



U.S. Department
of Transportation
**Federal Highway
Administration**

Washington Division

Suite 501 Evergreen Plaza
711 South Capitol Way
Olympia, Washington 98501-1284
(360) 753-9480
(360) 753-9889 (FAX)
<http://www.fhwa.dot.gov/wadiv>

June 22, 2011

HDE-WA/560/WA 624

Ms. Paula J. Hammond
Secretary of Transportation
Department of Transportation
Olympia, Washington

Attention: Barb De Ste Croix

**Sound Transit – I-90 East Link Project
Final Interchange Justification Report**

Dear Ms. Hammond:

This letter is in response to your June 20, 2011, request for a finding of engineering and operational acceptability for the Sound Transit I-90 East Link Interchange Justification Report (IJR). The project, in part, incorporates interchange modifications and closures within the I-90 center roadway to allow Sound Transit's East Link light rail project to use the I-90 reversible express lanes from MP 1.99 to MP 9.44. In addition, part of this project, incorporates comprehensive changes to I-90, including HOV access and lane modifications resulting from the I-90 Two-Way Transit and HOV Operations Project that form the ultimate configuration of I-90 between the cities of Seattle and Bellevue. We have compared the final IJR to previous drafts and find that it satisfies the requirements of the FHWA Interstate Added Access Policy.

Based on an engineering and operations review, the access request is considered acceptable. However, the general purpose left-hand on ramp connecting Island Crest Way to the WB I-90 HOV lane is a safety issue. The AASHTO Greenbook, *A Policy on Geometric Design of Highways and Streets*, discourages the use of left-hand on and off ramps. This access point should be monitored and closed to single occupant vehicles use if significant collision frequency and severity begin to occur. In addition, ramp metering must continue at this location.

If there are no major changes in the design of the proposal, final approval may be given upon the completion of the environmental process. Please submit a request for final IJR approval at the completion of the NEPA process.

Sincerely,

DANIEL M. MATHIS, P.E.
Division Administrator

By: Donald A. Petersen
Division Safety/Design Engineer

Enclosure

cc: Ed Barry, MS TB-85, LeRoy Patterson, MS 47336

East Link Project

FINAL I-90 Interchange Justification Report

May 2011



EAST LINK PROJECT

Interstate 90 Interchange Justification Report Signature Sheet:

I-90 Reversible Express Lanes Mile Posts 1.99 to 9.44

This Interchange Justification Report (IJR) has been prepared under my direct supervision, in accordance with Chapter 18.43 of the revised Code of Washington and appropriate Washington State Department of Transportation manuals.

IJR Engineer of Record



By: Craig J. Grandt, P.E.
CH2MHILL

Date: May 27th, 2011

Northwest Region Engineer Manager

By: Paul Bennett, P.E.

Date: 27 MAY 2011, 2011

Traffic Analysis Engineer

By: Mark J. Boly, P.E.
Regional Traffic Engineer

Date: June 2, 2011

WSDOT Approval: Assistance State Design Engineer

By: Al G, P.E.

Date: May 31, 2011

WSDOT Approval: Development Services and Access Manager

By: Byron King, P.E.

Date: ~~May 31~~ June 6, 2011

FHWA Approval: FHWA Safety and Design Engineer

By: Donald A. Peterson, P.E.

Date: JUNE 22, 2011

Contents

| | |
|---|-------------|
| Introduction and Executive Summary | ES-1 |
| ES.1 Background | ES-1 |
| ES.2 Meeting the Eight Policy Points | ES-4 |
| ES.3 Project Description, Schedule, and Funding | ES-9 |
| Policy Point 1: Need | 1-1 |
| 1.1 Summary | 1-1 |
| 1.2 Project Purpose | 1-2 |
| 1.3 Project Need | 1-4 |
| 1.4 Analysis Parameters and Assumptions | 1-5 |
| 1.5 Existing and Future No-Build Conditions | 1-14 |
| 1.6 Why the Existing System Does Not Meet the Needs | 1-44 |
| Policy Point 2: Alternatives | 2-1 |
| 2.1 Summary | 2-1 |
| 2.2 Alternative Development | 2-2 |
| 2.3 Project Alternatives | 2-7 |
| Policy Point 3: Operational and Accident Analysis | 3-1 |
| 3.1 Summary | 3-1 |
| 3.2 Analysis Parameters and Assumptions | 3-3 |
| 3.3 Future No-Build and Build Conditions | 3-6 |
| Policy Point 4: Design | 4-1 |
| 4.1 Summary | 4-1 |
| 4.2 Interchange Modifications | 4-1 |
| 4.3 Conceptual Signing Plan | 4-6 |
| 4.4 I-90 Design Deviations | 4-6 |
| Policy Point 5: Consistency with Land Use and Transportation Plans | 5-1 |
| 5.1 Summary | 5-1 |
| 5.2 Regional and State Plans | 5-1 |
| 5.3 Local Plans | 5-6 |
| Policy Point 6: Future Interchanges | 6-1 |
| 6.1 Summary | 6-1 |
| 6.2 SR 519 Intermodal Access Project | 6-1 |
| 6.3 I-90 Two-Way Transit and HOV Operations Project | 6-2 |
| 6.4 I-405 Corridor Program | 6-2 |
| 6.5 Other Projects | 6-3 |
| Policy Point 7: Coordination | 7-1 |
| 7.1 SR 519 Intermodal Access Project | 7-1 |
| 7.2 I-90 Two-Way Transit and HOV Operations Project | 7-2 |
| 7.3 I-405 Corridor Program | 7-2 |
| 7.4 Local Projects | 7-2 |

| | |
|---|------------|
| 7.5 Other Potential Projects..... | 7-3 |
| Policy Point 8: Environmental Process (NEPA) | 8-1 |
| 8.1 Summary | 8-1 |
| 8.2 Environmental Process..... | 8-1 |
| References..... | R-1 |
| Acronyms and Abbreviations | A-1 |

Appendixes

Policy Point 1

- 1A I-90 Memorandum Agreement (1976) and the 2004 Amendment to the Memorandum Agreement
- 1B I-90 Existing and Future No-build Highway Capacity Manual (HCM) Level of Service Figures

Policy Point 2

- 2A East Corridor High Capacity Transit Mode Analysis History Report (*printed summary provided, full report on CD*)

Policy Point 3

- 3A East Link EIS Transportation Methods and Assumptions Report (*printed summary provided, full report on CD*)
- 3B East Link Interchange Justification Report Methods and Assumptions Memorandum
- 3C VISSIM Model Calibration and Overview Memorandum
- 3D Existing and Future I-90 Mode Share
- 3E December 22, 2006 WSDOT Letter regarding Mercer Island residents access to I-90 HOV lanes
- 3F Existing and Future I-90 Vehicle and Person Throughput
- 3G I-90 Future Highway Capacity Manual (HCM) Level of Service Figures
- 3H Existing and Future I-90 Congestion Maps
- 3I Future I-90 HOV Lane Performance
- 3J Existing and Future I-90 Travel Times by Mode
- 3K Existing and Future Intersection Level of Service
- 3L Existing Accident Information
- 3M East Link I-90 IJR Interchange Specific Weaving Analysis

Policy Point 4

- 4A East Link Project Preliminary Engineering Sheets (Segment A and south Segment B) and updates to Engineering Sheets with the I-90 Two-Way Transit and HOV Operations Project (*provided on CD only*)

4B ST East Link Project Draft East Link D-2 Right-of-way Operations Assessment of Planned Joint Use by Bus and Rail Report

Policy Point 5

5A East Link Project's Consistency with Land Use and Transportation Plans

Additional Files Provided on CD

East Link IJR Project Management Plan

East Link Project: IJR Synchro Files

East Link Project: IJR VISSIM Files

Tables

- ES-1 Proposed I-90 Future Access Revisions
- 1-1 East Link Transportation Analysis Measures of Effectiveness
- 1-2 2030 No-build Condition Transportation Programs and Projects
- 1-3 Peak-period Vehicle Demand Forecasts for I-901-4 I-90 Future Channelization and Access Modifications
- 1-5 Existing and 2030 Regional Travel Impact Comparison Summary
- 1-6 Existing and 2030 No-build AM and PM Peak-hour Screenline Volume-to-capacity Ratios
- 1-7 Existing and 2030 No-build I-90 Vehicle and Person Peak-hour Throughput at Screenlines 2 and 3
- 1-8 Existing and 2030 No-build AM Peak-hour (7:15-8:15 AM) I-90 Freeway Segment LOS and Density
- 1-9 Existing and 2030 No-build PM Peak-hour (4:30-5:30 PM) I-90 Freeway Segment LOS and Density
- 3-1 Peak-period Vehicle Demand Forecasts for I-90
- 3-2 I-90 Future Channelization and Access Modifications
- 3-3 2020 and 2030 Regional Travel Impact Comparison Summary
- 3-4 2020 and 2030 East Link Ridership Forecasts Along I-90
- 3-5 2020 and 2030 No-build and Build Screenline PM Peak-hour Volume-to-capacity Ratios
- 3-6 2020 and 2030 Vehicle and Person Peak-hour I-90 Throughput at Lake Washington (Screenline 2)
- 3-7 2020 and 2030 Vehicle and Person Peak-hour Throughput for I-90 at Mercer Slough (Screenline 3)
- 3-8 2030 Vehicle and Person Peak-hour Demand Served for I-90 at Lake Washington (Screenlines 2 and 3)
- 3-9 2020 No-build and Build AM Peak-hour (7:15-8:15 AM) I-90 Freeway Segment LOS and Density
- 3-10 2020 No-build and Build PM Peak-hour (4:30-5:30 PM) I-90 Freeway Segment LOS and Density

- 3-11 2030 No-build and Build AM Peak-hour (7:15-8:15 AM) I-90 Freeway Segment LOS and Density
- 3-12 2030 No-build and Build PM Peak-hour (4:30-5:30 PM) I-90 Freeway Segment LOS and Density
- 3-13 2020 and 2030 AM Peak-period I-90 Ramp 95th Percentile Vehicle Queues
- 3-14 2020 and 2030 PM Peak-period I-90 Ramp 95th Percentile Vehicle Queues
- 3-15 Existing Accident Rate Distribution on I-90
- 3-16 2030 Accident Frequency Predictions for I-90
- 3-17 Accident Rates as a Function of Vehicle and Person Miles Traveled (All Roadways)
- 3-18 2030 Injury Accident Frequency Predictions for I-90 Outer Mainline Roadways
- 3-19 Injury Accident Rates as a Function of Vehicle and Person Miles Traveled (All Roadways)
- 3-20 2030 Expected Weave and Mainline Volumes at Select Locations

- 4-1 Future Westbound I-90 Interchange Access
- 4-2 Future Eastbound I-90 Interchange Access
- 4-3 I-90 Design Deviations with East Link Project
- 4-4 I-90 Design Deviations at Island Crest Way and Bellevue Way Interchanges with the I-90 Two-Way Transit and HOV Project

- 8-1 Anticipated Permits and Approvals for East Link Project

Figures

- ES-1 East Link Project – I-90 Future Channelization and Ramps
- ES-2 East Link Project Corridor
- ES-3 East Link Targeted Project Milestones

- 1-1 PSRC 2030 PM Roadway Volume-to-capacity Ratios Without East Link
- 1-2 East Link Project Vicinity Map
- 1-3 IJR Study Area, Study Intersections, and Screenlines
- 1-4 I-90 Two-Way Transit and HOV Operations Project Stages
- 1-5 I-90 Two-Way Transit and HOV Operations Project
- 1-6 I-90 Future No-build Lane Channelization and Ramps
- 1-7 Screenline 2 (Lake Washington) with I-90 and SR 520 Separated, Existing and 2030 No-build PM Peak-hour Mode Share
- 1-8 Screenline 3 (I-90 at Mercer Slough), Existing and 2030 No-build Peak-hour Mode Share
- 1-9 Existing and 2030 I-90 Peak-hour Person Throughput at Screenline 2 (Lake Washington) and Screenline 3 (I-90 at Mercer Slough)
- 1-10 2030 PM Peak-hour No-build Congestion by Lane Type
- 1-11 I-90 Existing and 2030 No-build AM and PM Peak-period Congestion Maps
- 1-12 AM and PM Peak Period Existing and 2030 No-build SOV I-90 Travel Times Between I-405 and I-5
- 1-13 AM Peak Period I-90 Existing and 2030 No-build Travel Times by Mode
- 1-14 PM Peak Period I-90 Existing and 2030 No-build Travel Times by Mode
- 1-15 Existing and 2030 AM/PM Intersection LOS Results

- 2-1 East Link Project Segments and Alternatives
- 2-2 History of High-capacity Transit in the East Corridor

- 2-3 I-90 Two-Way Transit and HOV Operations Project
- 2-4 I-90 Future Channelization and Ramps
- 2-5 East Link Project – Segment A

- 3-1 I-90 2020 and 2030 AM and PM Peak-hour Person Throughput Across Lake Washington
- 3-2 I-90 Future Channelization and Ramps
- 3-3 Screenline 2 (Lake Washington) with I-90 and SR 520 Separated 2020 No-build and Build PM Peak-hour Mode Share
- 3-4 Screenline 2 (Lake Washington) with I-90 and SR 520 Separated 2030 No-build and Build PM Peak-hour Mode Share
- 3-5 Screenline 3 (I-90 at Mercer Slough), 2020 and 2030 No-build and Build AM and PM Peak-hour Mode Share
- 3-6 2020 and 2030 I-90 Peak-hour Person Throughput at Screenline 2 (Lake Washington)
- 3-7 2020 and 2030 I-90 Peak-hour Person Throughput at Screenline 3 (I-90 at Mercer Slough)
- 3-8 I-90 2030 No-build and Build Congestion Maps
- 3-9 2030 AM and PM Peak-period No-build and Build SOV I-90 Travel Times Between I-405 and I-5
- 3-10 2020 AM Peak Period, I-90 No-build and Build Travel Times by Mode
- 3-11 2020 PM Peak Period, I-90 No-build and Build Travel Times by Mode
- 3-12 2030 AM Peak Period, I-90 No-build and Build Travel Times by Mode
- 3-13 2030 PM Peak Period, I-90 No-build and Build Travel Times by Mode
- 3-14 Segments A and B 2020 Build and No-build Conditions Intersection AM/PM LOS
- 3-15 Segments A and B 2030 Build and No-build Conditions Intersection AM/PM LOS

- 4-1 Future I-90 Channelization and Ramps

- 8-1 East Link Targeted Project Milestones

Introduction and Executive Summary

This Final Interchange Justification Report (IJR) was prepared to address the access modifications and removals needed to convert the Interstate 90 (I-90) center reversible roadway for exclusive light rail as part of the East Link Light Rail Transit Project (East Link Project or, simply, East Link). This IJR addresses the Federal Highway Administration (FHWA) and Washington State Department of Transportation (WSDOT) requirements associated with new and modified access to interstate facilities. This report addresses the elements required by the FHWA policy *Additional Interchanges to the Interstate System* (FHWA, 1998) and the WSDOT Design Manual, Chapter 550 (WSDOT, 2009).

ES.1 Background

Local, regional, and state agencies have been studying high-capacity transportation alternatives to connect Seattle with the Eastside of King County since the mid-1960s. Already in 1976, when expansion plans for I-90 were stalled, the affected entities of Seattle, Mercer Island, Bellevue, and the Washington State Highway Commission signed a Memorandum Agreement (MA) titled *Memorandum Agreement on the Design and Construction of the I-90 Bridge* (MA I-90) (City of Seattle et al, 1976), which called for converting the center roadway to dedicated transit usage in the future.

In 2004, Puget Sound Regional Council (PSRC) prepared the *Central Puget Sound Region High-Capacity Transit Corridor Assessment* (PSRC, 2004) to establish a basis for more detailed planning studies and environmental analysis. Applying the adopted land use and metropolitan transportation plan, the report found that the cross-lake corridor connecting the urban centers of Seattle, Bellevue, Overlake, and Redmond had the highest potential for near-term development of high-capacity transit (HCT). The Board of Directors of Central Puget Sound Regional Transit Authority (known as “Sound Transit”) has adopted light rail as the mode for this corridor, now referred to as “the East Link Project.”

The East Link Project builds on the conclusions of previous planning studies and public involvement processes dating back to the mid-1960s. Consistent with the memorandum titled *Integration of Planning and NEPA Processes* (Appendix A to Title 49, Part 613, Statewide Transportation Planning; Metropolitan Transportation Planning, 2-14-07, of the *Code of Federal Regulations* [CFR])(Federal Transit Administration [FTA] and FHWA, 2005), the decision process is based on comprehensive studies that were completed in cooperation with state and local agencies and broad public input. In particular, the Sound Transit Board made the following two major decisions after extensive evaluation and review with agencies and the public before beginning this environmental review:

- Regional HCT to the Eastside via I-90 is necessary.
- Light rail is the preferred HCT technology for the I-90/East Corridor connecting Seattle, Mercer Island, Bellevue, Overlake, and Redmond.

Policy Point 2 of this IJR further summarizes key milestones in the process of making these decisions and describes the process used to determine light rail as the HCT mode. Within the I-

90 corridor a separate *Access Point Decision Report* (APDR) (Sound Transit and WSDOT, 2005), was approved to provide new lanes for high-occupancy vehicle (HOV) traffic as part of the I-90 Two-Way Transit and HOV Operations Project. That APDR covered much of the same area as this IJR and addressed modified access as part of that action. The APDR made two-way HOV lane preferential travel possible, as opposed to the center roadway HOV facility that only accommodated one direction. Because these projects are within the same corridor, they have been closely coordinated. Another related WSDOT action included an IJR for the State Route (SR) 519 Intermodal Access Project Phase 2: Atlantic Corridor (IJR approval, May 2008).

Table ES-1 summarizes access revisions in the I-90 Two-Way Transit and HOV Operations Project that APDR approved in April 2005 and those proposed in this IJR. These revisions are also shown in Figure ES-1. The East Link Project proposes to eliminate seven connections between the center reversible roadway and either the local streets (77th Avenue SE and Island Crest Way) or the I-90 westbound and eastbound mainline roadways (near Rainier Avenue South and East Channel Bridge). In addition, a change in the use of the D2 Roadway to allow only joint bus and rail operations and relocate the proposed eastbound HOV direct-access off-ramp to Island Crest Way (instead of at 77th Avenue SE) is requested.

TABLE ES-1
Proposed I-90 Future Access Revisions

| Interchange | I-90 Existing (2007) Interchange Access (with use and/or time restrictions) | I-90 Two-Way HOV and Transit Project Revisions | East Link Preferred Alternative Proposed Revisions^a |
|---------------------------------------|--|---|---|
| SR 519 and Edgar Martinez Drive South | <i>Westbound off-ramp</i> | <i>No change</i> | <i>No change</i> |
| | <i>Eastbound on-ramp</i> | <i>No change</i> | <i>No change</i> |
| 5th Avenue South and D2 Roadway | Westbound off-ramp : bus and HOV (AM only) | No change | Westbound off-ramp: bus only |
| | Eastbound on-ramp : bus and HOV (PM only) | No change | Eastbound on-ramp: bus only |
| I-5 Interchange | Westbound off- and on-ramps | No change | No change |
| | Eastbound off- and on-ramps | No change | No change |
| Rainier Avenue South | Westbound off- and on-ramps | No change | No change |
| | EB off- and on-ramps | No change | No change |
| | Westbound ramp from mainline to transit flyer stop | No change, bus only | No change, bus only |
| | Eastbound ramp from transit flyer stop to mainline | No change, bus only | No change, bus only |
| | Westbound exit from center roadway to mainline (AM only) | No change | Closed |
| | Eastbound entry to center roadway from mainline (PM only) | No change | Closed |
| West Mercer Way | Westbound on-ramp | No change | No change |
| | Eastbound off-ramp | No change | No change |
| 76th Avenue | Westbound on-ramp | No change | No change |

TABLE ES-1
Proposed I-90 Future Access Revisions

| Interchange | I-90 Existing (2007) Interchange Access (with use and/or time restrictions) | I-90 Two-Way HOV and Transit Project Revisions | East Link Preferred Alternative Proposed Revisions ^a |
|---------------------------|---|---|---|
| SE | | | |
| 77th Avenue SE | Eastbound off-ramp | No change | No change |
| | Westbound off/eastbound on-ramp with center roadway | No change | Closed |
| | Eastbound HOV off-ramp | Stage 3 | Modified to Island Crest Way |
| 80th Avenue SE | Westbound off/eastbound on-ramp with center roadway | Eliminated with Stages 1 and 2 | No change |
| | <i>Westbound HOV off-ramp</i> | <i>Stage 1</i> | <i>No change</i> |
| | Eastbound HOV on-ramp | Stage 2 | No change |
| Island Crest Way | Westbound off- and on-ramps | No change | No change |
| | Eastbound off- and on-ramps | No change | No change |
| | Westbound on-ramp to center roadway (AM only) | No change | Closed |
| | Eastbound off-ramp from center roadway (PM only) | No change | Closed |
| | Eastbound HOV off-ramp | N/A | Modified from 77th Avenue SE |
| East Mercer Way | Westbound off- and on-ramps | No change | No change |
| | Eastbound off- and on-ramps | No change | No change |
| | Westbound entry to center roadway (AM only) | No change | Closed |
| | Eastbound exit from center roadway (PM only) | No change | Closed |
| Bellevue Way ^b | Westbound off- and on-ramps | No change | No change |
| | Eastbound off- and on-ramps | No change | No change |
| | <i>Westbound HOV on-ramp</i> | <i>Modified ramps to create two-way HOV ramps (Stage 1)</i> | No change |
| | <i>Eastbound HOV off-ramp</i> | | |
| I-405 ^b | Westbound off- and on-ramps | No change | No change |
| | Eastbound off- and on-ramps | No change | No change |
| | Westbound HOV on-ramp | No change | No change |
| | Eastbound HOV off-ramp | No change | No change |

Table reflects existing conditions year of 2007; italic text indicates the project has been constructed (as of 2011).

^a East Link Project compared with I-90 Two-Way HOV and Transit Project.

^b At some of the Bellevue Way and I-405 ramps, the I-90 Two-Way HOV and Transit Project modified their operations to improve flow but continue to provide the access; therefore, "No change" to access.

HOV high-occupancy vehicle

ES.2 Meeting the Eight Policy Points

This IJR responds to FHWA's eight policy points to support the finding of engineering and operational acceptability of the Proposal. Analysis of alternatives and options is included in Draft Environmental Impact Statement (EIS) (Sound Transit, 2008), and this document supports only the preferred alternative identified by the Sound Transit Board in June 2010. Detailed operations and safety analysis has been provided to support modified or removed access as part of the East Link Project. The analysis includes phased evaluation of the I-90 Two-Way HOV and Transit Project using analytical procedures (such as multihour simulation analysis of freeway elements) and preliminary engineering design. Electronic files of the analysis are included in Appendix 3F (provided on DVD), with results summarized in this report and further detailed in the other appendices. Pending engineering and environmental documentation is discussed in Policy Point 4 (Design) and Policy Point 8 (Environmental Process), respectively. Included in Policy Point 4 is documentation of anticipated design deviations with the I-90 Two-Way Transit and HOV Project and the East Link Project

The need for HCT, specifically light rail on the I-90 corridor to connect Seattle with urban communities, has been progressively established in documents dating back to 1976. Along with furthering the state growth policy (Washington State Growth Management Act of 1990 [GMA]) light rail has been supported in virtually every long-range transportation plan developed by the state, regional planning agencies (such as PSRC), regional transit providers (such as Sound Move and King County Metro), and local planning agencies (such as the Cities of Bellevue, Redmond, Seattle, and Mercer Island). The need for East Link, and the subsequent access modifications proposed for its implementation, is fully documented in Policy Point 1 (Need). Studies and plans also going back to 1976 and related to HCT have investigated numerous alignments, modes, and governance. Through documentation, close coordination with stakeholders, and a broad alternatives process including the East Link Draft EIS (Sound Transit, 2008) and Supplemental Draft EIS (Sound Transit, 2010a), Sound Transit's Board identified the locally preferred alternative (known as *Preferred Alternative A1* [and *Preferred Alternative B2M* near the Bellevue Way interchange]) on I-90 in June 2010. This alternative is the Proposal discussed in this IJR, and the alternative evaluation and decision-making process is documented in Policy Point 2 (Alternatives).

To address Policy Point 3 (Operational and Accident Analysis) an in-depth operations and safety analysis was initiated in 2006 and conducted to reflect a base year of 2007, a design horizon year of 2030, and a year of opening of 2020 that reflects effects of other (I-90) phased projects. The safety and operations analysis was conducted progressively over 3 years and included close coordination among WSDOT, FHWA, and Sound Transit. Key decision milestones in the analysis included agreement on the following:

- Methods and assumptions and performance measures
- Calibration of existing conditions
- Future-year operations and safety predictive analysis
- Design refinements and deviations

The operations and safety analysis reviewed safety, including countermeasures agreed to within the I-90 Two-Way Transit and HOV Project. The countermeasures are described in the I-90 Two-Way Transit and HOV Operations Project Final Environmental Impact Statement

(WSDOT and Sound Transit, 2004). Operations and safety analysis reflected measures of effectiveness ranging from systemwide demand to person throughput and vehicle travel time to intersection queuing.

Measures also addressed transit reliability and service. Policy Point 3 documents this extensive operations and safety analysis. The analyses documented in Policy Point 3 indicate that operations and safety of I-90 will not be adversely affected and, for many of the measures, indicates improved conditions as a result of the Proposal. Further analysis within this document reflects the benefit of the Proposal in terms of person throughput during peak periods because approximately 5,500 more people will be able to travel across Lake Washington on I-90 with the project compared with the no-build condition. Additionally, vehicle travel times are expected to remain similar or improve compared with no-build conditions, and the I-90 corridor's safety is predicted to not be compromised.

Not included in the Proposal is a change to the outer roadway HOV lane eligibility. Outer roadway HOV traffic will remain consistent with the I-90 Two-Way Transit and HOV Operations Project Record of Decision (ROD) (FHWA, 2004). HOV and transit will be authorized to use only the eastbound, left-side off-ramp at Island Crest Way, and Mercer Island traffic from the westbound, left-side on-ramp at Island Crest Way will be allowed only in the HOV lane for merge and acceleration purposes. With the East Link Project, access to and from reversible center roadway would be removed as well as its ramps connecting to Mercer Island (77th Avenue SE and Island Crest Way). With the access modifications from the I-90 Two-Way Transit and HOV Operations Project and the East Link Project, the traffic analysis assumed Mercer Island single-occupant vehicles (SOVs) would be able to use the HOV lanes in both directions of I-90 between Seattle and Island Crest Way. This was assumed to demonstrate that it does not affect the results of the analysis and represents a worst-case condition. This assumption does not represent approving SOVs using the outer roadway HOV lanes or the eastbound left-side off-ramp to Island Crest Way. Any changes to the HOV lane eligibility – such as tolling, managed lanes, or Mercer Island SOV use – would need to be addressed in a future analysis, approval, and agreement.

The Proposal has an acceptance base in regional and local policies and plans, as noted in Policy Point 5 (Consistency with Land Use and Transportation Plans). The Proposal is consistent with all local and regional plans and programs established by local and regional agencies, including the Metropolitan Planning Organization (MPO) comprehensive plans, *Vision 2020 1995 Update* (PSRC, 1995) (and, by extension, *VISION 2040*) and *Destination 2030* (PSRC, 2007a) (and, by extension, *VISION 2040* and the plans of the Cities, Sound Transit, and King County). The Proposal has been closely coordinated with other future or anticipated projects, including I-90 interchange modifications, as described in Policy Point 6 (Future Interchanges). The Proposal does not depend on other actions, although it functions with other long-range regional investments such as the SR 519 South Seattle Intermodal Access Project, I-90 Two-Way Transit and HOV and I-405 Expansion (as described in Policy Point 7 [Coordination]). This IJR has also been closely coordinated, and analysis consistent with, the environmental document being prepared for East Link. Policy Point 8 identifies anticipated permit requirements consistent with the Final EIS (WSDOT and Sound Transit, 2011) and ROD.

This page intentionally left blank.

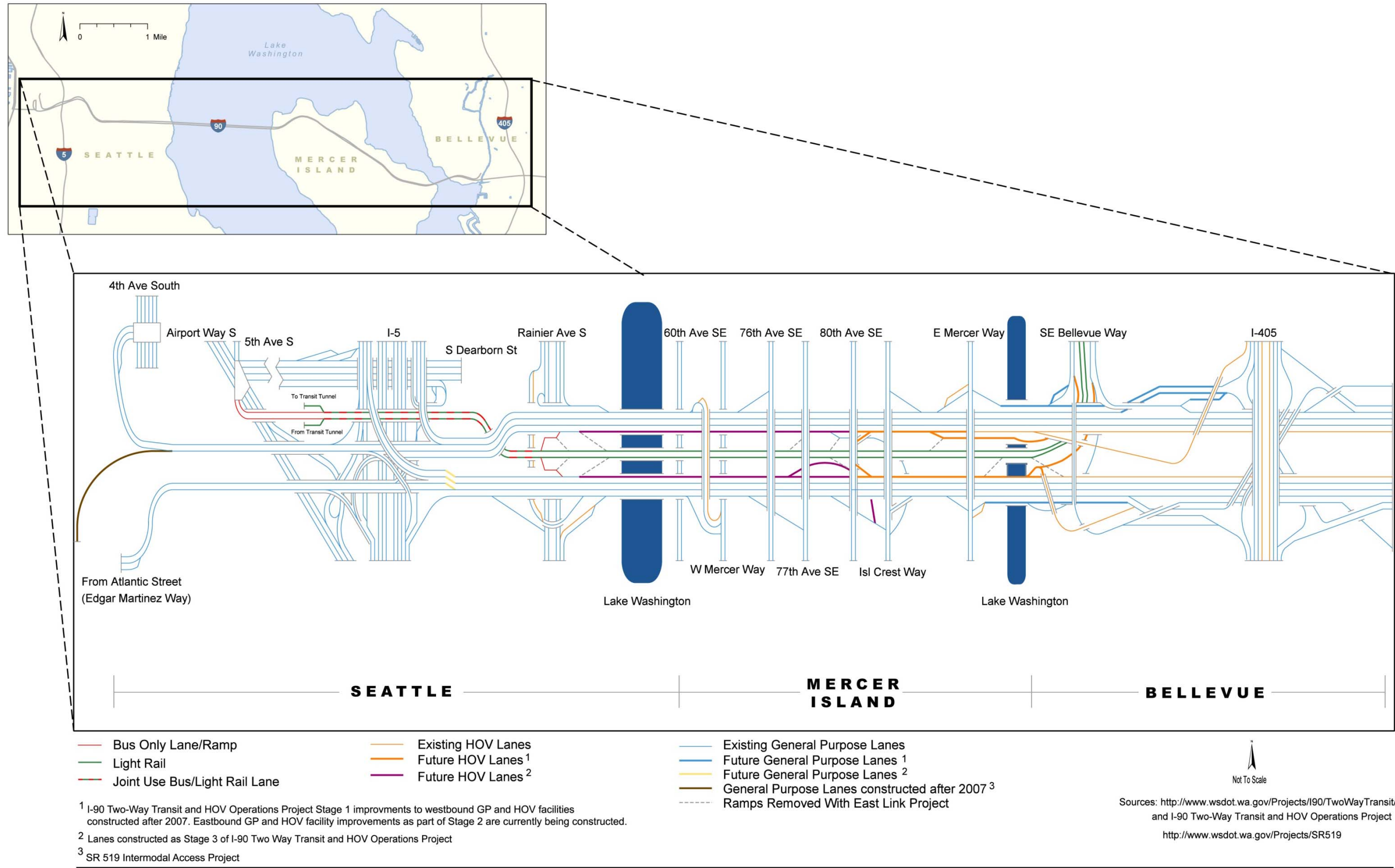


FIGURE ES-1
I-90 Future Channelization and Ramps

ES.3 Project Description, Schedule, and Funding

Current population and employment levels are causing longer hours of congestion for traffic crossing Lake Washington in both directions, and population and employment trends indicate that this situation will continue to worsen. On both sides of the lake, the cities of Seattle, Bellevue, and Redmond are rapidly meeting housing and employment density goals set by PSRC. PSRC's *VISION 2040* plan recognizes that these urban centers will require HCT options to meet their increasing transportation demands. Even with recent

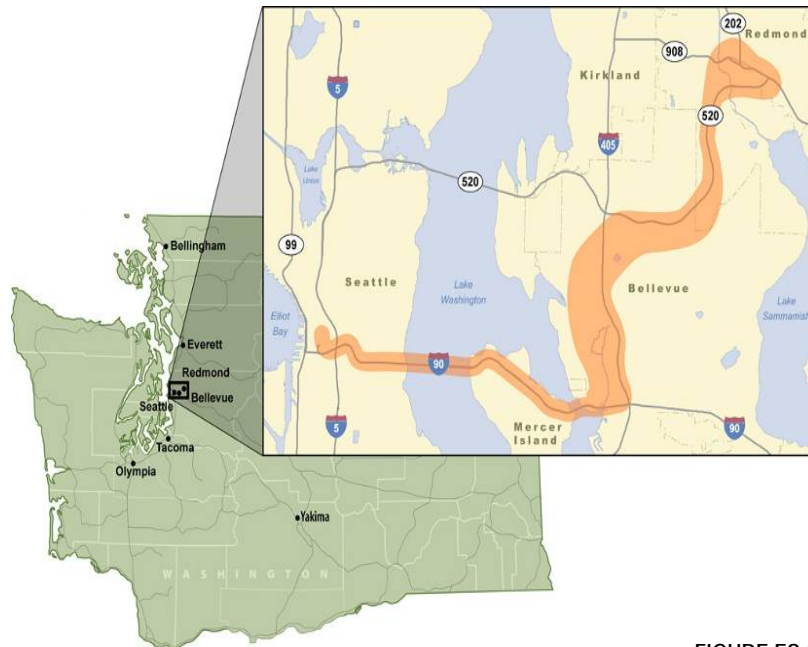


FIGURE ES-2
East Link Project Corridor

surges in transit ridership over the last few years as gas prices have dramatically increased in the Puget Sound region, current transit options are vulnerable to traffic congestion, which affects transit's on-time performance and reliability. In July 2006, as an outgrowth of nearly 40 years of extensive analyses and coordination among agencies and local jurisdictions, including public input, Sound Transit identified light rail as the preferred transportation mode for this corridor.

Sound Transit is proposing the East Link Project to address these growing transportation needs. The East Link Project would involve constructing an approximately 14- to 18-mile-long light rail transit system connecting the urban centers on both sides of Lake Washington in a dedicated right-of-way from Downtown Seattle to Mercer Island, Bellevue, Overlake, and Redmond by way of I-90. For the East Link Project, this IJR is for the Proposal between Seattle and the Bellevue Way interchange that crosses I-90 in the reversible center roadway; no other IJR is planned for the East Link Project because the project does not affect access to the rest of the Puget Sound freeway system. This system would benefit the region by providing frequent and reliable HCT service 20 hours each day in the Seattle-Bellevue-Redmond corridor (Figure ES-2). **The light rail system would provide fast transit travel times and would increase transportation capacity in the corridor.**

Daily ridership in the corridor is projected to be up to 52,500 boardings by 2030, and light rail service can be expanded to accommodate growth. Figure ES-3 shows project milestones that are anticipated for the East Link Project. The schedule for final design, construction, and operation will be refined as the project nears the end of environmental review and preliminary design.

The East Link Light Project is included in Sound Transit 2 (ST2), The Regional Transit System Plan for Central Puget Sound, also known as the “Mass Transit Expansion Proposal,” which was approved by voters in November 2008. ST2 funds construction and operation of the portion of the East Link Project from Seattle to the Overlake Transit Center. The length and configuration of the constructed project would depend on project funding, final project design, track profiles, and project costs; the EIS, however, covers the whole corridor.

FIGURE ES-3
East Link Targeted Project Milestones

| Preliminary Design and Environmental Review | |
|---|-----------------------------|
| Draft EIS published | December 2008 |
| Draft EIS comment period | 75 days |
| Sound Transit Board identifies preferred alternative | Spring 2009/ Spring 2010 |
| SDEIS published | Fall 2010 |
| SDEIS comment period | 60 days |
| Final EIS published | Spring 2011 |
| Sound Transit Board selects project to be built | Summer 2011 |
| Federal Record of Decision | Summer 2011 |
| Final Design, Construction, and Operation — ST2 Targets | |
| Final Design | 2011 - 2014 |
| Construction | |
| <ul style="list-style-type: none"> • Seattle to Bellevue • Bellevue to Overlake | 2013 - 2019 2014 - 2020 |
| Start of Service | |
| <ul style="list-style-type: none"> • Seattle to Bellevue • Bellevue to Overlake | 2020 2021 |