

EAST LINK EXTENSION

2017 SEPA Addendum



SEATTLE



MERCER ISLAND



BELLEVUE



OVERLAKE



REDMOND



East Link Extension

2017

SEPA Addendum to

East Link

Final Environmental Impact Statement

Prepared Pursuant to Washington State Environmental Policy Act
(Chapter 43.21 C RCW) and WAC 197-11-625

April 2017

Sound Transit
Washington State Department of Transportation

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April 2017

Dear Recipient:

The Washington State Department of Transportation (WSDOT), and Sound Transit have prepared this State Environmental Policy Act (SEPA) Addendum for the East Link Extension, which is a light rail project that connects downtown Seattle to Mercer Island, Bellevue, and Redmond via Interstate 90. This Addendum updates the Final Environmental Impact Statement (EIS) issued in July 2011, and subsequent Addenda, and provides additional analysis and information about the project. This Addendum describes changes to the operation of I-90 high-occupancy vehicle lanes and project refinements associated with transit integration on Mercer Island, evaluates the potential impacts of these changes, and identifies changes to mitigation measures.

Copies of this Addendum are available for review at Sound Transit's office and on the Sound Transit website at www.soundtransit.org/environmental-documents. To request a copy, please contact Zack Ambrose, Community Outreach Specialist, 401 S. Jackson St., Seattle WA 98104-2826, or (206) 903-7176.

Sincerely,

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Deputy Director
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Executive Summary

ES.1 Introduction

The East Link Extension consists of constructing and operating an approximately 18-mile light rail system connecting Sound Transit's existing line in downtown Seattle east across Lake Washington via Interstate 90 (I-90) to Mercer Island, Bellevue, and Redmond. Sound Transit, Washington State Department of Transportation (WSDOT), and the Federal Transit Administration (FTA) issued the *East Link Project Final Environmental Impact Statement* (EIS) pursuant to the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA) in July 2011. The Sound Transit Board selected the East Link project to build in July 2011, and FTA and the Federal Highway Administration (FHWA) each issued a Record of Decision (ROD) in November 2011. Construction for East Link began in April 2016 in Bellevue, and construction in the I-90 corridor will begin in June 2017. The East Link Extension from Seattle to the Overlake/Redmond Technology Center will open for service in 2023.

The purpose of this SEPA Addendum is to describe changes in the operation of I-90 high-occupancy vehicle (HOV) lanes between Seattle and Mercer Island and project refinements associated with transit integration on Mercer Island, to evaluate the potential impacts of these changes, and to identify changes in mitigation measures.

ES1.1 Changes in I-90 Operations

The section of I-90 between Seattle and Mercer Island has three general-purpose (GP) lanes in each direction and a two-lane reversible center roadway that operates in the peak direction. With the East Link Extension and completion of the R-8A project HOV lanes (currently under construction), light rail will occupy the center roadway, and two new HOV lanes will be provided in the outer roadway, one operating permanently in each direction. Between Mercer Island and Bellevue the R-8A HOV lanes are already in place. The East Link Final EIS assumed that single-occupant vehicles (SOVs) traveling between Seattle and Mercer Island would be able to use the R-8A HOV lanes in both directions of I-90 between Seattle and Island Crest Way on Mercer Island, similar to how they currently use the center roadway between Seattle and Mercer Island. This assumption was based on conditions as they existed at the time the Final EIS was prepared regarding use of the HOV lanes.

In August 2016, FHWA sent a letter to WSDOT and the City of Mercer Island stating that the U.S. Department of Transportation does not have legal authority to grant temporary or permanent SOV access to the I-90 HOV lanes. This means that SOVs traveling to and from Mercer Island are prohibited from using the R-8A HOV lanes on the westbound and eastbound I-90 mainlines between Seattle and Mercer Island, and the Island Crest Way ramps that directly connect with those HOV lanes. At the time FHWA's letter was issued, the East Link Extension Project had advanced into construction in some segments and into the last stages of final design and contracting for the I-90 segment in anticipation of closing the I-90 center roadway for light rail construction in June 2017.

This change in operations of the I-90 R-8A HOV lanes is not a result of the East Link Extension. Nevertheless, Sound Transit and WSDOT have analyzed whether FHWA's decision creates any new

significant environmental impacts beyond the range of impacts and alternatives analyzed in the previous environmental documents. Three different options for operating the R-8A HOV lanes were analyzed based on the approved East Link Extension and completion of the R-8A HOV lanes between Mercer Island and Seattle. The East Link Extension Project closes the existing center roadway and associated ramps for East Link construction and operations regardless of how the R-8A HOV lanes are operated. On Mercer Island there are currently 16 on- and off-ramps that are accessible at any given time. Fourteen of these serve GP traffic and two are HOV access only. With East Link, the ramps to and from the center roadway at 77th Avenue SE and Island Crest Way will be closed and the eastbound Island Crest Way ramp will be modified to connect to the new R-8A HOV lane. This will result in a total of 15 on- and off-ramps in the future. The I-90 options reflect different operating conditions for the R-8A HOV lanes and connecting ramps at Island Crest Way. The I-90 options are:

- **Mercer Island SOVs allowed in the HOV lanes (Option 1):** Option 1 is what was assumed in the Final EIS for the build condition. It assumes HOVs, transit, and Mercer Island SOVs would be allowed in the I-90 R-8A HOV lanes between Seattle and Mercer Island, including the westbound and eastbound Island Crest Way HOV ramps. It is included in the Addendum to update the Final EIS analysis as a point of comparison.
- **Mercer Island SOVs prohibited from HOV lanes (Option 2):** Option 2 is based on the FHWA determination. It assumes only HOVs and buses would be allowed in the I-90 R-8A HOV lanes between Seattle and Mercer Island. SOV traffic from Mercer Island would not be allowed to use the Island Crest Way HOV ramps. There is an existing eastbound GP off-ramp to Island Crest Way but not a westbound GP on-ramp from Island Crest Way.
- **HOV lanes converted to general purpose lanes (Option 3; only for construction period):** Option 3 assumes conversion of the outer roadway R-8A HOV lanes between Mercer Island and Seattle to GP lanes and of the westbound and eastbound Island Crest Way HOV ramps to GP ramps during East Link construction only. Converting the R-8A HOV lanes to GP lanes is not consistent with existing regional goals and policies and may require repayment of both local and federal funds that have already been invested in the R-8A HOV lanes on this portion of I-90. Option 3 was requested for study by the City of Mercer Island.

A No Build condition was also analyzed in the transportation section for the construction and operations periods. It is provided for comparison purposes only as the East Link Extension Project is already approved. This No Build condition assumes implementation of other reasonable and foreseeable regional transportation projects for each analysis year (2020 and 2035). It provides a baseline of what transportation conditions would be in the future years with these other projects but without completing the R-8A project and the East Link project. This allows the potential impacts from changing the R-8A HOV lane operations to be compared to the existing conditions of I-90 without the East Link project and completion of the R-8A HOV lanes between Seattle and Mercer Island.

ES1.2 Mercer Island Bus Transit Integration Configurations

Since publication of the Final EIS, Sound Transit has been coordinating with Mercer Island, King County Metro (Metro), and WSDOT to refine a transit integration plan on Mercer Island. At each East Link station, similar to existing link light rail stations, efforts have been made to refine bus connections with the light rail system, creating efficiencies, enhancing transit reliability, and enabling future service expansion. On Mercer Island, the refined Transit Integration configurations have been developed where Sound Transit and Metro routes that currently travel from east of Mercer Island to Seattle via I-90 would be rerouted to other Eastside communities, deleted, or modified to begin and end at Mercer Island where riders could transfer to the regional light rail system. Westbound buses would not continue into Seattle under the proposed Transit Integration refinements.

Sound Transit evaluated two configurations for bus integration in addition to the transit integration configuration proposed in the Final EIS (called the FEIS Configuration in this analysis): the 77th Avenue SE Configuration and the 80th Avenue SE Configuration. The two proposed configurations would create new bus stops and layover spaces next to the new Mercer Island Station. They would involve some changes to adjacent roadways and circulation of transit routes in this area and use of additional public or private right-of-way. The three configurations analyzed in this Addendum are:

- **FEIS Configuration:** Under this configuration some bus routes that travel on I-90 would be discontinued or rerouted, or would terminate on Mercer Island, while other routes would continue to stop on Mercer Island and travel to and from Seattle. Like today, buses would use the 76th Avenue SE, 77th Avenue SE, and 80th Avenue SE ramps on Mercer Island, depending on direction and time of day. Bus stops and layover areas would be along N Mercer Way and on 80th Avenue SE. There would be about 200 buses stopping daily on Mercer Island with this configuration compared to the 350 daily buses that travel to and from Mercer Island today.
- **77th Avenue SE Configuration:** For this configuration, buses would be routed in a counter-clockwise direction along N Mercer Way and turn around at a new roundabout at N Mercer Way and 77th Avenue SE. Buses would use the westbound 80th Avenue HOV off-ramp and the eastbound 80th Avenue HOV on-ramp. The configuration would include roadway improvements, bus drop-off and pick-up areas, and bus layover areas on both sides of N Mercer Way and the west side of 80th Avenue SE. There would be about 320 buses stopping daily on Mercer Island with this configuration.
- **80th Avenue SE Configuration:** For this configuration, buses would exit I-90 from the westbound 80th Avenue HOV off-ramp and travel in a counter-clockwise direction through a bus transfer area on the west side of 80th Avenue SE and to the eastbound 80th Avenue HOV on-ramp. The 80th Avenue SE Configuration would include roadway improvements, bus drop-off and pick-up areas on the western side of 80th Avenue SE, and bus layover areas along N Mercer Way. There would be about 320 buses stopping daily on Mercer Island with this configuration.

ES.2 Projectwide Comparison of Impacts

Table ES-1 compares impacts for the East Link Extension Project adopted by the Sound Transit Board (see box) with all three I-90 options and the Mercer Island Transit Integration configurations. Table ES-1 also shows the range of impacts for all East Link alternatives for the full-length project from Seattle

East Link Extension Project

The project was chosen by the Sound Transit Board in 2011 and updated in 2013. It includes the Final EIS alternatives A1, B2M, C9T, D2A, and E2.

to Redmond evaluated in the Final EIS and the 2013 and 2016 Addenda to the Final EIS. As shown in the table, the changes in use of the HOV lane and the proposed transit configurations would have fewer local intersection traffic impacts, potentially have two more residential displacements and property acquisitions, and potentially have an increased area of park impact compared to the East Link Extension Project adopted by the Sound Transit Board. Although not shown in the table, the I-90 options and proposed transit configurations would also have similar or improved transportation operations and safety performance as disclosed for the alternatives evaluated in the Final EIS. Overall, the impacts with the I-90 options and proposed transit configurations are within the range of impacts for all alternatives evaluated in the Final EIS and subsequent Addenda.

Table ES-1. Projectwide Impact Comparison for the Project, I-90 Options and Transit Integration Configurations

Environmental Resource	Impact Category	Project ^a	Project with I-90 Options and Transit Integration Configurations	Impact Range from All Alternatives in the Final EIS and Subsequent Addenda	
				Low Range	High Range
Transportation	Intersections not meeting local standards before mitigation (after mitigation)	12 (0)	9-11 (0)	9 (0)	20 (0)
Property Acquisition	Residential displacements	62	62-64	2	242
	Full/partial property acquisitions	51/99	51-53/115	14/84	92/222
Visual	Decrease in visual quality	No	No	No	Yes
Noise	Receptors impacted by buses before mitigation (after mitigation)	0 (0)	0 (0)	0 (0)	0 (0)
	Receptors impacted by traffic before mitigation (after mitigation)	0 (0)	0 (0)	0 (0)	154 (0)
Parks	Acres of permanent/temporary impacts	6.3/7.9	6.3-6.9/7.9	1.3/2.0	7.0/14.1
Historic	Historic properties impacted	1	1	0	3

^a Project impacts include changes in impacts from 2013 and 2016 project refinements.

ES.3 I-90 Operations - Potential Impacts

The I-90 options would not have impacts to any non-transportation elements of the environment. There would also be no difference in the transportation impacts from the I-90 options for certain transportation analyses. The following discussion summarizes where there are differences in impacts to transportation among the options, including to transit service and operations, I-90 highway operations, local and arterial operations, non-motorized facilities, and freight.

Table ES-2 identifies the analysis years evaluated for the transportation analysis.

Table ES-2. I-90 Conditions Evaluated and Analysis Years

Year	Existing Condition	No Build Condition	Option 1 - Mercer Island SOVs Allowed in HOV Lanes	Option 2 - Mercer Island SOVs Prohibited from HOV Lanes	Option 3 - HOV Lanes Converted to GP Lanes
2016	X				
2020 (Construction)		X	X	X	X
2035 (Operations)		X	X	X	

ES3.1 Transit

During construction, buses traveling between Bellevue and Seattle would continue to stop on Mercer Island. Bus travel times between Seattle and Bellevue would be the shortest with Option 2 (SOVs prohibited) compared to Options 1 (SOVs allowed) and Option 3 (all GP lanes), because with Option 2 only HOVs and transit would be allowed in the R-8A HOV lanes. Option 2 would also have the highest transit reliability for the same reason. Option 3 would have the longest travel time and lowest reliability because there would be no HOV lane for buses to use.

During East Link operations, light rail service between the South Bellevue Station and the International District Station would take 14 minutes and have better reliability than buses in either option. Transit travel times to and from Mercer Island are discussed in Section ES3.2, Highway Operations and Safety.

ES3.2 Highway Operations

I-90 operations key measures include vehicle and person throughput, travel times, congestion, and safety.

On a daily basis, about 160,000 vehicles travel on I-90 across Lake Washington between Seattle and Mercer Island and about 174,000 on the East Channel Bridge between Mercer Island and Bellevue. The amount of volume on the floating bridge in the westbound and eastbound directions is fairly evenly split with about 80,000 vehicles per day. About 15,000 vehicles per day use the center roadway and about 6,500 of these go to or from Mercer Island. About 68,000 vehicles per day use the I-90 ramps to

Highway Operations Analysis Terms

Peak Period: The peak period analyzed for highway operations was 6:30 to 10:00 a.m. and 3:30 to 7:00 p.m.

Vehicle and person throughput: Vehicle and person throughput indicates the number of vehicles and people in vehicles that cross a location (also called a screenline). Compared with vehicle throughput, person throughput is a more appropriate transit assessment measure because it illustrates the overall efficiency of the system through the number of people able to move.

Travel time: Travel time is how long it would take someone to travel from one location to another. It is presented individually for each mode (SOV, HOV, and transit) and combined for all modes. It is developed by summarizing the travel times to and from each of the I-90 ramps on Mercer Island.

and from Mercer Island. About 60 percent of daily trips and 55 percent of peak-period trips go to and from Mercer Island and the Eastside, while about 40 percent of daily trips and 45 percent of peak period trips are to and from Seattle.

Vehicle and Person Throughput

During light rail construction, the I-90 vehicle and person throughput for Option 2 (SOVs prohibited) in the AM and PM peak periods would be slightly higher than the No Build condition (7 percent more vehicles and 5 percent more people) because the new R-8A HOV lanes accommodate more vehicles and people with HOV lanes in both directions. Option 2 person throughput would be similar to Option 1 (SOVs allowed) and Option 3 (all GP lanes).

With light rail operating, vehicle and person throughput during the AM and PM peak periods in 2035 across I-90 for Options 1 and 2 would be similar to each other and would substantially improve (about 5 percent more vehicles and 18 percent more people) during the peak periods compared to the No Build condition.

Travel Times

Overall, I-90 travel times for all modes to and from Mercer Island, including SOV, HOV, and transit riders, would be similar to or improved for Options 1, 2, and 3 compared to the No Build condition during construction (2020) and for Options 1 and 2 compared to the No Build condition during operations (2035). Most people traveling on I-90 to and from Mercer Island would experience a similar travel time with all options during construction and operation of East Link. As described in this section, travel times for some people would increase or decrease but overall the changes tend to offset each other. The differences between options discussed in this section can be attributed to SOVs either being allowed in the R-8A HOV lanes or not, and the corresponding changes in overall traffic volumes and congestion that occur on I-90 with SOVs using these lanes or not.

Construction (2020)

During East Link construction, overall average travel times (Table ES-3) on I-90 to and from Mercer Island with Option 2 (SOVs prohibited) would be similar to the No Build condition, slightly longer than Option 1 (SOVs allowed), and similar to or slightly shorter than Option 3 (all GP lanes).

Table ES-3. 2020 I-90 Overall Person Travel Time Summary to and from Mercer Island between Seattle and Bellevue (minutes)

Condition	AM Peak Period	PM Peak Period
No Build	7.1	6.4
Option 1	6.7	5.4
Option 2 ^a	7.0-7.0	6.0-6.2
Option 3	7.5	5.8

Notes:

Option 1 - Mercer Island SOVs allowed in HOV lane and Island Crest Way (ICW) HOV ramps.

Option 2 - Mercer Island SOVs not allowed in HOV lane and ICW HOV ramps.

Option 3 - HOV lane between Mercer Island and Seattle converted to GP lane during construction.

Travel times are summarized based on all modes (SOV, HOV, and transit) and consider all I-90 ramps on Mercer Island.

^a Range of Option 2 results depends on whether WSDOT determines it is appropriate in the future to modify the eastbound HOV lane transition at the Mount Baker Tunnel in Seattle.

Mercer Island and Seattle

Between Mercer Island and Seattle in the AM peak westbound direction, overall person travel time would increase slightly (by 0.5 to 1.5 minutes) with all three options, compared to the No Build condition, but would decrease in the eastbound direction (1 to 3.5 minutes shorter) because the new R-8A HOV lane provides an additional lane in this direction in the morning. Average travel times for SOVs traveling westbound from Mercer Island to Seattle in the AM peak with Options 2 and 3 would be up to 2 minutes longer compared to the No Build condition and Option 1. Westbound HOV and transit times would improve between 2 and 3 minutes with Option 2 compared to Options 1 and 3. Eastbound travel time for SOVs from Seattle to Mercer Island in Option 2 could be similar to or 4 minutes longer than Option 1, but would not be longer than the No Build condition. HOV travel times with Option 2 would be 0.5 to 1 minute longer than Option 1, but 3 to 4 minutes shorter than in the No Build condition. SOV and HOV travel times for Option 3 would be in between Option 1 and the No Build condition. Eastbound transit travel time would be from 1.5 to 2.5 minutes longer with the options compared to the No Build condition.

In the PM peak, overall westbound person travel time from Mercer Island to Seattle would be slightly longer overall (0.5 to 1.5 minutes) in Option 2 than the No Build condition and Options 1 and 3. SOV travel times in the westbound direction would be 1.5 to 2.5 minutes longer with Option 2 than Options 1 and 3. For Option 2, overall eastbound person travel times could be similar to up to 2 minutes longer than Option 1 and the No Build condition. SOV travel time in the eastbound direction could be within a minute to up to 2.5 minutes longer than the No Build condition and the other options. HOV and transit travel times with Option 2 in both directions would be similar to Option 1, but shorter than Option 3.

Mercer Island and Bellevue

Between Mercer Island and Bellevue, overall person travel times in the AM peak period in both directions with Option 2 would be similar compared to Option 1 and up to a minute shorter than Option 3. In the PM peak, overall person travel times are shorter by up to 3 minutes in the westbound direction with all three options because completing the outside HOV lanes provides additional capacity across Lake Washington. Travel times in the eastbound direction between Bellevue and Mercer Island would be similar to the No Build condition or shorter for all three options.

Seattle and Bellevue

Between Seattle and Bellevue, I-90 SOV travel times in the AM and PM peak periods with Option 2 would generally be similar to or better than Options 1 and 3 in both directions except for the westbound direction in the PM peak period, when Option 2 would be between 3 and 4 minutes longer than the other options but 5 minutes shorter than the No Build condition. HOV and transit travel times between Seattle and Bellevue are generally shorter with all options in the non-peak directions because of the new R-8A HOV lane, but Option 2 provides the greatest improvements in the peak directions compared to Options 1 and 3.

Operations (2035)

During East Link operations, overall person travel times (Table ES-4) to and from Mercer Island would be similar to 2020 because both options would be similar to or improved over the No Build condition. With Option 2 (SOVs prohibited), overall person travel time on I-90 to and from Mercer Island would be similar to the No Build condition but slightly longer than Option 1 (SOVs allowed).

Table ES-4. 2035 I-90 Overall Person Travel Time Summary to and from Mercer Island between Seattle and Bellevue (minutes)

Condition	AM Peak Period	PM Peak Period
No Build	7.5	6.7
Option 1	6.6	5.3
Option 2 ^a	7.1-7.8	6.4-6.6

Notes:

Option 1 - Mercer Island SOVs allowed in HOV lane and ICW HOV ramps.

Option 2 - Mercer Island SOVs not allowed in HOV lane and ICW HOV ramps.

Travel times are person-weighted based on all modes (SOV, HOV, and transit) and consider all ramps on Mercer Island.

^a Range of Option 2 results depends on whether WSDOT determines it is appropriate in the future to modify the eastbound HOV lane transition at the Mount Baker Tunnel in Seattle.

Mercer Island and Seattle

Between Mercer Island and Seattle in the AM peak period, overall person travel time in the westbound direction would increase 0.5 to 1 minute with Option 2 compared to the No Build condition and Option 1. SOV travel times with Option 2 in the westbound direction would be up to 2.5 minutes longer, while HOV travel would be up to 2 minutes shorter compared to Option 1.

In the eastbound direction, overall person travel times with Option 2 could range from similar to Option 1 or similar to the No Build condition, which is about 4 minutes longer than in Option 1. The range of SOV and HOV eastbound travel times with Option 2 follows a similar pattern and could be similar to Option 1 or up to 2 minutes longer than in the No Build condition.

In the PM peak, overall person travel times with Option 2 in the westbound direction would increase by 1 to 1.5 minutes compared to the No Build condition and Option 1, respectively. In the eastbound direction, overall person travel times with Option 2 could be 1 to 2 minutes longer compared to the No Build condition and 2.5 to 3.5 minutes longer compared to Option 1.

Bellevue and Mercer Island

Between Mercer Island and Bellevue, overall person travel times in the AM peak in both directions with Option 2 would be similar to the No Build condition and within 1 minute of Option 1. Transit travel times in the AM peak with Option 2 would be similar to Option 1 and about 0.5 minute shorter than the No Build condition. In the PM peak, overall person travel times as well as SOV and transit modes would be between 2.5 and 3 minutes shorter in the westbound direction with both options compared to the No Build condition. In the eastbound direction, Option 2 would have slightly lower overall person travel times (0.5 minute shorter) compared to Option 1 or the No Build condition.

Seattle and Bellevue

Between Seattle and Bellevue, I-90 SOV travel times in the AM and PM peak periods with Option 2 would generally be similar to or better than Option 1 in both directions except for the westbound direction in the PM peak period, when Option 2 would be about 3.5 minutes longer than Option 1 but about 5 minutes shorter than the No Build condition. HOV travel times between Seattle and Bellevue would be improved between 1 to 4 minutes with both options in the non-peak directions with the new R-8A HOV lanes compared to the No Build condition. In the peak directions, Option 2 provides about a 4-minute improvement in the AM westbound direction and is about 3 minutes longer in the PM eastbound direction compared to Option 1.

Transit travel times along I-90 between Seattle and Bellevue improve with both Options 1 and 2 because light rail service is operating in an exclusive guideway. Light rail across I-90 will take 14 minutes to travel between the International District/Chinatown Station and South Bellevue Station. In comparison, bus travel times in the No Build condition would take as long as about 20 minutes for the same route, and bus travel time would have lower reliability than light rail.

I-90 Congestion

Congestion on I-90 would occur during the morning and afternoon peak commute periods for the No Build condition and all options in both 2020 and 2035. There would generally be less congestion in the off-peak directions with the new R-8A HOV lanes because R-8A provides HOV lanes all day in each direction, which better accommodates current traffic patterns. Starting in 2023, light rail service would also reduce congestion as some people would use light rail instead of driving.

Congestion in the westbound direction during the AM peak period would be similar between the options and the No Build condition in the GP lanes, but congestion in the HOV lane would be less with Option 2 (SOVs prohibited) compared to the other options. With Option 1 (SOVs allowed), the HOV lane in the westbound direction during the AM peak period would not meet the WSDOT operational policy of maintaining a speed of at least 45 mph for 90 percent of the peak period during 2020 or 2035. The HOV lane would meet this policy with Option 2. Westbound congestion in the GP lanes during the PM peak period with Option 2 would be improved compared to the No Build condition, but would be worse than Option 1 because more vehicles would be in the GP lanes. During the PM peak, the HOV lane in the westbound direction would operate similarly between both options and meet WSDOT operational policy in both 2020 and 2035. WSDOT would meter the Island Crest Way westbound on-ramp for all options and consider other actions to improve the HOV lane performance and the on-ramp operations for Options 1 and 3. Adding these operational actions would increase vehicle queues on the Island Crest Way westbound on-ramp for Options 1 and 3 and drivers may shift to use other I-90 ramps, which would affect local travel times for those drivers similar to Option 2. See Section 3.4.2 for local street operations in the future with the options.

In the eastbound direction, congestion would occur at the Mount Baker Tunnel in Seattle with the No Build condition and all options. Traffic modeling indicates that congestion west of the tunnel could be higher with the No Build condition and Option 2 compared to Options 1 and 3 because of lane changes.

In the No Build condition, a fourth GP lane ends (and connects to the center roadway when operating in the eastbound direction), and in Option 2 the fourth GP lane transitions to the R-8A HOV lane before the tunnel. WSDOT will monitor this area as East Link is being constructed and after it begins operation to determine whether conditions warrant further analysis of potential modifications to the HOV lane transition to improve operations between I-5 and the Mount Baker Tunnel.

Highway Safety

The Final EIS determined that with East Link occupying the center roadway there would be no impact on the total number of crashes in the I-90 corridor as traffic in the center roadway, and associated crashes, shifts to the outer roadway. Once East Link begins operation, the I-90 corridor would have substantially fewer crashes per person compared to the No Build condition because riders on light rail would be traveling in a safer mode than traffic currently using the center roadway.

When compared to the other options, Option 2 (SOVs prohibited) would have an overall 1 to 3 percent reduction in crashes on the I-90 mainline that is predicted to have approximately 500 crashes per year in the future. Option 2 is predicted to have 2 fewer crashes per year in 2020 and 7 fewer in 2035 than Option 1 (SOVs allowed) and 14 fewer crashes per year than Option 3 (all GP lanes) in 2020. The crash reduction is attributed to drivers using different ramps on Mercer Island and to slightly fewer vehicles traveling on I-90 with Option 2 than with Options 1 and 3. For example, in Option 2 fewer vehicles would travel westbound on I-90 between Island Crest Way and West Mercer Way with the westbound Island Crest Way ramp becoming HOV-only, and therefore the expected number of crashes on the I-90 mainline in this area would decrease. Option 3 would have the highest number of crashes with 12 more than Option 1.

At the I-90 interchanges, the total number of crashes would be similar overall between the options. Option 2 would slightly reduce crashes at the Island Crest Way interchanges, which have the highest crash frequency on Mercer Island, with a small offsetting increase in crashes at the W Mercer Way and 76th Avenue interchanges. The geometry of the Island Crest Way westbound on-ramp with the R8-A project in conjunction with higher traffic volumes with Options 1 and 3 would increase the potential for additional crashes at this location. Ramp metering and other actions previously described to address operation of the westbound HOV lane and Island Crest Way westbound on-ramp could also improve safety at the Island Crest Way westbound on-ramp.

ES3.3 Arterials and Local Streets¹

Arterials and local streets performance measures discussed in this section are travel time, intersection level-of-service, and safety.

The East Link Extension Project closes the existing center roadway and associated ramps regardless of how the R-8A HOV lanes are operated. The Mercer Island ramps connecting to the center roadway at 77th Avenue SE and westbound Island Crest Way would be closed. The eastbound Island Crest Way

¹ The City of Mercer Island prepared an analysis of local street impacts on Mercer Island with the westbound Island Crest Way ramp operating as HOV-only. Sound Transit has reviewed the City's report and considered it in this analysis.

center roadway ramp would connect to the new R-8A HOV lanes. With Mercer Island SOVs prohibited from using the R-8A HOV Lanes (Option 2), there would be 11 GP ramps and 4 HOV/transit ramps available at any one time on Mercer Island compared to 13 GP ramps and 2 HOV/transit use ramps with Options 1 and 3. With closure of the center roadway and changes in ramps, travel patterns on Mercer Island to and from I-90 in both 2020 and 2035 would also change.

The main difference between the options is that with Option 2, SOVs would not have access to westbound I-90 from Island Crest Way because the westbound on-ramp would become HOV-only. Since there would be no westbound GP ramp from Island Crest Way, SOVs would instead shift to the westbound on-ramps at either 76th Avenue SE or W Mercer Way. With Option 2, some HOVs would also move to use the westbound Island Crest Way ramp throughout the day because the HOV lane is designated for HOV and transit use only. About 3,700 daily SOV trips would shift from the Island Crest Way westbound on-ramp and about 1,000 HOVs would shift to the on-ramp, resulting in a net decrease in traffic on Island Crest Way (about 2,700 trips) and a corresponding increase in traffic volumes on local streets, which represents about 3 to 4 percent of total daily trips using the I-90 ramps to and from the island. Depending on where people are coming from, several streets could be used to reach the 76th Avenue SE or W Mercer Way ramps, including N Mercer Way, SE 27th Street, SE 24th Street, 76th Avenue SE, SE 40th Street, and W Mercer Way. These streets are classified by Mercer Island as either secondary or collector arterials.

Travel Time

In the AM and PM peak periods, average travel times for all vehicles accessing I-90 from local Mercer Island streets would not experience noticeable change between the No Build condition and the I-90 options except in the AM peak for the westbound direction to Seattle. The largest on island travel time increase with Option 2 would be for the small percentage of SOVs using the 76th Avenue SE or W Mercer Way on-ramps instead of the Island Crest Way westbound HOV on-ramp, which would increase their local street travel time by up to 3 to 4 minutes. In addition, some HOVs in Option 2 could see a decrease in travel time by shifting their route to use the Island Crest Way westbound on-ramp to access the R-8A HOV lane, which would have a shorter travel time than the GP lanes on I-90. To understand the total change in travel time for Mercer Island trips, changes in local street travel times (Table ES-5) should be added to the change in I-90 travel times previously discussed.

Intersection Level of Service

The overall number of intersections impacted by the East Link Extension Project would be reduced with both Options 1 and 2 compared to the Final EIS. The Final EIS identified five locations on Mercer Island with impacts due to the East Link Extension Project. The updated analysis shows that four of these locations would no longer be impacted with Option 1 (SOVs allowed), and two locations would no longer be impacted with Option 2 (SOVs prohibited). The updated analysis also identified one location in Seattle that was not impacted in the Final EIS analysis.

Table ES-5. Mercer Island Local Travel Times (minutes)

Condition	AM Peak Period	PM Peak Period
2020		
No Build	1.3 (0.2-3.2)	1.5 (0.2-3.3)
Option 1	1.4 (0.2-4.9)	1.5 (0.2-3.1)
Option 2	1.5 (0.2-5.0)	1.5 (0.2-3.3)
Option 3	1.4 (0.2-4.9)	1.4 (0.2-3.1)
2035		
No Build	1.3 (0.2-3.2)	1.5 (0.2-3.2)
Option 1	1.4 (0.2-4.9)	1.6 (0.2-3.5)
Option 2	1.5 (0.2-4.9)	1.5 (0.2-5.9)

Notes:

The value outside of the parentheses indicates the person-weighted average travel time in minutes. The values inside the parentheses indicate the travel time range in minutes.

Travel time paths were measured between the I-90 ramp intersections and boundary of local travel time area defined in Exhibit 3-14 in Section 3. All vehicle trips to and from the I-90 on- and off-ramps within the local travel time area are included.

In 2020, three locations on Mercer Island would have impacts that would affect the intersection level of service (LOS) or have queues that extend into the adjacent intersection with Option 2 and operate worse than in the No Build condition. In 2035, two additional locations would not meet LOS standards with Options 1 or 2 compared to the No Build condition. The affected locations are shown on Table ES-6. These impacts can be mitigated with modifications to the intersection controls or on-ramp operations, traffic signals, minor widening and/or restriping, and/or signing, which will be implemented as part of the East Link project. With these measures, all locations would improve to the same LOS or better than the No Build condition. These modifications are similar to mitigation for the Final EIS impacts proposed prior to the start of light rail service, although some of them will be advanced earlier in connection with construction.

For construction period mitigation measures that cannot be completed in their permanent form prior to the start of East Link construction in June 2017, WSDOT and Sound Transit would implement temporary mitigation measures prior to closure of the center roadway or soon thereafter, once approvals are obtained. All permanent mitigation measures would be implemented prior to East Link beginning operation in 2023. City of Mercer Island permits and/or approvals are required for temporary and permanent mitigation on city streets.

Table ES-6. Locations of Intersection Level of Service Impacts

Location	Period of Impact	Option(s)
4th Ave. S/Royal Brougham Way intersection	Operation	Options 1 and 2
76th Ave. SE/N Mercer Way/ I-90 westbound on-ramp intersection	Construction	Option 2
77th Ave. SE/N Mercer Way intersection	Construction	Option 2
	Operation	Option 1
80th Ave. SE and SE 27th St. intersection	Operation	Option 2
Island Crest Way between I-90 westbound off-ramp and I-90 eastbound on-ramp	Construction	Option 2

Safety

With all of the options, closure of the I-90 center roadway and its ramps would shift the locations where crashes occur in the future. With Option 2 (SOVs prohibited), SOV drivers heading to Seattle would travel longer distances on Mercer Island local streets to access I-90 via W Mercer Way or 76th Avenue SE, instead of traveling on the Island Crest Way westbound on-ramp, and would have a shorter trip on I-90. With this shift, Option 2 is predicted to have a total of up to 2 more crashes per year on local streets (where there are currently 30 crashes per year) than Option 1 in both 2020 and 2035. This is offset by the reduction in crashes on I-90 and the overall result is a decrease in crashes in the study area with Option 2 compared to Options 1 or 3. In addition, the streets likely to experience increased traffic volumes with Option 2 are posted at lower speeds than Island Crest Way and I-90, which typically correlate with lower-severity crashes.

ES3.4 Non-Motorized

The changes in I-90 operations would not change or modify any non-motorized facilities during construction or operations. Bicycle storage for transit users would be increased with East Link.

Most of the streets where traffic would shift with the options (as described in Section ES3.3.) have sidewalks and/or paved shoulders or pathways that are recognized by the City as bicycle facilities. Included in the crashes described with Option 2 for local streets in Section ES3.3, there would be one crash every 10 to 20 years that would involve a pedestrian or bicycle compared to Option 1. This correlates to about a 1 to 3 percent increase based on the existing number of non-motorized crashes over a similar time period. The streets that drivers would likely use to access I-90 in Option 2 likely have greater pedestrian and bicycle activity than Island Crest Way, but also have lower speeds, which typically correlates with lower-severity crashes.

ES3.5 Freight

With all of the options, the large majority of truck traffic crossing Lake Washington between Seattle and I-405 would continue to use the eastbound and westbound I-90 outer roadways and travel times would be similar or improved compared to the No Build condition. Truck access and travel time to and from Mercer Island would generally be similar with all the options since most of the commercial freight

activity on Mercer Island is within the Town Center area and this area does not have convenient access to the westbound Island Crest Way HOV ramp. About 2 percent of the traffic using the westbound Island Crest Way HOV ramp is considered to be trucks and their travel time with Option 2 compared to the No Build condition and other options would be similar to what is described in ES 3.2 and 3.3.

ES.4 Transit Integration Configuration - Potential Impacts

The Transit Integration configurations were included in the transportation analyses described in Section ES.3 for the changes in I-90 operations, and the results described in Section ES.3 would not differ between these two Transit Integration configurations.

ES.4.1 Potential Transportation Impacts

This section describes transportation measures where there would be differences among the three Transit Integration configurations.

The number of buses stopping on Mercer Island every day would be higher with the 77th and 80th Avenue configurations (about 320 buses) than the FEIS Configuration (200) but would be slightly less than today, when about 350 buses stop on the island daily. By 2035, daily light rail boardings at the Mercer Island Station are estimated to increase to 6,000 with the 77th or 80th Avenue SE Configuration compared to 3,000 with the FEIS Configuration. The increase in boardings is due to transit riders transferring between buses and light rail.

The 77th Avenue SE and 80th Avenue SE configurations would have greater transit reliability than the FEIS Configuration because they would not have buses in service between Mercer Island and Seattle, and light rail has higher reliability than buses operating in traffic. For the FEIS Configuration, bus travel times between Mercer Island and Seattle would be better with Option 2 (SOVs prohibited) than Option 1 (SOVs allowed) because SOVs would not use the HOV lanes. Other transit performance measures would be similar between the Transit Integration configurations.

During construction, the 77th Avenue SE and the 80th Avenue SE configurations could require temporary road closures on N Mercer Way, 77th Avenue SE, and 80th Avenue SE. Detour routes would be provided if closures are necessary. During operations, the vehicle delay at some intersections could be slightly different among the three Transit Integration configurations, but the LOS at intersections would be the same. There would be no difference in impacts on arterial and local street operations, parking, or safety among configurations during operations.

The 77th Avenue SE Configuration would have temporary impacts during construction on the I-90 Trail on the north side of N Mercer Way. The 80th Avenue SE Configuration would have temporary impacts during construction on the pathway over I-90 on the west side of 80th Avenue SE. The temporary impacts could include pathway closures and detours. During operation, the 77th Avenue SE Configuration would increase the number of pedestrians crossing N Mercer Way to 1,300, an increase of 1,050 from the 250 that would occur with the FEIS and 80th Avenue SE configurations. Sidewalk and crosswalk improvements could be implemented to increase the pedestrian capacity at this location.

ES.4.2 Potential Environmental Impacts

The Transit Integration configurations were evaluated for potential acquisition, land use, air quality, noise, visual, public services, parks, and historic property impacts. Neither the 77th Avenue SE nor the 80th Avenue SE Configuration would result in new impacts or changes in impacts to air quality, noise, public services, or historic properties.

The 77th Avenue SE Configuration would acquire two single-family properties that face N Mercer Way due to a new roundabout at the intersection of N Mercer Way and 77th Avenue SE. Total acquisitions for the project with the two additional acquisitions would be within the range evaluated in previous environmental documents (see Table ES-1). Sound Transit would compensate the affected property owners according to the provisions in Sound Transit's adopted *Real Estate Property Acquisition and Relocation Policy, Procedures, and Guidelines* (Sound Transit, 2013). This configuration would change the visual character somewhat, but not result in visual impacts.

The 80th Avenue SE Configuration would use 0.7 acre of Aubrey Davis Park and relocate a sculpture in the Outdoor Sculpture Gallery, an increase of 0.6 acre compared to the FEIS Configuration. Sound Transit would relocate the sculpture in consultation with the City of Mercer Island. The impact is similar in scale to a design option at Mercer Island Station for an entrance at the Outdoor Sculpture Garden, between 77th Avenue SE and 80th Avenue SE, which was considered in the Final EIS but not included in the project selected by the Sound Transit Board. The park area and sculpture garden are maintained by the City of Mercer Island but are part of the I-90 right-of-way and leased from WSDOT. Therefore, Section 4(f) of the U.S. Department of Transportation Act regulating the use of certain parks and open spaces does not apply to this property. This configuration would also affect visual character along 80th Avenue SE due to landscape removal, but it does not result in substantial visual impacts.

ES.5 Conclusions

The impacts resulting from the option that prohibits SOVs from using the R-8A HOV lanes between Seattle and Mercer Island (Option 2) or the option that converts the R-8A HOV lanes to general purpose lanes (Option 3; construction only), are of similar magnitude to the alternatives evaluated and impacts identified in the 2011 Final EIS. This is also true for the 77th Avenue SE and 80th Avenue SE Transit Integration configurations. Impacts from the I-90 options and Transit Integration configurations are within the range of impacts and alternatives evaluated in the Final EIS and subsequent Addenda, and can be mitigated. The I-90 options and Transit Integration configurations would not alter the analysis or conclusions of significant impacts evaluated in the 2011 Final EIS. No new probable significant adverse environmental impacts would arise and a supplemental EIS is not warranted.

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Acronyms and Abbreviations

ADA	Americans with Disabilities Act
ADT	average daily traffic
APE	Area of Potential Effect
CO	carbon monoxide
CPTED	Crime Prevention Through Environmental Design
dBA	A-weighted decibels
DAHP	Department of Archaeology and Historic Preservation
East Link	East Link Extension light rail project
EIS	Environmental Impact Statement
FGTS	Freight Goods Transportation System
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GP	general purpose
HOV	high-occupancy vehicle
I-405	Interstate 405
I-90	Interstate 90
ICW	Island Crest Way
IJR	Interchange Justification Report
Ldn	day-night noise level
LOS	level of service
Metro	King County Metro
MI	Mercer Island
NB	northbound
NRHP	National Register of Historic Places
PSRC	Puget Sound Regional Council
ROD	Record of Decision
SB	southbound
SEPA	State Environmental Policy Act
SOV	single-occupant vehicle
Transit Integration	Mercer Island Bus Transit Integration
USDOT	United States Department of Transportation

v/c	volume to capacity ratio
VHT	vehicle hours of travel
VMT	vehicle miles of travel
WSDOT	Washington State Department of Transportation

1.0 Introduction and Purpose

The East Link Extension will construct and operate an approximately 18-mile light rail system connecting Sound Transit’s existing light rail line in downtown Seattle east across Lake Washington via Interstate 90 (I-90) to Mercer Island, Bellevue, and Redmond. Sound Transit, Washington State Department of Transportation (WSDOT), and the Federal Transit Administration (FTA) issued the *East Link Project Final Environmental Impact Statement (EIS)* pursuant to the National Environmental Policy Act and the State Environmental Policy Act (SEPA) in July 2011. The Sound Transit Board selected the East Link project to build in July 2011 and reconfirmed the decision to use Interstate 90 (I-90) when revising the selected project in April 2013. FTA and the Federal Highway Administration (FHWA) each issued a Record of Decision (ROD) for the East Link Extension light rail project (East Link) in November 2011.

Following issuance of the FTA and FHWA East Link RODs, FHWA approved the I-90 Interchange Justification Report (IJR) in December 2011, which approved use of the I-90 center roadway for light rail. In 2012, WSDOT granted Sound Transit an air space lease for light rail use of the center roadway. Sound Transit also completed SEPA Addenda to the East Link Final EIS in 2013 and 2016. The second Addendum addressed refinements to the project and construction staging in the I-90 corridor. Exhibit 1-1 shows the East Link Extension project schedule. Construction for East Link began in April 2016 in Bellevue and construction in the I-90 corridor will begin June 2017. The East Link Extension from Seattle to Overlake will open for service in 2023.



Exhibit 1-1. East Link Extension Project Schedule

The I-90 section of East Link was addressed in the Final EIS as the Preferred Alternative in Segments A and B (Alternative A1 and part of Alternative B2M). The corridor begins just south of the International District Station/Chinatown Station, where it connects to the existing light rail system. From there, the project enters the D2 Roadway, which is an exclusive right-of-way ramp, and continues in the center roadway lanes of I-90 across Lake Washington and Mercer Island to its exit at Bellevue Way SE. I-90 ramps accessing the center roadway located between Seattle and Mercer Island would be closed. There are two light rail stations in the I-90 corridor, the Judkins Park Station in Seattle and the Mercer Island Station located between 77th and 80th Avenue SE. Exhibit 1-2 shows the project selected to build by the Sound Transit Board.

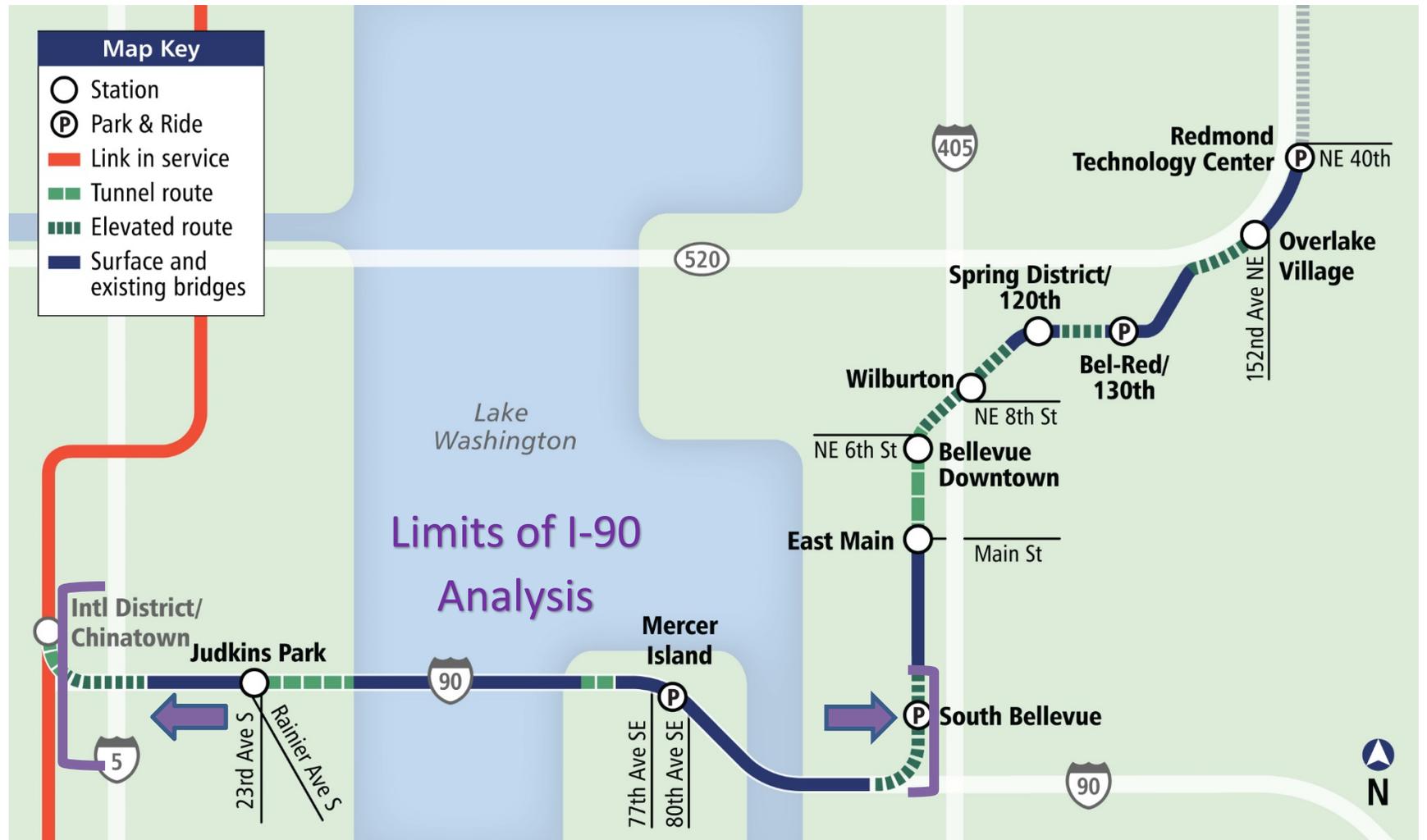


Exhibit 1-2. Selected Alternative and I-90 Study Area

The purpose of this SEPA Addendum is to describe changes to the operation of I-90 high-occupancy vehicle (HOV) lanes between Seattle and Mercer Island and project refinements associated with transit integration on Mercer Island, evaluate the potential impacts of these changes, and identify changes in mitigation measures. It is an addendum to the East Link Project Final EIS and provides additional analyses and information (WAC 197-11-600(4)(c)).

1.1 Changes in I-90 Operations

This section describes why changes in I-90 Operations are occurring and Section 2.1 describes how they were analyzed in this document.

In anticipation of East Link, Sound Transit and WSDOT developed the I-90 Two-Way Transit and HOV Operations Project. Sound Transit, FHWA, and WSDOT issued the I-90 Two-Way Transit and HOV Operations Final EIS in April 2004, which identified Alternative R-8A as the Preferred Alternative. The Sound Transit Board selected R-8A as the project to build in August 2004. FHWA and FTA issued RODs for the project in September 2004 and April 2011, respectively. As shown in Exhibit 1-3, Alternative R-8A restripes the I-90 outer westbound and eastbound roadways to add HOV lanes between Seattle and Bellevue and provide I-90 HOV ramps to and from Mercer Island and Bellevue via new interchange ramps (<https://www.wsdot.wa.gov/projects/i90/twowaytransit>).

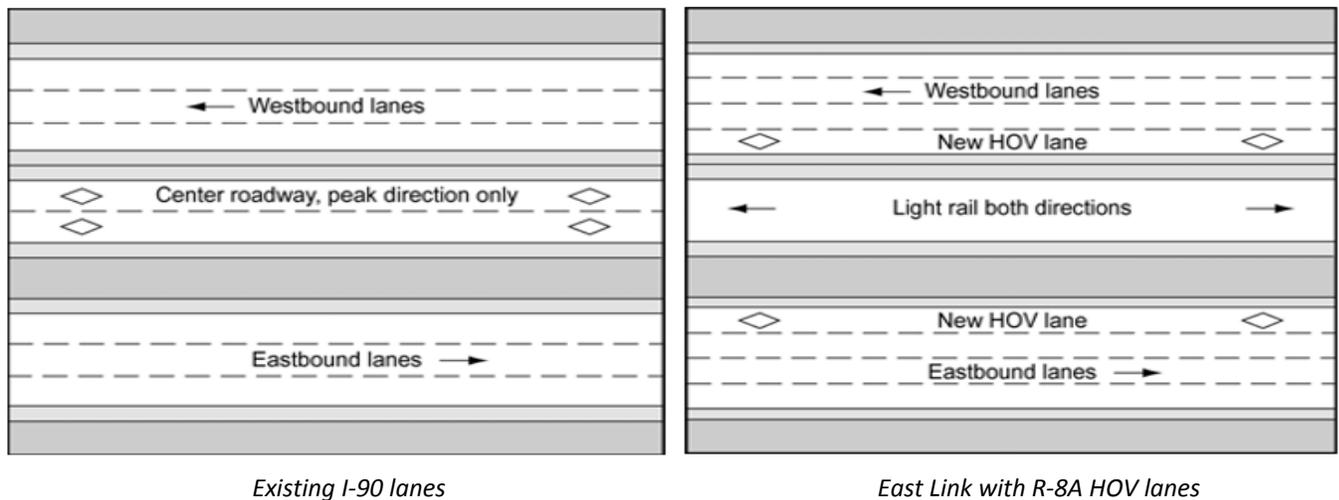


Exhibit 1-3. Existing and R-8A Lane Configurations

Stage 1 of R-8A, completed in 2008, and Stage 2 of R-8A, completed in 2012, added HOV lanes in both directions in the outer roadways between 80th Avenue SE and Bellevue Way SE, along with HOV ramp modifications or additions at each end. Stage 3, currently under construction, will add HOV lanes in both directions of the outer roadways between Seattle and Mercer Island and build or modify ramps on Mercer Island to provide access. This stage will be completed just prior to closure of the center roadway for East Link construction. The outer roadways will have three general purpose (GP) lanes and one HOV lane traveling in both directions. With East Link

occupying the center roadway and completion of R-8A, I-90 will have the same number of lanes as today, HOV lanes in both directions, plus the addition of light rail service in 2023.

The East Link Final EIS assumed that single-occupant vehicles (SOV) between Seattle and Mercer Island would be able to use the R-8A HOV lanes in both directions of I-90 between Seattle and Island Crest Way, similar to how they currently use the center roadway. This assumption was based on conditions as they existed at the time the Final EIS was prepared regarding use of the HOV lanes.

In August 2016, FHWA sent a letter to WSDOT and the City of Mercer Island stating that the U.S. Department of Transportation does not have legal authority to grant temporary or permanent SOV access to the R-8A HOV lanes. This means that SOVs traveling to and from Mercer Island are prohibited from using the R-8A HOV lanes on the westbound and eastbound I-90 mainlines between Seattle and Mercer Island, and the Island Crest Way ramps that directly connect with those HOV lanes. At the time FHWA's letter was issued, the East Link Extension project had advanced into construction in some segments and the last stages of final design and contracting for the I-90 segment in anticipation of closing the I-90 center roadway for light rail construction in June 2017.

This change in operations of the I-90 R-8A HOV lanes is not a result of the East Link Extension. Nevertheless, Sound Transit and WSDOT have analyzed whether FHWA's decision creates any new significant impacts beyond the range of impacts and alternatives analyzed in the previous environmental documents. The FHWA letter is included in Attachment A of Appendix A, Transportation Technical Report. This Addendum assesses this changed condition. The different I-90 operating conditions are described further in Section 2.

1.2 Mercer Island Bus Transit Integration

This section describes the intent of Mercer Island Bus Transit Integration (Transit Integration) refinement and Section 2.2 describes how it was analyzed in this document.

Project refinements are a normal part of final design and engineering and the Transit Integration refinements are consistent with that process. Since publication of the Final EIS, Sound Transit has been coordinating with Mercer Island, King County Metro (Metro), and WSDOT to develop a transit integration plan along I-90 with implementation of East Link. The objective of a transit integration plan is to create efficiencies, enhance reliability, and enable future service expansion. In preparing the Final EIS, Metro and Sound Transit developed a transit integration plan that identified changes in both Metro and Sound Transit bus service that would occur with implementation of East Link. At each East Link station, including the South Bellevue and Mercer Island stations, plans were developed to route Seattle-bound buses to each station, where bus patrons would transfer to light rail.

On Mercer Island, the refined transit integration plan would create a central location allowing bus riders on some routes from the east to transfer to and from the East Link light rail transit system and eliminate duplicate transit service between Mercer Island and Seattle. Other bus

routes from the east would allow transfers to light rail at the South Bellevue Station. Certain bus routes heading west on I-90 would end at Mercer Island, and routes heading east on I-90 would originate on Mercer Island. Although the East Link Final EIS assumed some bus routes would continue across I-90 into Seattle, all westbound I-90 bus routes would end at Mercer Island with the proposed Transit Integration refinements. These refinements would ensure transit reliability, avoid duplicative service, and provide an opportunity to increase transit service within the I-90 corridor once East Link service begins operation.

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2.0 Changed Conditions and Project Refinements

Changed conditions to I-90 Operations and the Mercer Island Bus Transit Integration refinements are described below.

2.1 I-90 Operations Changed Condition

As described in Section 1.1, FHWA has determined that SOVs will not be allowed in the new R-8A HOV lanes on the outer roadway between Mercer Island and Seattle. Because some I-90 on- and off-ramps on Mercer Island provide direct access to the HOV lanes, SOVs will no longer be able to use these ramps and will only be able to use ramps that provide access to and from the GP lanes. The analysis in this document assesses how the change in use of the R-8A HOV lanes and access to and from I-90 by SOVs would affect regional and local transportation and the environment. This section describes the different conditions analyzed in Sections 3.0 and 4.0.

The study area for the changes in I-90 Operations analysis is I-90 between 4th Avenue S in Seattle and I-405 in Bellevue (see Exhibit 1-2). Describing the different conditions for operating I-90 includes assumptions in three different timeframes:

- **Existing year:** The existing year, serving as a baseline, is 2016.
- **Construction year:** East Link construction will take place from 2017 through 2023, and 2020 is used as the construction year as that is approximately the mid-point in the construction schedule.
- **Operational year:** 2035 is used as the future operational horizon year for consistency with the regional forecasts used by both Puget Sound Regional Council (PSRC) and Sound Transit.

2.1.1 Existing Conditions (2016)

The existing condition reflects the existing I-90 and local street system and operations, including the reversible center roadway from Bellevue to Seattle and completion of Stages 1 and 2 of the I-90 Two-Way Transit and HOV Operations Project (R-8A) between Bellevue Way and 80th Avenue SE ramps on Mercer Island. The section of I-90 that crosses Lake Washington between Seattle and Mercer Island currently has three GP lanes in each direction and a reversible center roadway that operates in the peak directions. HOVs, buses, and Mercer Island SOVs can use the reversible center roadway between the Rainier Avenue S interchange in Seattle and the Island Crest Way ramps. Mercer Island SOVs traveling eastbound on the center roadway are required to exit at Island Crest Way. Between Mercer Island and Bellevue, the R-8A HOV lanes are already in place. On weekdays the center roadway operates westbound from 6:00 a.m. to 12:30 p.m. and eastbound from 2:00 p.m. to 5:00 a.m. On weekends the reversible roadway operates eastbound only, unless accommodations are made for special events.

There are I-90 on- and off-ramps in Seattle, Mercer Island, and Bellevue. On Mercer Island there are currently 16 on- and off-ramps. Fourteen of these serve GP traffic and two are HOV access only.

2.1.2 No Build Condition

The No Build condition was analyzed for the construction and operations years in the transportation analysis only. This option is provided for comparison purposes only because the East Link Extension project is already approved. This No Build condition assumes implementation of other reasonable and foreseeable regional transportation projects for each analysis year (2020 and 2035). It provides a baseline of what transportation conditions would be in the future years with these other projects but without completing the R-8A project and the East Link project. This allows the changes in conditions with the East Link Project to be identified when comparing the two conditions (No Build and East Link). The analysis years are:

- Construction (2020) analysis year:** The No Build construction analysis assumes the existing conditions with the forecast 2020 population, employment, and future background projects. It assumes Stages 1 and 2 of the R-8A HOV lanes are constructed and the center roadway is available for peak-direction use by HOVs, transit, and Mercer Island SOVs. R-8A Stage 3 (outer roadway HOV lanes) is not included in the No Build condition. Buses on I-90 would continue in and out of Seattle and use the D2 Roadway.
- Operations (2035) analysis year:** The No Build operation analysis assumes existing conditions with forecast 2035 population, employment, and future background projects. It assumes completion of Stages 1 and 2 of the R-8A HOV lanes, and the center reversible roadway is still available for peak-direction use by HOVs, transit, and Mercer Island SOVs. R-8A Stage 3 (outer roadway HOV lanes) is not included in the No Build condition. Buses on I-90 would continue in and out of Seattle and use the D2 Roadway.

2.1.3 Build Conditions

Three options for operating the I-90 R-8A HOV lanes were analyzed for the construction (2020) analysis year and two options were analyzed for the operations (2035) analysis year as described below. Table 2-1 summarizes which conditions and options are evaluated in each analysis year.

With East Link, the ramps to and from the center roadway at 77th Avenue SE and Island Crest Way will be closed and the eastbound Island Crest Way ramp will be modified to connect to the new R-8A HOV lane (Exhibit 2-1). This will result in a total of 15 on- and off-ramps in the future. Details of ramp access with each option are described by option below.

Table 2-1. I-90 Conditions Evaluated and Analysis Years

Year	Existing Condition	No Build Condition	Build Condition		
			Option 1 Mercer Island SOVs Allowed in HOV Lanes	Option 2 Mercer Island SOVs Prohibited from HOV Lanes	Option 3 HOV Lanes Converted to GP lanes
2016	X				
2020 (Construction)		X	X	X	X
2035 (Operations)		X	X	X	

2.1.3.1 Option 1 - Mercer Island SOVs Allowed in the HOV Lanes (Construction and Operations)

Option 1 is what was assumed in the Final EIS for the build condition. It is included to update the Final EIS analysis as a point of comparison. It assumes completion of Stage 3 of the R-8A HOV lanes and that the center roadway would be closed for East Link construction and operation. HOVs, buses, and Mercer Island SOVs would be allowed in the HOV lanes between Seattle and Mercer Island (see Exhibit 2-1). For Option 1, the 77th Avenue and Island Crest Way on- and off-ramps connecting with the center roadway on Mercer Island are closed to all vehicles because of East Link occupying the center roadway (see Exhibit 2-2). The eastbound Island Crest Way off-ramp from the center roadway will be modified to connect to the R-8A HOV lane. Mercer Island SOVs would continue to access I-90 via Island Crest Way and would have access to the R-8A HOV lanes via the HOV westbound and eastbound direct-access ramps.

2.1.3.2 Option 2 - Mercer Island SOVs Prohibited from HOV Lanes (Construction and Operations)

Option 2 is based on the FHWA determination. It assumes completion of Stage 3 of the R-8A HOV lanes and that the center roadway would be closed for East Link construction and operation. HOVs and buses would be allowed in the HOV lanes between Seattle and Mercer Island (see Exhibit 2-1). SOVs traveling between Seattle and Mercer Island would not be allowed to use the HOV lanes or the Island Crest Way westbound and eastbound HOV ramps. There is an existing eastbound GP off-ramp to Island Crest Way but not a westbound GP on-ramp from Island Crest Way (see Exhibit 2-2). As in Option 1, the 77th Avenue SE ramp (connecting with the center roadway) would be closed to all vehicles on Mercer Island.

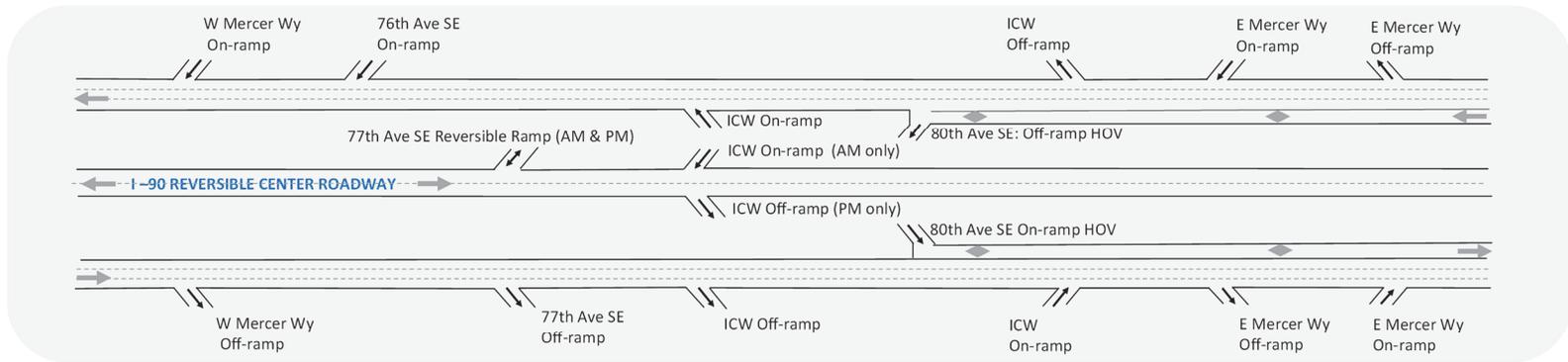
2.1.3.3 Option 3 - HOV Lanes Converted to General Purpose (Construction Only)

Option 3 assumes completion of Stage 3 of the R-8A HOV lanes but the outer roadway HOV lanes between Mercer Island and Seattle would be converted to GP lanes during East Link construction only. This option also would convert the westbound and eastbound Island Crest Way HOV ramps to GP ramps during the construction period. This option was requested for study by the City of Mercer Island. Converting HOV lanes to GP lanes is not consistent with existing regional goals and policies and may require repayment of both local and federal funds that have already been invested in the HOV lanes on this portion of I-90.

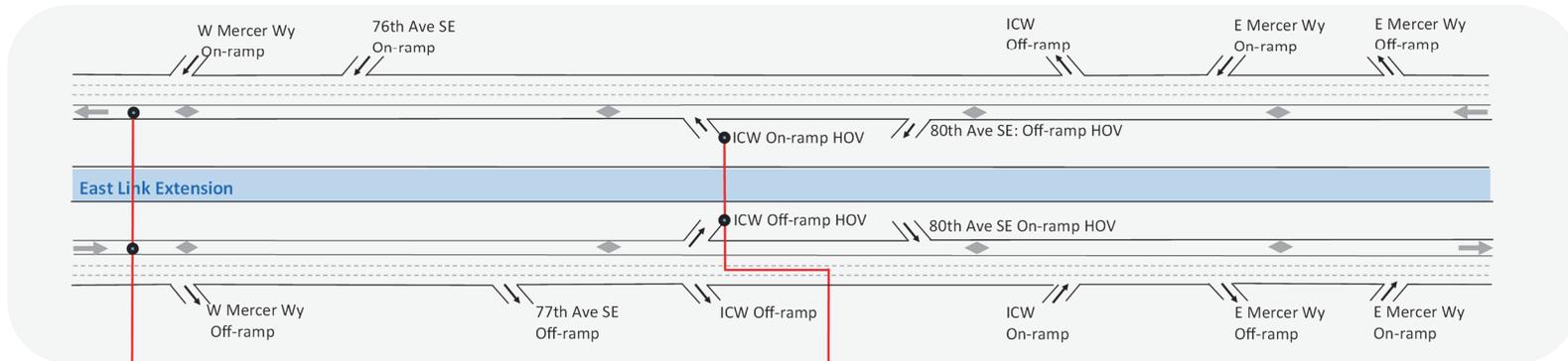
2.2 Mercer Island Bus Transit Integration Refinements

Sound Transit, in consultation with other agencies, has developed configurations for transit integration on Mercer Island that differ from the plan evaluated in the Final EIS. Sound Transit evaluated these configurations in *Sound Transit East Link: Bus/Light Rail Transit System Integration Study* (CH2M HILL, 2014) and this Addendum. Based on these studies, community outreach, and consultation with the City of Mercer Island, WSDOT, and Metro, two refined configurations for transit integration are evaluated for when East Link light rail begins service in 2023.

Existing I-90 Operations



I-90 Operations with East Link and R-8A Projects Completed



- HOV lanes and ICW HOV ramps converted to GP lanes (Option 3) - During construction only
- Mercer Island SOVs allowed in the HOV lanes and ICW HOV Ramps (Option 1) - Between Mercer Island and Seattle only
- Mercer Island SOVs prohibited from the HOV lanes and ICW HOV ramps (Option 2)

PLEASE NOTE: This exhibit is intended to illustrate existing and changes to the I-90 operations once East Link and R-8A projects are completed. It is not to scale.

Exhibit 2-1. Changes to I-90 Ramps between Seattle and Bellevue

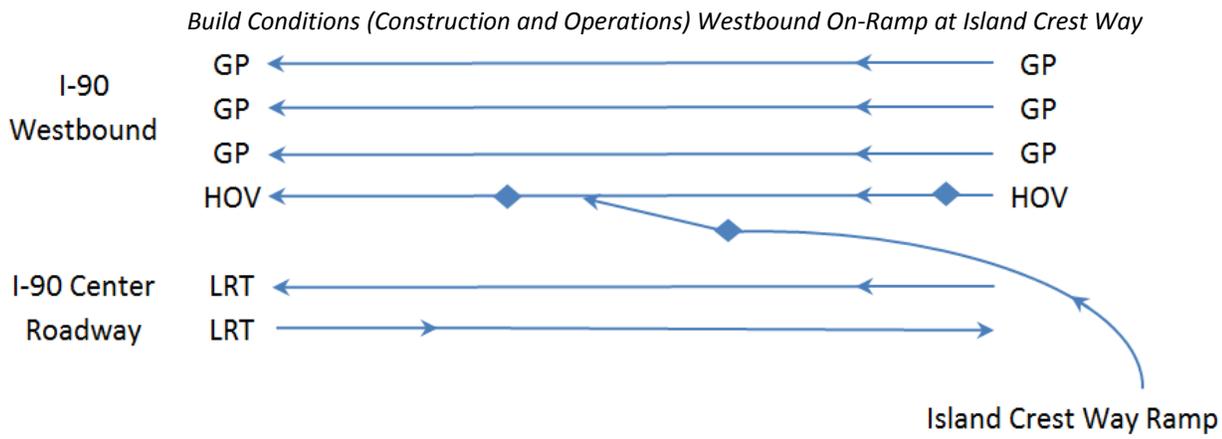
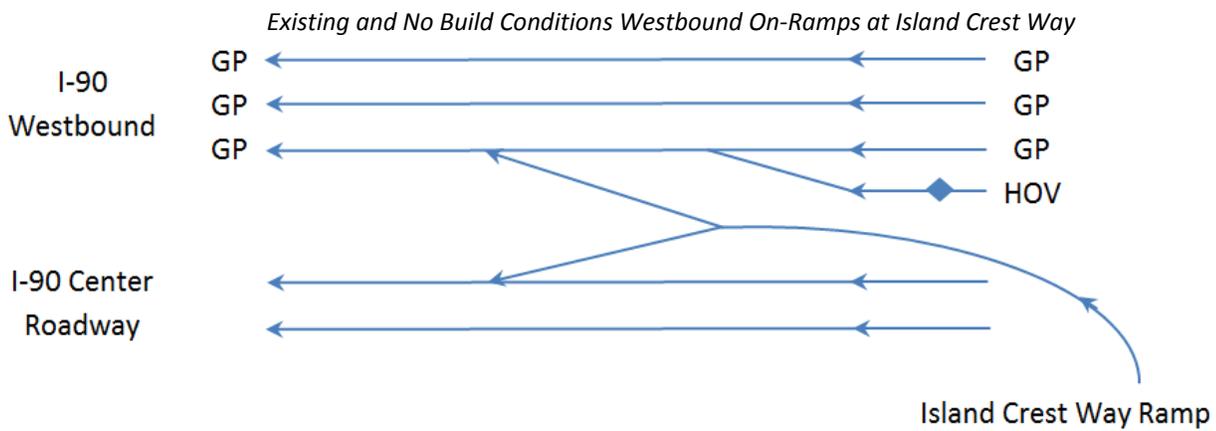


Exhibit 2-2. Changes to I-90 Island Crest Way Westbound On-Ramp

These two configurations differ from that described in the Final EIS (FEIS Configuration): the 77th Avenue SE Configuration and the 80th Avenue SE Configuration. Bus service would continue to be provided between Mercer Island and Seattle during East Link construction.

The two proposed configurations would include bus drop-off and pick-up areas, bus layover areas, and roadway improvements, with buses stopping at Mercer Island Station and using the 80th Avenue HOV ramps for access to and from the east. Sound Transit and Metro routes that currently travel from east of Mercer Island to Seattle via I-90 would be rerouted to other Eastside communities, deleted, or modified to begin and end at Mercer Island where riders could transfer to the regional light rail system.

For all configurations, East Link trains would operate 4-car trains with an 8-minute headway during the peak periods. Although the assumption used in the Final EIS was 7-minute headways, the operating plan has been updated since that time and the analysis in this Addendum reflects the 8-minute headway operating plan. A summary of the year 2035 peak-hour bus volumes and routes serving I-90 and Mercer Island is included in Appendix A, Transportation Technical Report.

2.2.1 Existing Conditions

Currently, buses use the center roadway in the peak direction and GP lanes in the outer roadways in the non-peak direction. Buses traveling to and from Mercer Island on I-90 use the 76th Avenue SE, 77th Avenue SE, and 80th Avenue SE ramps, depending on direction and time of day. Buses drop off

and pick up riders on both sides of N Mercer Way near 80th Avenue SE adjacent to the Mercer Island Park-and-Ride, and there is layover space for up to four buses. Currently there are about 350 buses that stop daily in this area.

2.2.2 FEIS Configuration

Under the FEIS Configuration (Exhibit 2-3), some bus routes that travel on I-90 would be discontinued, rerouted, or terminate on Mercer Island, while others would continue to stop on Mercer Island. There would be about 200 buses stopping daily on Mercer Island with this configuration.

The most critical operations of the transit integration with this configuration occur for bus routes in the westbound direction during the AM peak period and routes traveling in the eastbound direction during the PM peak period. In the AM peak period, bus riders need to be dropped off prior to an arriving light rail train, while in the PM peak period, a key consideration is to facilitate an easy transfer from light rail to bus routes ready for pick-up. Changes to specific bus routes are described in Section 3.2.

2.2.2.1 Bus Stop and Layover Locations on Mercer Island

With the FEIS Configuration (Exhibit 2-3), a combined drop-off/pick-up bus stop would be located on the north side of N Mercer Way just to the west of 80th Avenue SE, the same as existing conditions. This stop is expected to accommodate up to two articulated buses and would serve westbound routes from I-90 as well as the local Mercer Island bus routes.

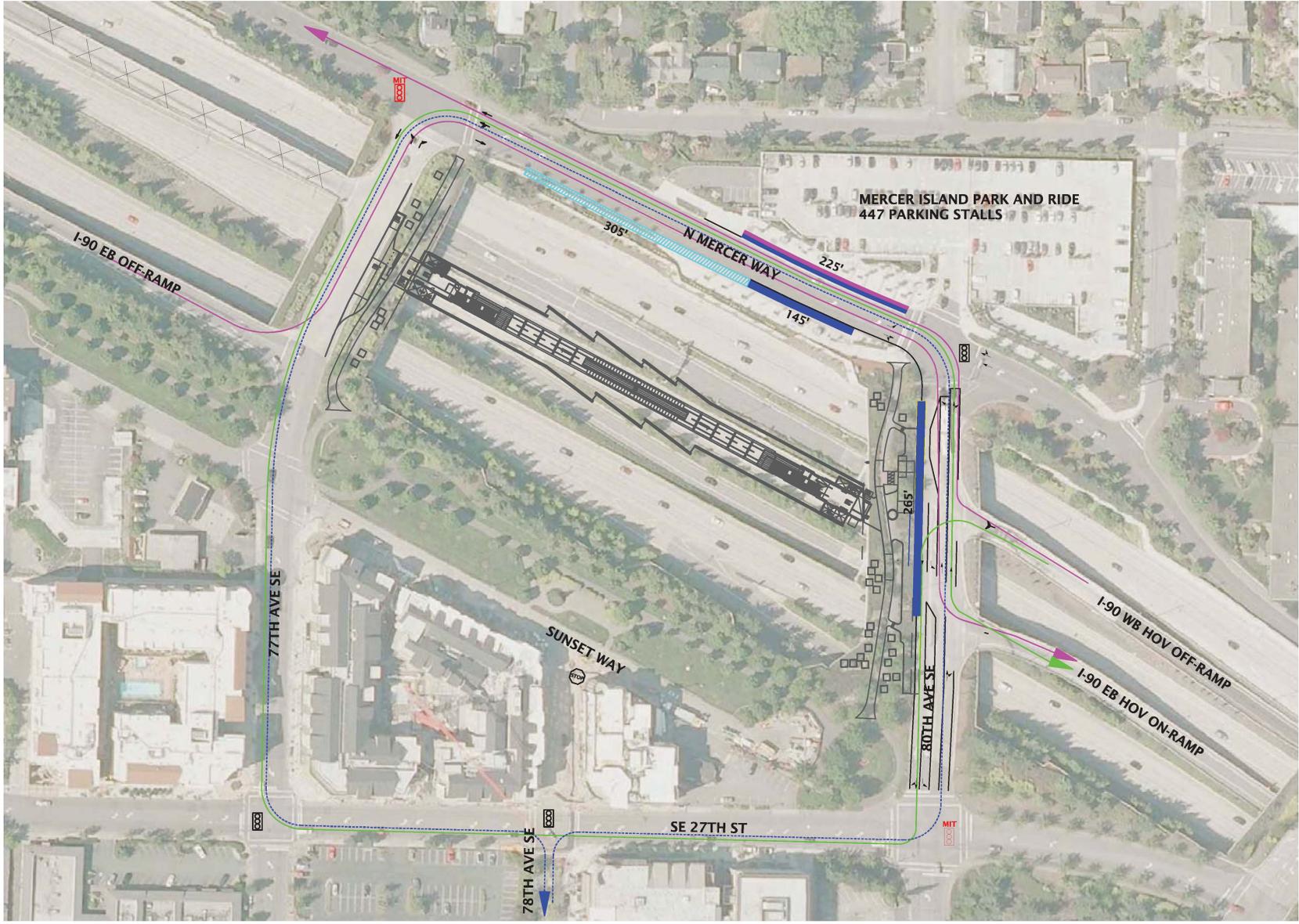
For eastbound buses, one combined drop-off/pick-up stop would be located on the south side of N Mercer Way to the west of 80th Avenue SE, and one combined drop-off/pick-up stop would be located on the west side of 80th Avenue SE to the south of N Mercer Way. Both of the eastbound stops are expected to accommodate up to two articulated buses each. Bus layover bays would be included along the south side of N Mercer Way, to the east of 77th Avenue SE. The layover areas are expected to accommodate up to six articulated buses during layover times.

2.2.2.2 Road Network and Intersections

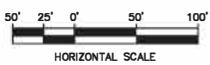
The FEIS Configuration includes all road network and roadway assumptions within the Mercer Island study area that are documented in the Final EIS. The main network difference between existing conditions and the FEIS Configuration is the closure of the I-90 center roadway and its connecting 77th Avenue ramp to vehicle traffic. The FEIS Configuration included traffic signal mitigation at the 77th Avenue SE and N Mercer Way intersection and the 80th Avenue SE and SE 27th Street intersection.

2.2.3 77th Avenue SE Configuration

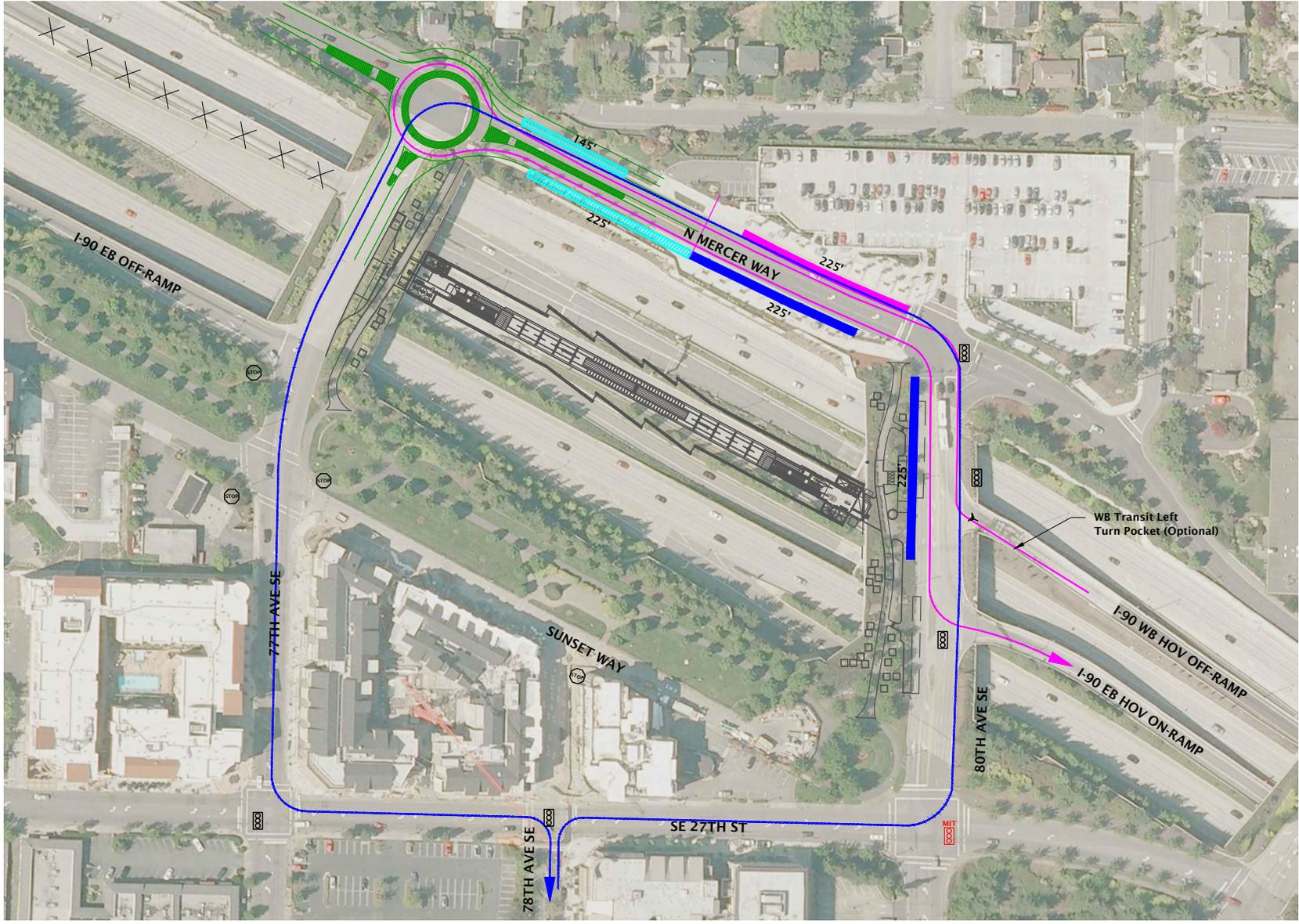
The 77th Avenue SE Configuration would route buses in a counter-clockwise direction along N Mercer Way to allow them to travel from the westbound 80th Avenue HOV off-ramp to the eastbound 80th Avenue HOV on-ramp. The configuration would include roadway/sidewalk improvements, bus drop-off and pick-up areas, and bus layover areas on the both sides of N Mercer Way and the west side of 80th Avenue SE (Exhibit 2-4). There would be about 320 buses stopping daily on Mercer Island with this configuration.



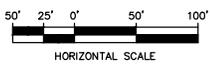
- LEGEND**
- BUS DROP-OFF AREA
 - BUS LAYOVER AREA
 - BUS PICK UP
 - MERCER ISLAND EAST LINK STATION
 - MERCER ISLAND ROUTES
 - TRANSIT CENTER ROUTES
 - SOUND TRANSIT ROUTE 554
 - MIT EAST LINK FEIS PROPOSED MITIGATION
 - SC EXISTING SIGNAL CONTROL
 - STP EXISTING STOP CONTROL



MERCER ISLAND BUS TRANSIT INTEGRATION
Exhibit 2-3 - FEIS Configuration



- LEGEND**
- BUS DROP-OFF AREA
 - BUS LAYOVER AREA
 - BUS PICK UP
 - MERCER ISLAND EAST LINK STATION
 - MERCER ISLAND ROUTES
 - TRANSIT CENTER ROUTES
 - EAST LINK FEIS PROPOSED MITIGATION
 - EXISTING SIGNAL CONTROL
 - STOP EXISTING STOP CONTROL



MERCER ISLAND BUS TRANSIT INTEGRATION
Exhibit 2-4 - 77th Avenue SE Configuration

2.2.3.1 Bus Stop and Layover Locations on Mercer Island

Bus drop-off/pick-up areas would remain on both sides of N Mercer Way between 77th Avenue SE and 80th Avenue SE, as well as a pick-up area on the west side of 80th Avenue SE south of N Mercer Way. The north and south sides of N Mercer Way between 77th Avenue SE and 80th Avenue SE would also provide bus layover space for three buses.

Exhibit 2-5 illustrates the bus movements on the four roadway segments. Buses would only travel on these streets to access the additional bays on N Mercer Way when the four layover bays at the park-and-ride are full.

2.2.3.2 Road Network and Intersections

Network and roadway assumptions with the 77th Avenue SE Configuration are the same as documented for the FEIS Configuration, except for the signalized intersection at 77th Avenue SE and N Mercer Way. Instead of becoming signalized, a roundabout would be constructed to allow buses to turn around and prepare to travel eastbound on I-90.

2.2.4 80th Avenue SE Configuration

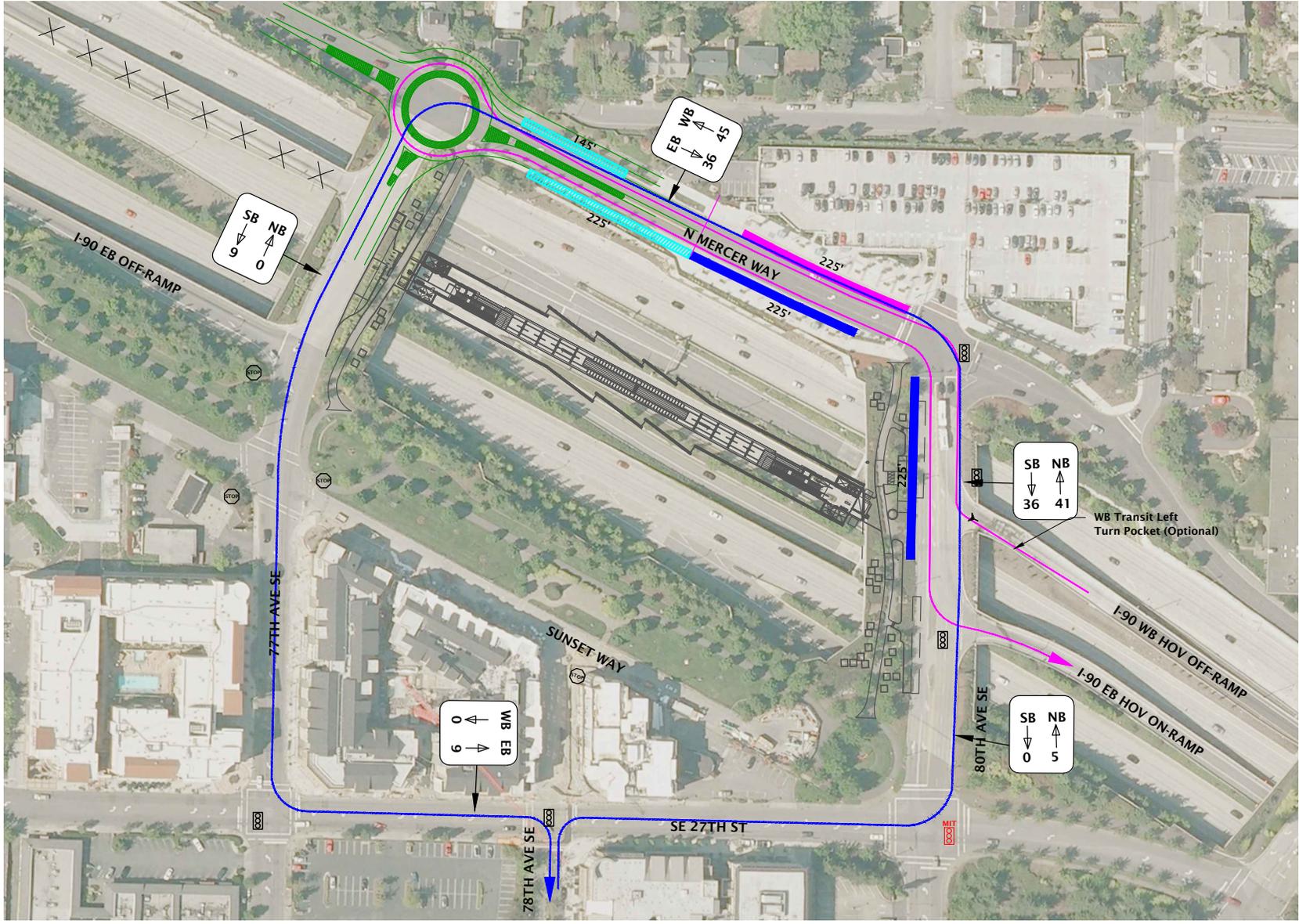
The 80th Avenue SE Configuration would route buses in a counter-clockwise direction through a bus transfer area on the west side of 80th Avenue SE to allow them to travel from the westbound 80th Avenue HOV off-ramp to the eastbound 80th Avenue HOV on-ramp. The 80th Avenue SE Configuration would include bus drop-off and pick-up areas on the western side of 80th Avenue SE and bus layover areas along N Mercer Way (Exhibit 2-6). There would be about 320 buses stopping daily on Mercer Island with this configuration.

2.2.4.1 Bus Stop and Layover Locations on Mercer Island

Buses would enter the transfer area from the I-90 80th Avenue SE HOV westbound off-ramp and would return to I-90 using the 80th Avenue SE HOV eastbound on-ramp. If buses are not laying over on Mercer Island they would only travel on 80th Avenue SE (Exhibit 2-7). There would be no bus stops on N Mercer Way, but additional layover space could be located on the south side, for a total of up to eight layover bays. Buses laying over on N Mercer Way would exit the 80th Avenue SE transfer area, use SE 27th Street and 77th Avenue SE to travel in a clockwise direction to reach N Mercer Way.

2.2.4.2 Road Network and Intersections

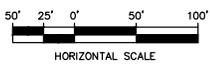
Network and roadway assumptions with the 80th Avenue SE Configuration are the same as documented for the FEIS Configuration, including signals at 77th Avenue SE and N Mercer Way 77th Avenue SE and the I-90 eastbound off-ramp, and at 80th Avenue SE and SE 27th Street. The configuration would add a westbound transit lane pocket, signals at the westbound HOV off-ramp to 80th Avenue SE and at the eastbound HOV on-ramp at 80th Avenue SE, a northbound right-turn pocket on the off-ramp to 80th Avenue SE, and create a four-way intersection at the eastbound HOV on-ramp with the addition of the outlet from the bus transfer area on the west side of the 80th Avenue SE.



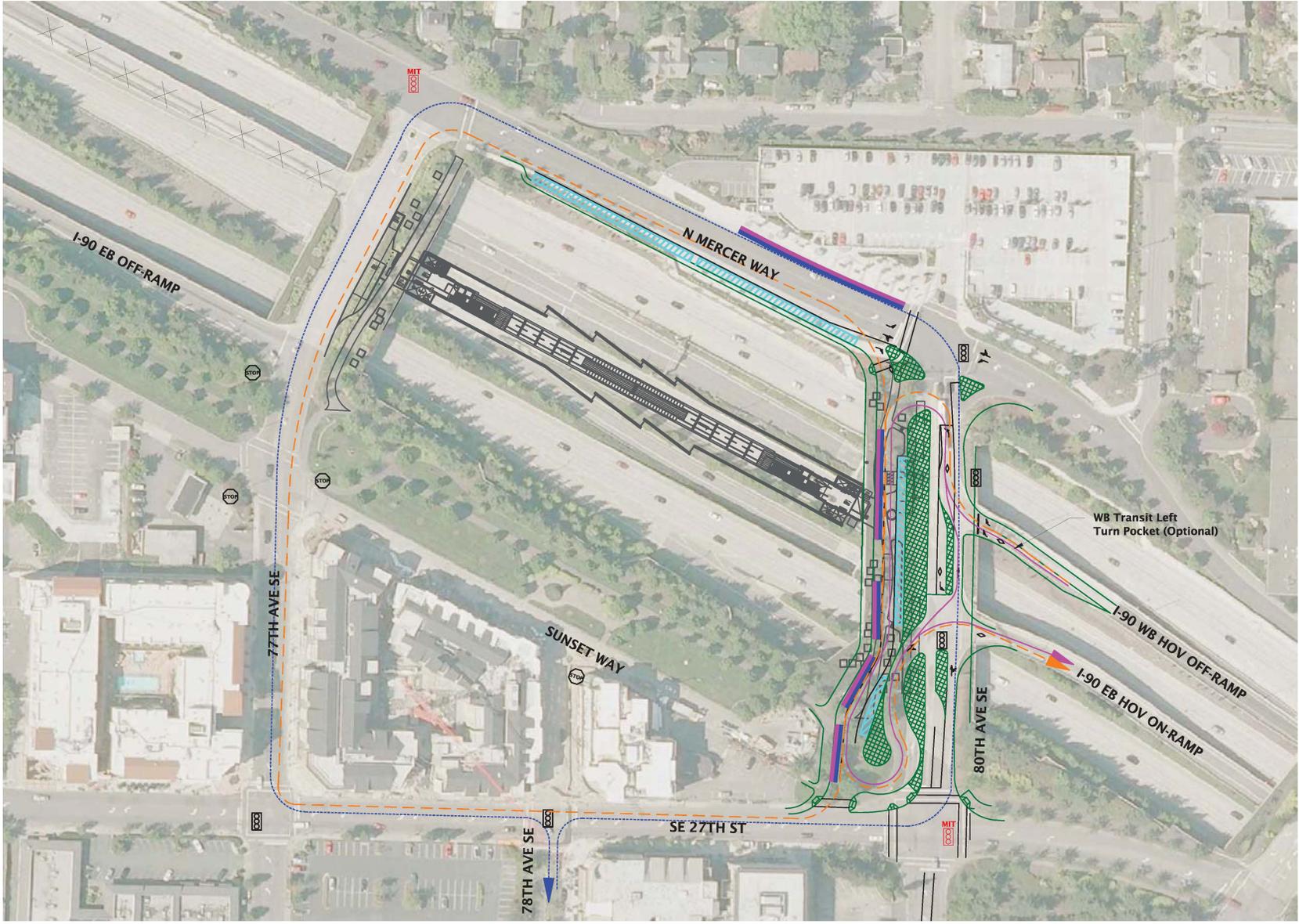
- LEGEND**
- BUS DROP-OFF AREA
 - BUS LAYOVER AREA
 - BUS PICK UP
 - MERCER ISLAND EAST LINK STATION
 - MERCER ISLAND ROUTES
 - TRANSIT CENTER ROUTES
 - EAST LINK FEIS PROPOSED MITIGATION
 - EXISTING SIGNAL CONTROL
 - EXISTING STOP CONTROL
 - PM PEAK HOUR BUS TURNING MOVEMENT VOLUMES

NOTES:

1. Bus Volumes are the same for AM and PM Peak Hours

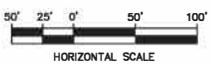


MERCER ISLAND BUS TRANSIT INTEGRATION
Exhibit 2-5 - 77th Avenue SE Configuration Bus Routes

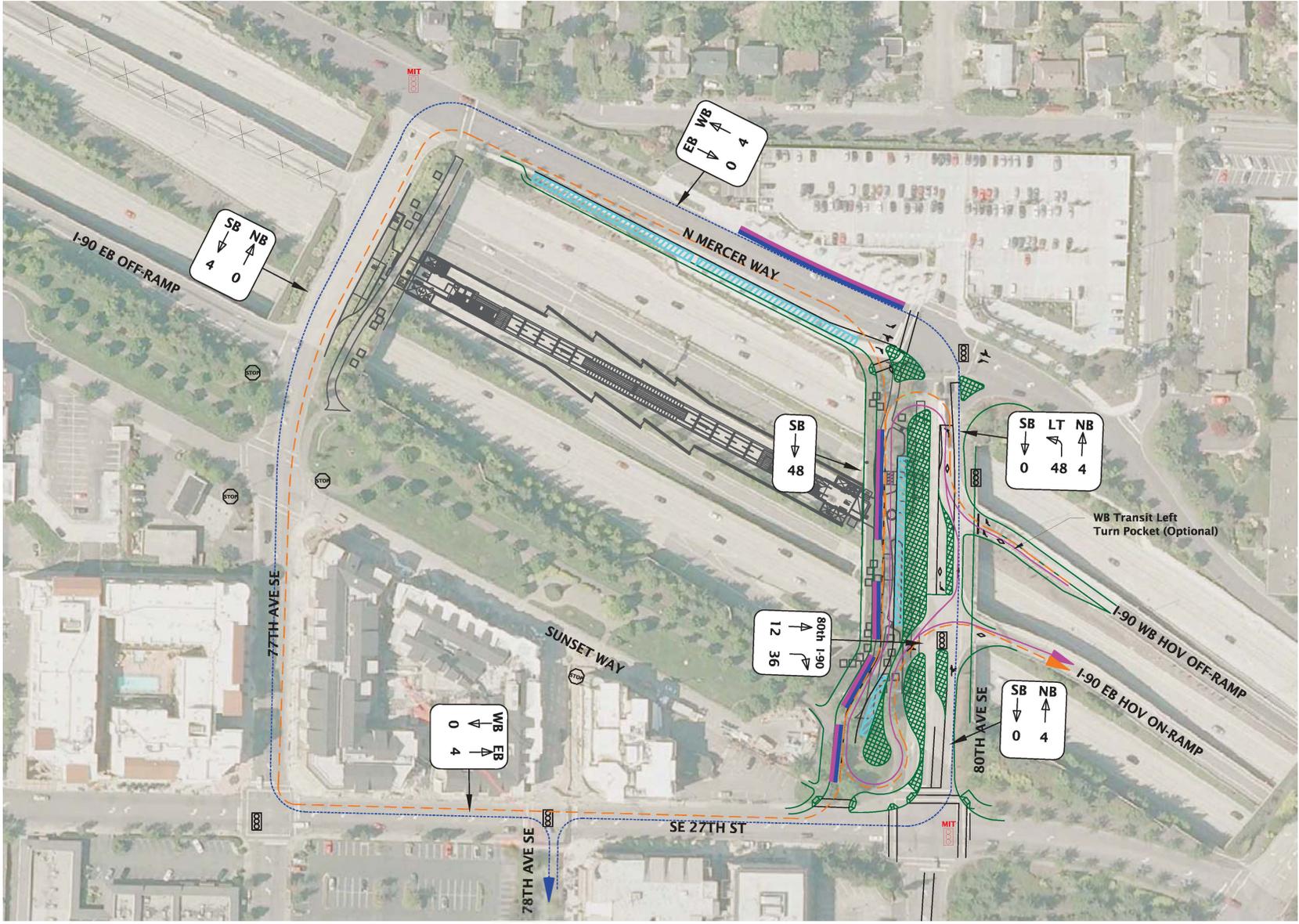


- LEGEND**
- BUS DROP-OFF AREA
 - BUS LAYOVER AREA
 - BUS PICK UP
 - MERCER ISLAND EAST LINK STATION
 - MERCER ISLAND ROUTES
 - TRANSIT CENTER ROUTE
 - N MERCER WAY LAYOVER ROUTE*
 - ⊞ EXISTING SIGNAL CONTROL
 - STOP EXISTING STOP CONTROL
 - MIT EAST LINK FEIS PROPOSED MITIGATION

NOTES:
 *N MERCER WAY LAYOVER ROUTE USED WHEN ALL TRANSIT CENTER LAYOVER SPACES OCCUPIED

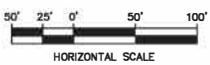


MERCER ISLAND BUS TRANSIT INTEGRATION
 Exhibit 2-6 - 80th Avenue SE Configuration



- LEGEND**
- BUS DROP-OFF AREA
 - BUS LAYOVER AREA
 - BUS PICK UP
 - MERCER ISLAND EAST LINK STATION
 - MERCER ISLAND ROUTES
 - TRANSIT CENTER ROUTES
 - N MERCER WAY LAYOVER ROUTE*
 - S EXISTING SIGNAL CONTROL
 - STOP EXISTING STOP CONTROL
 - PM PEAK HOUR BUS TURNING MOVEMENT VOLUMES
 - MIT EAST LINK FEIS PROPOSED MITIGATION

NOTES:
 *N MERCER WAY LAYOVER ROUTE USED WHEN ALL TRANSIT CENTER LAYOVER SPACES OCCUPIED



MERCER ISLAND BUS TRANSIT INTEGRATION
 Exhibit 2-7 80th Avenue SE Configuration Bus Routes