	50	51	D	35	41	D
					Through	5	0	A	5	0	A
					Right	700	92	F	360	40	D

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 3B AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 3B AM Peak Hour			2050 Build 3B PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>10</b>	<b>Lind Ave SW &amp; SW 16th St</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>1610</b>	<b>17</b>	<b>B</b>	<b>1790</b>	<b>24</b>	<b>C</b>
					Northbound	<b>290</b>	<b>14</b>	<b>B</b>	<b>380</b>	<b>13</b>	<b>B</b>
					Left	35	14	B	35	17	B
					Through	245	14	B	335	12	B
					Right	10	14	B	10	12	B
					Eastbound	<b>435</b>	<b>34</b>	<b>C</b>	<b>465</b>	<b>29</b>	<b>C</b>
					Left	330	34	C	310	31	C
					Through	50	29	C	105	25	C
					Right	55	29	C	50	25	C
					Southbound	<b>595</b>	<b>0</b>	<b>A</b>	<b>675</b>	<b>25</b>	<b>C</b>
					Left	110	1	A	150	29	C
					Through	435	0	A	255	23	C
					Right	50	0	A	270	24	C
					Westbound	<b>290</b>	<b>42</b>	<b>D</b>	<b>270</b>	<b>37</b>	<b>D</b>
					Left	25	27	C	5	24	C
					Through	80	44	D	65	38	D
					Right	185	45	D	200	38	D
<b>11</b>	<b>Rainier Ave &amp; Hardie Ave</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3335</b>	<b>17</b>	<b>B</b>	<b>3553</b>	<b>17</b>	<b>B</b>
					Northbound	<b>1808</b>	<b>15</b>	<b>B</b>	<b>1748</b>	<b>19</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1790	15	B	1730	19	B
					Right	18	8	A	18	11	B
					Eastbound	<b>70</b>	<b>71</b>	<b>E</b>	<b>40</b>	<b>70</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	71	E	5	70	E
					Right	65	0	A	35	0	A
					Southbound	<b>1392</b>	<b>14</b>	<b>B</b>	<b>1704</b>	<b>12</b>	<b>B</b>
					Left	37	130	F	44	119	F
					Through	1355	11	B	1660	9	A
					Right	0	9	A	0	9	A
					Westbound	<b>65</b>	<b>76</b>	<b>E</b>	<b>61</b>	<b>73</b>	<b>E</b>
					Left	18	68	E	18	68	E
					Through	3	80	E	6	75	E
					Right	44	0	A	37	0	A
<b>52</b>	<b>Maple Ave &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM2000</b>		<b>2846</b>	<b>18</b>	<b>B</b>	<b>3442</b>	<b>22</b>	<b>C</b>
					Northbound	<b>52</b>	<b>24</b>	<b>C</b>	<b>57</b>	<b>24</b>	<b>C</b>
					Left	5	0	A	5	0	A
					Through	5	27	C	5	27	C
					Right	42	23	C	47	24	C
					Eastbound	<b>1276</b>	<b>10</b>	<b>A</b>	<b>1937</b>	<b>22</b>	<b>C</b>
					Left	15	7	A	135	12	B
					Through	1231	10	A	1797	22	C
					Right	30	0	A	5	0	A
					Southbound	<b>15</b>	<b>27</b>	<b>C</b>	<b>90</b>	<b>28</b>	<b>C</b>
					Left	5	0	A	15	0	A
					Through	5	27	C	5	28	C
					Right	5	0	A	70	0	A
					Westbound	<b>1503</b>	<b>26</b>	<b>C</b>	<b>1358</b>	<b>23</b>	<b>C</b>
					Left	82	15	B	47	15	B
					Through	1331	26	C	1266	23	C
					Right	90	0	A	45	0	A
<b>51</b>	<b>Lind Ave SW &amp; I-405 Direct Access Ramp</b>					<b>0</b>	<b>9</b>	<b>A</b>	<b>0</b>	<b>9</b>	<b>A</b>
					Eastbound						
					Left	6	9	A	6	9	A
					Southbound						
					Left		9	A		9	A
					Westbound						
					Right		8	A		8	A

Notes:

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.
- 3) Yellow shading indicates intersection is operating at LOS standard, while red shading indicates intersection operates below LOS standard.

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 4 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 4 AM Peak Hour			2050 Build 4 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>Study Area</b>											
<b>1</b>	<b>Rainier Ave S &amp; SW 7th St</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>4640</b>	<b>49</b>	<b>D</b>	<b>5265</b>	<b>61</b>	<b>E</b>
					Northbound	<b>1800</b>	<b>14</b>	<b>B</b>	<b>1730</b>	<b>34</b>	<b>C</b>
					Left	300	63	E	150	100	F
					Through	1396	5	A	1393	30	C
					Bus	44	2	A	37	8	A
					Right	60	2	A	150	8	A
					Eastbound	<b>570</b>	<b>90</b>	<b>F</b>	<b>930</b>	<b>81</b>	<b>F</b>
					Left	200	106	F	295	76	E
					Through	265	82	F	495	84	F
					Right	105	82	F	140	84	F
					Southbound	<b>1335</b>	<b>56</b>	<b>E</b>	<b>2085</b>	<b>73</b>	<b>E</b>
					Left	85	91	F	285	98	F
					Through	1103	56	E	1476	76	E
					Bus	37	38	D	44	40	D
					Right	110	38	D	280	40	D
					Westbound	<b>935</b>	<b>80</b>	<b>F</b>	<b>520</b>	<b>64</b>	<b>E</b>
					Left	110	141	F	55	178	F
					Through	370	73	E	290	54	D
					Right	455	72	E	175	44	D
<b>2</b>	<b>Lind Ave SW &amp; SW Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>		<b>3427</b>	<b>35</b>	<b>D</b>	<b>4856</b>	<b>47</b>	<b>D</b>
					Northbound	<b>656</b>	<b>29</b>	<b>C</b>	<b>1120</b>	<b>42</b>	<b>D</b>
					Left	190	32	C	190	40	D
					Through	195	26	C	436	43	D
					Right	271	0	A	494	0	A
					Eastbound	<b>1225</b>	<b>45</b>	<b>D</b>	<b>1455</b>	<b>60</b>	<b>E</b>
					Left	170	14	B	268	30	C
					Through	985	50	D	1107	67	E
					Right	70	50	D	80	67	E
					Southbound	<b>205</b>	<b>28</b>	<b>C</b>	<b>945</b>	<b>36</b>	<b>D</b>
					Left	20	23	C	330	42	D
					Through	95	29	C	425	33	C
					Right	90	29	C	190	34	C
					Westbound	<b>1341</b>	<b>30</b>	<b>C</b>	<b>1336</b>	<b>41</b>	<b>D</b>
					Left	386	52	D	286	46	D
					Through	855	21	C	970	40	D
					Right	100	21	C	80	40	D
<b>3</b>	<b>SR 167/Rainier Ave S &amp; SWGrady Way</b>	<b>Signal</b>	<b>WSDOT</b>	<b>HCM 2000</b>		<b>5307</b>	<b>54</b>	<b>D</b>	<b>5802</b>	<b>53</b>	<b>D</b>
					Northbound	<b>2505</b>	<b>51</b>	<b>D</b>	<b>2165</b>	<b>42</b>	<b>D</b>
					Left	390	89	F	305	90	F
					Through	1378	57	E	1128	44	D
					Bus	12	26	C	12	27	C
					Right	725	18	B	720	19	B
					Eastbound	<b>566</b>	<b>78</b>	<b>E</b>	<b>1096</b>	<b>105</b>	<b>F</b>
					Left	306	105	F	386	188	F
					Through	50	104	F	50	190	F
					Right	210	33	C	660	49	D
					Southbound	<b>1439</b>	<b>38</b>	<b>D</b>	<b>1704</b>	<b>29</b>	<b>C</b>
					Left	140	68	E	155	42	D
					Through	803	26	C	1173	21	C
					Right	496	48	D	376	51	D
					Westbound	<b>785</b>	<b>73</b>	<b>E</b>	<b>825</b>	<b>58</b>	<b>E</b>
					Left	625	79	E	570	61	E
					Through	50	52	D	50	52	D
					Right	0	0	A	0	0	A
					Right	110	0	A	205	0	A
<b>4</b>	<b>Lake Ave S &amp; S Grady Way</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>		<b>3120</b>	<b>15</b>	<b>B</b>	<b>3220</b>	<b>20</b>	<b>C</b>
					Northbound	<b>65</b>	<b>38</b>	<b>D</b>	<b>190</b>	<b>42</b>	<b>D</b>
					Left	50	49	D	150	53	D
					Through	0	0	A	0	0	A
					Right	15	0	A	40	0	A
					Eastbound	<b>1630</b>	<b>20</b>	<b>C</b>	<b>1680</b>	<b>25</b>	<b>C</b>
					Left	0	0	A	0	0	A
					Through	1505	20	C	1540	25	C
					Right	125	0	A	140	0	A
					Southbound	<b>50</b>	<b>61</b>	<b>E</b>	<b>140</b>	<b>60</b>	<b>E</b>
					Left	30	61	E	25	60	E
					Through	10	61	E	15	60	E
					Right	10	61	E	100	60	E
					Westbound	<b>1375</b>	<b>5</b>	<b>A</b>	<b>1210</b>	<b>6</b>	<b>A</b>
					Left	25	9	A	20	12	B
					Through	1300	5	A	1170	5	A
					Right	50	5	A	20	5	A

# I-405/SR 167 Program

## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 4 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 4 AM Peak Hour			2050 Build 4 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
5	Shattuck Ave S & S Grady Way	Signal	Renton	HCM 2000		<b>3041</b>	<b>15</b>	<b>B</b>	<b>3205</b>	<b>27</b>	<b>C</b>
					Northbound	<b>130</b>	<b>45</b>	<b>D</b>	<b>250</b>	<b>44</b>	<b>D</b>
					Left	80	44	D	125	41	D
					Through	20	46	D	30	46	D
					Right	30	46	D	95	46	D
					Eastbound	<b>1500</b>	<b>17</b>	<b>B</b>	<b>1505</b>	<b>25</b>	<b>C</b>
					Left	240	65	E	155	24	C
					Through	1239	8	A	1326	23	C
					Bus	21	16	B	24	47	D
					Right	65	16	B	95	47	D
					Southbound	<b>70</b>	<b>44</b>	<b>D</b>	<b>340</b>	<b>51</b>	<b>D</b>
					Left	35	43	D	195	53	D
					Through	15	46	D	75	47	D
					Right	20	46	D	70	47	D
					Westbound	<b>1341</b>	<b>9</b>	<b>A</b>	<b>1110</b>	<b>20</b>	<b>C</b>
					Left	20	13	B	70	46	D
					Through	1237	7	A	998	18	B
					Bus	34	31	C	17	33	C
					Right	50	31	C	25	33	C
6	Talbot Rd S & S Grady Way	Signal	Renton	HCM 2000		<b>4483</b>	<b>54</b>	<b>D</b>	<b>4615</b>	<b>49</b>	<b>D</b>
					Northbound	<b>2088</b>	<b>42</b>	<b>D</b>	<b>1085</b>	<b>39</b>	<b>D</b>
					Left	880	51	D	445	49	D
					Through	970	34	C	455	31	C
					Right	215	34	C	175	31	C
					Bus	23	184	F	10	102	F
					Eastbound	<b>1385</b>	<b>73</b>	<b>E</b>	<b>1660</b>	<b>46</b>	<b>D</b>
					Left	140	164	F	80	73	E
					Through	940	75	E	860	48	D
					Right	305	28	C	720	40	D
					Southbound	<b>390</b>	<b>48</b>	<b>D</b>	<b>1015</b>	<b>45</b>	<b>D</b>
					Left	40	78	E	130	61	E
					Through	285	46	D	765	45	D
					Right	65	41	D	120	32	C
					Westbound	<b>620</b>	<b>51</b>	<b>D</b>	<b>855</b>	<b>73</b>	<b>E</b>
					Left	70	70	E	215	155	F
					Through	430	48	D	505	45	D
					Right	120	48	D	135	45	D
7	SR 515 & I-405 SB Off-ramp	Signal	WSDOT	HCM 2000		<b>3410</b>	<b>27</b>	<b>C</b>	<b>3940</b>	<b>45</b>	<b>D</b>
					Northbound	<b>2010</b>	<b>16</b>	<b>B</b>	<b>950</b>	<b>25</b>	<b>C</b>
					Left	175	9	A	65	31	C
					Through	1835	17	B	885	25	C
					Eastbound	<b>40</b>	<b>63</b>	<b>E</b>	<b>245</b>	<b>58</b>	<b>E</b>
					Left	10	81	F	25	86	F
					Right	30	57	E	220	55	D
					Southbound	<b>620</b>	<b>17</b>	<b>B</b>	<b>1670</b>	<b>47</b>	<b>D</b>
					Through	587	17	B	1643	47	D
					Right	15	15	B	10	28	C
					Bus	18	14	B	17	27	C
					Westbound	<b>740</b>	<b>63</b>	<b>E</b>	<b>1075</b>	<b>57</b>	<b>E</b>
					Left	455	68	E	840	64	E
					Through	90	54	D	40	32	C
					Right	195	55	E	195	34	C
8	SR 515 & I-405 SB On-ramp	Signal	WSDOT	HCM 6		<b>3770</b>	<b>3</b>	<b>A</b>	<b>4155</b>	<b>4</b>	<b>A</b>
					Northbound	<b>2680</b>	<b>4</b>	<b>A</b>	<b>1445</b>	<b>2</b>	<b>A</b>
					Through	2010	4	A	950	2	A
					Right	670	0	A	495	0	A
					Southbound	<b>1090</b>	<b>1</b>	<b>A</b>	<b>2710</b>	<b>4</b>	<b>A</b>
					Left	25	28	C	125	42	D
					Through	1065	1	A	2585	3	A
9	SR 515 & S Puget Dr/S 15th St	Signal	WSDOT	HCM 6		<b>3835</b>	<b>50</b>	<b>D</b>	<b>4160</b>	<b>26</b>	<b>C</b>
					Northbound	<b>1915</b>	<b>49</b>	<b>D</b>	<b>1115</b>	<b>30</b>	<b>C</b>
					Left	10	108	F	15	69	E
					Through	1895	49	D	1040	30	C
					Right	10	48	D	60	30	C
					Eastbound	<b>105</b>	<b>46</b>	<b>D</b>	<b>60</b>	<b>35</b>	<b>D</b>
					Left	85	47	D	45	36	D
					Through	10	0	A	5	0	A
					Right	10	41	D	10	32	C
					Southbound	<b>1060</b>	<b>31</b>	<b>C</b>	<b>2585</b>	<b>23</b>	<b>C</b>
					Left	250	88	F	730	38	D
					Through	785	14	B	1790	17	B
					Right	25	14	B	65	17	B
					Westbound	<b>755</b>	<b>88</b>	<b>F</b>	<b>400</b>	<b>40</b>	<b>D</b>
					Left	50	51	D	35	41	D
					Through	5	0	A	5	0	A
					Right	700	92	F	360	40	D

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## Renton Rainier BRT Access Study

### Synchro Detailed Intersection Results - 2050 Build Alt 4 AM/PM Peak Hour

#	Intersection	Traffic Control	Agency	HCM Method	Approach / Movement	2050 Build 4 AM Peak Hour			2050 Build 4 PM Peak Hour		
						Volume (veh/hr)	Delay (sec/veh)	LOS	Volume (veh/hr)	Delay (sec/veh)	LOS
<b>10</b>	<b>Lind Ave SW &amp; SW 16th St</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 6</b>	<b>1610</b>	<b>16</b>	<b>B</b>	<b>1790</b>	<b>14</b>	<b>B</b>	
					Northbound	<b>290</b>	<b>11</b>	<b>B</b>	<b>380</b>	<b>13</b>	<b>B</b>
					Left	35	14	B	35	15	B
					Through	245	11	B	335	13	B
					Right	10	11	B	10	13	B
					Eastbound	<b>435</b>	<b>22</b>	<b>C</b>	<b>465</b>	<b>13</b>	<b>B</b>
					Left	330	24	C	310	13	B
					Through	50	17	B	105	11	B
					Right	55	17	B	50	11	B
					Southbound	<b>595</b>	<b>12</b>	<b>B</b>	<b>675</b>	<b>15</b>	<b>B</b>
					Left	110	13	B	150	17	B
					Through	435	12	B	255	13	B
					Right	50	12	B	270	14	B
					Westbound	<b>290</b>	<b>20</b>	<b>C</b>	<b>270</b>	<b>17</b>	<b>B</b>
					Left	25	16	B	5	10	B
					Through	80	21	C	65	17	B
					Right	185	21	C	200	17	B
<b>11</b>	<b>Rainier Ave &amp; Hardie Ave</b>	<b>Signal</b>	<b>Renton</b>	<b>HCM 2000</b>	<b>3335</b>	<b>16</b>	<b>B</b>	<b>3453</b>	<b>15</b>	<b>B</b>	
					Northbound	<b>1808</b>	<b>17</b>	<b>B</b>	<b>1648</b>	<b>15</b>	<b>B</b>
					Left	0	0	A	0	0	A
					Through	1790	17	B	1630	15	B
					Right	18	8	A	18	8	A
					Eastbound	<b>70</b>	<b>66</b>	<b>E</b>	<b>40</b>	<b>63</b>	<b>E</b>
					Left	0	0	A	0	0	A
					Through	5	66	E	5	63	E
					Right	65	0	A	35	0	A
					Southbound	<b>1392</b>	<b>10</b>	<b>B</b>	<b>1704</b>	<b>12</b>	<b>B</b>
					Left	37	165	F	44	106	F
					Through	1355	6	A	1660	10	A
					Right	0	10	A	0	8	A
					Westbound	<b>65</b>	<b>69</b>	<b>E</b>	<b>61</b>	<b>66</b>	<b>E</b>
					Left	18	63	E	18	61	E
					Through	3	72	E	6	68	E
					Right	44	0	A	37	0	A
<b>52</b>	<b>Maple Ave &amp; SW Grady Way</b>	<b>TWSC</b>	<b>Renton</b>	<b>HCM6</b>	<b>2822</b>	<b>356</b>	<b>F</b>	<b>3407</b>	<b>1</b>	<b>A</b>	
					Northbound	<b>40</b>	<b>207</b>	<b>F</b>	<b>45</b>	<b>0</b>	<b>A</b>
					Left	5	207	F	5	-	
					Through	5	207	F	5	-	
					Right	30	207	F	35	-	
					Eastbound	<b>1276</b>	<b>0</b>	<b>A</b>	<b>1931</b>	<b>1</b>	<b>A</b>
					Left	15	13	B	135	15	B
					Through	1231	-		1791	-	
					Right	30	-		5	-	
					Southbound	<b>15</b>	<b>356</b>	<b>F</b>	<b>90</b>	<b>0</b>	<b>A</b>
					Left	5	356	F	15	-	
					Through	5	356	F	5	-	
					Right	5	356	F	70	-	
					Westbound	<b>1491</b>	<b>1</b>	<b>A</b>	<b>1341</b>	<b>1</b>	<b>A</b>
					Left	70	22	C	35	36	E
					Through	1331	-		1261	-	
					Right	90	-		45	-	

**Notes:**

- 1) Traffic Control is the control type at the specific intersection location; Signal = signalized intersection; OWSC = One-way stop-controlled intersection; TWSC = Two-way stop controlled intersection; AWSC = All-way stop-controlled intersection; Roundabout = roundabout controlled intersection
- 2) HCM6 methodology was used for all locations where applicable, otherwise, HCM2000 methodology was used.

Appendix B

# Alternatives Evaluated

# OPTIMIZE | Concepts Considered not Advanced

**Group 1 – Optimize Existing Network:** Traffic network is maintained. Concepts within this group require minimal capital investment and can likely be achieved in the near-term to gain measurable benefits.



- A** Southbound off-ramp access
- B** Jug-handle access

- C** Far-side U-turn
- D** Talbot Road Access

**Key Observations:**  
• Minimal travel benefits

\*Renton Transit Center limits are approximate for visual purposes only.

# OPTIMIZE | Concepts Considered Advanced

**Group 1 – Optimize Existing Network:** Traffic network is maintained. Concepts within this group require minimal capital investment and can likely be achieved in the near-term to gain measurable benefits.



**Key Observations:**

- BRT Route same as no-build.
- Grady/Rainier I/S improvements.
- Concept E may require property acquisition.
- Concepts F&G to utilize existing ROW.

- E** SB Transit Bypass Lane
- F** SB Transit Queue Jump

**G** Dual Left

\*Renton Transit Center limits are approximate for visual purposes only.

# AUGMENT | Concepts Considered not Advanced

**Group 2 – Augment Existing Network:** Traffic network is altered by adjusting certain movements. Concepts within this group require some capital investment.



**Key Observations:**

- Requires purchase/development of private road

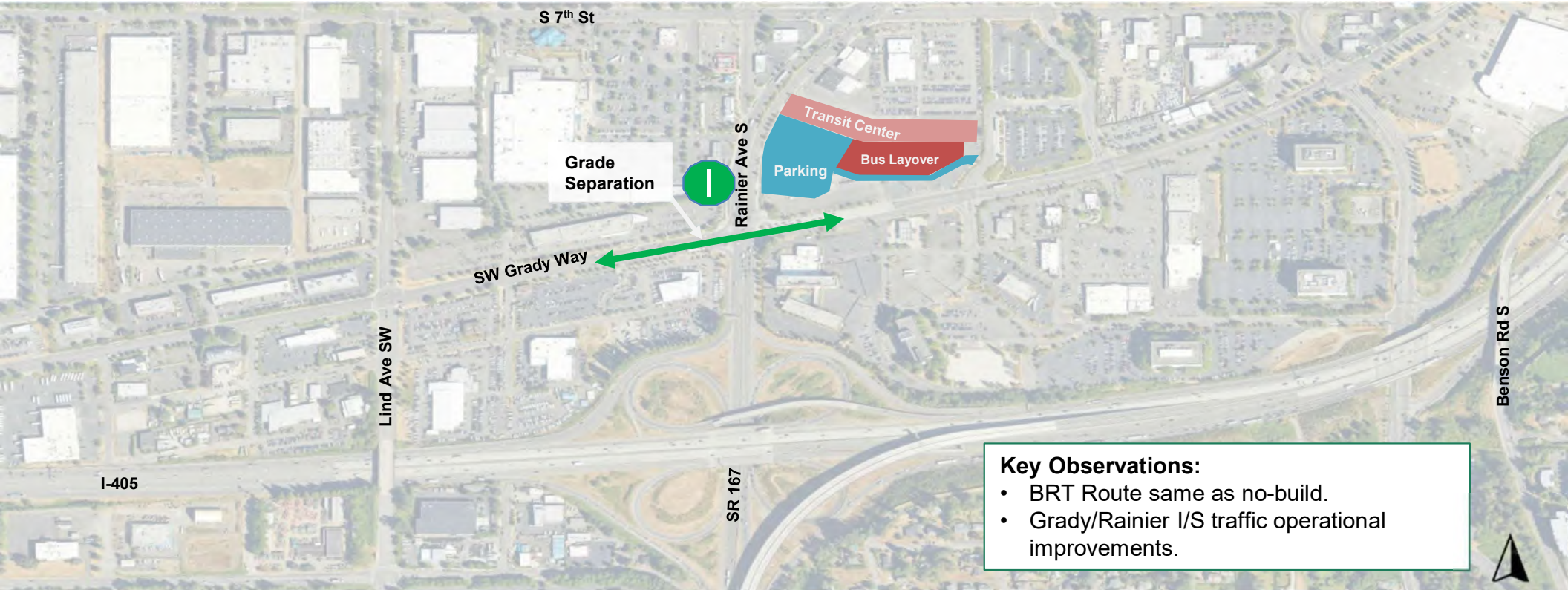
**H** New access within South Renton Village

**J** Displaced Left (Existing northbound left to southwest Grady Way Removed)

\*Renton Transit Center limits are approximate for visual purposes only.


# AUGMENT | Concepts Considered Advanced

**Group 2 – Augment Existing Network:** Traffic network is altered by adjusting certain movements. Concepts within this group require some capital investment.



**Key Observations:**

- BRT Route same as no-build.
- Grady/Rainier I/S traffic operational improvements.

 Grade Separate at SW Grady Way

\*Renton Transit Center limits are approximate for visual purposes only.

# NEW GP ACCESS | Concepts Considered Advanced

**Group 3 – Development New General-Purpose Lanes:** Traffic network is altered by providing new general-purpose lanes. Concepts within this group could require major capital investment depending on location.

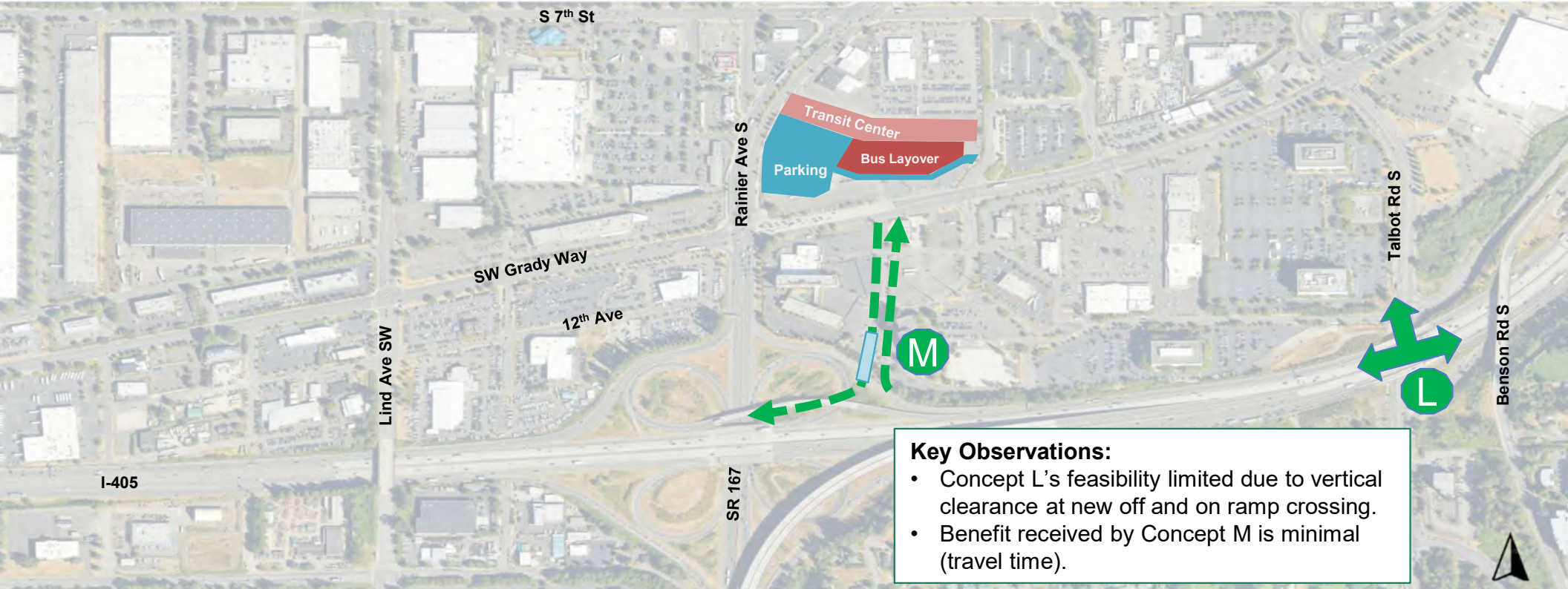


**K** Half-Diamond at Lind Ave SW

\*Renton Transit Center limits are approximate for visual purposes only.

# NEW TRANSIT ACCESS | Concepts Considered not Advanced

**Group 4 – Develop New Transit Access:** Traffic network may be altered depending on the location of the new transit access. Concepts within this group would likely require major capital investment depending on location.



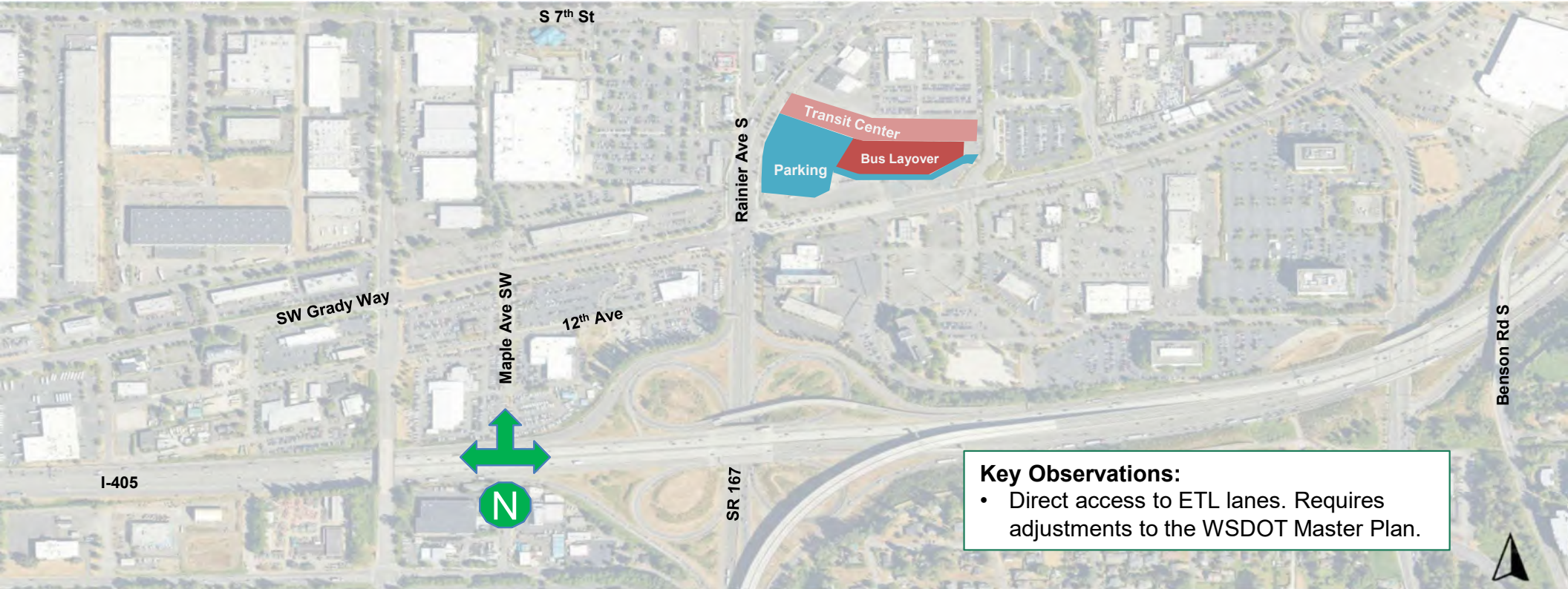
**L** Transit access at Talbot Rd S


**M** Transit access at existing ramps

\*Renton Transit Center limits are approximate for visual purposes only.

# NEW TRANSIT ACCESS | Concepts Considered Advanced

**Group 4 – Develop New Transit Access:** Traffic network may be altered depending on the location of the new transit access. Concepts within this group would likely require major capital investment depending on location.



 Transit access at Maple Ave SW

**Key Observations:**

- Direct access to ETL lanes. Requires adjustments to the WSDOT Master Plan.

\*Renton Transit Center limits are approximate for visual purposes only.

Appendix C

# Summary of Focus Groups

# Renton BRT Access Study – Business & Property Stakeholders Roundtable Meeting Summary

**Date:** July 16, 2025

**Location:** Renton Library

**Facilitators:** Blake Jones (WSDOT), Bryanna Bui (WSDOT) and Karl Westby (WSDOT)

**Participants:** Five participants in attendance including representatives from Lincoln Property Company, Renton Village Associates, Renton Downtown Partnership; and representation from the City of Renton.

## Meeting purpose

To present and gather feedback on four concepts developed as part of the Renton Bus Rapid Transit (BRT) Access Study. The study aims to improve transit system access and reliability around I-405/SR 167 facilities and the Renton Transit Center (Rainier Ave/Grady Way) consistent with the plans and visions for the project area including City of Renton, King County Metro, Sound Transit and WSDOT's I-405 and SR 167 Master Plans.

## Concepts presented

An overview was provided of the four concepts under evaluation, including initial findings and anticipated benefits.

### 1. Concept 1: Operational Improvements

- a. Lower-cost, potentially nearer-term improvements that largely make use of the existing street network (e.g., transit queue jumps, turn pockets, ramp metering).
- b. Least disruptive constructability-wise but offers more limited long-term benefits.

### 2. Concept 2: Lind Avenue Half-Diamond Interchange

- a. Adds a new NB I-405 to SB Lind Avenue ramp and SB Lind Avenue to SB I-405 ramp to try and remove some of the vehicle traffic from the Rainier/Grady interchange.
- b. Impacts to vehicle traffic with limited benefit to BRT speed and reliability.

### 3. Concept 3: Direct Access Ramps to Transit Center

- a. Transit-only ramps from I-405 express lanes to the Renton Transit Center.
- b. High capital cost and likely to present right-of-way impacts.
- c. Some traffic relief with improvement to BRT speed and reliability.

### 4. Concept 4: Rainier/Grady Bypass

- a. Grade-separates the east-west movement along SW Grady Way to reduce intersection congestion.
- b. Strongest overall benefit for both transit and general traffic compared to other concepts.

## Concept-specific feedback

### Concept 1

- **Nearer-term solution:**
  - Participants understood Concept 1 as a more cost-effective and potentially near-term solution.

### Concept 2

- **Redundant ramps:**
  - Participants felt that the proposed ramp would be redundant given the proximity to the existing I-405/SR 167 ramps and did not state any preference for this concept.

### Concept 3

- **Full or partial business closures:**
  - Business and property managers alike expressed concern about the likelihood of impacts to businesses along Rainier Ave and Grady Way that could result in full acquisitions and relocations; noting a ramp placed on Maple Ave would cut off access to the Brotherton Cadillac and Chevrolet businesses and likely force these businesses to close absent a design solution that could maintain the existing footprints and access.
  - There were questions about whether enough community and political support could be generated to select this concept given the significant impacts to the area and Renton it presents.
  
- **Long-term efficiency:**
  - Some community members shared that Concept 3 could be most efficient and best address transit and traffic issues over the long term.
    - *“Concept 3 reminds me a lot of Eastgate interchange off of I-90 and I think that’s very efficient. I think long term that would really help as Renton grows, I think this concept would more successful.”* – Roundtable participant

### Concept 4

- **Complexity and potential confusion:**

- Community members expressed a structure like this could add more confusion for drivers along Rainier Ave/Grady Way which is already a complex intersection to navigate.
- **Business impacts and concerns:**
  - A business owner noted that the bypass could impact auto dealership access and recommended future conversations with these groups who will have concerns about potential impacts to their businesses.
- **Aesthetic & environmental impacts:**
  - Participants suggested Concept 4 would need to consider thoughtful design measures that prioritize lighting and landscaping to mitigate visibility, safety and accessibility concerns.
    - *“Despite concerns [for how a bypass structure will change the surrounding environment], the feeling of Concept 4 reminds me of Bellevue and Kirkland which are more transit-focused whereas, a bypass feels more authentic to Renton with the heavy commuter traffic while also keeping that neighborhood feel.”* – Roundtable participant
- **Pedestrian & community experience:**
  - Community members had mixed views on how an elevated structure would affect walkability and neighborhood character.
  - Some participants saw potential for improved pedestrian safety by separating some of the traffic; others worried about a less welcoming environment.
    - *“The City is trying to bring high-density living into Renton, and I don’t feel like a bypass and a concept like this, aesthetically, spray paint and safety wise, adheres to that... You lose the open light way with adding concrete walls and barrier that will now be used for graffiti... It’s an eye sore and changes the sight line of Renton.”*
    - *“There are heavy traffic volumes at Rainier/Grady so separating them and pulling out some of those traffic volumes so that they don’t even have to interact definitely makes it easier in some ways as a pedestrian to not have to deal with as much busyness in terms of volume.”* - Roundtable Participant

## Preferences

- **Concept 1** (Operational improvements) was viewed as a good starting point for nearer-term and more cost-effective solutions.
- **Concept 2** (Lind Ave. partial interchange) received the least interest and support due to limited benefits to driver travel time and transit speed and reliability.
- **Interest in Concept 3** (Maple Ave. median direct access) **with some strong concerns about impacts to businesses:**
  - Participants appreciated Concept 3 for its transit benefits but expressed concerns about potential costs and property acquisition.
- **Strong support for Concept 4** (Grady Way bypass) **with concerns about access and aesthetics:**
  - Participants noted that Concept 4 could present access issues for businesses near Rainier/Grady.
  - Most respondents saw Concept 4 as the most effective long-term solution for traffic and transit reliability.
  - Some community members recognized Concept 4 as capital-intensive but worth the investment to accommodate future growth.

## General feedback for all concepts

- **Traffic analysis:**
  - A participant questioned how the traffic analysis was conducted and the accuracy of the data depending on when the analysis was done, noting there was a period of traffic influx due to a nearby Amazon facility. Their delivery vehicles and the routes they were using triggered an increase in traffic and congestion on Rainier/Grady but has since been addressed.
- **Access & connectivity:**
  - Businesses and property managers had concerns about maintaining access to businesses during and/or after construction and planning and access impacts to future tenants for multi-family homes in Renton Village.
    - A participant asked if the study would consider and provide improvements to pedestrian crossing on Rainer Ave.
  - Community members showed interest in how concepts would affect local surrounding traffic and transit routes further outside the study area.
- **Renton Transit Center parking & EV infrastructure:**
  - Participants emphasized the need for sufficient parking at the transit center. Some also expressed the need for EV charging stations at park and rides to

motivate EV drivers to utilize public transportation and meet the state’s mandate for EV by 2035.

- One participant noted that there is a lack of EV infrastructure at other regional transit centers which can sometimes deter or limit EV drivers parking at and utilizing a transit center.

- **Early and consistent communication:**

- If a concept is funded for design and construction, participants emphasized the need for early, clear, and consistent communication with businesses and property managers so they can inform their tenants, staff and customers about potential construction impacts.

- **Prioritize community considerations and cost efficiency:**

- Businesses want to make sure these concepts are the right fit for the community long term, especially with potential construction activities that could impact the bottom line for local businesses.

- **Business support and impacts:**

- A participant asked about the City of Renton’s consideration for a Local Improvement District (LID) to address impacts to local businesses and fund complementary improvements similar to the City of Seattle.
  - *“I think businesses in Renton are 100% behind this new transit center and would be willing to invest for their employees and future business growth.”* – Renton business community member
- The City of Renton informed participants that the City does not currently employ an LID program. However, the City noted in addition to potential impacts of any future adoption of these concepts, the City has some major utility issues in the Transit-Oriented-Development (TOD) area that have to do with infill in the area and relocation of PSE transmission lines, as well as some sewer main issues that need to be addressed. The City would need to consider how and when to implement a LID given these anticipated costs and impacts.

## Suggestions & additional considerations

- Participants recommended considering phased implementation by starting with Concept 1 improvements while planning and awaiting funding for larger investments.
- Community members would like to see clear signage and wayfinding for all users, especially concepts that introduce new traffic patterns.
- Suggestions for the City of Renton to explore funding mechanisms like LIDs.

- Support for prioritization of equity and accessibility in final designs.
- Community members highlighted the importance of incorporating community identity and aesthetics into infrastructure design that aligns with Renton's character.
- Participants strongly encouraged the project team to connect with businesses and properties that could potentially face significant impacts.
- A participant suggested that the study consider options that would route buses by Talbot Road S as a means of accessing the Renton Transit Center to move bus routes away from the heavily congested Rainier/Grady intersection.

### Next steps

- Input will be presented to the study team to inform a potential recommendation.
- Additional roundtable sessions will be held with residents, community-based organizations, and transit riders.

# Renton BRT Access Study – Residents Roundtable

## Meeting Summary

**Date:** July 20, 2025

**Location:** Triton Towers, Renton, Washington

**Facilitators:** Blake Jones (WSDOT), Samantha DeMars-Hanson (WSDOT) and Caroline Barnett (WSDOT)

**Participants:** Three participants total including representatives from South Renton Connection, Cascade/Benson Hill as well as representation from the City of Renton.

### Meeting purpose

To present and gather feedback on four concepts developed as part of the Renton Bus Rapid Transit (BRT) Access Study. The study aims to improve transit system access and reliability around I-405/SR 167 facilities and the Renton Transit Center (Rainier Ave/Grady Way) consistent with the plans and visions for the project area including City of Renton, King County Metro, Sound Transit and WSDOT's I-405 and SR 167 Master Plans.

### Concepts presented

An overview was provided of the four concepts under evaluation, including initial findings and anticipated benefits.

#### 1. Concept 1: Operational Improvements

- a. Lower-cost, nearer-term improvements that largely make use of the existing street network (e.g., transit queue jumps, turn pockets, ramp metering).
- b. Least disruptive constructability-wise but offers more limited long-term benefits.

#### 2. Concept 2: Lind Avenue Half-Diamond Interchange

- a. Adds a new NB I-405 to SB Lind Avenue ramp and SB Lind Avenue to SB I-405 ramp to try and remove some of the vehicle traffic from the Rainier/Grady interchange.
- b. Minimal traffic relief with limited benefit to BRT speed and reliability.

#### 3. Concept 3: Direct Access Ramps to Transit Center

- a. Transit-only access ramps from I-405 express lanes to the Renton Transit Center.
- b. High capital cost and likely to present right-of-way impacts.
- c. Some traffic relief with improvement to BRT speed and reliability.

#### 4. Concept 4: Rainier/Grady Bypass

- a. Grade-separates the east-west movement along SW Grady Way to reduce intersection congestion.
- b. Strongest overall benefit for both transit and general traffic compared to other concepts.

## Concept-specific feedback

### Concept 1

- **Leverages existing infrastructure:**
  - Participants stated that Concept 1 is the only concept that works to make better use of existing infrastructure and community members appreciated the cost-effectiveness, minimal construction disruption, and potential opportunity for earlier implementation.

### Concept 2

- **Limited traffic benefits:**
  - Participants noted that this concept performed the worst in traffic analysis with limited traffic and travel improvements.

### Concept 3

- **Property impacts:**
  - Community members expressed concerns about property impacts and generating enough community and political support to move this concept forward despite the benefits it provides to transit and vehicles.

### Concept 4

- **Pedestrian experience:**
  - Residents are concerned about the pedestrian experience including potential noise, air quality, and safety issues under the structure.
  - Interest in signal timing and prioritization of various modes of traffic (vehicle, bike and ped) considerations if Concept 4 moved forward.

## General feedback for all concepts

- **Environmental & community impact:**
  - Pedestrian safety and accessibility should be emphasized in all concepts.
  - Alignment with Renton's long-term vision for a people-oriented neighborhood should be adhered to.
- **Construction fatigue:**
  - Residents noted that they've heard about fatigue with on-going construction and impacts from development happening in Renton.
- **Downtown transit access:**

- Community members emphasized the need for improved connectivity between downtown and the new transit center.

## Preferences

- **Concept 1** (Operational improvements) was viewed favorably for its low impact and cost effectiveness.
- **Concept 2** (Lind Ave. partial interchange) was least preferred due to limited transit benefits and impacts on vehicle traffic.
- **Strong preference for Concept 3** (Maple Ave. median direct access) for its limited impact on the existing Rainier/Grady intersection and potential for significant benefits to transit.
- **Concept 4** (Grady Way bypass) participants acknowledged strong performance for drivers and transit but had less favorable views on the environmental and community impacts.

## Suggestions & additional considerations

- **Infrastructure & routing ideas:**
  - Concept 2 – Participants were curious if the plan could be modified to provide two direct access ramps for different movements: one at the existing location and another east of SR 167.
  - Consider the use of existing Talbot ramps and internal roads.
  - Create a back road access near Uwajimaya for bus routing.

## Next steps

- Input will be presented to the study team to inform a potential recommendation.
- Additional roundtable sessions will be held with community-based organizations and transit riders.

# Renton BRT Access Study – Community-based Organizations Roundtable Meeting Summary

**Date:** July 21, 2025

**Location:** Renton Chamber of Commerce

**Facilitators:** Blake Jones (WSDOT), Bryanna Bui (WSDOT) and Joyce Khoury (WSDOT)

**Participants:** Nine participants in attendance including representing various Community-based Organizations including HealthPoint, Win with Warriors, Communities and Schools of Greater King County, Sunset Community Church, Renton Rotary, AFEW, Renton Chamber of Commerce, North Renton Neighborhood Association, American Legion, St. Stephen Housing Association; and representation from the City of Renton.

## Meeting purpose

To present and gather feedback on four concepts developed as part of the Renton Bus Rapid Transit (BRT) Access Study. The study aims to improve transit system access and reliability around I-405/SR 167 facilities and the Renton Transit Center (Rainier Ave/Grady Way) consistent with the plans and visions for the project area including City of Renton, King County Metro, Sound Transit and WSDOT's I-405 and SR 167 Master Plans.

## Concepts presented

An overview was provided of the four concepts under evaluation, including initial findings and anticipated benefits.

- **Concept 1: Operational Improvements**
  - a. Lower-cost, potentially nearer-term improvements that largely make use of the existing street network (e.g., transit queue jumps, turn pockets, ramp metering).
  - b. Least disruptive constructability-wise but offers more limited long-term benefits.
- **Concept 2: Lind Avenue Half-Diamond Interchange**
  - a. Adds a new NB I-405 to SB Lind Avenue ramp and SB Lind Avenue to SB I-405 ramp to try and remove some of the vehicle traffic from the Rainier/Grady interchange.
  - b. Impacts to vehicle traffic with limited benefit to BRT speed and reliability.
- **Concept 3: Direct Access Ramps to Transit Center**

- a. Transit-only access ramps from I-405 express lanes to the Renton Transit Center.
- b. High capital cost and likely to present right-of-way impacts.
- c. Some traffic relief with improvement to BRT speed and reliability.
- **Concept 4: Rainier/Grady Bypass**
  - a. Grade-separates the east-west movement along SW Grady Way to reduce intersection congestion.
  - b. Strongest overall benefit for both transit and general traffic compared to other concepts

## Concept-specific feedback

### Concept 1

- **Nearer-term solution with limited improvements:**
  - Participants appreciated Concept 1 for its potential to be a nearer-term improvement, although participants noted that the improvements may not significantly alleviate congestion or improve transit speed and reliability.
- **Forward compatibility with other concepts:**
  - Positive feedback shared that Concept 1 could be implemented early and supplemented later with other concepts.
- **Ramp metering and movement improvements:**
  - Community members expressed skepticism about ramp metering systems and noted that it feels like it actually adds to the congestion. One participant suggested analyzing this issue further as part of the study.
  - Others noted that the on and off ramps for I-405 and SR 167 are really challenging and agreed that giving transit priority would help transit move through them faster.

### Concept 2

- **Cost vs. benefit:**
  - Community members questioned whether the investment would be justified given the limited improvements for transit.

### Concept 3

- **Property & business impacts:**
  - Community members expressed concern about impacts to nearby businesses including the auto dealerships and were skeptical they could remain in place.
- **Support for transit benefits:**

- Despite concerns, many attendees acknowledged the strong transit reliability improvements Concept 3 would offer.

## Concept 4

- **Aesthetics and safety impacts:**

- Concept 4 raised concerns about the elevated structure affecting aesthetics, and creating a dark, uninviting space. However, some community members shared the current Rainier/Grady area doesn't feel like a neighborhood, therefore the bypass structure wouldn't feel out of place.
- Community members suggested adding lighting, murals, landscaping, park benches and community programming under the structure to activate the area and make it more attractive for pedestrians.
  - *“The light rail extension in Federal Way has created a similar structure... but the common complaints I've heard about is – it blocks the view, residents are sometimes upset that it changes the skyline, and bothers people when people congregate. I've seen solutions like in San Francisco; they have something similar that has lights and music underneath. They turn it into like an artist space and park that encourages traffic instead of making it a dark cave. There are solutions to mitigate concerns.”* – Renton community member
- Some participants favored the grade separated structure because they liked the potential improvements to traffic safety and efficiency.

- **Maintaining local access:**

- Participants highlighted the importance of maintaining local access along Grady Way with the addition of a bypass structure.
- Emphasis on the need for clear signage, improved traffic signaling, and lighting to help drivers and pedestrians navigate the Rainier/Grady intersection safely.

- **Construction complexity:**

- Concerns about construction feasibility and a potentially long timeline.

## General feedback for all concepts

- **Traffic & safety:**

- Community members unanimously agreed that the current Rainier/Grady area is a dangerous intersection with frequent vehicle incidents and crashes.
- Strong concerns about pedestrian and vehicle conflicts.
- Community members showed strong interest in improved pedestrian crossings and refuge islands to be considered in all concepts.

- *“There are not a lot of businesses that generate foot traffic in the [study] area because there is a lot of vehicle traffic and tragic incidents. There are plans for mixed-use of residential and commercial development so there will be a growth in people who will be inclined to walk, so my concern is for pedestrians.”* – Renton community member
- **Access & equity:**
  - Desire for access improvements that work for the entire community including veterans, students, and underserved populations.
  - Strong need for safe, reliable transit options for those without cars.
  - Community members would like to see transit routes that effectively serve Renton neighborhoods and provide more access to Downtown Seattle and other regional hubs.
- **Construction impacts:**
  - Concerns about the duration and disruption of construction for each concept.
  - Community members expressed interest in minimizing access impacts for businesses and maintaining traffic flow.
- **Cost and benefit analysis:**
  - Participants expressed interest in further cost and benefit analysis to better understand the estimated cost of each concept and how to make most effective use of taxpayer dollars.

## Preferences

- **Concept 1** (Operational improvements) was appreciated for its low cost and early implementation potential. Many participants encouraged building Concept 1 first.
- **Concept 2** (Lind Ave. partial interchange) generated mixed views with most participants expressing little interest in pursuing further.
- **Interest in Concept 3** (Maple Ave. median direct access) based on benefits to transit.
- **Strong support for Concept 4** (Grady Way bypass) as it was regarded as the most effective concept for improving transit and driver experiences.

## Suggestions & additional considerations

- **Phased approach:**

- Community members supported phased implementation of improvements as funding becomes available. Some participants expressed support for implementing Concept 1 first, followed by Concept 4 as funding allows.
- **Alternative ideas:**
  - Participants encouraged the study team to explore pedestrian bridge options for safer crossings across Rainier Ave and Grady Way.
  - Suggested rerouting bus traffic to 7<sup>th</sup> St to access the transit center.

## Next steps

- Input will be presented to the study team to inform a potential recommendation.
- An additional roundtable session will be held with transit riders.

# Renton BRT Access Study – Transit Users Roundtable

## Meeting Summary

**Date:** August 4, 2025

**Location:** Renton Chamber of Commerce

**Facilitators:** Blake Jones (WSDOT), Bryanna Bui (WSDOT) and Karl Westby (WSDOT)

**Participants:** Five participants in attendance including transit riders from Renton, Kent, Bellevue, and a member of the Renton Chamber of Commerce.

### Meeting purpose

To present and gather feedback on four concepts developed as part of the Renton Bus Rapid Transit (BRT) Access Study. The study aims to improve transit system access and reliability around I-405/SR 167 facilities and the Renton Transit Center (Rainier Ave/Grady Way) consistent with the plans and visions for the project area including City of Renton, King County Metro, Sound Transit and WSDOT's I-405 and SR 167 Master Plans.

### Concepts presented

An overview was provided of the four concepts under evaluation, including initial findings and anticipated benefits.

- **Concept 1: Operational Improvements**
  - a. Lower-cost, potentially nearer-term improvements that largely make use of the existing street network (e.g., transit queue jumps, turn pockets, ramp metering).
  - b. Least disruptive constructability-wise but offers more limited long-term benefits.
- **Concept 2: Lind Avenue Half-Diamond Interchange**
  - a. Adds a new NB I-405 to SB Lind Avenue ramp and SB Lind Avenue to SB I-405 ramp to try and remove some of the vehicle traffic from the Rainier/Grady interchange.
  - b. Impacts to vehicle traffic with limited benefit to BRT speed and reliability.
- **Concept 3: Direct Access Ramps to Transit Center**
  - a. Transit-only access ramps from I-405 express lanes to the Renton Transit Center.
  - b. High capital cost and likely to present right-of-way impacts.
  - c. Some traffic relief with improvement to BRT speed and reliability.

- **Concept 4: Rainier/Grady Bypass**
  - a. Grade-separates the east-west movement along SW Grady Way to reduce intersection congestion.
  - b. Strongest overall benefit for both transit and general traffic compared to other concepts.

## Concept-specific feedback

### Concept 1

- **Limited benefits with nearer-term potential:**
  - Participants appreciated Concept 1 for its feasibility as a nearer-term improvement, although participants noted that the improvements may not significantly alleviate congestion or improve transit speed and reliability.
- **Forward compatibility with other concepts:**
  - Community members noted that Concept 1 could be implemented early without creating rework in the future if other concepts were to be funded.

### Concept 2

- **Ineffective:**
  - Most transit users viewed Concept 2 as ineffective in addressing congestion at Rainier/Grady in a way that would benefit transit and vehicles.
  - They felt Concept 2 added complexity without solving core transit access issues and vehicle traffic congestion.

### Concept 3

- **Property impacts:**
  - Community members acknowledged transit benefits but raised concerns about impacts to nearby businesses.
- **Efficiency:**
  - Participants were familiar with the general configuration and have seen it work efficiently in other areas like Bellevue and Lynnwood.
  - They noted Concept 3 could take some of the existing traffic load off Lind Ave.
- **Multimodal potential:**
  - Community members liked that Concept 3 offers more opportunities to make Grady Way a multimodal roadway with aesthetic improvements including landscaping.

### Concept 4

- **Aesthetics and community impact:**

- Some participants expressed concerns about the elevated structure creating a dark, potentially unsafe environment that doesn't align with the future vision for the area.
  - *"I think it will make people feel unsafe because it's a bunch of gray, it's going to be dark underneath. Rainier/Grady is going to be like another downtown and it's going to be a lot denser. There's going to be trees and bike lanes, hopefully, things that are going to be all around and you'll have a giant gray thing coming out of the middle of road distracting drivers."* – Renton community member
- **Requires education:**
  - Participants raised concern that if Concept 4 is selected, there will be confusion from the general public on what this structure is and how to use it. A participant noted that during the day when the area is well-lit and has constant traffic flow to follow, this concept will have less navigational challenges. Whereas during the night, when there is less traffic and less light, participants predict that drivers will most likely be easily confused or lost.
    - *"If we're talking about late evening, to Rentonites, they'll adjust quickly. If you're new to Renton and you see this overpass, come out of nowhere, you will immediately find yourself getting lost or might get confused with the lanes. But in the day when you can see everything, then it'll make a bit more sense."* – Renton community member

## General feedback for all concepts

### Transit access and reliability:

- Transit users emphasized the need for efficient and direct routing to and from neighborhoods currently underserved by transit such as Highlands, Skyway, and Cascade.
- Riders raised reliability and access concerns with transfer times and indirect routing, particularly for local King County Metro services.

### Pedestrian safety and experience:

- Participants noted that Grady Way is not currently pedestrian-friendly.
- Community members expressed strong interest in a vision for pedestrian traffic regardless of which concept is advanced.
- Transit users emphasized the importance of lighting, landscaping, and pedestrian connections to enhance safety and walkability in the study area.

### Related I-405 and SR 167 improvements:

- Multiple participants were interested in improvements to the existing I-405/SR 167 facilities that could complement or enhance the intersection experience and proposed concepts.

### Transit-oriented community:

- Transit-users expressed the need to align improvements with a transit-oriented community. Community members foresee increases in density and would like a neighborhood that they can easily walk, ride or drive through to access stores, cafes and restaurants.

## Preferences

- **Concept 1** (Operational improvements) was described as a feasible early-phase option that could be implemented while pursuing funding for more comprehensive improvements.
- **Concept 2** (Lind Ave. partial interchange) had the least interest.
- **Strong support for Concept 3** (Maple Ave. median direct access) was favored for being away from the heavily congested and dense redevelopment opportunities while still providing transit benefits.
  - *“I prefer Concept 3, it reminds me of what Bellevue has, it’s a little bit more out of the way for pedestrians. If I’m walking through here with future cafes and stores, it’ll feel like a nicer environment.”* – Renton transit user
- **Strong interest in Concept 4** (Grady Way bypass) was recognized by community members as the most ideal and effective concept for improving transit and driver experience. Some participants felt that safety and aesthetic concerns associated with the bypass could be mitigated during design and that people would adapt once it’s in place.
- **Most preferred: combine Concepts 3 and 4**
  - Participants showed strong interest in combining concepts 3 and 4 with a phased approach, implementing Concept 3 first, followed by Concept 4. Many participants felt the combination of the two concepts offered optimal transit reliability, travel time improvements, and traffic flow benefits to justify the significant investment.

## Suggestions & additional considerations

- **Phased Approach:**

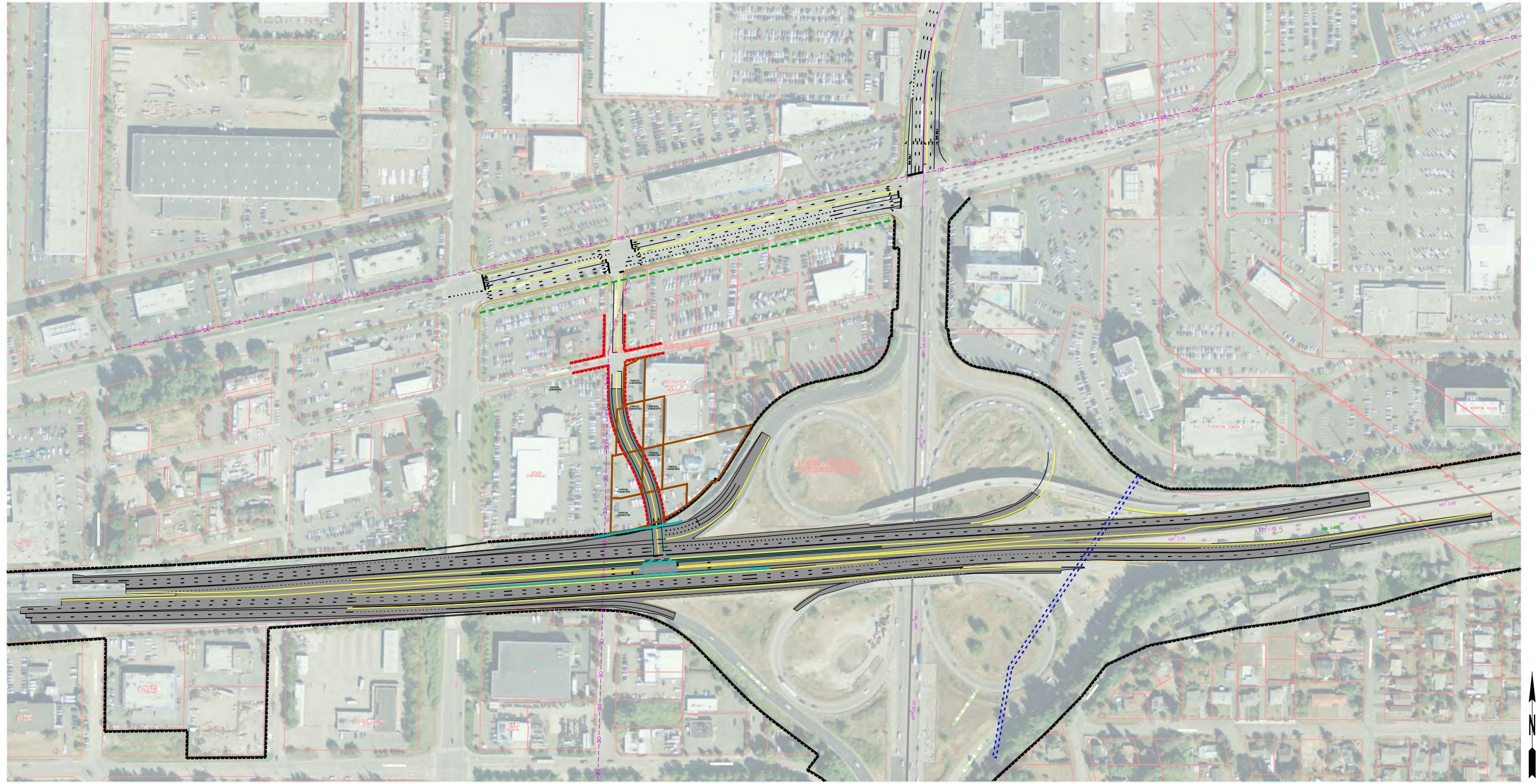
- Community members support phased implementation of improvements as funding becomes available.
- **Safety conditions:**
  - Transit users would like to see well-lit areas and considerations for bus driver and rider safety at all hours.
- **Alternative Ideas:**
  - A participant asked if the study considered having the transit center in areas further away from the congested Rainier/Grady interchange.
  - A participant encouraged the study team to explore footbridge options for safer pedestrian crossings across Rainier Ave and Grady Way.

## Next steps

- Input will be presented to the study team to inform a potential recommendation.

Appendix D

# 1 Percent Design and Cost Estimate



LEGEND	
	EXISTING PARCEL
	POTENTIALLY IMPACTED EXISTING PARCEL
	EXISTING LIMITED ACCESS RIGHT OF WAY
	ASSUMED NEW LIMITED ACCESS RIGHT OF WAY
	EXISTING FISH PASSAGE BARRIER

A WSDOT Cost Estimating Validation Process (CEVP) was not conducted as part of this study. Therefore, the overall costs were increased by 75% to account for unknown risks, as calculated below.

Items	405 Mainline & Direct Access Ramps	Local Streets	Total
Construction Contract Base Cost:	\$ 65,460,000	\$ 7,316,000	\$ 72,776,000
Other Project Delivery Costs:	\$ 50,659,000	\$ 4,406,000	\$ 55,065,000
Subtotals:	\$ 116,119,000	\$ 11,722,000	\$ 127,841,000
Risk: 75%	\$ 87,089,250	\$ 8,791,500	\$ 95,880,750
<b>Total<sup>1</sup> (w/Risk):</b>	<b>\$ 203,208,250</b>	<b>\$ 20,513,500</b>	<b>\$ 223,721,750</b>

Escalation (Not Included at this Stage)

**Construction Contract Base Costs (by Section):**

Section 1 Earthwork	\$ 6,439,000	\$ 96,000	\$ 6,535,000
Section 2 Pavement	\$ 1,191,000	\$ 1,106,000	\$ 2,297,000
Section 3 Drainage	\$ 2,719,000	\$ 675,000	\$ 3,394,000
Section 4 Specialty Items (Walls, Planting, Fish Passage)	\$ 23,926,000	\$ -	\$ 23,926,000
Section 5 Traffic Items	\$ 6,346,000	\$ 3,151,000	\$ 9,497,000
Section 7 Minor Items	\$ 5,043,000	\$ 546,000	\$ 5,589,000
Section 8 Mobilization	\$ 4,707,000	\$ 510,000	\$ 5,217,000
Section 9 DB Professional Services	\$ 11,389,000	\$ 1,232,000	\$ 12,621,000
Section 10 Differing Site Conditions	\$ 1,000,000	\$ -	\$ 1,000,000
<b>Construction Contract Base Costs:</b>	<b>\$ 65,460,000</b>	<b>\$ 7,316,000</b>	<b>\$ 72,776,000</b>

**Other Project Delivery Costs (Items Included):**

Sales Tax	\$ 6,939,000	\$ 740,000	\$ 7,679,000
Project Development Costs <sup>2</sup>	\$ 22,126,000	\$ 2,438,000	\$ 24,564,000
Right of Way <sup>3</sup>	\$ 11,500,000	\$ -	\$ 11,500,000
Major Utility Relocates	\$ 4,536,000	\$ 54,000	\$ 4,590,000
Project Specific Obligations <sup>4</sup>	\$ 3,305,000	\$ 953,000	\$ 4,258,000
Direct Project Support <sup>5</sup>	\$ 2,253,000	\$ 221,000	\$ 2,474,000
<b>Other Project Delivery Costs:</b>	<b>\$ 50,659,000</b>	<b>\$ 4,406,000</b>	<b>\$ 55,065,000</b>

Notes:

- 1) Funding timeline for improvements are unknown at this time, therefore dollar values represent costs in 2025. Active transportation elements and associated right of way impacts are also not included.
- 2) Project Development Costs represent planning, engineering, management, documentation, construction engineering, and inspections.
- 3) Right of Way costs are based on layout/configuration of 1% design. This could change as project and design progress.
- 4) Project Specific Obligations represent 1% contingency, incentives, stipends for proposals, and overhead costs.
- 5) Direct Project Support represent administration support at various phases of project development and delivery.

