FINAL EIS

EAST LINK PROJECT

FINAL ENVIRONMENTAL IMPACT STATEMENT

Appendix H4
Historic and Archaeological Resources Technical Report


SEATTLE


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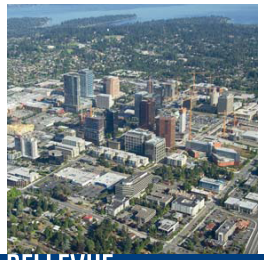
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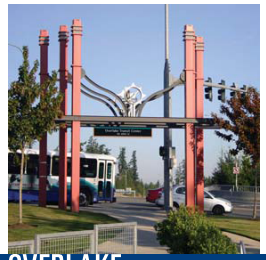
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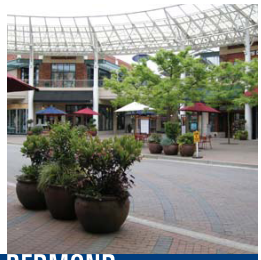
REDMOND

SOUNDTRANSIT

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REGIONAL TRANSIT AUTHORITY

Washington State Department of Transportation

U.S. Department of Transportation
Federal Transit Administration

July 2011

SOUND TRANSIT EAST LINK PROJECT

Appendix H4

Historic and Archaeological Resources Technical Report

Prepared for:
Sound Transit

Prepared by:
Historical Research Associates, Inc.
CH2M HILL

July 2011

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Executive Summary

The following report has been prepared pursuant to Section 106 of the National Historic Preservation Act as amended (16 U.S.C. 470f) and implementing regulations 36 CFR Part 800, which stipulates that projects that involve federal money, permits, and/or licenses must take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. This technical report presents the eligibility of historic and archaeological resources, effects analysis and findings, along with commitments to avoid, minimize, and mitigate impacts.

As part of the project's historic environmental review, 439 buildings or structures, cultural investigations, and two archaeological sites located within the Area of Potential Effect (APE) were documented and analyzed. Of this total, 12 buildings or structures have been found to be listed or eligible for the National Register of Historic Places (NRHP). The Federal Transit Administration (FTA), in consultation with the State Historic Preservation Office (SHPO), has made a determination of adverse effect for the project. This determination results from the preferred alternative's potential impacts on the Winters House and potential Surrey Downs historic district. Other alternatives would also impact the potential Surrey Downs historic district and Justice White House.

Project Overview

East Link project is an extension of the light rail system from Seattle, Mercer Island, and the east side of Lake Washington to Bellevue and Redmond. The corridor is approximately 18 miles long and has been divided into five segments: Segment A, Interstate 90 (Seattle, Mercer Island to Bellevue); Segment B (I- 90 to Downtown Bellevue); Segment C (Downtown Bellevue); Segment D (Downtown Bellevue to Overlake Transit Center); and Segment E (Overlake Transit Center to Downtown Redmond). From the 28 different alternatives considered in these segments, the Sound Transit Board has identified a combination of Alternatives A1, B2M, C11A or C9T, D2A, and E2, as the *Preferred Alternative*.

Archaeology

Several portions of the alternatives have a high sensitivity for prehistoric archaeological sites, while no high sensitivity historic-period archaeological sites were identified. Archaeological investigations were conducted on 25 survey tracts. The surveys located no NRHP-eligible prehistoric or historic-period archaeological sites in the APE.

Additional archaeological surveys would be conducted prior to construction. In addition, an Archaeological Resources Monitoring and Treatment Plan (ARMPT) or an Unanticipated Discovery Plan would be prepared to guide archaeological monitoring during East Link construction. The Federal Transit Administration (FTA) and Sound Transit would consult with the Washington State Historic Preservation Officer (SHPO), the Muckleshoot and Snoqualmie Tribes, and other interested parties as appropriate, to review this plan.

Historic Resources

Project historians analyzed 439 buildings and structures for eligibility to the National Registrar. Of the total inventoried properties (including one potential historic district), 12 properties were either listed in the NRHP or recommended to be eligible to the NRHP. The Table ES-1 lists the 12 historic properties, findings of eligibility and impacts for each resource, along with minimization and mitigation measures. The resources that are "bold and italicized" are located along the *Preferred Alternative*. For the *Preferred Alternative*, a potential impact could occur at the Winters House and the potential Surrey Downs historic district during construction. The *Preferred Alternative* would not result in any other impacts on any other historic resources.

The project alternatives avoid all of the listed or eligible resources within the APE with the following exceptions. In Segment A, the *Preferred Alternative* would be located within the center roadway of the historic segment of I-90. The *Preferred Alternative* would not impact I-90 because light rail would maintain its character defining features

and because this segment of I-90 was originally designed to accommodate high capacity transit including light rail.

Preferred Alternative B2M would be located in a lidded retained cut under the front yard of the Winters House. Project construction includes measures to minimize damage to the house. If damage does occur, Sound Transit would make the needed repairs consistent with U.S. Secretary of the Interior's standards for treating historic properties. The Winters House will be closed during construction and the existing tenant temporarily relocated. The proximity of the light rail to the house creates the potential for groundborne noise above the FTA criteria during light rail operations. Project design would include vibration-reducing track work to mitigate this impact. Implementing these measures would resolve the project's potential impacts on the Winters House.

Preferred Alternative B2M also would benefit the historic features of the Winters House. The proposed mitigation for the Winters House would improve its visual and physical context. Following construction, and in consultation with the City of Bellevue, more historically appropriate landscaping would be planted over the lidded retained-cut with a net benefit to the historic home. The Winters House today lacks sufficient or appropriate signage providing information about its history and historic significance. Sound Transit would also provide new interpretive signage on or near the Winters House property.

Preferred Alternative C11A is located adjacent to three contributing properties within the potential Surrey Downs historic district. Operations of the project would not diminish the historic setting within the potential Surrey Downs historic district, which is already located in a highly developed area. A landscaped berm and permanent sound barrier would be constructed between the station and the potential Surrey Downs historic district, providing a visual buffer and mitigating operational noise impacts. Construction adjacent to the potential district has potential impacts without implementation of appropriate minimization techniques including installing a solid construction barrier, and preserving the evergreen trees along the south edge of the proposed station, as practical.

Alternative E4, which is not a *Preferred Alternative*, would sustain an impact because the Justice White House would need to be relocated.

TABLE ES-1
Historic Properties within Project Area of Potential Effect, Eligibility, and Effect Findings

Segment	Map ID	Property Name/Type	Address	Register Status	Avoidance Minimization Mitigation	Impact Findings
A, Interstate 90	376	Publix Hotel (Seattle Chinatown NRHP/ International Special Review historic district)	504 5th Avenue South	Contributing element to NRHP and Seattle Special Review historic districts	Project avoids resource.	No Impact
	132	Immigrant Station and Assay Office	815 Airport Way South	NRHP, WHR, eSL	Project avoids resource.	No Impact
	303	Jose Rizal 12th Avenue South Bridge	12th Avenue South crossing of South Dearborn Street	NRHP, WHR, eSL	Project avoids resource.	No Impact
	166	Will H. Thompson House	3119 South Day Street	NRHP, WHR, SL	Project avoids resource.	No Impact
	I90	I-90 Lake Washington Highway Segment between mileposts 3.4 and 8.9	I-90 between mileposts 3.4 and 8.9 (includes Mount Baker Ridge Tunnel and Eastern Portals)	eNRHP, eWHR, SL[a]	Project is consistent with the character and design intent of I-90.	No Impact
	156	Endresen Residence	1402 32nd Avenue South	eSL	Project avoids resource.	No Impact
	133	Romaine Electric/Washington Iron Works Pattern Shop	1101 Airport Way South	eSL	Project avoids resource.	No Impact
B, South Bellevue	16	Frederick Winters House	2102 Bellevue Way SE	NRHP, WHR	All alternatives, except *Preferred Alternative B2M* avoid resource. *Preferred Alternative B2M* designed with minimization and mitigation measures during construction and in operations. Project would benefit the property with landscape improvements consistent with the historic period and interpretative signage.	Potential Impact for Alternative B2M only
	63	Pilgrim Lutheran Church	10420 SE 11th Street	eNRHP, eWHR	Project avoids resource; small area of parking lot is affected, away from resource.	No Impact
C, Downtown Bellevue	various	Potential Surrey Downs historic district	Between 108th Avenue and 112th Avenue SE, south of Main Street (see Table 7-4)	Potentially eNRHP, eWHR	*Preferred Alternative C11A*: resource is separated from project with landscaped buffer and noise barrier. Construction minimization measures in place.	Potential Impact

TABLE ES-1 CONTINUED
Historic Properties within Project Area of Potential Effect, Eligibility, and Effect Findings

Segment	Map ID	Property Name/Type	Address	Register Status	Avoidance Minimization Mitigation	Impact Findings
	1100	Safeway Store	414, 424, and 456 104th Avenue NE	eNRHP	Project avoids resource.	No Impact
D, Bel-Red/Overlake	104	Former Bellevue Fire Station	14822 NE Bellevue-Redmond Road	eNRHP, eWHR	Project avoids resource.	No Impact
E, Downtown Redmond	112	Justice William White House	Leary Way NE and NE 76th Street	eNRHP, eWHR, RHL	Project avoids resource, except for Alternative E4 (requires relocation of the house).	Potential Impact for Alternative E4 only
	113	Redmond Trading Company	7805 Leary Way NE	RHL	Project avoids resource	No Impact
	114	Bill Brown Saloon Building	7824 Leary Way NE	RHL, eNRHP, eWHR	Project avoids resource.	No Impact
	118	Dudley Carter/Haida House	Sammamish Slough Park	RHL	Project avoids resource.	No Impact

NRHP National Register of Historic Places

WHR Washington Heritage Register

SL Seattle Landmark

RHL Redmond Historic Landmark

e determined eligible

[a] The Mount Baker Ridge Tunnel and Eastern Tunnel Portals are also designated Seattle Landmarks.

1.0 Introduction

The East Link light rail system would connect Seattle, Mercer Island, Bellevue, and Redmond, with a length of about 18 miles. This technical report, prepared to support the Sound Transit East Link Project's Final Environmental Impact Statement (EIS), addresses potential effects on historic and archaeological resources, which include the following: prehistoric and historic-period archaeological sites; districts, buildings, structures, objects, and landscapes; and cultural or traditional places or resources that have value to a community, such as an Indian tribe. Important resources are termed "historic properties" and—because of the inclusion of federal monies or federal licensing and permitting—must be considered by the lead agencies as they make decisions about the East Link Project. Section 1.1 provides a description of the East Link Project.

This technical report addresses historic and archaeological resource laws and regulations (Section 2.0) and the methods used for the investigations (Section 3.0). The Federal Transit Administration (FTA) and Sound Transit consulted with interested Indian tribes and the Washington State Historic Preservation Officer (SHPO) in the Department of Archaeology and Historic Preservation (DAHP), and the Washington State Department of Transportation (WSDOT) (as described in Section 4.0). The investigation included information on the natural setting (Section 5.0) and cultural context (Section 6.0) of the study area. The results of survey efforts to inventory historic and archaeological resources, and to identify historic properties, appear in Section 7.0. Potential project effects are discussed in Section 8.0, potential mitigation measures in Section 9.0, and cumulative effects in Section 10.0. Section 11.0 lists the references cited in this report. The appendices contain the following information: archaeological surveys (Appendix A and B), the inventory of historic buildings and structures (Appendix C), background reports on the Winters House (Appendix D), agency consultation (Appendix E), reports from previous cultural resource management studies (Appendix F), and the draft Memorandum of Agreement (Appendix G). Inventory forms for each building or structure have been submitted to DAHP.

Several cultural resource management specialists from Historical Research Associates, Inc. (HRA) contributed to this study, including senior reviewer Gail Thompson, Ph.D., principal investigator and Project Manager Erica Kachmarsky, M.A., who lead historical research, inventory, and evaluation of buildings and structures with Ann Gillespie, M.A., and Jennifer Gilpin, M.A., who directed the 2010 archaeological survey and analyzed archaeological information, including data compiled previously by Gretchen Kaehler, M.A. Lori Durio Price, M.A. of CH2M HILL was responsible for senior technical review, and also prepared the draft of the Section 106 Memorandum of Agreement for the Project.

1.1 Project Description

The proposed project consists of constructing and operating an approximately 18-mile light rail system that would connect Sound Transit's Central Link at the International/Chinatown Station to Redmond via Interstate 90 (I-90) to Mercer Island, Downtown Bellevue, and Bel-Red/Overlake before terminating in Downtown Redmond. Light rail consists of electrically powered trains of up to four cars running on steel rails operating at speeds of up to 55 miles per hour in a dedicated right-of-way.

1.2 Description of Alternatives

The following alternatives are evaluated in the Final EIS and described here for easy reference. The project is divided into five segments, A through E. The alternatives are made up of a range of light rail routes and stations. The proposed route and station alternatives vary in profile as travelling at-grade, elevated, or in a tunnel. There are four maintenance facility location alternatives, which are described further in the Final EIS.

1.2.1 Segment A: Interstate 90

Segment A has one alternative, the ***Preferred Interstate 90 Alternative (A1)***, which crosses Lake Washington and connects Seattle and Mercer Island with Segment B, South Bellevue. *Preferred Alternative A1* has two stations: one in Seattle and one on Mercer Island (Exhibit 1-1).

1.2.2 Segment B: South Bellevue

Segment B has six alternatives and one design option that connect to Downtown Bellevue in Segment C as shown in Exhibit 1-2.

Preferred 112th SE Modified Alternative (B2M) is elevated in the I-90 center roadway, crosses over westbound I-90, and continues elevated on the east side of Bellevue Way SE to the South Bellevue Station, located at the current South Bellevue Park-and-Ride; this alternative also maintains the westbound and eastbound I-90 high-occupancy vehicle (HOV) ramps. The South Bellevue Station includes a parking structure up to about five stories high built on the site of the existing South Bellevue Park-and-Ride. After leaving the station, the route transitions to a retained cut on the east side of Bellevue Way within Mercer Slough Nature Park to the intersection of Bellevue Way SE and 112th Avenue SE. From this point, *Preferred Alternative B2M* has three variations that connect to one of the Segment C *Preferred Alternatives*: one connects to *Preferred 108th NE At-Grade Alternative (C11A)*, and two connect to *Preferred 110th NE Tunnel Alternative (C9T)*. Each variation connects to one of the Segment C *Preferred Alternatives*. The following describes the three variations**:**

- When connecting to *Preferred Alternative C11A*, *Preferred Alternative B2M* continues in a retained cut on the east side of Bellevue Way SE and then travels under the northbound lanes of 112th Avenue SE to enter the center median of this road and travel in the median to SE 8th Street. This variation does not have a SE 8th Station.
- When connecting to *Preferred Alternative C9T*, *Preferred Alternative B2M* transitions to at-grade on the east side of 112th Avenue SE to the at-grade SE 8th Station north of SE 8th Street. From there *Preferred Alternative B2M* remains at-grade until reaching Segment C at SE 6th Street.

Bellevue Way Alternative (B1) travels within the I-90 center roadway and continues in the Bellevue Way SE HOV direct-access ramp under the westbound lanes of I-90 onto Bellevue Way at-grade to the South Bellevue Station. Alternative B1 travels in the median of Bellevue Way SE its entire length up to Segment C at SE 6th Street. Bellevue Way from north of the South Bellevue Station up to SE 6th Street would generally be widened to the west. North of the 112th Avenue NE intersection, the widening of Bellevue Way may fluctuate to either side in some locations.

112th SE At-Grade Alternative (B2A) is elevated in the I-90 center roadway, crosses over westbound I-90, and touches down on the east side of Bellevue Way in an elevated profile. After leaving the South Bellevue Station, the alternative transitions to at-grade in the median of Bellevue Way, turning into the median of 112th Avenue SE and extending to SE 6th Street. Additional right-of-way would be required along the east side of Bellevue Way SE, both north and south of the Frederick Winters House, as well as across from the Frederick Winters House on the west side of the road. Also, 112th Avenue SE would be widened to the east and west within existing right-of-way to maintain existing travel lanes.

112th SE Elevated Alternative (B2E) is the same as Alternative B2A up to the South Bellevue Station. After the station, Alternative B2E crosses to the west side of Bellevue Way SE until just south of the Bellevue Way SE/112th Ave SE intersection, where the alternative crosses over to continue along the east side of 112th Avenue NE to SE 6th Street. The SE 8th Station is elevated for Alternative B2E. Most of the additional right-of-way would be required along the west side of Bellevue Way SE north of the South Bellevue Station and on the east side of 112th Avenue SE just south and north of SE 8th Street.

112th SE Bypass Alternative (B3) follows the same route as Alternatives B2A and B2E to the South Bellevue Park-and-Ride. North of the park-and-ride lot, Alternative B3 mimics Alternative B2A in profile and right-of-way requirements, except that it becomes elevated along 112th Avenue SE, south of SE 8th Street, and then turns northeast in new right-of-way behind commercial buildings and up to SE 6th Street. It does not include a SE 8th Station.

Alternative B3 - 114th Extension Design Option (B3 - 114th Extension Design Option) extends the route at SE 8th Street farther east to 114th Avenue SE and turns north along the east side of 114th Avenue. The extension travels through the Wilburton Park-and-Ride and then cross 114th Avenue SE again to connect to Segment C.

BNSF Alternative (B7) is elevated in the I-90 center roadway similar to Alternatives B2, B2E, and B3, except that it crosses over westbound I-90 and the HOV off-ramp near Bellevue Way SE and moves to the north side of I-90 and continues eastbound elevated across Mercer Slough in a new 30-foot right-of-way until it turns north inside

the former BNSF Railway right-of-way. After the 2008 Draft EIS was published, the I-405 South Bellevue Widening Project was completed, which included removing the Wilburton Tunnel over I-405 and widening I-405 to the west near the Alternative B7 route. This widening changed the topography near the route for approximately 500 feet, which changed the profile for this part of the route from at-grade to elevated. Neither the profile elevation nor the horizontal alignment of the route was changed. The I-405 South Bellevue Widening Project also constructed sound barriers between I-405 and some residences along 118th Avenue SE.

1.2.3 Segment C: Downtown Bellevue

Segment C has ten alternatives through Downtown Bellevue, crossing I-405 to connect with Segment D at NE 12th Street (Exhibit 1-3). Sound Transit identified the *Preferred Alternative C11A* as the new preferred at-grade alternative in Segment C and *Preferred Alternative C9T* as the new preferred tunnel alternative in Segment C. The new tunnel alternative was developed in response to requests from the City of Bellevue for a shorter and less expensive tunnel alternative.

Preferred 108th NE At-Grade Alternative (C11A) connects with *Preferred Alternative (B2M)* or Alternatives B3 and B7. When connecting with *Preferred Alternative B2M*, *Preferred Alternative C11A* transitions from center-running to side-running on the west side of 112th Avenue SE, crossing the southbound lanes south of SE 6th Street. It continues north from SE 6th Street, remaining at-grade along the west side of 112th Ave SE, transitioning from at-grade profile to retained fill on the west side of 112th Avenue SE and then becomes elevated to cross SE 1st Place and turn west. *Preferred Alternative C11A* then travels on the south side of Main Street in a retained cut to the 108th Station between 108th and 110th Avenues NE. From the 108th Station, *Preferred Alternative C11A* turns north at-grade over Main Street to the center of 108th Avenue NE. At NE 6th Street, C11A turns east along the center of NE 6th Street to the at-grade Bellevue Transit Center Station, located at the existing Bellevue Transit Center between 108th and 110th Avenues NE. *Preferred Alternative C11A* then crosses 110th Avenue NE at-grade, transitioning to a retained fill and then to an elevated profile between 110th and 112th Avenues NE before crossing 112th Avenue NE. Alternative C11A transitions from center-running on NE 6th Street between 110th and 112th Avenues NE to the north side of NE 6th Street before crossing I-405 and 116th Avenue NE. *Preferred Alternative C11A* then turns north along the former BNSF Railway right-of-way to cross NE 8th Street and reach the elevated Hospital Station and then connects with Segment D alternatives from the former BNSF Railway right-of-way. When connecting to Alternatives B3 and B7, Alternative C11A crosses elevated over 112th Avenue SE just south of Main Street to follow the south side of Main Street to the 108th Station before turning north under at grade on 108th Avenue NE.

Preferred 110th NE Tunnel Alternative (C9T) connects to *Preferred Alternative B2M* or Alternatives B3 and B7. When connecting to *Preferred Alternative B2M*, *Preferred Alternative C9T* begins on the east side of 112th Avenue SE at SE 6th Street and then transitions to the west side of 112th Avenue SE at SE 6th Street. This alternative then travels at-grade on the west side of the road before turning west at Main Street to enter the tunnel portal. The tunnel continues on the south side of Main Street before turning north under 110th Avenue NE. This alternative requires realigning SE 4th Street through Surrey Downs Park to connect to 112th Avenue SE further south, forming a 4-way intersection at SE 6th Street. The Bellevue Transit Center Station would be at NE 4th Street. From the station, *Preferred Alternative C9T* continues north to NE 6th Street, where it turns east and transitions to an elevated profile in the center of NE 6th Street to cross 112th Avenue NE, I-405, and 116th Avenue NE. *Preferred Tunnel Alternative C9T* then turns north along the former BNSF Railway right-of-way to cross NE 8th Street and reach the elevated Hospital Station, and then it connects with Segment D alternatives from the former BNSF Railway right-of-way. When connecting to Alternative B3 or B7, *Preferred Alternative C9T* crosses elevated over 112th Avenue SE to follow the south side of Main Street, transitioning to a tunnel before turning north under 110th Avenue NE.

The Bellevue Way Tunnel Alternative (C1T) continues at-grade in the median of Bellevue Way SE from Alternative B1, then transitions to a tunnel in a retained cut from approximately SE 4th Street to SE 2nd Street. Alternative C1T continues in a tunnel to the underground Old Bellevue Station between Main Street and NE 2nd Street. The alternative turns east at NE 6th Street to an underground station at the Bellevue Transit Center and exits the tunnel after 110th Avenue NE in an elevated profile in the median of 112th Avenue NE. It continues over I-405 and 116th Avenue NE before turning north inside the former BNSF Railway right-of-way. The Hospital Station is elevated just north of NE 8th Street. Alternative C1T then descends to an at-grade profile to cross under NE 12th Street where it connects to Segment D.

106th NE Tunnel Alternative (C2T) travels from Segment B in a tunnel under 106th Avenue NE, turns east at NE 6th Street, and crosses over I-405 to connect with the Segment D alternatives.

108th NE Tunnel Alternative (C3T) travels from Segment B in a tunnel under 108th Avenue NE, turns east at NE 12th Street, and crosses I-405 to connect with the Segment D alternatives.

Couplet Alternative (C4A) travels from Segment B at-grade with a northbound track on 110th Avenue NE and southbound track on 108th Avenue NE. It turns east at NE 12th Street and crosses I-405 to connect with the Segment D alternatives.

112th NE Elevated Alternative (C7E) travels from Segment B elevated along 112th Avenue NE, turns east on NE 12th Street, and crosses I-405 to connect with the Segment D alternatives.

110th NE Elevated Alternative (C8E) travels from Segment B adjacent to 114th Avenue NE/I-405, turns west at NE 2nd Street and north elevated along 110th Avenue NE, turns east at NE 12th Street, and crosses I-405 to connect with the Segment D alternatives.

110th Avenue NE At-Grade Alternative (C9A) follows a similar route as *Preferred Alternative C11A*, but along 110th Avenue NE instead of 108th Avenue NE. From Segment B, Alternative C9A could connect with Alternative B2A, B2E, B3, or B7 from the Draft EIS. This alternative has a SE 8th Station if connecting to Alternative B2A or B2E or has an East Main Station if connecting to Alternative B3 or B7. From the Segment B connection, Alternative C9A heads west on the south side of Main Street before turning north in the center of 110th Avenue NE and traveling in the center to NE 6th Street, where it would turn east to a Bellevue Transit Center Station located between 110th and 112th avenues NE. From the station, this alternative travels east in an elevated profile over 112th Avenue NE, I-405, and 116th Avenue NE. Alternative C9A then turns north along the former BNSF Railway right-of-way to cross NE 8th Street and reach the elevated Hospital Station and then connects with Segment D alternatives from the former BNSF Railway right-of-way.

114th Avenue NE Elevated Alternative (C14E) connects to Alternative B3 or B7 from the 2008 Draft EIS and follows 114th Avenue SE/NE to the south side of the I-405 and NE 8th Street interchange. This alternative is elevated the entire distance and crosses over I-405 beginning at NE 6th Street. The Bellevue Transit Center Station is located on an elevated structure above 114th Avenue NE, between NE 4th and 6th Streets, east of the existing Bellevue Transit Center. To provide better access from the Bellevue Transit Center, a moving sidewalk connects the station to City Hall Plaza, located across the street from the Bellevue Transit Center. After crossing I-405, Alternative C14E crosses 116th Avenue NE in an elevated profile and then turns north in the former BNSF Railway right-of-way to an elevated Hospital Station. This alternative does not include the East Main Station.

An **Interim Terminus** would be needed if the East Link Project were built in phases. A station in Segment C could be selected as the interim terminus station until completion of the final phase of the East Link Project. The Hospital or Ashwood/Hospital Station in Segment C could serve as an interim terminus, depending on the alternative selected. An interim terminus would require storage tracks up to 850 feet beyond the station platform for temporary layover of a four-car train and turnback operations.

The preferred interim terminus location is a storage track in the former BNSF Railway corridor north of the Hospital Station. However, operational plans may require the construction of a maintenance facility at the interim terminus. The closest of the proposed alternative maintenance facility sites is in Segment D, so an access track and maintenance facility may be built beyond Segment C under this phasing scenario.

1.2.4 Segment D: Downtown Bellevue to Overlake Transit Center

There are four alternatives in Segment D and one design option, which serve both the City of Bellevue's Bel-Red Corridor and Redmond's Overlake Village planning areas (Exhibit 1-4). The Segment D alternatives begin with connections from either the north side of NE 12th Street across 116th Avenue NE or from the former BNSF Railway right-of-way coming from NE 6th Street. Sound Transit prepared the design modifications to the *Preferred NE 16th At-Grade Alternative (D2A)* based on comments from property owners in the corridor, the cities of Bellevue and Redmond, and the Sound Transit Board.

Preferred NE 16th At-Grade Alternative (D2A) travels parallel to and north of a new NE 15th and 16th Street corridor east from 116th Avenue NE in a mixed at-grade, retained-cut, and elevated profile. This alternative has four stations: 120th, 130th, Overlake Village, and Overlake Transit Center. *Preferred Alternative D2A* crosses 116th

Avenue NE at-grade, continues elevated over the former BNSF Railway tracks, and then transitions to a retained cut under 120th Avenue NE to a retained-cut 120th Station. After leaving the station, the route continues in a retained cut under 124th Avenue NE before transitioning to an elevated profile over the Kelsey Creek West Tributary and returns to the at-grade 130th Station, which includes a park-and-ride lot. *Preferred Alternative D2A* continues at-grade on NE 16th Street, turns at 136th Place NE, and crosses NE 20th Street at-grade until it transitions to an elevated structure along the south side of SR 520. This alternative then continues northeast to the Overlake Village Station west of 152nd Avenue NE, next to SR 520, and transitions to a retained-cut profile after the station until reaching the retained-cut Overlake Transit Center Station, which includes a proposed four-story parking structure. King County Metro bus, Sound Transit bus, and Microsoft shuttle services are integrated into this station. From this station, the route descends into a retained-cut profile on the east side of SR 520 and crosses under NE 40th Street before connecting with all the Segment E alternatives. *Preferred Alternative D2A* also includes the preferred location for storage tracks to extend north of the Segment C and D connection within the former BNSF Railway corridor. An interim terminus would be needed if the East Link Project is built in phases. Any proposed station in Segment D could be selected as the interim terminus station until completion of the final phase of the East Link Project. An interim terminus would require storage tracks up to 850 feet beyond the station platform for temporary layover of a four car train and turnback operations. The *Preferred Alternative* includes proposed storage tracks in the former BNSF Railway corridor north of the Segment C/D break.

Preferred Alternative D2A also includes design options. One option follows the same horizontal alignment between 120th and 124th Avenues NE, but it is at-grade instead of a retained cut, with an at-grade 120th Station. The second design option is similar to the original *Preferred Alternative D2A* evaluated in the 2008 Draft EIS near NE 24th Street and 152nd Avenue NE, but it leaves the SR 520 corridor and runs elevated along the north side of NE 24th Street. After crossing 148th Avenue NE, *Preferred Alternative D2A* becomes at-grade before turning north along the west side of 152nd Avenue NE to the Overlake Village Station, and continues north to the SR 520 right-of-way.

NE 16th Elevated Alternative (D2E) is an elevated version of *Preferred Alternative D2A* except for the Overlake Village area. This alternative is elevated over 116th Ave NE then continues elevated along NE 16th corridor turning north and crossing over NE 20th Street and then following the south side of SR 520 continues over 148th Avenue NE staying on the south side of NE 24th Street before turning north along the east side of 152nd Avenue NE and continuing to SR 520 where it descends into a retained cut to Overlake Transit Center Station.

NE 20th Alternative (D3) follows the same route as *Preferred Alternative D2A* until the alternative approaches NE 20th Street, where it turns east into the median of NE 20th Street at-grade, requiring widening on either side of the road, then into a retained cut east of 140th Avenue NE. Alternative D3 remains in a retained-cut profile, heading north at 152nd Avenue NE, transitions to an at-grade center-running route just south of NE 24th Street. 152nd Avenue NE would be widened to the east and west. The alternative continues north to Overlake Village and then mirrors the *Preferred Alternative D2A* profile and stations, except that D3 is in the median of 152nd Avenue NE.

SR 520 Alternative (D5) is elevated from the north side of NE 12th Street, or at-grade in the former BNSF Railway, turns east at approximately NE 20th Street, crosses Northup Way, and continues east on the south side of SR 520. The alternative crosses over NE 24th Street and then transitions into a retained-cut profile under 148th Avenue NE and then into the retained cut/at-grade station at the Overlake Village Station behind the Safeway store or at the Overlake Village Station at NE 25th Street along the west side of 152nd Avenue NE. From 152nd Avenue NE, Alternative D5 is similar to *Preferred Alternative D2A* going to Segment E.

1.2.5 Segment E: Overlake Transit Center to Downtown Redmond

The three Segment E alternatives follow one route from Segment D along the south side of SR 520 until they split into three different routes accessing Downtown Redmond (Exhibit 1-5). From the Overlake Transit Center, all Segment E alternatives follow along the south side of SR 520 and under NE 40th Street, NE 51st Street, and NE 60th Street in a retained-cut profile. The three alternatives split into different routes at the SR 520 interchange with Lake Sammamish Parkway. The *Preferred Marymoor Alternative (E2)* crosses the interchange to continue east along the south side of SR 520.

Preferred Marymoor Alternative (E2) (see Exhibit 1-5) was modified in response to the City of Redmond by replacing the Redmond Town Center Station and the Redmond Transit Center Station with one Downtown

Redmond Station located midway between the two original stations and discontinuing the alignment up 161st Avenue NE. *Preferred Alternative E2* remains elevated on the south side of SR 520 in a new bridge structure over the Sammamish River, descending down to grade and straddling the SR 520 right-of-way and Marymoor Park property lines. The SE Redmond station, parking structure, and park-and-ride lot are located on the south side of the SR 520 and SR 202 interchange. After the station, *Preferred Alternative E2* turns west going under the SR 520 and SR 202 interchange and enters the former BNSF Railway right–of-way elevated over SR 520 and Bear Creek. *Preferred Alternative E2* then becomes at-grade to cross 170th Avenue NE and continues in the former BNSF Railway corridor to the Downtown Redmond Station and terminus northwest of Leary Way. An 800-foot-long tail track would extend past the station for train layovers. *Preferred Alternative E2* has two traction power substations: one located adjacent to the route before approaching West Lake Sammamish Parkway and another just east of 166th Avenue NE prior to the Downtown Redmond Station. The E2 – Redmond Transit Center Design Option retains the Redmond Town Center Station and the Redmond Transit Center Station and continues up 161st Avenue NE as described in the 2008 Draft EIS.

Redmond Way Alternative (E1) becomes elevated and crosses north over SR 520, follows the northwest side of West Lake Sammamish Parkway, and turns northeast on the south side of Redmond Way on a new bridge structure over the Sammamish River. Alternative E1 continues along Redmond Way and turns southeast into an at-grade profile onto the former BNSF Railway right-of-way to Redmond Town Center, then transitions to an elevated structure over Bear Creek and the SR 520/SR 202 interchange to the terminus, SE Redmond Station. This station would include a four-story structured park-and-ride facility in the industrial park adjacent to the former BNSF Railway corridor.

Leary Way Alternative (E4) crosses north over SR 520 and is elevated on the northwest side of West Lake Sammamish Parkway, and it turns northeast along the south side of Leary Way, crossing the Sammamish River on a new bridge structure, then transitions to an at-grade profile south of Bear Creek Parkway and turns southeast in the former BNSF Railway right-of-way. The alternative continues along the former BNSF Railway, crosses over Bear Creek on a bridge, and then transitions into a retained-cut profile under SR 520 before terminating in an at-grade profile. The SE Redmond terminus station would include a four-story structured park-and-ride facility in the industrial park adjacent to the former BNSF Railway corridor.

Preferred Alternative
- At-Grade Route
- Tunnel Route

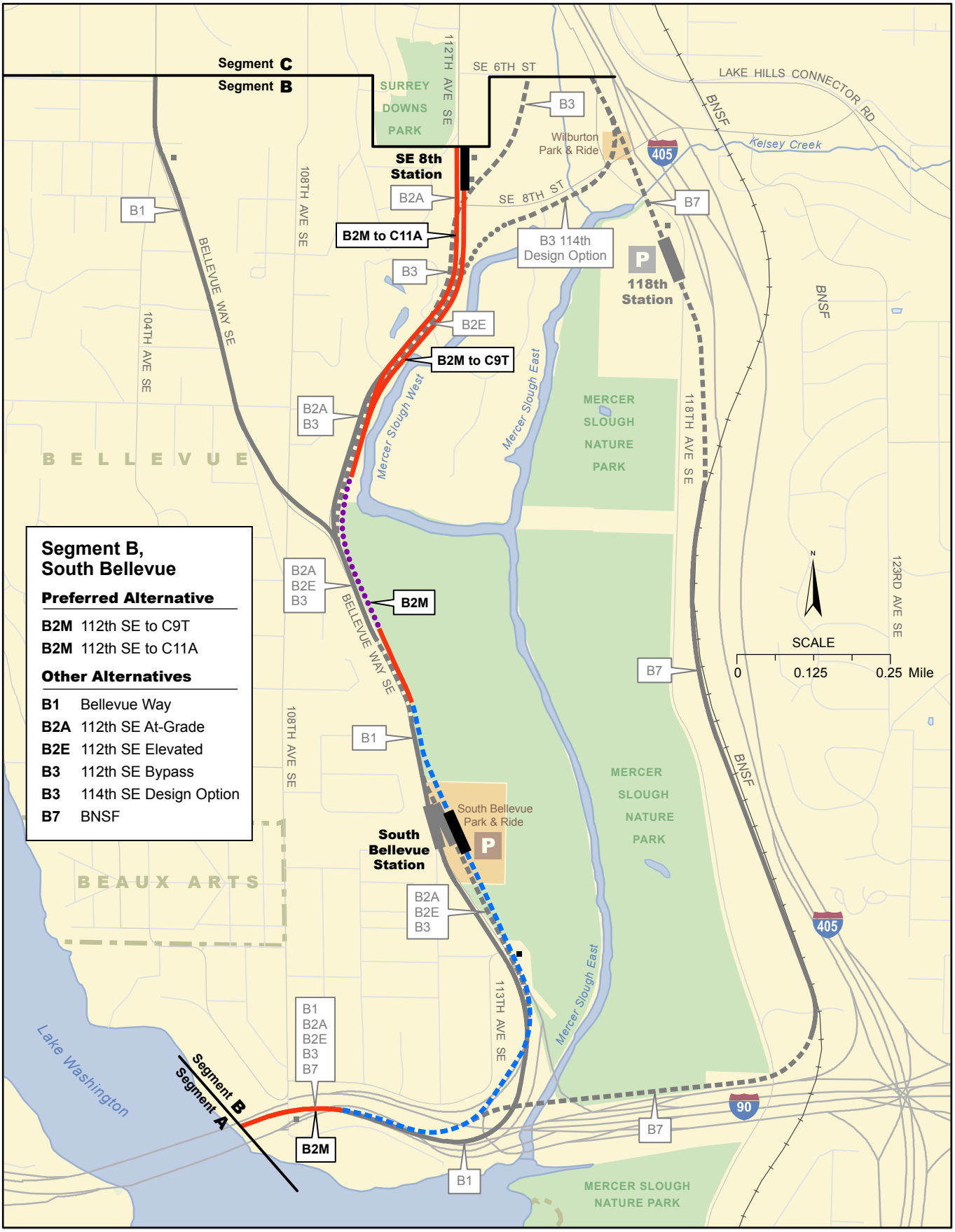
Other Alternatives
- At-Grade Route
- Tunnel Route

- Traction Power Substation
- Station
- A | B Segment Limit
- Central Link Alignment and Station

N

SCALE
0 0.5 Mile

Exhibit 1-1
Segment A, Interstate 90
East Link Project



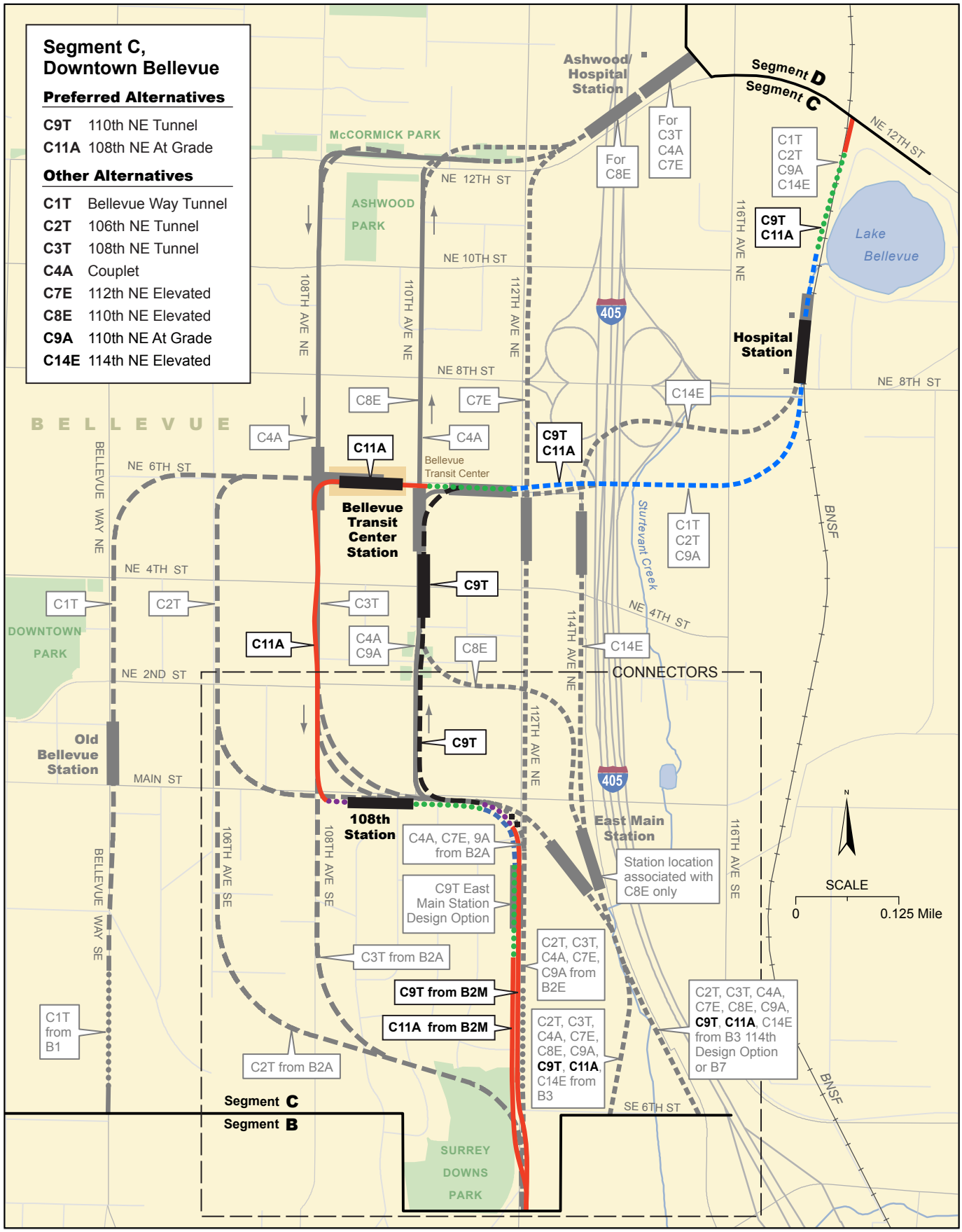
Source: City of Bellevue (2005) and King County (2006).

Preferred Alternatives
- At-Grade Route
- Elevated Route
- Retained-Cut Route
- Retained-Fill Route

OtherAlternatives
- At-Grade Route
- Elevated Route
- Retained-Cut Route
- Retained-Fill Route

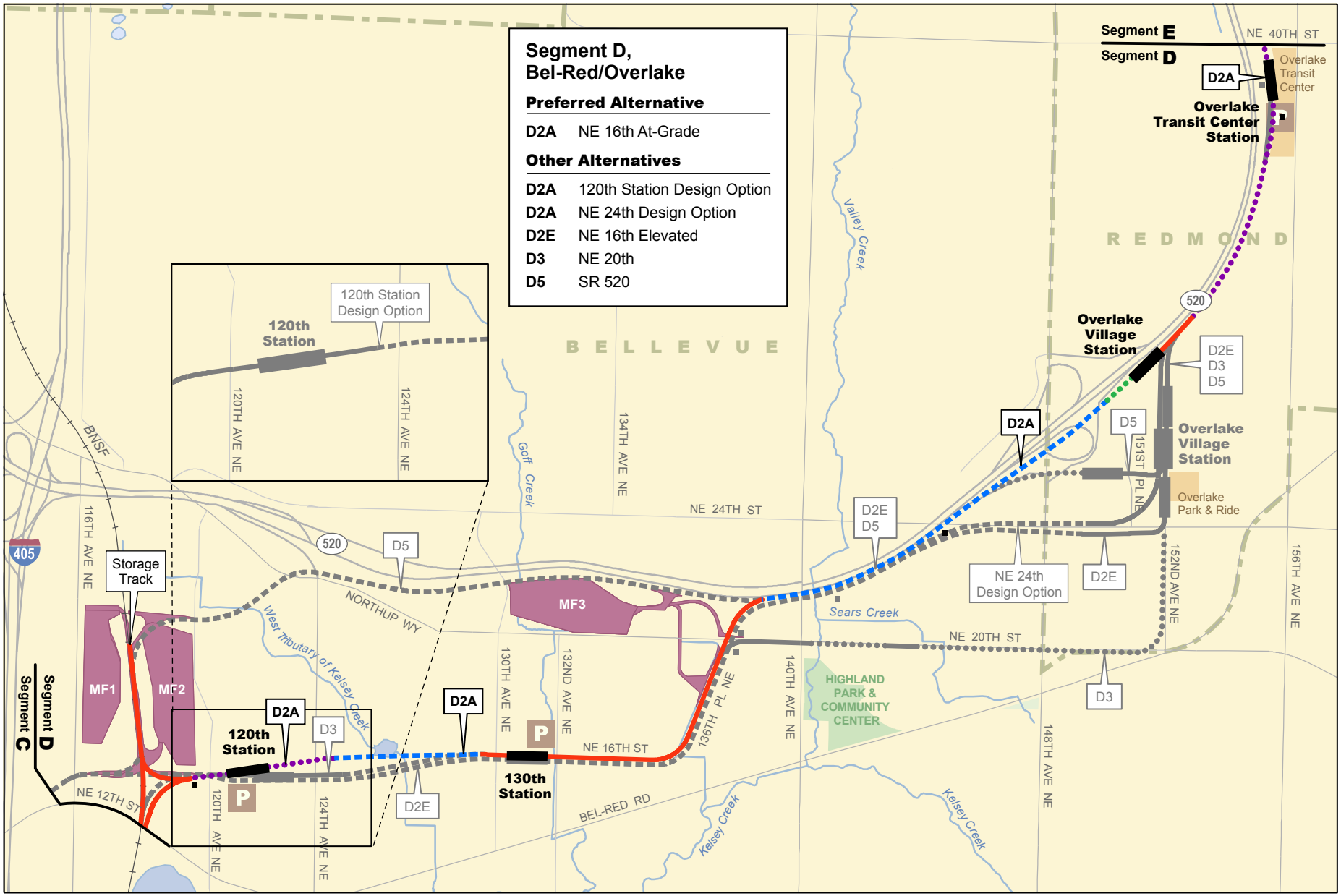
- Traction Power Substation
- Station
- P — New and/or Expanded Park-and-Ride Lot
- A | B — Segment Limit

Exhibit 1-2
Segment B, South Bellevue
East Link Project



Source: City of Bellevue (2005) and King County (2006).

Exhibit 1-3
Segment C, Downtown Bellevue
East Link Project



Source: City of Bellevue (2005), City of Redmond (2005), and King County (2006).

Preferred Alternative
- At-Grade Route
- Elevated Route
- Retained-Cut Route
- Retained-Fill Route

Other Alternatives
- At-Grade Route
- Elevated Route
- Retained-Cut Route

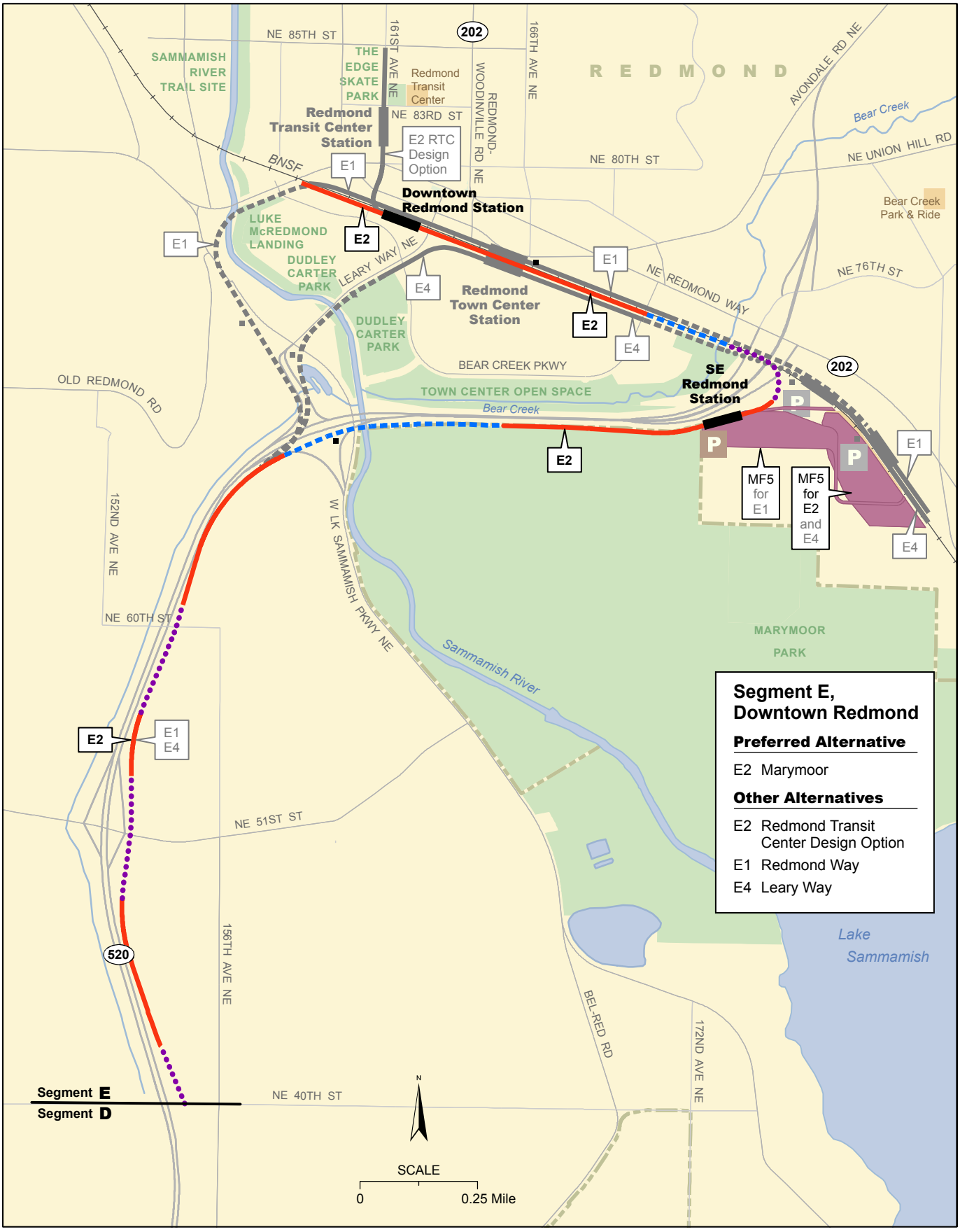
- Traction Power Substation
- Station
- P — New and/or Expanded Park-and-Ride Lot
- Maintenance Facility and Tail Track

C | D Segment Limit

N

SCALE
0 0.25 Mile

Exhibit 1-4
Segment D, Bel-Red/Overlake
East Link Project



Source: King County (2006).

Preferred Alternative
- At-Grade Route
- Elevated Route
- Retained-Cut Route

Other Alternatives
- At-Grade Route
- Elevated Route
- Retained-Cut Route

- Traction Power Substation
- Station
- P — New and/or Expanded Park-and-Ride Lot
- D | E — Segment Limit
- Maintenance Facility and Access Track

Exhibit 1-5
Segment E, Downtown Redmond
East Link Project

2.0 Laws and Regulations

2.1 Federal Laws and Regulations

Federal laws and regulations apply because FTA is the lead agency for Sound Transit's East Link Project. WSDOT is a cooperating agency, and the Washington SHPO is a consulting party. The National Historic Preservation Act of 1966 (NHPA), as amended, and the National Environmental Policy Act of 1969 (NEPA) provide for the consideration of historic properties; the FTA's guidance follows federal regulations for these laws. NHPA Section 106 states that any federal or federally assisted project or any project requiring federal licensing or permitting must consider the project's effects on historic properties listed in, or eligible for listing in, the National Register of Historic Places (NRHP or National Register). Regulations governing the Section 106 review process are contained in the Code of Federal Regulations (CFR) Title 36, Part 800, Protection of Historic Properties. Properties include historic and prehistoric archaeological sites, as well as districts, buildings, structures, objects, and landscapes. The NHPA also provides for consultation with American Indian groups when proposed projects might affect cultural or traditional places or resources that have value to an Indian tribal group, derived from the role the property plays in the community's historically rooted beliefs, customs, and practices (NHPA Section 101). These regulations encourage coordination with the environmental review process required by other statutes, including Section 4(f) of the U.S. Department of Transportation Act of 1966.

Regulations in 36 CFR 800 provide a step-by-step process for satisfying the Section 106 requirements. There are four steps: 1) initiate consultation with regulatory agencies, concerned Indian tribes, and other interested parties; 2) identify historic properties; 3) assess adverse effects; and 4) resolve adverse effects. Significant properties are evaluated in consultation with the Washington SHPO in the DAHP and must qualify for listing in the NRHP by being at least 50 years old, in most cases, and by meeting specific eligibility criteria and standards of integrity (36 CFR 60.4). The current investigation is designed to identify prehistoric and historic-period archaeological sites, historic buildings and structures, districts, and traditional cultural properties (TCPs), and to evaluate their National Register eligibility, to the extent feasible, using reconnaissance-level data. To consider the potential concerns of Indian tribes, the investigation also uses the following regulations:

- American Indian Religious Freedom Act of 1978
- Executive Order (EO) 13007 (access to and/or ceremonial use of sacred sites by Indian religious practitioners)

2.2 Washington State Laws

The State Environmental Policy Act (SEPA), Revised Code of Washington (RCW) 43.21C, and implementing rules contained in the Washington Administrative Code (WAC) 197-11 require the identification of historic, archaeological, and cultural resources listed in, or proposed for, national, state, and local registers, and the identification of measures to reduce or control effects on these resources. RCW 27.44, Indian Graves and Records, protects Indian burials, while RCW 27.53, Archaeological Sites and Resources, protects archaeological sites. RCW 42.56, Public Records Act, provides for the confidentiality of information on archaeological sites. WSDOT's *Environmental Procedures Manual* (WSDOT, 2006) Section 456, Historic, Cultural, and Archaeological Resources, and DAHP's survey and inventory standards both address the methods for cultural resource studies.

2.3 Municipal Regulations

The City of Seattle adopted additional specific environmental policies and procedures in the Seattle Municipal Code (SMC 25.05) while implementing SEPA. Procedures related to historic properties and archaeological sites need to comply with the Landmarks Preservation Ordinance (SMC 25.12), and resources that meet criteria for landmark designation must be identified. Properties eligible for city landmark designation must be at least 25 years old and meet at least one of six criteria of significance. The Seattle Landmarks Preservation Board conducts formal reviews to designate city landmarks. Altering landmarks requires a certificate of approval from the Landmarks Commission or another applicable commission, such as the Pioneer Square Preservation Board.

The City's historic preservation officer might require specific mitigation measures when a proposed project is located adjacent to or across the street from a designated landmark or when a site of potential archaeological significance is impacted.

The City of Mercer Island's Ordinance No. 05C-09 (amending Ordinance No. 02-16) contains provisions for historic designation of private and municipal properties, 50 years of age or older, within the city limits. The City of Redmond's Ordinance No. 2224 contains provisions for historic preservation, including a Redmond Heritage Resource Register, administered by the Landmarks and Heritage Commission. Designation requires that a structure be at least 40 years of age and meet other criteria established by the commission; archaeological sites also are eligible for designation. The property owner must apply to the commission to modify or demolish listed landmarks.

The City of Bellevue has no preservation ordinance. King County's Ordinance No. 20.62 requires the County to maintain a list of landmarks within the unincorporated areas and for some municipalities with which the County has formulated agreements. The County has no agreement with the City of Bellevue.

3.0 Methods

This chapter outlines the methodology developed for archaeological and historic evaluation and FTA and Sound Transit's consultation regarding the methodology. Project cultural resource specialists prepared a statement about the methods that would be used to inventory and evaluate historic properties, and to determine potential project effects and mitigation measures. Sound Transit provided the methods statement to DAHP and the Duwamish, Muckleshoot, Snoqualmie, and Tulalip Indian tribes for review, and discussed the methods during consultation meetings and field trips. The methodology includes the definition of the Area of Potential Effects (APE), data collection methods, archaeological sensitivity model and survey procedure, building and structure inventory methods, National Register of Historic Places eligibility evaluation process, effects analysis approach, and avoidance and mitigation measure development.

3.1 Area of Potential Effects

Sound Transit and FTA, consulted with, and received concurrence from, the SHPO on the APE used for the project (letter of July 13, 2007, from DAHP to FTA). Sound Transit determined and mapped an APE for both archaeological resources and historical buildings and structures (Appendix C). The APE is the area within which an undertaking may cause direct or indirect changes to the character of any historic properties. The APE for archaeological resources is limited to the portion of the project where ground-disturbing activities will be conducted, such as areas for demolition, construction, staging, equipment storage locations, and stormwater management facilities, per 36 CFR 800.16[d]. For the archaeological resource investigation, the vertical APE might vary according to construction practice—deeper for excavation areas and shallower for at-grade construction, depending on the geomorphology of the landform where the project element occurs.

The APE for historical buildings and structures is one block (approximately 200 feet) on each side of the centerline of the project routes (i.e., a total corridor width of approximately 400 feet). The APE extends approximately 200 feet from the outer limits of station locations and maintenance facilities. The APE also includes the area one block from where tunnel alternatives could disturb the surface or have the potential for other surface effects, depending on terrain and local land use. Uniquely, for bored or mined tunnel construction, the APE for noise, vibration, and settlement effects is 100 feet on each side of the route centerline (i.e., a total corridor width of approximately 200 feet).

3.2 Data Collection

Information regarding resources in the East Link Project APE, that have already been identified, evaluated, and recognized, was gathered from established lists—the NRHP, the Washington Heritage Register (WHR), the DAHP, and local landmark or historic designations. Online register lists for the King County Historic Preservation Program and the City of Seattle were checked. Project archaeologists and historians reviewed the methods and results of cultural resource management reports for previous surveys conducted near the APE. Information regarding existing historic or prehistoric archaeological and traditional cultural resources in the project APE was gathered to help characterize the types of resources that might be found, and to identify areas that possess a high sensitivity for containing such sites. Sources of this information included historical maps, ethnographic literature, local histories, General Land Office Survey maps, and the files and site records of the Washington DAHP. Project archaeologists and historians mapped the locations of known archaeological sites, ethnohistoric places, and historical buildings and structures.

Other sources included fire insurance maps, historical photographs, building permits, assessors' records, and oral histories. Locations for this information included the University of Washington, Seattle Public Library, the Museum of History and Industry, and the Washington State Archives Puget Sound Region Branch at Bellevue Community College. In addition, Project historians contacted the Eastside Heritage Center, advocates for historic preservation, and private-sector experts.

Research was conducted to determine the soil types, geomorphologic setting, and age of landforms involved, as well as the extent of modern disturbance. The research established the potential for encountering buried prehistoric and historic archaeological sites, increasing the likelihood that existing sites would be identified during reconnaissance. It is possible, however, that one or more subsurface sites might not be discovered before construction.

Tribal consultation was the most important method for gathering data pertinent to identifying TCPs within the APE. Another method consisted of research into ethnographic sources that discuss Indian place names, especially the geographical data that T.T. Waterman prepared for the Puget Sound area in the 1920s (Hilbert, et al., 2001; Waterman, 1920). During consultation, Sound Transit, FTA, and tribal representatives discussed protocols to protect culturally sensitive information from broad public distribution. If TCPs were to exist within the APE, and interested tribes were concerned about maintaining the confidentiality of culturally sensitive information, then Sound Transit and FTA would avoid placing information specifically identifying the resource in the EIS.

3.3 Archaeological Study

3.3.1 Archaeological Sensitivity Models

Project archaeologists mapped the potential for prehistoric and historic-period archaeological sites to occur in the APE and reviewed information gathered about environmental features, known archaeological resources, and the patterns of prehistoric, ethnographic, and historic use of the area. Project archaeologists then studied maps and conducted a vehicle reconnaissance of the alternatives in 2007. Project archaeologists developed a set of criteria for identifying areas with a high sensitivity for containing archaeological sites, excluding locations with apparently severe disturbance, such as along I-90 in Segment A. High-sensitivity zones were identified areas where the potential for archaeological resource findings is high. The high-sensitivity areas are as follows:

- Areas within about 0.25 mile of water body confluences, especially water bodies with anadromous fish runs
- Areas within about 0.25 mile of water bodies
- Areas within about 0.25 mile of freshwater resources
- Areas on higher ground, such as terraces above water bodies
- High areas that provide protection and/or visibility, such as bluff tops

Areas on General Land Office (GLO) plats and/or Sanborn Fire Insurance Maps that show historical land use. In response to the DAHP comment on the Draft EIS requesting additional archaeological survey, project archaeologists developed an expanded cultural resources survey plan to identify potential prehistoric and historical archaeological sites along the *Preferred Alternative* and guide additional surveys as part of Final EIS (Gilpin and Thompson, 2010). Project archaeologists used information gathered about known archaeological resources and the patterns of prehistoric, ethnographic, and historic use of the area, along with the results of the previous cultural resources assessment, which was conducted in advance of the Draft EIS (Thompson et al. 2007). Archaeological field survey was designed to target a reasonably representative sample of the Project's *Preferred Alternative* with a systematic examination of a number of parcels, concentrating on high probability areas, but also including some lower probability areas; some open and undeveloped areas; more developed, urbanized areas; and some public and private ownership areas, within the APE of the *Preferred Alternative*.

Project archaeologists first identified areas of greater or lesser archaeological probability by reference to models developed by HRA for the East Link Project, and by DAHP for the state. The archaeological sensitivity data from the DAHP was provided in a format compatible with Global Positioning System (GPS) mapping software (e.g., ESRI ArcMap®), and the information covered the alignments active at that time. The DAHP archaeological predictive model uses standardized and repeatable statistical methods including Bayesian statistical analysis and "point kringing" (a form of geostatistical spatial estimation) (Kauhi and Markert 2009:46) with statewide environmental and cultural resources data. Data on geology, soils, landform, and information gleaned from historic-period GLO plats, were correlated with locations of known archaeological sites to "…determine the probability that, under a particular set of environmental conditions, another location would be expected to contain an archaeological site." (Kauhi and Markert, 2009)

DAHP's model combines local information from field surveys to identify locations with five resulting sensitivity levels: Very High (5), High (4), Moderate (3), Low (2), and Very Low (1). The agency refined these categories for

management purposes, with groups (1) and (2), Archaeological Survey Contingent upon Project Parameters; group (3), Archaeological Survey Recommended; and groups (4) and (5), Archaeological Survey Required. The sensitivity zones developed by project archaeologists and the DAHP are shown on maps provided in Appendix B, and they are discussed in Section 7.1.2.

3.3.2 Selection of Geotechnical Boring Locations for Archaeological Survey

As part of preliminary engineering for the project, geotechnical borings were conducted in Segments A through D to assess general subsurface soil and groundwater conditions. The borings measured up to 8 inches in diameter and extended from approximately 50 to 200 feet deep. Project archaeologists determined that these borings would provide relatively little useful archaeological data because of the methods that are used in drilling. As a result, FTA proposed, and DAHP concurred, that no archaeological monitoring would be conducted during this exploratory work. A more important concern was whether the drilling activity (e.g., moving or storing equipment) could impact an unrecorded archaeological site. This would most likely occur on a soft surface, such as grass, that has not previously received an archaeological survey. For this reason, a "pre-excavation archaeological survey" was proposed for four high sensitivity boring locations (Thompson and Gilpin, 2010).

Several sources of information were examined to identify highly sensitive boring locations. Project archaeologists first examined archaeological sensitivity maps of the project APE (see Section 3.3.1, above), and compared these data with GIS maps showing the locations of proposed bore holes plotted on an aerial photograph background. Project archaeologists then used a table that outlined the identification (i.e., designation), location, and several additional characteristics of each proposed boring. These characteristics included proposed depth overall, depth to a hard (i.e., glacial, bedrock) surface, whether the bore would be placed on pavement or grass, and the potential for disruption of traffic.

Project archaeologists used the sensitivity maps and table, in combination with the results of the 2007 archaeological survey for the project, to winnow the list of potentially sensitive probe locations to those proposed for a pre-drilling survey. As a final cross-check, to potentially further refine boring locations, archaeologists examined the data for eight geotechnical borings excavated for the 2008 Draft EIS (Jacobs Associates, 2007) and 18 previously excavated borings along the route in Segment B (GeoMap NW 2009).The eight borings described by Jacobs Associates (2007) in Appendix B are located along Segment C, and were largely outside the area of the boreholes planned for Final EIS studies in the highly sensitive portions of Segment B. However, the 18 bores mentioned previously were drilled in the direct vicinity of the Segment B route.

The high-sensitivity borehole locations selected for archaeological survey occur along Segments B, C, and D. Segment A was not included because it consists largely of I-90, which either contains too much fill or is too disturbed for archaeological resources to be present, and no borings are presently planned for Segment E. Following are the selected borehole locations:

- Located in the previously-mapped zones of higher archaeological sensitivity
- Proposed to be excavated on a grassy surface (This narrowed down the probe locations to several in Segment B, with none in Segments C or D, where borings in archaeologically sensitive areas are proposed to be drilled on pavement.)
- Situated on relatively little estimated fill (This step eliminated several probes that are located close to the I-90 on- and off-ramps to Bellevue Way SE.)
- Proposed to be drilled outside of the boundaries of the 2007 archaeological survey tracts in Segment B, for which archaeological and subsurface information is already known (Thompson and Gilpin, 2010)

3.3.3 Archaeological Survey

For the initial archaeological survey conducted in 2007, Project archaeologists focused attention on multiple routes. Archaeologists selected a number of tracts for survey, favoring locations with high sensitivity for containing archaeological sites, but also including some areas of low sensitivity for comparison. Survey tracts focused on land that is publicly owned and on open land used to facilitate access, land with clear views of the ground surface, and on land allowing the possibility of digging shovel test probes. These locations were dispersed among the alternatives, as practical (Appendix B).

For the 2010 Archaeological Survey Plan (Appendix A), a similar method for selecting survey tracts was used, although attention was focused on the *Preferred Alternative* in each project segment. Project archaeologists prepared an Archaeological Survey Plan, and much of the discussion below is taken from this document (Thompson and Gilpin, 2010). Project archaeologists created a color-coded priority system to aid in the selection of archaeological survey tracts (Thompson and Gilpin, 2010). The process of prioritizing was undertaken with reference to the two sensitivity models (see Section 3.3.1), and by taking into account perceived local ground disturbance. Table 3-1 outlines this color-based priority system, with the general guidelines applied by project archaeologists, while coding each proposed survey segment. Based on this method, 11 tracts were identified for Stage 1 survey (see Thompson and Gilpin 2010 for spreadsheets showing this process). Additional tracts were also identified using this method, for future survey.

TABLE 3-1
Colors Used To Categorize Proposed Final EIS Archaeological Survey Tracts

Flag Color	Project Archaeologist Sensitivity (Approximate)	DAHP Sensitivity (Approximate)	Additional Factors
Red	High	5 (Survey Highly Advised: Very High Risk) Can be 4 (Survey Highly Advised: High Risk)	Generally, fewer disturbances seen (i.e., vegetated), but largely very high sensitivity.
Yellow	High	5 (Survey Highly Advised: Very High Risk) 4 (Survey Highly Advised: High Risk) Can be 3 (Survey Recommended: Moderate Risk)	Generally showing more developed and/or paved surfaces, but still high sensitivity.
Green	Low	4 (Survey Highly Advised: High Risk) 3 (Survey Recommended: Moderate Risk) Can be 2 (Survey Contingent Upon Project Parameters: Moderately Low Risk)	Generally, fairly developed and/or paved surfaces; some moderate risk. These tracts can be used as control or comparison areas for lower probability.
Blue	Low	2 (Survey Contingent Upon Project Parameters: Moderately Low Risk) 1 (Survey Contingent Upon Project Parameters: Low Risk)	Generally, very developed and/or disturbed, with lowest archaeological sensitivity.

Project archaeologists coded the proposed tract as Red when both sensitivity models classified the area as High to Very High risk, and it appeared (using aerial photographs) that the vicinity showed few obvious disturbances (i.e., much of the area shows vegetation rather than development). Yellow survey tracts are those with generally high sensitivity, but usually with increased disturbance; for instance, development or paved surfaces. Project archaeologists coded tracts as Green when (a) archaeological probability was high to moderate (generally, by the DAHP model) and predicted disturbances were quite extensive, or (b) archaeological probability was more moderate, but fewer disturbances were evident on aerial photographs of the alignment. Blue survey tracts are those in low-probability areas for archaeological resources, and they are generally also perceived to be at least moderately affected by development. This color coding system was then used as a basis for assigning proposed survey tracts to Stage 1 and 2, as described below.

Based on this color-coded priority system, 11 tracks were identified for Stage 1 survey as part of the Final EIS because these meet the following criteria:

- Identified as high probability for archaeological resources under both sensitivity models
- Primarily in public ownership
- Free from pavement or otherwise readily accessible

Based on the information gained from Stage 1 research and archaeological investigations, including geotechnical borings, a second preconstruction survey (Stage 2) would be planned, refined, and implemented. Stage 2 tracts are anticipated to be outside of public ownership, or are paved or otherwise less accessible at the time of the 2010

survey. Portions of several proposed Stage 1 tracts extended onto private property (for example, in Segment B), and these portions may be surveyed in Stage 2 (Thompson and Gilpin, 2010). The Stage 2 approach is included in Appendix A, Archeological Survey Plan.

A crew of four archaeologists conducted the survey, walking pedestrian transects at intervals appropriate for each alternative and level of existing urban development, generally at about 10- to 20-meter (33- to 66-feet) intervals. While the 2007 survey was generally limited to surface investigation, except for alluvial sediments or relatively shallow historical fill, the 2010 survey focused on systematic subsurface survey of the *Preferred Alternative* in the Stage 1 survey tracts. The field director took into account local disturbances, topography, and field conditions (i.e., large amounts of fill or other recent disturbances, standing water) to determine the placement of auger or shovel probes. Probes were generally spaced at about 20-meter (66 foot) intervals, and they were excavated down to sterile materials or a maximum of 2 meters (7 feet) in depth.

Excavated matrix was screened through .025 -inch mesh and examined for prehistoric- and historic-period artifacts. Cultural items were documented on standardized shovel probe forms and, if diagnostic, by digital photography, before being returned to the excavated hole; no artifacts were collected. The shovel probes were immediately backfilled following their termination and recording, and the turf was replaced, as appropriate.

Included in the above-described group of strategic shovel probes is one location where Sound Transit planned to drill a geotechnical boring in an archaeologically sensitive zone (Survey Tract 12F). Prior to the excavation of this boring, archaeologists examined the grassy (or otherwise unpaved) ground surface surrounding the drill location, and excavated one shovel probe at the approximate drill location, to determine if the drilling (including the movement of drill-related machinery) would disturb an unrecorded archaeological site. Archaeologists also performed a pedestrian survey and excavated eight shovel probes within a length of the APE at the location of the proposed boring (see Appendix B). The location of survey transects and shovel probes was recorded using a handheld Trimble® GPS unit loaded with ArcGIS® software. Archaeological sites were mapped, photographed, and recorded using Washington Archaeological Site Inventory forms. Maps of archaeological survey tracts from 2007 and 2010, along with summary information on shovel probes, are provided in Appendix B and discussed in Section 7.1.3.

3.4 Inventory of Buildings and Structures

Sound Transit architectural historians conducted a literature and records search and a reconnaissance-level field survey of historic buildings and structures in the East Link APE using the year 2016 as a baseline. Per the baseline, buildings in the APE that would be 50 years old by 2016 were evaluated and documented. For buildings in the City of Seattle, Project architectural historians used the local age criterion of 25 years, whereas the City of Mercer Island uses an age of 50 years and the City of Redmond uses 40 years. As the City of Bellevue has no local historic preservation ordinance, the age criterion of 50 years old by 2016 was applied.

The architectural historians drove along the alternative routes on several occasions, between September 2006 and April 2010. Using lists compiled from records searches, including maps of parcels with buildings identified in King County Tax Assessor's data that met the age criteria, existing historic property inventory (HPI) forms, NRHP nomination forms, and published sources, the architectural historians compiled a master list of historic resources within the East Link APE. The architectural historians briefly surveyed these areas, in September and December 2006, to search for buildings and structures that would clearly be of concern in initial evaluations of project alternatives. These architectural historians returned to the study area in February, April, May, September through October 2007, and again in February, March, and April 2010, for systematic inventory along the alternatives.

Resources that met the applicable jurisdiction's age criterion by 2016 were photographed and reconnaissance-level data was entered into Washington State DAHP Historic Property database inventory forms along with a recommendation of the buildings' eligibility for listing in the NRHP, WHR, or local jurisdiction register. Complete inventory forms were then completed for those structures that met one or more of the eligibility criteria for the NRHP, WHR, or local jurisdictions' criteria of integrity and significance. The result of the records search and reconnaissance field survey is a list of existing and newly recommended historic properties in the APE that could be affected by one or more of the Project alternatives. A list of inventoried buildings and structures is provided in Appendix C and discussed in Section 7.3.

3.5 Evaluation of Register Eligibility

Prehistoric and historic-period archaeological sites, TCPs, and buildings and structures are called "historic properties" if they are listed in, or eligible for, the NRHP. To be eligible, a property must be at least 50 years old or be exceptionally important and meet one or more of the criteria for evaluation, as outlined in 36 CFR 60.4:

> *The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, or association; and*
>
> *A. That are associated with events that have made a significant contribution to the broad patterns of our history; or*
>
> *B. That are associated with the lives of persons significant in our past; or*
>
> *C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
>
> *D. That have yielded or may be likely to yield, information important in prehistory or history.*

Certain properties are unlikely to qualify, including cemeteries, birthplaces and graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years. The application of the criteria considerations is discussed in 36 CFR Part 63. Properties can be eligible for the NRHP at the national, regional, or local level. Landmark registers for the cities of Seattle, Mercer Island, and Redmond use criteria similar to those for the NRHP, although the age criterion for the City of Seattle is 25 years and for the City of Redmond it is 40 years.

Sound Transit and FTA submitted the database of inventory forms to DAHP for review of preliminary determinations about NRHP eligibility. Similarly, the agencies submitted the forms to the cities of Seattle, Mercer Island, and Redmond for reviews of eligibility determinations. Only these local jurisdictions can determine local landmark status after their formal review; therefore, apparent eligibility for local landmark status was based solely on the professional judgment of East Link and local jurisdiction staff, and is not to be considered an official determination. DAHP reviewed the inventory forms and made concurrence determinations of National Register eligibility for the properties (Letters from DAHP to FTA of November 16, 2007; February 20, 2008; and February 24, 2009). The City of Redmond provided a letter regarding the National Register eligibility of properties within the City's jurisdiction (Letter from City of Redmond to Sound Transit of November 19, 2007), and the City of Mercer Island concurred with the project inventory and lack of National Register-eligible properties within its jurisdiction (Letter from Mercer Island to Sound Transit on January 22, 2008). The result was a list of existing and newly recommended historic properties in the APE that could be affected by one or more of the project alternatives.

3.6 Approach to Effects Analysis

The analysis for construction impacts and operations impacts follows the standard approach for historic properties, including buildings and structures, prehistoric and historic-period archaeological sites, and TCPs. The Advisory Council on Historic Preservation's regulations implementing NHPA Section 106 create a process by which federally assisted undertakings are reviewed for their impacts on properties listed in, or eligible for listing in, the NRHP. After the resource is identified and evaluated, the next step is to apply the Criteria of Adverse Effect. These criteria are used to determine whether the undertaking could change the characteristics that qualify the property for NRHP inclusion. An adverse effect (or impact) is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects include, but are not limited to, the following:

- Demolishing or altering the property
- Altering the property's setting

- Introducing visual, audible, or atmospheric elements that are out of character with the setting of the historic property
- Physically encroaching upon an archaeological site

In addition to the criteria above, 36 CFR 800.5(b) allows the agency official to propose a finding of no adverse effect if the undertaking is modified or conditions are imposed to avoid impacts.

Cumulative effects are discussed using readily available information on past, present, and foreseeable projects.

3.7 Potential Mitigation Measures

When an undertaking is found to have an adverse effect, Section 106 requires consultation with the Washington SHPO in the DAHP, affected Indian tribes, and other interested parties regarding appropriate avoidance or mitigation measures. Some typical mitigation measures include modifying the undertaking through redesign, reorientation, or other similar changes; documenting buildings or structures that must be destroyed or substantially altered; and implementing data recovery of archaeological or architectural information and materials. Sound Transit and FTA consulted with SHPO about potential mitigation measures for historic properties. The product of consultation, when there is a finding of adverse effect for the project, is an agreement document (Memorandum of Agreement [MOA] per 36 CFR 800.6[c]) that contains stipulations specifying measures to be implemented that would avoid or mitigate the impacts. A draft MOA is in Appendix G of this report.

4.0 Agency and Tribal Consultation

Sound Transit consulted with the Washington DAHP, local jurisdictions, and Indian tribes during its historic and archaeological resources investigations. Sound Transit coordinated with staff members at the cities of Bellevue, Mercer Island, Redmond, and Seattle. Consultation with DAHP and other agencies clarified the applicable federal, state, and local legal and regulatory requirements for any archaeological sites and/or TCPs identified within the East Link APE.

Sound Transit and FTA sought government-to-government consultation with the Muckleshoot Indian Tribe, Snoqualmie Indian Tribe, Suquamish Tribe, Duwamish Tribe, Tulalip Tribes of Washington, and Yakama Nation, initially providing information by mail. The initial letters served to identify which tribes wished to participate in consultation, to establish a protocol, and to identify the appropriate tribal representatives with whom to consult. Meetings were held with Snoqualmie and Muckleshoot tribal representatives to discuss the project, its potential effects on archaeological sites and TCPs, and whether the tribes would like to make field trips to the study area and provide members for the archaeological field crew. Sound Transit and FTA solicited information from the tribes about the presence of any known archaeological sites and TCPs that might be affected by future construction of a *Preferred Alternative*. Table 4-1 lists the letters that resulted from agency and tribal consultation. Copies of letters appear in Appendix E.

TABLE 4-1
Consultation Summary

Date	Form	Participants	General Topic(s)
August 24, 2006	Letter	FTA/Sound Transit to Tulalip, Duwamish, Muckleshoot, Yakama, Snoqualmie, and Suquamish tribes	Opening consultation with tribes
December 19, 2006	Submittal of cultural resources methods statement to DAHP and ACHP, tribes and US Bureau of Indian Affairs for review	Sound Transit and DAHP	Historic, archaeological, and cultural resources methods statement sent to DAHP for review
January 2, 2007	Letter	From Matthew Sterner, DAHP, to James Irish, Sound Transit	Review comments on proposed resource study methods statement
July 3, 2007	Letter	FTA to DAHP	Requesting concurrence on APE for historic properties
July 13, 2007	Letter	DAHP to FTA	Concurring in APE for historic properties
July 18, 2007	Letter	FTA to DAHP	Requesting concurrence in determinations of NRHP-eligibility for historical resources
November 16, 2007	Letter	DAHP to FTA	Providing determinations of National Register eligibility for historic properties
November 19, 2007	Letter	City of Redmond to Sound Transit	Concurring with Local Register eligibility recommendations
November 19, 2007	Letter	Snoqualmie Tribe to Sound Transit	Requesting Sound Transit to clarify position about former BNSF Railway corridor.
January 9, 2008	Letter	FTA to DAHP	Requesting review and concurrence of additional historic properties
January 22, 2008	Letter	City of Mercer Island to Sound Transit	Concurring with Local Register eligibility recommendations
February 20, 2008	Letter	DAHP to FTA	Providing determinations of NRHP eligibility for additional historic properties
May 27, 2008	Letter	City of Seattle to Sound Transit	Providing determinations of eligibility for Seattle Landmark Ordinance

TABLE 4-1 CONTINUED
Consultation Summary

Date	Form	Participants	General Topic(s)
December 10, 2008	Letter	Advisory Council on Historic Preservation to Sound Transit	Acknowledging receipt of the 2008 Draft EIS
January 5, 2009	Letter	DAHP to FTA	Acknowledging receipt of 2008 Draft EIS and requesting consultation once a Preferred Alternative is selected
February 24, 2009	Letter	DAHP to FTA	Concurring with eligibility determinations for 337 properties and providing comments and potential determinations of effects
September 29, 2009	Letter	DAHP to FTA	Concurring with use of archaeological monitor in areas considered potentially sensitive.
November 23, 2009	Letter	DAHP to WSDOT	Concurring with eligibility determination for I-90 Lake Washington Segment
June 9, 2010	Letter	FTA to DAHP	Providing determinations of NRHP eligibility for additional historic properties
October 18, 2010	Letter	DAHP to FTA	Providing determinations of eligibility for additional historic properties
November 23, 2010	Letter	DAHP to FTA	Providing determination of eligibility for an archaeological site
March 28, 2011	Letter	FTA to DAHP	Requesting concurrence in determinations of NRHP-eligibility for a historical resource
May 19, 2011	Email	King County Metro Transit to FTA and Sound Transit	Providing Comments on the Archeological Resources Technical Report
May 23, 2011	Letter	City of Bellevue to FTA	Providing comments on potential historic impacts as a consulting party under Section 106
June 9, 2011	Letter	WSDOT to FTA	Concurring with determinations of Adverse Effect on Section 106 resources
June 10, 2011	Letter	City of Redmond to FTA	Review comments on the Historic and Archeological Resources Technical Report
April 21, 2011	Letter	FTA to DAHP	Requesting concurrence regarding determinations of NRHP-eligibility for archaeological resources.
June 15, 2011	Letter	DAHP to FTA	Providing concurrence determinations of National Register eligibility for historic properties and determinations of effect.

5.0 Environmental Context

This section describes the natural and geologic setting of the project vicinity, which provides a context for the environment in prehistoric times and insight regarding where archaeological remains may be discovered based on past geologic events and modern development.

5.1 Natural Setting

The East Link Project would be located in the central portion of the Puget Sound Lowland, generally running east and northeast across a series of north-south trending uplands and water bodies, from Seattle, east across Lake Washington and Mercer Island, along Mercer Slough, across the Bellevue upland, and into the Sammamish River Valley to Redmond. Drainages that would be crossed include Puget Sound, the Duwamish River estuary, Lake Washington, Mercer Slough, Sturtevant Creek, Lake Bellevue, Kelsey Creek and its tributaries, the Sammamish River, and Bear Creek. Ground surface elevations generally range within 500 feet above sea level. Summary information on environmental factors that would affect the resource and land use of prehistoric and historic-period residents can help identify areas sensitive for archaeological resources, as well as the types of resources that could be present.

Late Pleistocene glaciation and post-glacial alluvial processes shaped the landforms in the project vicinity, starting by about 18,000 years before present (B.P.) (Porter and Swanson, 1998). [1] As the glaciers melted, plant and animal communities became established and able to support prehistoric gathering, hunting, and fishing, with a tundra environment becoming established by about 15,000 B.P. and a forest-parkland environment about 14,000 B.P. (Brubaker, 1991; Whitlock, 1992). In the latter environment, species included scattered trees of lodgepole pine (*Pinus contorta*), alder (*Alnus rubra*), and Douglas fir (*Pseudotsuga menziesii*); and shrubs, bracken fern (*Pteridium aquilinum*), and grasses (Whitlock, 1992). Climatic conditions warmed and dried, even more so than today, expanding the forest-parkland environment until about 7,000 B.P. (Barnosky, et al., 1987).

Climatic conditions similar to the present became established by about 6,000 B.P. Western hemlock (*Tsuga heterophylla*) and successional Douglas fir dominated the forested uplands, while western red cedar (*Thuja plicata*) were found along the stream banks, and marshes occurred in low-lying areas (Brubaker, 1991; Whitlock, 1992). Deer (*Odocoileus* sp.) and elk (*Cervus canadensis*) were probably more abundant in stream valleys than upland forests. Environments along water bodies generally supported more varied plant and animal resources useful to humans, including wetland plants, waterfowl, and large and small game. Mercer Slough and its tributaries (Kelsey Creek and Sturtevant Creek), and the Sammamish River and its tributary (Bear Creek), have supported a variety of abundant resources, including a combination of anadromous Chinook (*Onchorynchus tshawytscha*), coho (*O. kisutch*), and sockeye (*O. nerka*) salmon (Williams, et al., 1975), as well as resident fish and freshwater mussels.

5.2 Geomorphic Setting

Geomorphology refers to the study of landforms, and the history of their development of geologic features. The most recent glacial advance, the Vashon stage of the Fraser glaciations, formed most of the present geologic and topographic conditions (Jacobs Associates, 2007:3). The ice sheet deposited a mixed assemblage of lacustrine deposits, outwash, glaciomarine drift, and till. Erosion and deposition have influenced the preservation of the glacial deposits, covering them in places with recent stream and river alluvium. The general environments for the deposition of archaeological remains include the tops of glacial deposits, where archaeological materials would be found within a short distance beneath the ground surface; stream deposits, where the materials could be buried to some depth; and river deposits, where they could be buried deeply. In addition, modern fill, often topped by asphalt, concrete, or gravel, occurs throughout the project vicinity, to varying depths. This fill could

[1] Before present is an archaeological term that considers radiocarbon dating at a specified point in time. Standard practice is to make time relative to January 1, 1950.

cover archaeological resources and may contain some historic-period remains. Where developers scraped glacially derived or shallow alluvial soils before placing fill, they likely destroyed or disturbed any archaeological deposits that may have been present. In downtown Bellevue, for example, project geotechnical work revealed fill to between about 8.5 and 10 feet below ground surface in six borings, underlain by glacial till or outwash, with glacial till to about 10 feet in one boring and outwash to about 6 feet in another (Jacobs Associates, 2007).

The Seattle earthquake fault zone includes the area around I-90, from Seattle to south Bellevue (Jacobs Associates, 2007:5). It is west trending and about 4 to 6 kilometers (2.5 to 3.75 miles) wide. Quaternary sediment has been folded and faulted along the zone. This fault has been the source of prehistoric and historic-period earthquakes that have affected human use of the project vicinity and archaeological sites located there. An earthquake about 1,000 to 1,100 years ago caused 23 feet of surface displacement (Jacobs Associates, 2007:5). Deposits in Redmond's Marymoor Park suggest that land at the north end of Lake Sammamish, near the project vicinity, dropped by 3 feet or more and a large wave from the lake washed north into the Sammamish River valley, covering the river's floodplain and the archaeological sites located there (Lewarch, et al., 2000:9).

The East Link alternatives traverse areas of glacially derived soils throughout most of Segments B, C, and D, except where the alternatives are located near streams or wetland areas. In particular, Segment B soils tend to be formed on terraces along or near Mercer Slough. By contrast, much of the Segment E soils consist of Sammamish River alluvium.

6.0 Cultural Context

This section discusses the previous cultural resource management studies, prehistory, ethnography, and history of the project vicinity to establish a context from which to evaluate the significance of archaeological and historic resources.

6.1 Previous Cultural Resource Management Studies

Numerous cultural resource management investigations have taken place in the project vicinity, as listed in Appendix F. Most of the studies have been conducted for transportation-related projects, although others include the Sammamish River Trail and park developments, commercial and residential developments, fiber optic cables and communication towers, and study of an archaeological site in Marymoor Park. The City of Bellevue conducted a survey of its historic properties in the 1990s (Tobin and Pendergrass, 1997). The studies have recorded few NRHP-eligible historic properties, two of which are located in the project APE.

6.2 Prehistory

Most archaeologists agree that human occupation and the use of inland western Washington has been continuous from approximately 10,500 years ago. The earliest sites consist of lithic scatters, possibly including leaf-shaped projectile points, which may be the remains of broad-spectrum foraging camps or hunting and gathering activity areas. Over time, changing aboriginal technology and site locations suggest increased sedentism and specialization in the use of particular environments and resources (Ames and Maschner, 1999; Samuels, 1993).

Several chronological sequences describe the timing and nature of cultural change in the Pacific Northwest. Table 6-1 shows a regional chronology for the Pacific Northwest coast, based on the work of Ames and Maschner (1999), that divides prehistoric occupation into five developmental periods. In general, Ames and Maschner's model suggests a shift from small groups relying on generalized hunting and gathering to larger groups with increasing social complexity and specialized reliance on aquatic resources.

TABLE 6-1
Ames and Maschner's (1999) Model of Prehistoric Change in the Puget Basin

Dates	Period	Land Use	Settlement	Subsistence	Technology
14,000 BC to 10,500 BC	Paleoindian	Generalized marine, littoral, and/or terrestrial	Short-term use of pit houses and shelters	Generalized marine, littoral, and/or terrestrial	Stone; bone, antler, and perishable materials likely
10,500 BC to 4,400 BC	Archaic	Generalized littoral, neritic, and terrestrial	Short-term use of pit houses and shelters	Generalized littoral, neritic, and terrestrial	Stone; some bone and antler; other perishable materials likely
4,400 BC to 1,800 BC	Early Pacific	Littoral, neritic, and terrestrial	Increased sedentism in seasonal villages	Increased focus on littoral resources and expanded use of neritic resources	Increase in ground stone, bone, antler, and perishable materials
1,800 BC to AD 200/500	Middle Pacific	Neritic, littoral, and terrestrial	Winter villages of plank houses and seasonal camps	Increased focus on marine and riverine resources; food storage technologies developed	Decrease in stone; diversification of tools and tackle of bone, antler, and perishable materials
AD 200/500 to c. AD 1775	Late Pacific	Neritic, littoral, and terrestrial	Large permanent villages and special use sites	Specialized marine, riverine, littoral, and terrestrial resource use and management; extensive food storage.	Tools and tackle of bone, antler, and perishable materials; very little stone

6.2.1 Paleoindian (14,000 BC to 11,000 BC)

The Paleoindian period includes the earliest evidence of movement of peoples from eastern Siberia onto the North American continent. Currently a few small sites with tool assemblages, dominated by basalt cobble choppers, flaked scrapers, and finely crafted fluted lanceolate Clovis projectile points, characterize the period. These artifacts suggest a highly mobile and opportunistic culture, adapted to the rapidly changing environments and ocean levels that followed the retreat of the glacial ice caps.

6.2.2 Archaic (10,500 BC to 4,400 BC)

Continued tectonic activity and fluctuation of ocean levels have contributed to the paucity of information regarding this period. Sites in the Pacific Northwest tend to consist primarily of surface scatters with shallow buried components. Time-sensitive lithic tools provide the only chronological reference, because little organic material has survived. Large bifacial, leaf-shaped artifacts, dating from 7,000 BC to 4,300 BC, dominate assemblages (known as Old Cordilleran) of this period. Subsistence strategies during this period include flexible technologies and broad skill sets applied to the exploitation of neritic (i.e., the ecological zone of the continental shelf extending from low tide to a depth of about 100 fathoms [about 180 meters]), littoral (i.e., the region of the shore of a lake, sea, or ocean), and terrestrial (i.e., land) resources. The archaeological record suggests populations were small, mobile, and did not develop technologies to store food.

6.2.3 Pacific (4,400 BC to About AD 1775)

The Pacific period is divided into the Early, Middle, and Late (described below), terminating around AD 1775 with the first European-introduced smallpox epidemic. In general, hunter-gatherer cultures increased in complexity during this period, with intensified use of specialized resources, settlement in permanent village sites, and the development of social stratification.

6.2.3.1 Early Pacific (4,400 BC to 1,800 BC)

The Early Pacific, also described as the Cascade Phase (Suttles and Lane, 1990), includes the first clear indication of the use of specialized resources, such as camas (*Camassia quamash*) and shellfish. This phase is characterized by an overall increase in food production with a focus on intertidal resources, as illustrated by numerous shell midden sites. These sites also indicate an increase in sedentism.

6.2.3.2 Middle Pacific (1,800 BC to AD 200/500)

A few coastal Washington sites characterize the Middle Pacific. These sites include large shell middens, remains of large rectangular cedar plank houses, and large canoes. The tool assemblages reveal an increase in complexity and an array of tools manufactured from antler and bone. Subsistence strategies include an intensification of fishing technologies and a growing reliance on food storage.

6.2.3.3 Late Pacific (AD 200/500 to About AD 1775)

Because sites dating to the Late Pacific are more common and have been studied more intensively, this period is better understood that the previous ones. Villages often consisted of large cedar plank houses, with ceremonial, artistic, and utilitarian artifacts. Items made of bone, antler, and wood largely replaced chipped stone tools. Both terrestrial and marine resources supplemented intense use of specific resources, such as salmon and root crops.

6.2.4 Project Vicinity Prehistory

Eleven prehistoric archaeological sites have been recorded in the project vicinity, and two have received more intensive testing and study. Table 6-2 summarizes information on these sites, most of which are located in the Sammamish River valley or along its tributaries. A cluster of sites has been recorded in Marymoor Park, along the upper Sammamish River, in the vicinity of the historic confluence of Bear Creek, and downstream from the historic shoreline of Lake Sammamish. The sites include 45KI9A/9B (called the Marymoor site) and 45KI10, recorded as a result of University of Washington archaeological studies in the area. Sites 45KI266, 45KI492, and 45KI493 also were recorded in Marymoor Park and were encountered during excavations for utilities. Northeast of the current confluence of the channelized Bear Creek and the Sammamish River, investigations in 2008 recorded prehistoric site 45KI839 (Hodges et al., 2009; Rinck, 2008).

TABLE 6-2
Previously Recorded Prehistoric Sites Recorded within the Vicinity of the East Link Project APE

Site Number and Name	Landform	Description	Reference
45KI8	Along Sammamish River banks, near mouth of Bear Creek	Prehistoric lithic scatter with large stemmed projectile point, two small leaf-shaped points, basalt blade fragment, adze blade fragment; historic whetstone fragment; also reported fluted point; disturbed context; location could not be verified in East Link Project fieldwork	Greengo ,1968; Greengo and Houston, 1970
45KI9A&9B Marymoor Site	Sammamish River banks	Prehistoric midden with a variety of lithic artifacts, thermally altered rock, and bone and shell fragments	Greengo, 1968; Greengo and Houston, 1970
45KI10	Sammamish River bank/ terrace	Small prehistoric site with basalt blades, corner- and side-notched projectile points, scrapers, choppers, and fire-cracked rock; also two basalt cores and flakes of basalt, cryptocrystalline silicate, and an unidentified material; disturbed context	Greengo, 1968; Greengo and Houston, 1970
45KI266	Sammamish River valley	Prehistoric fire pits and lithic artifacts; reported about 1979; destroyed by 1984	Elvidge, 1984
45KI466 Bear/Evans Creek Site	Confluence of Bear Creek and Evans Creek; also on upper terrace	Possible prehistoric campsite and historic road bed; basalt, jasper, and petrified wood flakes, chunks, cores, and chipped cobbles (13 artifacts); crushed rock, clear and green flat glass, coal slag; metal fragments	Norman, 1999a and 1999b
45KI467 Union Hill Road Site	Upper/Pleistocene terrace	Prehistoric lithic and historic debris scatter, with small lanceolate projectile point of petrified wood, jasper flake fragment, two pieces of amethyst bottle glass	Norman, 1999a and 1999b
45KI492	Sammamish River valley	Prehistoric burn feature, basalt cobble spall, cryptocrystalline silicate interior flake, and fire-modified rock; charcoal date of 3,220 – 3,060 B.P.	Nelson, 2000
45KI493	Sammamish River valley	Prehistoric burn feature, two cryptocrystalline silicate interior flakes; charcoal dates of 2,370 – 2,230 B.P. and 2,600 –2,460 B.P.; disturbed context	Nelson, 2000
45KI718 Eastern Terrace Site	Terrace above tributary to Kelsey Creek	Prehistoric lithic scatter with Cascade point, biface, and other chipped stone of cryptocrystalline silicate (11 artifacts); disturbed context	Cooper, 2005
45KI839	Bear Creek/Sammamish River floodplain	Prehistoric lithic scatter including fire-cracked rock concentration, flakes, and flaked-tool fragments	Rinck 2008
45KI941	Marymoor Pet Garden	five flake fragments/debitage and one unidentified mammal bone fragment found along the southern boundary of the Pet Garden	Hoyt, 2009

The reasons for the cluster of prehistoric sites in Marymoor Park likely include the local diversity of stream, lake, marsh, and upland environments, which provided abundant salmon and other fish, plants, waterfowl, and mammals. In addition, the park has saved the area from wholesale development, while requiring archaeological survey and monitoring of excavations within the park. This has provided some protection for the sites, as well as the means for finding and investigating them. The sites have received varying degrees of disturbance from historical and modern activities.

Marymoor site locus 45KI9A has received the most study. Two layers of dark midden soil with thermally altered rock, bone, and shell fragments, and artifacts that include projectile points, large blades, and microblade cores, scrapers, gravers, choppers, flake tools, quartz crystals, and pieces of ocher pigment characterize the deposits. Two radiocarbon dates suggest occupation, hunting, and fishing around 2,500 years B.P. (Greengo, 1968; Greengo and Houston, 1970). Nearby, locus 45KI9B appears to have been used later; its assemblage of ground stone adze

blades, barbed projectile points, worked and unworked bone, earth oven, stone pendant, and salmon and mollusk remains suggest occupation, fishing, woodworking, hunting, and plant processing (Greengo and Houston, 1970).

Site 45KI10 was recorded as a small, disturbed site with basalt blades, corner- and side-notched projectile points, scrapers, choppers, cores, flakes, and thermally altered rock (Greengo, 1968). Three other prehistoric archaeological sites have been recorded in Marymoor Park. Site 45KI266 consisted of prehistoric fire pits and lithic artifacts; originally recorded in 1966, the site was reported destroyed in 1984 (Elvidge, 1984). Sites 45KI492 and 45KI493 consist of prehistoric burn features and stone flakes, with radiocarbon dates of 3,220 to 3,060 B.P. and from 2,370 to 2,230 B.P. to 2,600 to 2,460 B.P., respectively (Nelson, 2000).

Site 45KI8 was recorded north of Marymoor Park, along the Sammamish River at Redmond (Greengo, 1966 and 1968); it is discussed in Section 7.1.1 below. Sites 45KI466 and 467, near the confluence of Bear and Evans creeks, were recorded during monitoring for excavations associated with the Millennium Corporate Center (Norman, 1999a and 1999b). Located close to the creek confluence, 45KI466 consists of a possible prehistoric campsite and historic road bed. Prehistoric artifacts included basalt, jasper, and petrified wood flakes, chunks, cores, and chipped cobbles, while historic-period artifacts included crushed rock, clear and green flat glass, coal slag, and metal fragments. Located south and west of the creek confluence, 45KI467 consists of a prehistoric lithic and historic debris scatter, with a small lanceolate projectile point of petrified wood, a jasper flake fragment, and two pieces of amethyst bottle glass.

Site 45KI839 was recorded during a cultural resources assessment for the proposed rehabilitation of Lower Bear Creek, northeast of the confluence of Bear Creek with the Sammamish River. The site includes cultural materials that appear to date to several thousand years old (based on radiocarbon dates of associated peat layers). The items in the lithic scatter, including a concentration of fire-cracked rock, fine-grained flakes, and several tool fragments, were observed below silty, clayey 'diatomaceous' earth, in association with deposits of peat, at 4.3 to 5.9 feet (1.3 to 1.8 meters) below surface (Hodges et al., 2009; Rinck, 2008). Archaeologists continued testing of the site into 2009, and are currently analyzing materials for an updated excavation report.

An archaeological survey for a residential development recorded 45KI718, a lithic scatter located on a terrace above a tributary to Kelsey Creek, south of the East Link Project vicinity (Cooper, 2005). Investigations there recovered a Cascade projectile point, a chipped stone biface, and several other chipped stone artifacts in a disturbed context.

6.3 Ethnography

The project vicinity is located in the aboriginal territories of the Duwamish and Sammamish (Haeberlin and Gunther, 1930; Suttles and Lane, 1990). These groups spoke the Lushootseed or Puget Salish language. People lived in winter villages, generally located where rivers and streams entered Puget Sound, near lakes, such as Lake Washington and Lake Sammamish, or at stream confluences. A village was located either at the confluence of Mercer Slough with Lake Washington, or along the slough (Hilbert, et al., 2001:95).

Winter villages consisted of longhouses built from split cedar planks placed on wooden frames, and ranged from one to several houses that sheltered one or more extended family groups. In the villages, people lived during the winter using food and other supplies collected throughout the year and supplemented with fresh foods available nearby. They made and repaired tools, clothing, and other necessary materials in winter, and pursued ceremonial and social activities. Families left their winter villages during the warmer months to fish, collect plant foods and materials, and hunt foods for immediate use and storage for the next winter. They often met other families and groups at locations with abundant resources, and traveled and traded with others. During these months, people camped in portable shelters made of mats stretched over pole frameworks (Haeberlin and Gunther, 1930; Suttles and Lane, 1990).

People gained their subsistence by fishing, collecting plant products, and hunting. Catching salmon in water bodies within the East Link Project vicinity was an especially important economic activity. Many fishing implements were utilized, including weirs and spears, traps, and dip nets. Freshwater fish, including trout, were taken from streams and lakes. Eels and freshwater mussels also came from streams. Plants used for food, medicines, and technological activities included shoots; camas bulbs; roots, such as wapato; and berries. Cedar trees provided materials for houses, canoes, mats, baskets, rope, and clothing. People used bows and arrows, pitfalls, and snares to hunt large and small game, often catching waterfowl in aerial nets. The Duwamish and

Suquamish also collected resources from Puget Sound, including shellfish, seals, and fin fish (Haeberlin and Gunther, 1930; Suttles and Lane, 1990).

Background research reveals Indian place names for villages and other uses occur along the Segment B alternatives in the vicinity of Mercer Slough, and along the Segment E alternatives in the vicinity of the Sammamish River. The place names correlate with areas analyzed as archaeologically sensitive. A promontory along Lake Washington, just west of the Mercer Slough confluence, was called *Tl³utsa³lus* ("tying a mesh"). *Sa'tsakaL* ("water at head of a bay"), the place name for Mercer Slough, and represents an old village site where the people were called *Sa'tsakalEbc*. It was reported to have been the staging place for the native attack on Seattle in January 1856 (Hilbert, et al., 2001:95). The place was also important in mythology (Hilbert, et al., 2001:46, 95).[2]

The place name for the Sammamish River was *sts!ap* ("crooked," "meandering") and for Redmond was *TL³oq³* ("crowded in, poked in"), while *Ceqos-a'lt^{u}* ("a high place with a house on it") denoted a creek entering the Sammamish River "from the east below Redmond" (Hilbert, et al., 2001:112). While maps of this downriver location should indicate north of Redmond, the maps of place names show this, and a creek called *Tuba'hal* ("broad"), to be located south of Redmond (Hilbert, et al., 2001:112). Possessing a number of upper branches, this was probably Bear Creek.

The earliest effects of Euroamerican contact appeared in Northwest Indian communities before the Euroamericans themselves. Researchers have not yet determined when epidemic diseases first appeared, but Lewis and Clark estimated that smallpox predated their 1805-1806 trip to the lower Columbia River area by about 30 years. Repeated epidemics of various diseases continued to drastically decrease populations (Noel, 1980:66), reducing many by two-thirds or more (Boyd, 1985:398).

Alcohol, disease, and dislocation from traditional territories disrupted the social and political organization of the groups. Euroamericans often hired Indians to act as guides, as transporters of goods and messages, and to hunt, fish, cut timber, and tend herds and crops, all of which took Indian people away from their traditional subsistence-oriented activities (Suttles and Lane, 1990). Reduction of Indian populations also brought changes in subsistence patterns.

In 1855, Washington Territorial Governor Isaac Stevens negotiated the Treaty of Point Elliott with a number of groups, including the Duwamish, Snoqualmie, and Sammamish tribes. The United States intended for the Duwamish Tribe to move to the Port Madison Reservation and the Snoqualmie Tribe to move to the Tulalip Reservation, while the Sammamish Tribe could go to either reservation (Ruby and Brown, 1992:72-73). Although some Indians moved to these reservations or to the Muckleshoot Reservation, others remained near their traditional settlements. The federal government recognized the Snoqualmie Tribe in 1999, but the Duwamish are not yet federally recognized.

6.4 History

The East Link Project would run from the historic International District of Seattle east through the Mount Baker District, across once-rural and now developed suburban and city areas of Mercer Island and Bellevue, and into Redmond. The following information regards the historic development and populations of each of these communities.

The International District, also known as Chinatown, encompasses the blocks east of Fifth Avenue South, west of Boren and Rainier Avenue South, north of South Dearborn Street, and south of South Main Street. The main thoroughfares in the District are South Jackson Street and South King Street, as well as 12th Avenue South intersecting at South Jackson Street.

By 1876, 3,400 people lived in the City of Seattle and 250 of them were Chinese. A small area on Washington Street, between 2nd Avenue and 3rd Avenue, became the City's earliest China Town. Seattle was one of two main

[2] Orthographic symbols, such as ^{3}, ^{u}, and !, used in archaeological names indicate sounds unique to the Lushootseed language.

ports of entry for Japanese immigrants during the 1880s, with the 1890 census listing 360 Japanese in Washington, most living in Seattle. The Japanese community grew next to that of the Chinese on Washington Street, and spread south past Jackson Street to Weller Street. When the City filled the tide flats south of Jackson Street in 1909, using debris from the Jackson and Dearborn Street regrades, the Chinese community, which had supplied much of the labor for these efforts, moved south to the newly filled area.

Filipinos came to Seattle in large numbers during the early decades of the twentieth century. By 1930, the Filipino population in Seattle had outgrown the Chinese population. At the same time, African Americans also settled in the Central District of Seattle in large numbers. Restrictive covenants prevented these ethnic and racial groups from buying land in many Seattle neighborhoods, prohibitions that encouraged the growth of what would become Seattle's International and Central districts (Chin, 2001). Seattle's International District is a National Register Historic District and a City of Seattle Landmark District based on its historic character, and because it is the only pan-Asian American community on the United States mainland (Chin, 2001:10).

Logging started early in the vicinity of Seattle, and the Mount Baker District featured saw and planning mills along its shoreline in the 1890s. Only a few families built houses there before 1905, however, because a small number of individuals and companies owned most of the land, and because people thought of the area as too distant from Seattle. The City's annexation of Mount Baker, in 1907, encouraged growth during the early twentieth century, and landowners platted most of the neighborhood by 1910. The Mount Baker Park Improvement Club discouraged the construction of buildings, other than single-family residences, and enforced restrictive covenants that prohibited selling property or renting apartments to nonwhites or recent immigrants. These restrictions continued until after World War II (Tobin, 2004).

A government land survey named Mercer Island after pioneer Thomas Mercer in 1860. The island's first post office, in the early settlement called East Seattle, opened in 1904. Passenger ferries connected the island with Seattle and Bellevue until the first bridge opened in 1923, which allowed vehicle traffic between Mercer Island and Bellevue. Population increased dramatically and, in 1924, the name of the settlement changed to Mercer Island. The island remained relatively rural until 1940, when the increasing population of Mercer Island and the resulting vehicle traffic necessitated construction of the Lake Washington Floating Bridge and the replacement of the East Channel Bridge. The population grew from 1,200 to 4,500 between 1940 and 1950 and then nearly doubled in the next 3 years. Voters rejected the first referendum on incorporation in 1945 and the next in 1953. In 1960, Mercer Island finally incorporated as a city and the downtown business district incorporated as a town—both named Mercer Island. This situation continued for a decade until the two governments merged in 1970.

The first settlers, William Meydenbauer and Aaron Mercer, both arrived in the area that would become Bellevue in 1869. Each settled in a coastal area that would come to bear his name, Meydenbauer on the bay and Mercer to the south along the slough. Isaac Bechtel purchased land near the current downtown area in 1883, working with his sons to log and clear the land. By 1890, shingle mills and a sawmill had begun operation and settlers had moved onto the cleared land. By 1900, the area had 400 residents. At that time, the Hewitt Lumber Company employed hundreds of men to log timber from the Wilburton vicinity, near the present day intersection of 116th Avenue SE and SE 8th Street, west to Lake Sammamish and south to Kennydale (Wilma, 1999). They hauled the logs overland and floated them down the Mercer Slough.

Before the Lake Washington Ship Canal opened in 1917, Mercer Slough included several boat landings and extended north nearly to Main Street, where a lumber mill operated at the community of Wilburton (Krafft, 1991). Operation of the Ship Canal lowered the level of Lake Washington, destroying the navigability of Mercer Slough and creating new farmlands in the rich bottomland soil. Residents grew holly trees; azaleas; bulbs, such as daffodils and iris; and berries.

The settlement of Lake Washington was spurred by industrialists such as William Renton and Peter Kirk, who constructed plants, platted towns, and contracted railroads to build spur lines to their developments. The Northern Pacific Railroad constructed the Lake Washington Beltline Route, which ran from Renton to Kirkland, in 1891. The route passes through Bellevue, roughly along the I-405 corridor. In the early years, this route was primarily used to transport coal and iron from the Cascade foothills in the vicinity of Redmond to steel plants in the Kirkland area (Allen 2007:4).

Post-World War II population growth spurred the development of Bellevue. Developer Kemper Freeman opened Bellevue Square, the first shopping mall on the Eastside, in 1946. In 1952, Roxbury Homes purchased 80 acres that

had been a filbert farm, platting the area as "Surrey Downs Addition No. 1." The residential subdivision eventually included about 200 houses, with the optimism of the period showing in the modern Northwest design of the houses. The City of Bellevue incorporated in 1953 (Stein, 1998).

Luke McRedmond, who came to the United States from Ireland, established the City of Redmond. He first settled in Seattle in 1865 and then staked a claim just north of Lake Sammamish in the early 1870s. McRedmond started a dairy farm and founded the Seattle and International Railroad. He was involved in the Black Diamond coal mines, and served as justice of the peace and the first postmaster, changing the community's name from Willows to Redmond. McRedmond's daughter Emma, born in Seattle in 1869, served as Redmond's postmistress for years, beginning at the age of 16. In 1898 she married William White, who would become a justice of the Washington State Supreme Court; their house is one of the oldest extant buildings in Redmond (Hanscom, 1979).

The Seattle, Lake Shore, and Eastern (SLS&E) Railway incorporated in 1885, and it was purportedly conceived as a response to Seattle's rival city Tacoma being selected as the terminus to the Northern Pacific Railroad's transcontinental line. By 1886, the line reached from downtown Seattle to the town of Ballard. By 1889, the line extended for 63 miles out of Seattle, reaching just past current-day North Bend (Martin, Jr., 2009).

Redmond had a train station with both freight and passenger service. Although there was some logging in the area before operation of the railroad, those efforts were limited. The sawmill began operation about 1890. Local logging increased as companies used the freight service to ship their lumber, thereby allowing the logging companies and mills to employ hundreds of men (Bagley, 1929:849). Redmond's hotels and restaurants benefited from the passenger service. Trains stopped in Redmond twice each day, serving schoolchildren, businessmen, people who shopped in Seattle, and the postal service, among others (MacIntosh, 1999b).

In 1892, the Northern Pacific Railroad acquired the SLS&E Railway line and operated it for just over a year. In 1893, the railroad was operated under the reorganized Seattle & International Railroad and Spokane & Seattle Railroad. By 1901, the Northern Pacific had re-absorbed this railroad, and they continued to operate the line, under its Snoqualmie Branch, until 1970, when the Burlington Northern purchased it (Northern Pacific Railway Historical Association, 2007). The railroad depot in Redmond, which had been open since 1889, closed in 1970. The building was demolished in 1972, but BNSF still owns much of the railroad right-of-way through Redmond (King County Property Records 2007, 2010; MacIntosh, 1999a). Many of the oldest buildings in Redmond are located near the former location of the depot, which was close to the intersection of the SLS&E and Leary Avenue NE. Table 6-3 lists historic-period archaeological resources that have been recorded in the vicinity of the East Link Project APE. The majority of these sites are located in downtown Seattle, and their contents reflect the history of the city. The sites range from scatters of industrial and domestic debris (45KI924, 45KI947), historic-period construction remnants (45KI765, 45KI943), and railroad properties (45KI930) associated with the various stages of development, from filling the Elliott Bay tidelands to the construction of the city.

Site 45KI451, the SLS&E Railway grade, was originally recorded as an archaeological site to within a few hundred feet east of Segment E in Redmond. The railroad grade continues into the APE and had been recorded as a Historic Property (Adams and O'Brien 2007b; HPI 1256-117 [Appendix C]), but had not been recorded as an archaeological site before the 2010 survey for the Project. In addition, the Frederick Winters House, located along Bellevue Way SE and discussed in Section 7.3.2 below, is recorded as 45KI606, although it is not an archaeological property. North of Redmond, and outside of the immediate vicinity of the Segment E route, the Moore Farmstead is recorded as 45KI543.

In 2007, Archaeological Investigations Northwest, Inc. (AINW) conducted a historic resources survey along segments of former BNSF Railway grades in Redmond and Bellevue, Washington, ahead of proposed abandonment by BNSF (Allen, 2007). The three segments surveyed—mile post (MP) 5.00 to 10.60 and (MP) 11.25 to 23.9 on the former Northern Pacific Lake Washington Beltline Route, running from Renton to Woodinville, and MP 1.86 to 7.30 on the former SLS&E rail line between Woodinville and Redmond—were recorded on HPI forms as historic period railroad properties. These segments contain six historic-period trestles and bridges, which were constructed between 1904 and 1960. AINW recommended the segments of historic-period railroad eligible for listing in the NRHP under Criterion A, with the bridges/trestles considered to be contributing elements.

TABLE 6-3
Previously Recorded Historic Sites Recorded within the Vicinity of the East Link Project APE

Site Number and Name	Landform	Description	Reference
45KI451	Multiple – locally Bear Creek/ Sammamish River floodplain	Railroad properties associated with Seattle, Lake Shore & Eastern Railway, constructed from 1885 to the 1890s. Includes sections of railroad grade, trestles, and associated artifacts	Hamilton and Johnson, 2004; Hudson and Nelson, 1997; LeTourneau, 2005; LeTourneau and Sundberg, 2009; Luttrell, 2007; Murphy and Iverson, 2000; Nelson, 2001; Norman, 2001; Sparks, 2006
45KI765 Sixth Avenue South Refuse Deposit	On 6th Avenue South between Royal Brougham Way and South Massachusetts Street	Historic debris concentration associated with pilings that formed the supports of Sixth Avenue South. The site is the result of numerous dumping episodes spanning a period of 33 years, from 1890 to 1923. Material collected include bottles, ceramics, faunal remains, misc. debris	Fallon, 2006
45KI924 Dearborn South Tideland Site	Filled tidelands	Historic commercial, industrial, and residential properties	Shong, 2009
45KI930	200 feet east of modern, constructed Puget Sound shoreline, 110 feet southeast of South King Street and Railroad Way South	Historic railroad properties	Gilpin, 2009
45KI942 W.L. McCabe's Machine Shop Site	Filled tidelands	Dimensional lumber, coal clinker deposits, and domestic and personal materials c. 1895.	Meyer, 2009
45KI943 Dearborn North Tideland Site	Filled tidelands	Historic commercial properties	Shong, 2009
45KI947	Duwamish River/filled Tidelands	Truncated historic surface composed of slag pits, lens of historic debris, scattered bricks and large depressions filled with concrete rubble and dimensional lumber.	Meyer, 2010

According to AINW, the railroad lines are associated with the development of railroads in the Puget Sound region, and more locally with the development of industry (e.g., coal mining and steel plants) in the area (Allen 2007:2-3). DAHP concurred with this recommendation on July 19, 2007, (Lake Washington Beltline segments) and on April 30, 2009 (SLS&E segment) (Allen and O'Brien 2007a, 2007b). At the time of the East Link Project Historic Properties survey in 2007, the Washington Beltline segment was still in operation, hosting the Spirit of Washington Dinner Train and a few freight trains.

The East Link project affects segments of the former BNSF corridor. These segments were reviewed for eligibility to the NRHP and it was determined that none of these segments are eligible to the NRHP.

7.0 Affected Environment

7.1 Archaeological Properties

7.1.1 Previously Recorded Archaeological Sites

Two archaeological sites (45KI8 and 45KI451) have been recorded in proximity to the East Link Project route. Site 45KI8 was recorded in 1966 (Greengo, 1966). The site was said to be located along the Sammamish River and near an old confluence of Bear Creek, near the Redmond Way Alternative (E1). The site was described as consisting of scattered artifact finds along the river for about one-half mile, including some finds in dredged material located on the west bank of the river. A fluted projectile point, which usually denotes ancient occupation, was said to have been found at the site in about 1941. The condition of the site, in 1966, was reported as "completely worked over on surface—no midden visible" (Greengo, 1966).

Various segments of SLS&E Railway grades have been previously recorded in King County as archaeological sites 45KI451 (Hamilton and Johnson, 2004; Hudson and Nelson, 1997; LeTourneau, 2005; LeTourneau and Sundberg, 2009; Luttrell, 2007; Murphy and Iverson, 2000; Nelson, 2001; Norman, 2001a; and Sparks, 2006) and 45KI536 (Hungar, 1996; Nelson, 1997; and Norman, 1996). Segments of SLS&E Railroad in Skagit County have been recorded as archaeological site 45SK244 (Norman 2001b) and a portion of the company's grade constructed in Spokane County has been recorded as 45SP643 (Emerson 2009a, 2009b). The segments in King County have been recorded from as close to the Project area as the east side of State Route 520 (and adjacent to HRA Survey Tract 11F) to the towns of Issaquah, Snoqualmie, and North Bend. Construction on the SLS&E began in Seattle in 1887. Through the years, the railroad changed hands, operating under the Northern Pacific, the Seattle & International Railway Co., and finally (by 1970) the Burlington Northern Railroad (Hudson and Nelson 1997).

7.1.2 Results of Archaeological Sensitivity Mapping and Implications for Archaeological Resources

The application of the landform criteria for archaeological sensitivity (see Section 3.3.1) identified several portions of the alternatives as having high sensitivity for prehistoric archaeological sites, while use of the historical criterion did not identify areas with a high sensitivity of historic-period archaeological sites. Examination of land patents and early GLO survey maps did not reveal historical building sites within the APE, and early agricultural use often did not leave archaeological deposits at locations removed from building sites. Historical uses, revealed by the Sanborn Fire Insurance maps, included commercial and industrial uses, such as an automobile repair shop in Bellevue and railroad tracks and a nearby depot in Redmond. These uses are well documented in the historical record, but no early tenements, apartments, small stores (that might have had living quarters), hotels, or other buildings that might have resulted in archaeological remains and contributed important information to the historical record, were found on the Sanborn Maps. Exhibits B-1 through B-5 in Appendix B show the relative amounts of high-sensitivity APE within each of the East Link alternatives, according to the project and DAHP sensitivity models. The relative amounts of high, moderate, and low-risk areas are described in the text below.

7.1.2.1 Segment A

Exhibits B-1 through B-5 in Appendix B show areas judged to have high prehistoric archaeological sensitivity for the project alternatives, as determined by the project predictive model. Segment A was not mapped because most of the APE in this segment was previously disturbed for the construction of I-90 and the project would be constructed on I-90. Although the DAHP sensitivity model shows high sensitivity for several portions of Segment A (particularly along I-90 on Mercer Island), no archaeological sites could be expected in the APE of Segment A. A small portion of Alternative A1 occurs on the east bank of Lake Washington, in an area considered to have high sensitivity for archaeological remains, according to both models.

7.1.2.2 Segment B

According to the DAHP model, the Segment B alternatives have a high to very high sensitivity for archaeological resources because of their proximity to Mercer Slough, especially its confluence with Lake Washington, and to the

Kelsey Creek and Sturtevant Creek confluences. The same is true for the project model, except for the portion of Alternative B1 where it follows Bellevue Way NE, which is not considered to be high probability. However, the area encompassing the Segment B alternatives has been extensively developed, with considerable disturbance to native soils that could have disrupted or destroyed archaeological deposits. These landforms have a high sensitivity for archaeological resources, although none may be found or be intact if identified because the area is highly developed and has been disturbed through development over the years. The portion of all Segment B alternatives along the I-90/Bellevue Way off-ramp is judged sensitive because, even though it follows I-90, it is located on old shoreline. Alternative B7 is located on uplands east of Mercer Slough and, of the five Segment B alternatives, the DAHP model assigns this the consistently lowest sensitivity (still, almost all of it is "high risk," see Appendix B). According to the sensitivities developed by Project archaeologists, Alternative B1 has the least amount of land considered to have high archaeological sensitivity, while Alternative B7 has the most.

7.1.2.3 Segment C

Most of Segment C is highly developed. In glacial till soils typical of eastern King County highlands, including the Bellevue core, sediments of an age that could include archaeological deposits are shallow, in the top meter or less below ground surface. Of course, if native soils have been buried by historic-era fill episodes archaeological materials can occur more deeply. Geologic explorations have show a thin layer (5 to 10 ft) of sandy material of non-native material from probably placed for roadway construction – over very dense sands and gravels, which appears to be glacial till. None of the recent explorations encountered any recent material (post glacial) show native soils (containing organics or archaeological remnants).

According to the project sensitivity model, portions of Segment C alternatives have a high sensitivity for archaeological resources because they travel along, or near, Sturtevant Creek or other freshwater resources. Portions of Alternatives C1T and C2T pass Lake Bellevue and cross Sturtevant Creek, where archaeological resources could be buried within the floodplain. The DAHP archaeological sensitivity model shows highest-risk areas in the southern and western portions of Segment C. As with the project model, the initial portions of *Preferred Alternative C9T* and Alternative C3T and Alternative C4A, until reaching the vicinity of Main Street, are high to very high risk areas for prehistoric archaeological materials.

To the north along 108th Ave NE and 110th Ave NE, Alternatives C3T and C4A transition to a less sensitive moderately low risk zone by NE 8th Street. The portion of *Preferred Alternative C9T* crossing I-405 and Sturtevant Creek retains moderate to high risk (reflected by the project model). The DAHP model differs, however, along Bellevue Way SE and 106th Ave SE (Alternatives C1T and C2T). These alignments range from very high to moderate risk for prehistoric archaeological materials. However, given that these areas have been moderately to highly developed over the past several decades and there are no apparent stream crossings nearby, it is unlikely that archaeological materials will be uncovered.

7.1.2.4 Segment D

The Segment D alternatives also are located in heavily developed areas. According to the project sensitivity model, portions of the Segment D alternatives have a high sensitivity for archaeological resources where they cross streams, such as the West Tributary of Kelsey Creek. In addition, part of *Preferred Alternative D2A* and Alternative D5 follow the uplands above the Sammamish River floodplain; such locations were often attractive for Native American groups for processing resources, camping, and even living for longer time periods. The DAHP model, however, shows Segment D as moderate to moderately low risk for prehistoric archaeological remains. At the West Tributary to Kelsey Creek, crossing along *Preferred Alternative D2A* and the D2A design options, the DAHP model shows a high risk (and this is within the larger project high probability area). Likewise, a second tributary to Kelsey Creek, located where these alternatives turn from NE 16th Street to the northeast, also shows a high probability, according to the DAHP model.

7.1.2.5 Segment E

The Segment E area is less heavily developed and retains more green space. The Segment E alternatives (E1 and E4) are considered to have a high to very high sensitivity for archaeological resources, according to both models. This is especially true near the crossings of Bear Creek and the Sammamish River, where some terraces are present and where archaeological resources may be buried within flood deposits.

7.1.3 Results of Archaeological Survey

The archaeological surveys conducted in 2007 and 2010 did not uncover any additional resources eligible for the NRHP. The archaeological survey took place during the last week of February 2007 and in March, June, and July 2010, with a field director and a crew of two to four archaeologists. The 2007 field survey included 15 survey tracts (Draft EIS tracts 1D to 16D), and the 2010 survey included 12 survey tracts (Final EIS tracts 1F to 12F). Of the 12 proposed 2010 survey tracts, two (Survey Tracts 5F and 6F) could not be surveyed because Sound Transit was denied entry for archaeological studies. Within each surveyed tract, the crew walked defined paths, or transects, and recorded observations; conducted shovel probes, depending on surface and perceived subsurface conditions; and screened materials. Shovel probes were spaced throughout the survey tracts, at intervals no greater than 20 to 25 meters (66 to 82 feet).

Twelve survey tracts were located in the archaeologically sensitive portions of Segment B; seven were located in Segment D (five Draft EIS tracts and two Final EIS tracts); and eight were located in the archaeologically sensitive portions of Segment E (four Draft EIS tracts and four Final EIS tracts). Two Draft EIS survey tracts in Segment D were placed in areas considered to have low archaeological sensitivity to control for the bias inherent in focusing the survey on high-sensitivity areas. No tracts were placed in Segments A or C during the 2010 Stage 1 archaeological survey because heavy development and other characteristics provide few areas of high archaeological sensitivity. The Stage 2 archaeological survey will target areas of lower archaeological probability and locations that are, according to the DAHP predictive model, of higher sensitivity but currently inaccessible (due to paved surfaces or other factors) or are currently privately owned.

The archaeological survey of the Segment B tracts encountered areas of historical and modern disturbance (for instance, the vicinity of the South Bellevue Park-and-Ride and the landscaping surrounding modern industrial parks), steep slopes in many portions of the *Preferred Alternative B2M*, heavy vegetation, water at or near the ground surface, and modern debris. When cultural materials were observed in shovel probes, they were generally modern or lacking in context (for instance, in fill). Survey tracts in Segment D also showed considerable disturbance, including the observation of asphalt on the surface close to one shovel probe (SP12F-7) and at approximately 30 to 40 centimeters (12 to 16 inches) below surface in two other probes in Tract 12F (SPs 12F-5 and 12F-6); this asphalt may be a remnant of the roadway that existed prior to the development of SR 520.

In Segment E archaeologists encountered fill covering the native alluvial soils at varying depths, up to about 1 meter (3.28 feet) deep. Many shovel probes excavated in Segment E, Tracts 10F and 11F, contained peat layers similar in composition to those observed during archaeological investigation of prehistoric site 45KI832. However, no flakes, fire-cracked rock (FCR) or other prehistoric artifacts were observed in these probes. Project archaeologists searched for traces of previously recorded prehistoric archaeological Site 45KI8 in Segment E, but the work encountered no evidence of the site. It is difficult to tell whether the site still exists because the areas have been eroded, dredged, riprapped, and filled.

The survey located no prehistoric archaeological remains. Although past development has likely damaged or destroyed archaeological sites, particularly those dating to prehistory, some important remains could exist. However, two historic-period archaeological sites were recorded during the 2010 survey session. In Survey Tract 4F of Segment B, approximately 125 meters (425 feet) northwest of the Winters House, the archaeologists observed a scatter of domestic debris. The site extends from the eastern edge of the right-of-way in *Preferred Alternative B2M*, downslope to the level surface of Mercer Slough. The debris included bed components; portions of household appliances (e.g., oven); entire and fragmented colorless and brown glass vessels (identified as soda and beer bottles) and additional pane glass fragments; oil drums; and fragments of automobiles, including a car with a Wisconsin license plate, dated February 1963, and a bus or station wagon parked under large rhododendron bushes outside the Segment B route. These items are scattered over an area measuring approximately 30 meters (98 feet) north-south by 30 meters east-west. Although no historic-period diagnostic artifacts were identified in the APE, it is likely that some components of the site, such as the automobile, can be considered historic-period in age (i.e., older than 50 years). The archaeologists prepared an Archaeological Site Inventory Form for this resource (45KI1008 [Appendix C]).

The archeological survey also found segments of the former BNSF (former Northern Pacific) Railway corridor. As this is a mostly aboveground historic resource, its eligibility for listing in the NRHP is discussed in Section 7.3.

7.2 Traditional Cultural Properties

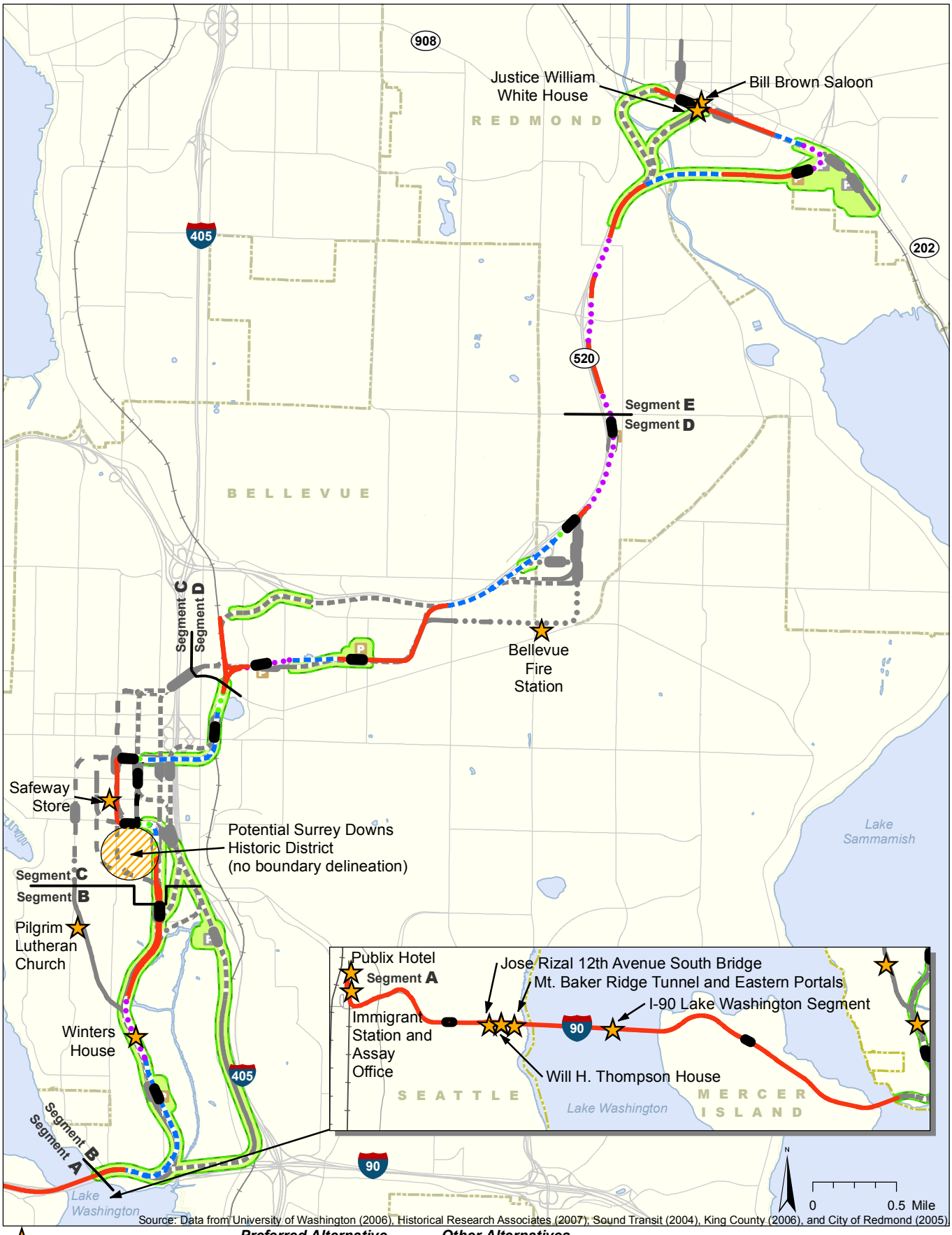
FTA and Sound Transit sought government-to-government consultation with the Muckleshoot Indian Tribe, Snoqualmie Indian Tribe, Suquamish Indian Tribe, Duwamish Tribe, Tulalip Tribes of Washington, and Yakama Nation, initially providing project information by mail. Meetings were held with Muckleshoot and Snoqualmie tribal representatives to discuss the East Link Project and its potential effects on archaeological sites and TCPs. Consultation with the tribes revealed no TCPs in the project vicinity.

7.3 Historic Buildings and Structures

The historical records search identified several properties listed in the NRHP, the WHR, or local registers. The field survey and preparation of inventory forms took place primarily from February through June, 2007, September through October, 2007, and from December 2009 through April 2010. Project architectural historians' research and field survey inventoried 439 buildings and structures (including one potential historic district with a number of contributing elements) in the APE, with 13 either listed in the National Register (and automatically part of the WHR) or recommended to be eligible (Appendix C). FTA's eligibility determinations were based on criteria for listing in the NRHP and the Washington DAHP (which houses the SHPO). Section 106 of the NHPA requires federal agencies to take into account the effects of their actions on properties that are determined eligible as well as those that are listed. The consent of private property owners is needed before their properties can be listed in the NRHP. As discussed in Section 3.5, above, properties to be listed or considered eligible for the National Register normally must be 50 years old, must meet one of four criteria for listing, and must retain their integrity. Most of the properties inventoried for the project did not qualify for the National Register.

In addition to resources discussed in the remainder of Section 7.3, one potential historic resource, the former BNSF Railway, was surveyed in the APE for multiple project segments. Portions of the former BNSF Railway are within the APE for Segments B, C, D, and E. The portions of the former BNSF Railway within the project's APE are recommended as not eligible for listing in the NRHP, although the railroad as a whole has been determined eligible. These portions are recommended not individually eligible regardless of eligibility of the whole route: under Criterion A (which is what DAHP found the route eligible under). These sections are nondescript and do not well represent the theme asserted in the 2007 HPI (Allen and O'Brien 2007a); under both Criterion B and C, they have not been found to be associated with a master or someone of other historical importance, nor do these segments contain any remnants that are distinctive or that well represent historical railroad themes (Criterion D), such as the trestles and bridges emphasized in Allen and O'Brien 2007a. In summary, significant intact properties representative of the former BNSF Railway's and the preceding owners' contributions to railroad technology are not presented by portions of the former BNSF Railway in these segments of the project corridor.

Table 7-1 summarizes the results of the inventory, which is discussed by segment and alternative in the sections below. Exhibit 7-1 shows the location of the NRHP Eligible resources. A list of inventoried properties is included in Appendix C, along with maps of their parcel locations. Table 7-2 summarizes the properties listed, or recommended as eligible for listing, in the NRHP (and thus also eligible for the WHR). Historic resources are described, by alternative, in following the table. Because landmark register criteria for the cities of Seattle, Mercer Island, and Redmond are similar to those of the NRHP, these properties are also recommended as eligible for the local registers. FTA determines, in consultation with SHPO, NRHP recommendations for eligibility and effect determination. Local jurisdictions review local landmark register recommendations.



Source: Data from University of Washington (2006), Historical Research Associates (2007), Sound Transit (2004), King County (2006), and City of Redmond (2005).

NHRP Listed/Eligible Site
Sensitivity Zone
Proposed Station
New and/or Expanded Park-and-Ride Lot

Preferred Alternative
At-Grade Route
Elevated Route
Retained-Cut Route
Retained-Fill Route
Tunnel Route

Other Alternatives
At-Grade Route
Elevated Route
Retained-Cut or Retained-Fill Route
Tunnel Route

Exhibit 7-1
Cultural Resources
Segments A, B, C, D, and E
East Link Project

TABLE 7-1
Buildings and Structures Inventoried for Each Segment

Segment	Number Inventoried	Number Recommended Not Eligible	Number Listed or Recommended Eligible for the NRHP
A, Interstate 90	62	56	5
B, South Bellevue	113	111	2
C, Downtown Bellevue	203	165	38 (37 of these properties are eligible as contributing elements of one potential historic district)
D, Downtown Bellevue to Overlake Transit Center	27	26	1
E, Overlake Transit Center to Downtown Redmond	33	31	2
B, C, D, and E Former BNSF Railway (Lake Washington Beltline Route)	1	1	0
Total	439	390	49

TABLE 7-2
List of Historic Properties

Segment	Field No. and Map ID	Property Name/Type	Address	Register Status
A, Interstate 90	376	Publix Hotel (Seattle Chinatown NRHP/ International Special Review historic district)	504 Fifth Avenue South	Contributing element to NRHP and Seattle Special Review historic districts
A, Interstate 90	132	Immigrant Station and Assay Office	815 Airport Way South	NRHP, WHR, eSL
A, Interstate 90	303	Jose Rizal 12th Avenue South Bridge	12th Avenue South crossing of South Dearborn Street	NRHP, WHR, eSL
A, Interstate 90	166	Will H. Thompson House	3119 South Day Street	NRHP, WHR, SL
A, Interstate 90	I90	I-90 Lake Washington Highway Segment, milepost 3.4-8.9 (includes Mount Baker Ridge Tunnel and Eastern Portals)	I-90 Washington State Department of Transportation right-of-way between mileposts 3.4 and 8.9	eNRHP, eWHR, SL[a]
A, Interstate 90	156	Endresen Residence	1402 32nd Avenue South	eSL
A, Interstate 90	133	Romaine Electric/Washington Iron Works Pattern Shop	1101 Airport Way South	eSL
B, South Bellevue	16	Frederick Winters House	2102 Bellevue Way SE	NRHP, WHR
B, South Bellevue	63	Pilgrim Lutheran Church	10420 SE 11th Street	eNRHP, eWHR
C, Downtown Bellevue	various (see Exhibit 7-12)	Potential Surrey Downs historic district	Between 108th and 112th Avenues SE, south of Main Street (see table 7-4)	Potentially eNRHP, eWHR
C. Downtown Bellevue	1100	Safeway Store	414, 424, and 456 104th Avenue NE	eNRHP
D, Bel-Red/Overlake	104	Former Bellevue Fire Station	14822 NE Bellevue-Redmond Road	eNRHP, eWHR
E, Downtown Redmond	112	Justice William White House	Leary Way NE and NE 76th Street	eNRHP, eWHR, RHL
E, Downtown Redmond	113	Redmond Trading Company	7805 Leary Way NE	RHL
E, Downtown Redmond	114	Bill Brown Saloon Building	7824 Leary Way NE	RHL, eNRHP, eWHR
E, Downtown Redmond	118	Dudley Carter/Haida House	Sammamish Slough Park	RHL

NRHP National Register of Historic Places
WHR Washington Heritage Register
SL Seattle Landmark
RHL Redmond Historic Landmark
e determined eligible

[a] The Mount Baker Ridge Tunnel and Eastern Tunnel Portals are also designated Seattle Landmarks.

7.3.1 Segment A

Survey efforts in the City of Seattle portion of Segment A inventoried 62 properties, of which 6 are listed or eligible for listing in the NRHP and 2 are eligible for listing as Seattle Landmarks (City of Seattle Letter to Sound Transit, May 2008). All of the properties inventoried in Segment A were included in the 2007 version of the Cultural Resources Technical Report for the 2008 Draft EIS except for the Lake Washington Highway Segment of I-90. The W.H. Thompson House at 3119 South Day Street and the Immigration & Assay Building at 851 Airport Way S were both listed in the NRHP. The remaining structures inventoried in Segment A were determined not eligible for the NRHP, although DAHP requested additional information about the Endresen Residence and Romaine Electric building to their eligibility for City of Seattle Landmark status. The letter also requested information regarding the NRHP-eligible I-90 (Lacey V. Murrow Memorial) bridge. Additional information for these resources is included below.

The APE crosses a corner of the Seattle Chinatown NRHP historic district, listed in 1986 under Criteria A. This area is also part of the Seattle International Special Review District. One building that contributes to both districts, the Publix Hotel (Exhibit 7-2), is located within the APE. The architect was J. L. McCauley, who also designed the Rainier Heat and Power Company that was located immediately south of the hotel. The building was originally a workmen's hotel, with three wings containing 211 single rooms and 12 street-level retail bays.

EXHIBIT 7-2
Publix Hotel, 504 Fifth Avenue South

The United States Immigrant Station and Assay Office Building (also referred to as the INS Building) (Exhibit 7-3) is listed in the NRHP under Criteria A and C. However, it is not considered eligible as a potential City of Seattle Landmark. The federal government constructed the building in 1931. James Wetmore, acting supervising architect and designer of many federal buildings during this period, approved the plans for the building. The architecture is a combination of elements from the Neo-classical and Mediterranean styles. The building was Seattle's third immigration building and second assay office.

EXHIBIT 7-3
United States Immigration Station and Assay Office Building, 815 Airport Way South

Because the Chinese Exclusion Acts limited immigration to the United States, and Chinese people of this period typically arrived with poor documentation, most of the immigrants detained in the building were Chinese males. The Immigration and Naturalization Service was still using the building and the detention facilities within it when the building was listed in the NRHP in 1979. The first assay office in Seattle opened in 1898 during the Klondike Gold Rush. Although the amount of gold processed in Seattle dropped steeply within a decade, the federal government kept an assay office in Seattle until 1955 (Lee and Mathison, 1978). The building is not used at present.

The City of Seattle Historic Resources Survey determined that the Washington Iron Works Pattern Shop (also known as the Romaine Electric Building) at 1101 Airport Way South (Exhibit 7-4) appears to meet the criteria of the Seattle Landmarks Preservation Ordinance. An HPI prepared by HRA in 2007 found the property to be ineligible for the NRHP and the Washington Heritage Register due to its lack of association with significant events or persons and it's not being an outstanding example of its architectural style or known to be the work of a master craftsman or architect. Although the building retains integrity of location and design, changes to the building impair the integrity of its materials and workmanship, and changes to the area around it impair the integrity of setting, feeling, and association.

EXHIBIT 7-4
Washington Iron Works Pattern Shop, 1101 Airport Way South

Tax assessor's files date the building, constructed as a pattern shop factory for the Washington Iron Works, to 1920. It is associated with the development of the Seattle tidelands area as a transportation-related industrial and commercial warehouse district, and is specifically associated with an industrial firm that was one of the earliest ironworks manufacturers in Seattle, and which played a significant role in the logging, mining, shipbuilding and airplane manufacturing industries. The tidelands were filled through a series of successive grading and fill projects, between 1895 and 1929, which created developable land that made the expansion of railroad and port facilities possible. This also fostered the development of the area for industrial and commercial use that supported significant economic progress of Seattle in the early twentieth century.

The utilitarian industrial building is a large rectangular, three-story, flat-roofed structure, characterized by the large window openings set within the repetitive bays along the east, west, and south elevations. It retains an industrial character and is one of the few remaining large buildings of its type in an area that was a historically significant industrial district. It also appears to be the only building remaining with associations to one of the most prominent and longstanding local iron working firms.

The City of Seattle constructed the Jose Rizal 12th Avenue South Bridge (Exhibit 7-5) in 1911 after removing a portion of northern Beacon Hill to decrease the grade of South Dearborn

EXHIBIT 7-5
12th Avenue South Bridge, 12th Avenue South crossing of South Dearborn Street

Street. One of Seattle's numerous regrading projects, the Dearborn Street work accomplished the City's goal of creating a route from Puget Sound to Lake Washington at a grade of 5 percent or less. The bridge replaced the section of 12th Avenue S that was removed during regrading, thus maintaining accessibility to the northern part of Beacon Hill (Phelps, 1978:23). The bridge was listed in the NRHP in 1982 based on its engineering design under Criteria C.

WSDOT, on behalf of the Federal Highway Administration and DAHP, identified a segment of I-90 between I-5 and I-405 as eligible for the NRHP under Criteria A and C and Criteria Consideration G. The Lake Washington Highway Segment of I-90 within the right-of-way from milepost 3.4 to 8.9 includes the west end of the Martin Luther King Jr. Way Lid to the east end of the East Channel Lake Washington Bridges. The determination of eligibility documentation included the Mount Baker Ridge Tunnels that were previously listed on July 16, 1982. DAHP concurred in its letter dated November 23, 2009 that this section of I-90 is eligible for the NRHP. This segment of I-90 (Exhibits 7-6 through 7-11) is just over five miles in length and encompasses the entire segment, including the roadway, with character-defining features such as lids, bridges, tunnels, ramps, sound barriers, overcrossings, and undercrossings. Major character-defining features include the Mount Baker Ridge Tunnels; the Lacey V. Murrow and Homer M. Hadley floating bridges; the East Channel Lake Washington Bridges; the Martin Luther King Lid; the First Hill Lid; and the Luther Burbank Lid. The lids have pedestrian and bicycle paths, extensive landscaping, and park areas (Exhibit 7-7).

This segment of I-90 runs through mostly residential neighborhoods. Due to its innovative design, which began in 1957, and its construction, from 1979 to 1993, the highway minimized impacts on surrounding neighborhoods by incorporating nine overpasses and three landscaped lid structures that provide both active and passive recreation opportunities in a 180-acre greenbelt. As a designed transportation system, the highway is planned to function as a whole and to achieve long-term transportation goals, including High Capacity Transit, while respecting the surrounding environment. The I-90 Lake Washington Segment was nominated with Criteria Consideration G, as most of the segment was completed between 1987 and 1992, making it less than 50 years old. Under Criteria Consideration G, a property achieving significance within the past fifty years is eligible if it is of exceptional importance. This segment is of exceptional importance as one of only four interstate system segments identified by WSDOT, in consultation with the FHWA, the Advisory Council on Historic Preservation, and the DAHP, as potentially significant segments of the National Interstate System on the "Final List of Nationally and Exceptionally Significant Features of the Federal Interstate Highway System." Features identified on that list warrant Section 106 review and require a formal determination of eligibility. The NRHP Registration form prepared for the resource supports the inclusion of this segment on that list as a feature of exceptional national significance.

The I-90 Lake Washington Segment is eligible for listing in the NRHP under Criteria A and C. Under Criterion A, the segment is an important component of the National Interstate System and a key piece of transportation history. It was one of the final sections that completed I-90 from Boston to Seattle. More than 25 years passed between initial planning and completion of construction, indicating the extensive considerations of planning, engineering, community involvement, and environmental effects in designing a freeway across Mercer Island, between I-5 and I-405. Its design was the product of an early NEPA challenge, resulting in a significant community and agency planning process that forged the Memorandum of Agreement of 1976.

Under Criterion C, the segment involved innovative engineering incorporating unusual and costly amenities. Interstate 90 incorporates many elements that exhibit outstanding engineering, including the floating bridges and the Mount Baker Tunnels. The original designers took great care to provide a consistent look and feel throughout the segment, and developed the I-90 Architectural Standards to guide their final design effort. The project balanced numerous competing interests to design an innovative and attractive final segment of I-90 that fulfilled its transportation mission while also providing tangible assets for the community. The NRHP areas of significance represented in the property are: Engineering, Transportation, Community Planning and Development, and Landscape Architecture. The property is significant locally, regionally, and nationally. The project, with the world's largest soft-earth tunnel, two floating bridges, and three landscaped lids, won the Presidential Design Award for Excellence, recognized for exemplary federal design achievement and honored for its engineering, energy conservation, and landscape architecture.

The I-90 Lake Washington Segment was designed with a vision for the future, when mass transit would be a necessity. The NRHP registration form notes that a central portion of the roadway, separating the eastbound and

Source: NAIP Aerial (2009).

I-90 Lake Washington Segment

N

0 0.5 1 Mile

Exhibit 7-6
Resource Locations
I-90 Lake Washington Segment

westbound sections, was designed to be operated in reverse to facilitate the passage of peak hour traffic or for use by mass transit and emergency vehicles (I-90 Design Team, 1972: 147-155).

When U.S. Secretary of Transportation Brock Adams signed his decision to approve construction of I-90, in 1978, he noted that the facility would be unique in including both highway and transit elements. Adams pointed to the 3-2-3 lane configuration and the environmental amenities that included covered roadway sections, landscaping, and bicycle/pedestrian trails (Exhibit 7-8). The final design of the segment minimized disruption to the community by depressing the roadway and providing overpasses widened to contain plantings and pedestrian/bicycle lanes. Two middle lanes were designated for future mass transit and use in reversible commuting, high-occupancy vehicles/buses, and eventually light rail. Post-tensioned concrete minimized the concrete posts needed for earlier freeways, wasting less open space and providing more open views. Landscaped lids were introduced to provide park areas, including some playfields and passive recreation. In the end, the I-90 Lake Washington Segment achieved both its transportation and community enhancement goals through what is generally considered one of, if not the first, context sensitive design solutions in the country.

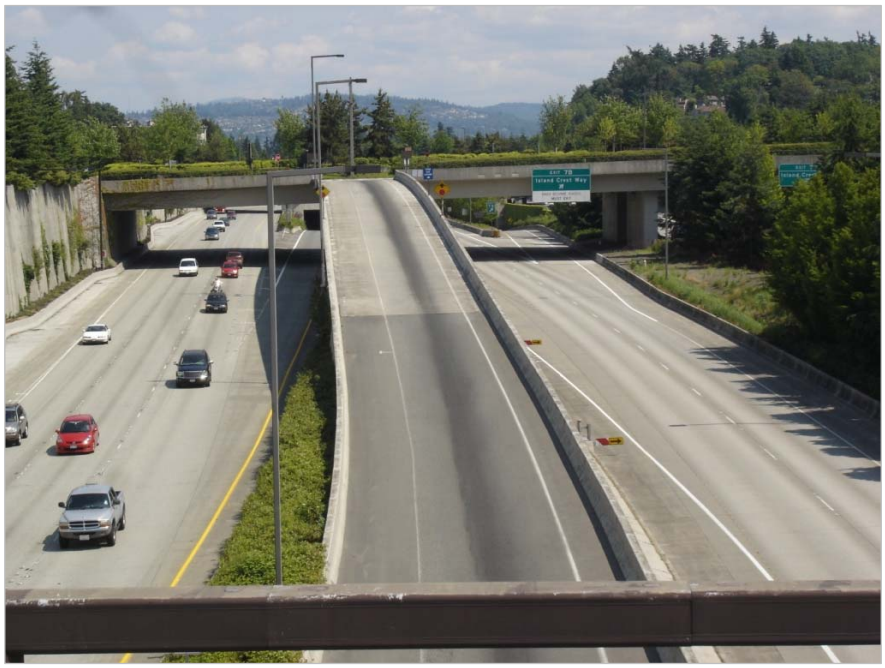


EXHIBIT 7-7
View (to the west) of the I-90 Roadway, Ramp (center of photo), Landscaped Overcrossing (in distance), Sound Barrier (left side of photo), and Landscaping

EXHIBIT 7-8
View (to the west) of a Landscaped Overcrossing above I-90

With the rise of automobile traffic congestion and suburban sprawl, as well as limited land to develop freeways, interchanges, and parking areas, officials made plans to develop a regional rail-transit system as early as the 1950s. Various reports and studies were produced toward this effort and, by 1964, a report recommended that the design of the third Lake Washington Bridge (now the Homer M. Hadley Bridge) be designed to accommodate the later addition of rapid transit rails. The report pointed out the lack of opening spans made it the only facility that would be adaptable to rail rapid transit operation.

The report also recommended the adoption of a coordinated bus and rail rapid transit plan to guide regional transit development to the year 1985. The report recommended that a regional plan, needed for the year 1985,

include a high-speed, high-capacity, grade-separated rapid transit route. This would include a connection to Bellevue across Mercer Island in the median of the I-90 corridor, a station at 81st Avenue SE, and a crossing at the east channel on the planned high-level bridge (De Leuw, Cather & Company, 1965: 17, 31-32, and Plate 9).

EXHIBIT 7-9
Martin Luther King Way Lid, West Portal Pedestrian Tunnel

A 1967 report by De Leuw Cather, Report on a Comprehensive Public Transportation Plan for the Seattle Metropolitan Area, as noted in the NRHP Registration form, recommended including approximately 47 miles of dual-track, grade-separated rail rapid transit routes with about 32 stations and about 24 miles of grade-separated right-of-way for future extension of rail rapid transit routes. One of the four major travel corridors would run east across Lake Washington in the proposed I-90 alignment. The recommendations were then submitted to the State Highway Department. Although a final study report based on the 6-year planning effort released by the King, Kitsap, Pierce, and Snohomish counties and the cities of Seattle, Tacoma, Everett, and Bremerton found that rail rapid transit was not feasible for the region, the City of Seattle started planning separately for mass transit.

EXHIBIT 7-10
Mount Baker Ridge Tunnel, East End of I-90 Tunnel

A transportation system plan for the Central Puget Sound Region, prepared in 1974 by the Puget Sound Governmental Conference (PSGC) recommended providing for an exclusive transit way on I-90 between Seattle and the Factoria interchange and the construction of two flyer stops on I-90. In 1976 a multi-jurisdictional I-90 MOA stated that I-90 would be designed and constructed to allow for future conversion of all or part of the transit roadway to fixed guideway. The MOA committed the parties to further planning and construction of transit access connections, and Federal Secretary of Transportation Brock Adams's 1978 approval of I-90 construction included a condition relating to the provision of transit access (Adams, 1978:4), stating that "public transportation shall permanently have first priority in the use of the center lanes" (Adams, 1978:6).

In August 2004, this MOA was amended to reflect the current and future conditions and demands along the I-90 corridor between Bellevue and Seattle crossing Lake Washington via Mercer Island. These included increased travel growth, changes in travel patterns, and a reduction in transit reliability, as well as adding Sound Transit as a signatory to this agreement. One of the key elements of this amendment was that all parties agree that the ultimate configuration for I-90 between Bellevue, Mercer Island, and Seattle should be defined as High Capacity Transit in the center roadway and HOV lanes in the outer roadways, and further agree that High Capacity Transit

for this purpose is defined as a transit system operating in dedicated right-of-way, such as light rail, monorail, or a substantially equivalent system.

Metro's 1984 I-90 Light Rail Conversion Feasibility Study evaluated the extent to which I-90 would provide for rail conversion, and determined the actions that could be taken during the highway's design and construction to preserve maximum flexibility and minimize disruption in operation of the facility resulting from conversion. The report's findings and conclusions included that the I-90 transit lanes could be converted to light rail transit, that there is adequate space for stations, and that no significant additional provisions are required. Report recommendations called for careful attention to character-defining features during final design and construction.

EXHIBIT 7-11
East Portal of the Mount Baker Ridge Tunnel ("Seattle Portal to the Pacific"), Showing Artwork.

EXHIBIT 7-12
Will H. Thompson House, 3119 South Day Street

The Mount Baker Ridge Tunnels and Eastern Portals (Exhibits 7-9 through 7-11), initially listed in the NRHP in 1982, were included in the I-90 Lake Washington Segment NRHP Registration form prepared in 2009, and are a Seattle Landmark. WSDOT constructed the tunnel, which consists of two parallel sections, in 1940. Because Mount Baker Ridge consists of blue glacial clay, the Highway Department avoided explosives and drilling in favor of excavating both tunnels with an electric shovel. The tunnels' architects designed an impressive gateway to the City of Seattle by combining Art Deco elements and stylized Native American motifs (Soderberg, 1980b). Although the tunnels were an engineering feat, the 1982 NRHP listing focuses on their striking ornamentation.

The Will H. Thompson House (Exhibit 7-12) was listed in the NRHP in 1979 based on its Queen Anne architectural style under Criteria C. This building is unusual for its scale in present-day Seattle and for its high degree of integrity. The property is also a Seattle Landmark. Ernest MacKay constructed the building in 1894 and lived in it until 1897. Will H. Thompson and his wife purchased the house at public auction in 1897, with members of their family living there until 1917. After their son Maurice sold the house, it served as a sanitarium and then a rooming house for women. The La Turner family purchased the house in the 1970s and reversed many

of the changes made by the sanitarium and rooming house owners (Kreisman, 1979). The building is one of the oldest surviving houses and one of the few examples of the Queen Anne architectural style to survive in the Mount Baker Neighborhood.

EXHIBIT 7-13
Endresen Residence, 1402 32nd Avenue SE

The City of Seattle Historic Resources Survey determined that the Endresen Residence at 1402 32nd Avenue South (Exhibit 7-13) in Seattle's Mount Baker Neighborhood appears to meet the criteria of the Seattle Landmarks Preservation Ordinance. The HPI prepared by HRA in 2007 for the residence found it to be ineligible for the NRHP and Washington Heritage Register because it is not associated with significant events or persons and is not an outstanding example of its architectural style or known to be the work of a master craftsman or architect. Built in 1908, this is a Craftsman-influenced, Colonial Revival-style, single-family dwelling. Initial development of the Mount Baker area occurred relatively late, post-1900, following the construction of the Rainier Avenue Electric Street Railway in the 1890s. The Mount Baker Park Addition represents the core of the neighborhood and is its primary character-defining feature.

Mount Baker Park is one of Seattle's earliest planned residential communities that successfully integrated the natural environment and a relatively exclusive residential neighborhood in its layout of lots, streets, boulevards, and parks. The houses, primarily built between 1905 and 1929, reflect a variety of eclectic and Northwest-based architectural styles, and include designs by many prominent local architects. Other important influences were the streetcar connection with downtown Seattle, the integration of local parks and boulevards into the Olmsted system, the construction of Franklin High School in 1912, and the building of the Mount Baker tunnel and Lacey V. Murrow Floating Bridge to Mercer Island in 1940. Today this middle-to-upper income neighborhood remains predominantly residential, is home to an ethnically diverse population, and retains much of its planned character.

The inventory of Segment A in the City of Mercer Island identified 13 properties, none of which are listed or eligible for the NRHP, WHR, or local register. The DAHP letter sent to FTA dated November 16, 2007 concurred with HRA's inventory of these properties and resultant determinations of eligibility for the NRHP.

7.3.2 Segment B

Survey efforts in the South Bellevue Segment B area inventoried 113 properties. One property, the Winters House, is on the NRHP, and another property, the Pilgrim Lutheran Church, is eligible for listing on the NRHP. The remaining properties were determined not eligible for the NRHP. All of the properties inventoried in Segment B were included in the 2007 version of the East Link Project Cultural Resources Technical Report. DAHP sent two letters to FTA (dated November 16, 2007, and February 20, 2008) regarding the inventory and determination of eligibility of Segment B properties and specifically noted that the Winters House at 2102 Bellevue Way SE was already listed in the NRHP, and the Pilgrim Lutheran Church at 10420 SE 11th Street is NRHP-eligible under Criteria C.

7.3.2.1 *Preferred Alternative B2M* and Alternatives B1, B2A, B2E, B3, and B3 - 114th Design Option

EXHIBIT 7-14
Winters House, 2102 Bellevue Way SE

The Winters House (Exhibit 7-14) was listed in the NRHP in 1992 under Criteria A and C, based on its Spanish Eclectic architecture and its association with developments in the bulb-growing and floriculture industry in King County and Washington State. The NRHP Registration form provides a boundary description that includes 50 feet of landscaping around the house, including a portion of the parcel along Bellevue Way. Frederick and Cecilia Winters purchased 10 acres of land along Mercer Slough in 1920, and 4 years later they purchased additional acreage to expand their business. During the late 1920s, a period of rapid growth for bulb farms in Washington, the family built the residence that remains on the property. Much of the surrounding land was then sold during the 1930s when it proved too swampy for growing bulbs, and the family sold the house in 1943. Historic photographs of the property depict its construction and the frequent changes made to the surrounding landscape throughout its evolution. The subsequent owners lived in the house until the 1980s, when the City of Bellevue acquired the house. The City of Bellevue restored the house during the 1990s, and it has since become the headquarters of the Bellevue Historical Society, which became the Eastside Heritage Center in 2001 when it merged with Marymoor Museum of Eastside History, in Redmond. The Winters House is currently used by the Eastside Heritage Center as a heritage research center, exhibit space, archive storage, library, and public meeting space. Additionally, the Eastside Heritage Center provides public and educational programming at the Winters House. The Winters House also contains office space for the City of Bellevue Parks and Community Service Department staff and can be used for public or private meeting event space. The Winters House is also part of the Heritage Loop Trail in Mercer Slough Nature Park the site includes historical interpretation and facilities for trail users.

The Winters House is prominently situated on the western edge of the Mercer Slough, a rich natural oasis in the midst of a substantial modern suburban community. The site of the house is bordered on the west by Bellevue Way SE, formerly a county road named Qualheim Road, which has been completely altered into a major arterial roadway and on the east by Mercer Slough. Oriented toward Bellevue Way, the former residence is set back approximately 50 feet and buffered from the roadway by a small grove of deciduous and conifer trees and shrubs. Originally a substantial lawn, fish pond, and planted area separated the residence from the formerly narrow roadway.

According to the 1991 NRHP Registration form, the house is the only intact historic property to remain on the site of the former nursery and bulb farm complex. While the house's orientation to Bellevue Way at one time would have been a significant character-defining feature of the structure and its relationship to the surrounding landscape, the historic design of the roadway and its relationship to the house has lost its integrity. The NRHP Registration form notes that while the house presented a distinctive and formal entrance façade toward the once narrow road it faced, the floor plan and siting of the house were specifically oriented toward the view of the bulb fields below the house, to the rear, and the undeveloped eastern side of Mercer Slough. From windows and balconies on the rear elevation it commanded a complete view of the nursery complex and fields which facilitated its construction.

Architectural historians reviewed the extant landscape and historic photographs to consider whether the landscape of the house is character-defining or includes any character-defining features from the historic period. In particular, HRA assessed the 50-foot boundary provided in the NRHP Registration form, which includes the set back of the residence from Bellevue Way. The NRHP Registration form includes the following boundary justification:

EXHIBIT 7-15
Winters House, 2102 Bellevue Way SE (1930)
Courtesy of Eastside Heritage Center

The nominated property includes the Winters House and the landscaped property within 50 feet of the house. While grounds within the surrounding and adjacent acreage are associated with the house, they are no longer

cultivated and no intact outbuildings remain. However, the house does retain its setting and relationship to the surrounding property that is now Mercer Slough Nature Park. A large parking lot and trail access are also within the setting of the house.

EXHIBIT 7-16
Winters House, 2102 Bellevue Way SE (January 6, 1939)
Courtesy of Eastside Heritage Center

Analysis of the 50-foot designated boundary to determine whether any character-defining landscape features currently remain that convey the significance of the residence and its relationship to the landscape found no such features. Rather, all of the surrounding landscaping was found to have been altered substantially from the historic period of the residence. Except for some mature trees beyond the rear of the residence that once were part of the larger property, the current landscape features do not in any way reflect the original landscape of the residence, nor do they convey the relationship of the landscape to the structure as it was first designed, matured, and allowed to evolve during the historic period of the property.

Architectural historians reviewed historic images of the Winters residence to further discern how the landscaping evolved and whether any character-defining significant original features of the residence are extant today. The earliest photograph reviewed from 1930 (Exhibit 7-15) depicts the residence when the landscape was just planted. Young cypress trees had been planted along the front elevation and a coniferous tree had also been planted against the front elevation.

A 1939 photograph (Exhibit 7-16) depicts how the cypress trees had grown as well as other shrubs planted along the front elevation, and the coniferous tree on the front elevation had grown to reach the roofline. On the opposite

end of the elevation where the single-story garage was built, a deciduous tree had been planted and reached the roofline.

The third image of the house reviewed is of the residence in the 1940s (Exhibit 7-17), at which time the landscape had matured and included the cypress trees reaching the roofline, a variety of deciduous and coniferous trees along the front elevation, as well as shrubs and plants throughout the entire front lawn. Whereas the front lawn in 1930 appeared to be largely covered with grass, by 1939 the lawn had been planted with a variety of shrubs and other plantings and in the 1940s had matured.

EXHIBIT 7-17
Winters House, 2102 Bellevue Way SE (1940s)
Courtesy of Eastside Heritage Center

Plantings from the period of significance have been removed. Currently the house consists of a landscaped lawn with a central concrete pathway featuring a center planting strip just opposite the entrance doors of the front elevation (Exhibit 7-18). All of the trees along the residence at the front elevation and side elevations appear to be plantings from after the period of significance, including relatively new deciduous trees and decorative shrubs. Although the landscaping in no way reflects the original landscaping, the residence itself remains intact and fully conveys its significance and period of construction and retains its relationship to the surrounding undeveloped land.

EXHIBIT 7-18
Winters House, 2102 Bellevue Way SE (Present)
Courtesy of Eastside Heritage Center

The NRHP Registration form describes the architectural style of the house, Spanish Eclectic, and the significance of this less common form of house design in the Pacific Northwest. The Winters House is unusual both for its style as well as its farmland setting, though the NRHP Registration form is careful to note that the landscape of the setting no longer has integrity to convey its significance. The rehabilitation and restoration of the residence in 1990 is also noted, and a Historic Structure Report was prepared to guide the project in accordance with the Secretary of the Interior's *Standards*. At the time of the nomination, future rehabilitation work was described as including selective restoration of the landscape, gardens, and bulb field areas by the City of Bellevue if proper funding could be obtained. As of the writing of this technical report, the Winters House landscape has not been restored and does not consist of features that are original or from the period of significance of the property.

The Winters House continues to fully convey its significance as outlined in its NRHP Registration form, though the 50-foot boundary provided around the house in the boundary justification does not signify that the landscaping is historic or character-defining. Rather, the presence of the undeveloped land around the residence is the historic context of the property, rather than what was actually planted around the residence, and the house retains its setting and relationship with the land. The relationship of the residence with and its orientation to Bellevue Way no longer has integrity, given the dramatic changes that have occurred to the once narrow country road that now is a major arterial leading to Downtown Bellevue.

7.3.2.2 Alternative B1

The Pilgrim Lutheran Church (Exhibit 7-19) within the Alternative B1 APE was completed in 1965. An outstanding example of Neo-Expressionist architectural style, the building is characterized by a geometric shingled roof that is both varied and dramatic. The roof forms a shed over most of the church and an angular cone rising to the steeple. Extending well beyond the building, the roof shelters brick walls, large windows, and walkways. The roofline also ties the church visually to the adjacent church hall. The design firm Grant, Copeland, Chervenak and Associates won awards for several of their local projects. The building is eligible for the NRHP under Criteria C and the WHR based on architectural excellence.

EXHIBIT 7-19
Pilgrim Lutheran Church, 10420 SE 11th Street

7.3.2.3 Alternative B7

No historic properties were recorded within the APE of Alternative B7.

7.3.3 Segment C

Survey efforts in the Downtown Bellevue Segment C area inventoried 203 properties, including one NRHP-eligible resource consisting of 37 contributing properties within the potentially eligible Surrey Downs historic district. All of the properties inventoried within the potential historic district (except for two residences on 109th Avenue SE surveyed in 2009) were included in the 2007 version of the Cultural Resources Technical Report for the 2008 Draft EIS. DAHP sent two letters to FTA (dated November 16, 2007, and February 20, 2008) regarding the inventory and determination of eligibility of Segment C properties and specifically noted that the Surrey Downs neighborhood is a potential historic district, exact boundaries of which have not been defined, eligible under Criteria A & C for NRHP listing. Project architectural historians have since updated the inventory of Surrey Downs to include two new residences, both found to be eligible for NRHP listing, and also further surveyed the Main Street end of the

potential historic district to assess where contributing properties are located and the integrity of resources nearest to Main Street. The remaining properties inventoried within Segment C, including the First Baptist Church at 1100 Bellevue Way, were determined not eligible for listing in the NRHP.

7.3.3.1 *Preferred Alternatives* C11A and C9T and Alternatives C2T, C3T, C4A, C9A, C7E, C8E, C9A, and C14E

DAHP determined 37 houses would be contributing elements to a potential Surrey Downs historic district within the Segment C area of the project APE. Exhibit 7-20 shows where in the project vicinity project architectural historians inventoried properties and which of those properties are recommended as contributing properties. Exhibits 7-21 through 7-25 demonstrate representative examples of these residences. A district is a concentration of buildings or other properties that may or may not be individually eligible for the National Register but are linked by one or more features that define their character. To be considered eligible as part of the potential Surrey Downs historic district, the houses needed to fit one of the architectural styles discussed below and not have undergone substantial modification (on the exterior) since their construction. Project architectural historians researched the history of the subdivision, inventoried buildings in the APE, and recommended 37 as contributing properties. Table 7-2 summarizes information on the contributing properties, and Appendix C, Exhibit C-7, shows their locations within the APE. FTA determined, in consultation with DAHP, that no boundaries were to be established for the potential district because it extends beyond the project APE.

EXHIBIT 7-20
Contributing Properties for the potential Surrey Downs Historic District, Between 108th and 112th Avenues SE, South of Main Street

In May 2007, HRA architectural historians first prepared findings for Sound Transit regarding the potential historic district within the Surrey Downs residential subdivision. In May 2010, project historians revisited the analysis of the potential historic district in response to public comment to more thoroughly assess the integrity of extant resources in relation to the criteria established for the potential district. The result was the inclusion of two additional residences as eligible for NRHP listing, and confirmation and additional documentation supporting that determination that properties along Main Street at the north end of the historic district are not contributing.

Table 7-3 lists properties that are currently considered to be contributing to the potential historic district:

Houses in Surrey Downs that retain integrity are likely to be eligible for the NRHP as a historic district because they are part of a residential subdivision developed during the period 1952-1956; many of the houses represent a Pacific Northwest regional variant of the Modern architectural design style of post-World War II residential architecture; a number of the houses are based on the designs of a prominent Seattle architectural firm Mithun & Nesland (now Mithun Partners); and the neighborhood retains a high degree of design unity and cohesiveness.

EXHIBIT 7-21
West Side of 109th Avenue Showing Mithun & Nesland Designs in Potential Surrey Downs Historic District

In 1952, Roxbury Homes purchased 80 acres that had been a filbert farm just south of Bellevue's downtown. The area was platted as "Surrey Downs Addition No. 1" in May of that year. The plat was bounded by Main Street on the north, 112th Avenue SE on the east, SE 2nd Street on the south, and 108th Avenue SE on the west. Roxbury Homes constructed the Surrey Downs residential subdivision, which eventually included about 200 houses. Between 1954 and 1956, they built approximately 40 of the houses using designs purchased from the Mithun & Nesland architectural firm. Although the owners have altered many of these houses—some substantially—since then, the neighborhood retains an unusual degree of design quality and cohesiveness.

EXHIBIT 7-22
Mithun & Nesland Design at 11022 SE 2nd Street in Potential Surrey Downs Historic District

Roxbury Homes constructed the subdivision in two stages, platted as Surrey Downs No. 1 and No. 2. For the first stage, the company purchased a few designs from Mithun & Nesland and adapted them to the varied topography of the subdivision, making aesthetic changes so that the houses built from the same design would not be identical. These Northwest Modern style designs (18 houses) included one-story houses with carports and two-story houses with garages located beneath the living space. Some of the one-story house designs featured a pitched roof that evoked a front-gabled house, with the house located under one pitch and the carport under the other. In other cases, the house extended under both sides of the roof, while the carport roof extended into the driveway. Some of the two-story houses showed a similar front-gabled appearance, while others had flat or nearly flat roofs. Other contributing houses include split-level (11 houses) and ranch styles (8 houses).

Properties that contribute to the potential historic district feature open plans, large areas of glass, and extensive use of wood. Hardwood floor and exposed beams characterize the house interiors, while the exteriors show wood

siding, exposed rafters, and wooden roof supports. Skylights supplement the windows, which are plentiful and large, maximizing the amount of light admitted. Roxbury Homes chose pleasing color combinations, allowed wood grains to show through treatments, and left many of the existing trees on the lots. All of these factors contribute to the unity of design and quality that distinguishes this portion of the subdivision.

A report and map prepared by University of Washington student Russell L. Leach in 1965 regarding Surrey Downs and its Mithun & Nesland Mid-Century Modern homes was reviewed in preparation of the May 2007 and May 2010 inventory and evaluation efforts. The map accompanying the report was drawn by Leach to represent the original Mithun & Nesland-designed homes, as told to Leach through an interview with Omer Mithun prior to the completion of his report in 1965. In reviewing Leach's report, project architectural historians determined there was a need for a new survey of the neighborhood to determine which of the homes identified by Leach as architect-designed were in fact representative of the Mithun & Nesland-designed residences, and which of those retained integrity and were thus eligible as contributing properties to the potential historic district. The architectural historians also surveyed properties to identify whether they were individually eligible for the NRHP.

EXHIBIT 7-23
Mithun & Nesland Design at 109 109th Avenue SE in Potential Surrey Downs Historic District

EXHIBIT 7-24
Split-Level Style at 301 109th Avenue SE in Potential Surrey Downs Historic District

EXHIBIT 7-25
Ranch Style at 204 110th Place SE in Potential Surrey Downs Historic District

As the Leach report suggests that Mithun & Nesland designed the Surrey Downs neighborhood, the review of the potential historic district and properties within have largely been based on determining which of the residences extant in the neighborhood reflect one of the three designs sold to Roxbury Homes by the firm. The research found that Roxbury Homes sought to keep residences within the neighborhood from becoming too uniform, and toward that end, the developer altered

TABLE 7-3
Contributing Properties to Potential Surrey Downs NRHP Historic District

Field Number and Map ID	Address	Style and Year Built
291	88 110th Avenue SE	Northwest Modern, 1954 a
1	106 110th Avenue SE	Ranch, 1954
123	114 110th Avenue SE	Ranch, 1954
119	122 110th Avenue SE	Northwest Modern, 1954[a]
297	115 110th Avenue SE	Northwest Modern, 1954 [a]
298	121 110th Avenue SE	Northwest Modern, 1954 [a]
299	125 110th Avenue SE	Ranch, 1954
300	214 110th Avenue SE	Northwest Modern, 1955 [a]
301	203 110th Place SE	Northwest Modern, 1954 [a]
317	215 110th Avenue SE	Northwest Modern, 1955 [a]
319	204 110th Place SE	Ranch, 1954
320	11005 SE 2nd Street	Ranch, 1954
321	11014 SE 2nd Street	Ranch, 1954
120	11022 SE 2nd Street	Northwest Modern, 1954 [a]
322	11030 SE 2nd Street	Ranch, 1954
323	11040 SE 2nd Street	Ranch, 1954
302	11039 SE 2nd Street	Northwest Modern, 1954 [a]
292	10904 SE 1st Street	Northwest Modern, 1955 [a]
325	10910 SE 1st Street	Ranch, 1955
296	10915 SE 1st Street	Northwest Modern, 1954 [a]
293	103 109th Avenue SE	Northwest Modern, 1955 [a]
294	114 109th Avenue SE	Northwest Modern, 1955 [a]
295	122 109th Avenue SE	Northwest Modern, 1955 [a]
121	128 109th Avenue SE	Northwest Modern, 1955 [a]
359	241 109th Avenue SE	Split Level, 1961
360	301 109th Avenue SE	Split Level, 1961
361	313 109th Avenue SE	Split Level, 1961
363	401 109th Avenue SE	Split Level, 1961
365	409 109th Avenue SE	Split Level, 1961
366	412 109th Avenue SE	Split Level, 1961
370	428 109th Avenue SE	Split level, 1961
371	431 109th Avenue SE	Split Level, 1961
372	436 109th Avenue SE	Split Level, 1962
373	442 109th Avenue SE	Split Level, 1962
375	423 110th Avenue SE	Split Level, 1961
406	115 109th Avenue SE	Northwest Modern, 1954 [a]
407	109 109th Avenue SE	Northwest Modern, 1954 [a]

[a] Mithun & Nesland, Architects

aspects of the three designs bought from the architectural firm in the actual construction of the residences. Further research into the use of the Mithun & Nesland designs by the developer should be conducted if and when the potential historic district is more fully reviewed and nominated for listing in the NRHP.

While the Leach report provides good supportive evidence for the current review of Surrey Downs properties, recent data and a firsthand interview conducted by a project architectural historian with a member of the current Mithun firm have revealed further information and have clarified the role of the firm in the neighborhood. Mithun expressed specifically that the firm sold Roxbury Homes three designs and has no record of where in the

subdivision those designs were used. No one at Mithun or in the archives used in the research expressed that everything in Surrey Downs was based on Mithun & Nesland designs, but rather that a survey of the properties would be necessary to determine which properties reflect the Mithun & Nesland firm and which of those retain integrity. It was also expressed that while designs were by Mithun & Nesland, the developer Roxbury Homes adapted the designs to ensure there would not be an overwhelming sense of uniformity among the residences.

Whereas many of the residences within the Surrey Downs subdivision constitute a potential historic district, particularly those based on Mithun & Nesland designs, other houses located south and east of the Mithun & Nesland residences within the subdivision are similar in architectural style but "lack the unity and quality of those designed by Mithun & Nesland."

Other properties considered to be noncontributing properties to the potential Surrey Downs historic district include structures located along the northern boundary of the subdivision, Main Street. These structures include highly altered residences, residences that are original to the subdivision but unrelated to Mithun & Nesland designs, former residences that have been altered for commercial uses, and nonresidential commercial structures.

One such property is 10845 Main Street (alternate address 69 110th Ave SE) (Exhibit 7-26), a former residence on the northern boundary of the neighborhood built in 1954 when Mithun & Nesland designed-residences were built within Surrey Downs. The property faces Main Street and yet was originally accessed by a driveway on 110th Ave SE. The alternate address for this property is 10845 Main Street. Currently operated by the Semenea Law Firm, the one-story side-gabled structure includes a plan consistent with the houses in the Surrey Downs subdivision. The clerestory windows in the gable end of the former residence are original, but other windows have been replaced. Other character-defining features include the low-sloping, dramatic side-gabled roof and materials and the red brick double-wide chimney, as well as wood siding. Current analysis finds that the building appears related to the three known Mithun & Nesland designs sold for use by Roxbury Homes, and yet the building has undergone significant alterations to its west (rear) elevation and a surface parking lot has been added along its north elevation due to its conversion for commercial use. Changes to windows and the setting of the building also detract from its overall integrity and relationship to the residences within Surrey Downs.

The altered former residence at 10845 Main Street was not considered in isolation but rather in the context of the potential historic district and other contributing and noncontributing properties. This and other properties facing Main Street and within proximity of the major roadway have undergone similar alterations and a change in context over the years and do not reflect the type of typical residential alterations that residences further within Surrey Downs have undergone.

Other Main Street properties surveyed include 10833 Main Street, a parking lot created to serve an adjacent commercial structure to the west. These properties (Exhibit 7-27) are not architecturally or historically related to the development of Surrey Downs. Though it is unknown when the property at 10833 Main Street was demolished to create the parking lot, and the assessor record was not updated as of March 19, 2010, it is known that these properties and the former residence to the east, 10845 Main Street, are not properties that contribute to the potential historic district.

EXHIBIT 7-26
10845 Main Street (Alternate Address 69 110th Avenue SE)

EXHIBIT 7-27
Main Street Properties

The structure at 11005 Main Street (Exhibit 7-28), opposite the former residence at 10845 Main Street and across 110th Avenue SE, is operated by the Law Offices of Fitch & Ludwick and is opposite a Toys R Us retail store and other commercial developments.

EXHIBIT 7-28
11005 Main Street

South of 11005 Main Street is 80 110th Avenue SE (Exhibit 7-29), identified as the "Kim Residence," along with the neighboring property to the south at 88 110th Avenue SE. Whereas both 80 and 88 110th Avenue SE residences were built in 1954, the two buildings are architecturally different. The residence at 80 110th Ave SE is a one-story residence with a side-gabled roof. It has an attached garage with a hipped roof. The cladding of both is clapboard. The architectural style is Minimal Traditional. According to the archived King County tax records, the owners enclosed the carport to create a garage in 1960 and altered the roof and some other elements in 1972 after a fire damaged the building. Although the building was found to have integrity of location, setting, workmanship, feeling, and association, changes to the house impair the integrity of design and materials. There is no known association between the building and significant events or lives of significant persons and it is not known to be the work of a master craftsman and or architect. It is also not an outstanding example of an architectural style or building type. While the building was built in 1954, the same year the residence directly to its south (88 110th Avenue SE) was built and designed by Mithun & Nesland, this residence does not portray any of the design qualities determined to be significant within the potential Surrey Downs historic district and in its design does not appear to be related to the significant work by the architectural

firm within the neighborhood. The lack of integrity of the residence due to changes to its original 1954 features furthers the determination that this residence is not a contributor to the potential historic district.

The residence at 88 110th Avenue SE (Exhibit 7-30), the third structure along 110th Avenue SE from Main Street, is one-story with a front-gabled roof. There are clerestory windows under the eaves. While owners have made changes to the residence since it was designed and built in 1954, the major design elements are intact. The windows appear original, as do the plan, roof structure and materials, brick chimney, and siding. These character-defining features of the residence are in keeping with other significant contributing residences within the potential historic district that can be attributed to the work of the architectural firm Mithun & Nesland.

EXHIBIT 7-29
80 110th Avenue SE

The residence at 79 110th Avenue SE (Exhibit 7-31), directly south of 10845 Main Street and opposite 80 and 88 110th Avenue SE, was noted by Leach in 1965 as a Mithun & Nesland designed residence, and yet upon inventory was found to be a noncontributor to the potential historic district due to its loss of integrity through extensive alterations.

EXHIBIT 7-30
88 110th Avenue SE

7.3.3.2 Alternative C1T

One historic property was found within the APE for Alternative C1T, a former Safeway store (Exhibit 7-32) located at 414, 424, and 456 104th Avenue NE. FTA has determined, in consultation with SHPO, that this structure is eligible to the NRHP. Constructed in 1962, the building likely originally served as a grocery store, and resembles other grocery stores constructed by the Safeway Corporation in the 1960s. According to National Register Criterion C, a building is eligible for the NRHP as a specimen of its type or period of construction and if it is an important example of building practices of a particular time in history. The former Safeway store embodies the distinctive characteristics of a type and period of construction in its representation of a large-scale commercial grocery store of the 1960s.

The historic context of this building is the big-box style commercial development of the 1960s and the role commercial retailers and particularly supermarkets had in suburban expansion. While the Safeway store is eligible for the NRHP under Criterion C due to its distinguishing characteristics of its type and period of construction, the building does not appear to be associated with events that made a significant contribution to the broad patterns of local, state, or national history and is not recommended eligible for listing under Criterion A. The building also does not appear eligible under Criterion B, as it is not known to be associated with the lives of significant people. Furthermore the building is unlikely to yield further information important in understanding local, regional, or national history, and is recommended ineligible under Criterion D. The building maintains good integrity of materials, design, workmanship, feeling, association, location, and setting. The store is currently closed and a preliminary land use plan application for new construction is posted on the property.

EXHIBIT 7-31
79 110th Avenue SE

EXHIBIT 7-32
Safeway Store

7.3.4 Segment D

Survey efforts in the Bel-Red/Overlake Segment D area inventoried 27 properties, including the NRHP-eligible Former Bellevue Fire Station. All of the properties inventoried in Segment D were included in the 2007 Cultural Resources Technical Report for the 2008 Draft EIS. DAHP sent two letters to FTA (dated November 16, 2007, and February 20, 2008) regarding the inventory and determination of eligibility of Segment D properties and specifically noted that the Bellevue Fire Station is eligible for NRHP listing under Criteria A and C. The remaining properties surveyed in Segment D, including the Highland Covenant Church at 15022 NE Bellevue-Redmond Road, were determined to be ineligible for NRHP listing.

7.3.4.1 *Preferred Alternative D2A* and Alternatives D2E and Alternative D5

No historic properties were recorded within the APE of these alternatives.

7.3.4.2 Alternative D3

Within the Alternative D3 APE, the former Bellevue Fire Station (Exhibit 7-33) on Bellevue-Redmond Road, constructed in 1960, is eligible for the National Register under Criteria C as a good example of Populuxe architecture. The nearly flat roof has eaves with a wide overhang. The roof silhouette, which widens at the center, gives the impression that the roof curves upward at the outer edges. The style is reminiscent of 1950s aerodynamic styling. The building is currently used for the City of Bellevue's vehicle storage. Although the building's parcel is situated inside the APE, the building itself is outside the APE.

EXHIBIT 7-33
Former Bellevue Fire Station, 14822 NE Bellevue-Redmond Road

7.3.5 Segment E

Survey efforts in the Downtown Redmond Segment E area inventoried 33 properties, including the NRHP-eligible Justice William White House and the Bill Brown Saloon Building. The Justice William White House and the Bill Brown Saloon Building are designated as Redmond Heritage Landmarks. Architectural historians recommended the two Redmond Heritage Landmarks as eligible for listing in the NRHP (and therefore also for the WHR). SHPO concurred with the recommendations. All of the properties inventoried in Segment E were included in the 2007 Cultural Resources Technical Report for the 2008 Draft EIS. DAHP sent two letters to FTA (dated November 16, 2007, and February 20, 2008) regarding the inventory and determination of eligibility of Segment E properties and specifically noted that the Justice White House/Hotel Redmond on Leary Way is formally determined eligible for NRHP listing by the Keeper but not listed due to owner objection and is also not listed on the WHR, and that the Bill Brown Building at 7824 Leary Way NE is eligible for listing in the NRHP under Criteria B. The remaining properties surveyed in Segment E, including the Haida House on Sammamish Parkway (Exhibit 7-34), were determined to be ineligible for NRHP listing.

EXHIBIT 7-34
Haida House on Sammamish Parkway

EXHIBIT 7-35
Justice William White House, Leary Way NE and NE 76th Street

The Justice William White House (Exhibit 7-35) is significant under Criteria B and C, because its owners, William and Emma White, both played important roles in the history of Redmond and western Washington and the building retains integrity and is one of the few, if not the only, remaining example of Queen Anne Shingle style architecture in Redmond. William White moved to Seattle from West Virginia in 1870. He served as prosecuting attorney of the Third Judicial District, represented King County in the Territorial Legislature, and then served as United States attorney for the territory until statehood in 1889. In 1890, the governor appointed White to the Washington State Supreme Court. In 1898, White married Emma McRedmond, daughter of one of Redmond's founders and its namesake, Luke McRedmond. Emma McRedmond served as the town's postmistress for many years, beginning when she was 16. She was among the first women to run for statewide office and organized the Women's Democratic Club. In 1900, Emma and William White moved into the 14-room house that they built on a portion of Luke McRedmond's original claim. They set aside a part of the house as a hotel because it was conveniently located close to the railroad line and the passenger depot, giving guests easy access. Justice White died in 1914, and the family lost the house to foreclosure in 1932. It then became the clubhouse for a golf course located south of the house (Hanscom, 1979). The golf course has since become the site of the Redmond Town Center shopping center, and an architecture firm occupies the house.

The Redmond Trading Company building (which is currently occupied by Half Priced Books) was built in 1910 to house the store that was Redmond's largest business for decades during the City's earliest period of development. The Redmond Trading Company engaged in selling "general merchandise" both wholesale and retail. Fred Reil, Redmond's first mayor and an early postmaster, was one of the original owners and the building originally housed both the store and the post office. Through the ownership changed over time, the Redmond Trading Company operated at this location until 1955. Since then, the building has housed several different businesses. The building was originally constructed with a wooden cornice, multi-light transom windows, wooden storefronts and two double entries. None of this fabric remains, nor do any of the spatial relationships created by this façade. The presence of the display windows along the Leary Way side of the building is the only characteristic that the present façade of this building shares with the original, and as a result it is not considered eligible for listing in the National or State Registers. However, this building is a Redmond Heritage Landmark since it is considered an important early reminder of the City's early commercial development.

The Bill Brown Saloon Building (Exhibit 7-36) is significant under Criteria B because of its association with the man who was mayor of Redmond from 1919 to 1948. The building, while not an outstanding example of an architectural style, is the work of a master craftsman. Beginning well before he became mayor, Brown operated a variety of businesses. In 1910, he constructed his first building at Leary Way and Cleveland Street, a wood-frame structure that housed his saloon. Brown tore it down 3 years later and constructed the brick building that stands on the corner today. When it opened, the building housed the saloon, a drugstore, and a barbershop, with an upstairs gathering space for community events. When prohibition closed the saloon, Brown explored other businesses, including an auto stage line and a logging company. Beginning about 1915, the building's second floor served as an unofficial Redmond City Hall (Hardy, 2001).

The Dudley Carter/Haida House is a City of Redmond historic landmark, and the City considers it to be eligible for listing in the National Register. It was constructed by nationally known, Canadian-born artist Dudley Carter following methods of the Haida First Nation. However, based on a November 16, 2007, finding by DAHP regarding eligibility of resources in the project APE, the Haida House did not meet the eligibility requirements for the National Register.

7.3.6 Maintenance Facility Surroundings

No historic properties have been recorded at the alternative maintenance facilities.

EXHIBIT 7-36
Bill Brown Saloon Building, 7824 Leary Way NE

8.0 Environmental Effects

Project operation and construction could impact historic properties directly or indirectly. The Criteria of Adverse Effect, which determine if there will be an impact, are discussed in Section 3.6 above. The Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800) create a process by which federally assisted projects are reviewed for their impacts on properties listed in, or eligible for listing in, the NRHP.

After a historic property is identified, the next step is applying the Criteria for Adverse Effect. These criteria are used to determine whether the undertaking could change the characteristics that qualify the property for NRHP eligibility. An impact is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Impacts include, but are not limited to, the following:

- Demolition or alteration of the property
- Alteration of the property's setting
- Introduction of visual, audible, or atmospheric elements that are out of character with the setting of the historic property
- Physical encroachment upon an archaeological site

Direct impacts are those caused by the project while the project is under construction or operating while indirect impacts are those reasonably foreseeable impacts caused by the action at a later time or at a distance that is farther removed from the project location, in accordance with 40 CFR 1508.8. The following sections discuss the potential impacts of project operation and construction on archaeological sites, TCPs, and historic buildings and structures by resource type for each segment.

Pursuant to 36CFR Part 800.5(b), an agency may propose a finding of no adverse effect in consultation with the SHPO when the undertaking is modified or conditions are imposed to avoid impacts. Potential impacts could occur at three historic resources, depending on the alternatives selected: the Justice White House with Alternative E4, the potential Surrey Downs historic district during construction of *Preferred Alternative C11A* or Alternatives C2T, C3T, orC4A and the Winters House during the construction of *Preferred Alternative B2M*. With the exception of the three resources and alternatives discussed above, in all instances where the project alternatives would affect a resource, impact minimization measures have been included in the project that would prevent an impact.

For all other historic resources and project alternatives, project historians did not find potential impacts from East Link Alternatives. These resources include the following: the I-90 Lake Washington Highway Segment and Mount Baker Ridge Tunnels, Will H. Thompson House, Jose Rizal 12th Avenue South Bridge, Immigrant Station and Assay House, Publix Hotel, Endersen Residence, Romaine Electric/Washington Iron Works Pattern Shop, Pilgrim Lutheran Church, Bill Brown Saloon, and the Dudley Carter/Haida House.

Following the release of the Draft EIS for public comment, the City of Bellevue requested that Sound Transit consider an alternative that traveled on the east side of Bellevue Way. This suggestion was also reiterated in numerous public comments that requested the alternative be furthest away from residences in order to minimize their perception of impacts on the adjacent neighborhoods. Further, to avoid intrusion on the Winters House and reduce concerns over visual impacts, the alternative was lowered below ground in front of the Winters House to preserve the existing contextual setting as much as possible. The alternative was selected as the *Preferred Alternative* by the Sound Transit Board as titled *Preferred 112th SE Modified Alternative (B2M)*.

The No Build Alternative would not impact any historic properties.

8.1 Archaeological Sites

8.1.1 Description

Project archaeologists recorded two historic-period archaeological sites in the APE of the Preferred Alternative. Site 1256-1, along *Preferred Alternative B2M* and Alternatives B2A, B2E, and B3, is not eligible for listing in the NRHP: its integrity has been compromised, and it does not meet any of the four criteria that define eligibility.

A newly-recorded segment of site 45KI451, the SLS&E Railway, is also recommended not eligible for listing in the NRHP. Although substantial portions of the grade retain integrity of location, materials, and design, the growth of Redmond and the demolition of the Redmond Depot have decreased its integrity of setting, feeling, and association. The resource is not eligible under any of the four criteria for listing.

The single previously recorded prehistoric site (45KI8) could not be verified during the 2007 archaeological survey. The location of the many portions of the project within areas not considered sensitive for the occurrence of archaeological sites or in high-sensitivity areas that have received previous disturbance makes it unlikely, although not impossible, that the project would impact NRHP-eligible archaeological sites.

It is possible that one or more archaeological sites may exist beneath the ground surface in areas where project excavation would take place. The Segment B and E alternatives are more sensitive for containing archaeological sites than the other segments. *Preferred Alternative B2M* and Alternatives B2A, B2E, B3, and B7 are near Mercer Slough and its adjacent terraces; *Preferred Alternative E2* and Alternatives E4 and E1 are near the Sammamish River valley and its adjacent terraces. In Segment C, archaeological deposits are typically shallow (in the top meter or less below the ground surface). Recent explorations have not shown presence of native soils that would contain any deposits. However, since the ground has been previously disturbed in this area and native soils have been buried by historic-era fill episodes, archaeological sites may exist at depths that would be disturbed by tunnel excavation.

8.1.2 Effects During Operation and Construction

Project archaeologists will conduct additional subsurface testing before construction— activities referred to as Stage 2 survey in Section 3.3. Stage 2 survey tracts are those outside of public ownership, or were paved or otherwise less accessible at the time of Stage 1 survey prior to FEIS preparation. Stage 2 surveys will be conducted and use information from the Stage 1 survey and geotechnical borings, and will occur once the properties have been acquired by Sound Transit, after completion of the Final EIS. Stage 2 surveys will take into account that the location of archeological sites may have shifted due to previous historic period ground disturbance activities. Information gathered from the Stage 2 survey will inform preparation of the Archaeological Resources Monitoring and Treatment Plan (ARMTP) or an Unanticipated Discoveries Plan (UDP), which will guide archaeological monitoring work during East Link Project construction. FTA and Sound Transit will coordinate with SHPO, interested tribes, and other interested parties as appropriate, to review the plan.

8.2 Traditional Cultural Properties

Consultation with the tribes has identified no information regarding traditional cultural properties that would be impacted by the East Link Project.

8.3 Historic Buildings and Structures

8.3.1 Effects During Operation

This section evaluates anticipated operation impacts on historic properties identified within the project alternatives' APE, beginning with the discussion of the potential impacts for the *Preferred Alternative* for each segment.

8.3.1.1 Segment A

Operation of the light rail system on Alternative A1 is not anticipated to impact the seven historic properties identified in Segment A because of the position of Alternative A1 in the center of I-90.

The Publix Hotel

The Publix Hotel would not be impacted by Alternative A1, which begins with the addition of the project to the Downtown Seattle Transit Tunnel. The building is across the street to the east from the International District Station entrance to the transit tunnel, and the project would not result in above-ground changes in the immediate vicinity. There would be no impact on the setting of the property and no direct impacts on the structure from vibration, given the distance of the project from the historic property.

The INS Building

The INS Building is situated at the east edge of the APE, and considerable traffic associated with the 5th Avenue S/I-90 ramp is already present. The light rail facility would be at the level of the transit tunnel and then under Airport Way, and would not be visible until south of Airport Way when it transitions to at-grade to enter the existing D2 Roadway right-of-way. The project would not impact the setting of the building or the structure itself, because it would be below grade on an existing transportation structure, and consistent in general appearance with the buses using the D2 Roadway.

The Washington Iron Works Pattern Shop

Due to the location of the project alternative in the existing D2 Roadway right-of-way and the project's consistency with the transit function and appearance of this facility, operation of the project would not impact the Washington Iron Works Pattern Shop structure or setting, nor would it have vibration or other impacts on the structure.

12th Avenue South Bridge

The operation of the project along I-90 at-grade beneath the 12th Avenue South Bridge would not impact the setting of the bridge because the project is within the boundaries of the existing I-90 roadway.

Will H. Thompson House

The Will H. Thompson House sits above the Mount Baker Ridge Tunnels, where the light rail would run. The project is anticipated to have no vibration or other impacts on the Will H. Thompson House.

1402 32nd Ave South

Due to the distance of the project alternative from the residence at 1402 32nd Avenue South and the project's location in a tunnel within the existing I-90 right-of-way, operation of the project along I-90 at-grade would not impact the setting of the residence, nor would it have vibration or other impacts on the structure and its character-defining features.

I-90 Lake Washington Segment and the Mount Baker Ridge Tunnels

Preferred Alternative A1 would use the I-90 center roadway for the light rail trackway (Exhibit 8-1) and include a station in the center of I-90 between Rainier Avenue and 23rd Avenue with entrances from 23rd Avenue S and Rainer Avenue S, and a station with the existing park-and-ride garage on Mercer Island between 77th and 80th avenues SE and station entrances on 77th Avenue SE and 80th Avenue SE. The conversion of the center roadway to light rail would require closure of the westbound 77th Avenue SE off-ramp and the eastbound direct high-occupancy vehicle (HOV) off-ramp to Island Crest Way. The project includes an option to connect the outer HOV lane from I-90 east bound to the Island Crest Way ramp. Both the

EXHIBIT 8-1
I-90 Floating Bridges with Light Rail Visual Simulation

I-90 tunnels and the floating bridge would require modifications to incorporate light rail. Modifications would include changes to wall dividers, a catenary system, light rail tracks, drainage, and ventilation. To equalize weight on the bridge from installation of steel rail, the concrete surface may be made thinner by removing the upper layers. Finally, to accommodate movement of the floating bridge in relation to the land abutment, specialized rail expansion joints would be installed on the bridge.

This segment of I-90 is unique in including both highway and transit elements in its earliest planning stages, unlike most of the national interstate system. In applying the Criteria of Adverse Effect, it has been concluded that that there would not be an impact on the historic property and its character-defining features because of its original design to accommodate high capacity transit, including light rail, and the placement of light rail within the existing right-of-way in the center roadway, which maintains character-defining features of the floating bridges, tunnel portals, and lids. The project would be constructed within the facility's existing center roadway and would not require widening of the facility. Structural modifications would not be noticeable. Modifications would not affect location, design, setting, materials, workmanship, feeling, or association of the I-90 corridor that make it eligible for the National Register. The project would not change the innovative engineering or amenities, such as the floating bridges, Mount Baker Tunnels, and landscaped lids. The project fulfills part of the original intention for use of the center roadway for transit. The primary changes to the transportation facility do not affect the character or the intended use of the structure.

8.3.1.2 Segment B

There are two historic properties within the APE of the Segment B alternatives. The Winters House is within the APE of *Preferred Alternative B2M* and Alternatives B1, B2A, B2E, and B3. The Pilgrim Lutheran Church is within the APE of Alternative B1. There are no historic properties within the APE of Alternative B7.

Winters House

The Winters House is within the APE of all Segment B alternatives except Alternative B7. None of the Segment B alternatives would have an impact on the property during operation. The following discusses each alternative within proximity of the Winters House.

Effects of *Preferred Alternative B2M*

All measures to minimize potential operational period impacts to the Winters House are incorporated in project design. The alignment of *Preferred Alternative B2M* is proposed to be located within the 50-foot boundary of the Winters House established in the NRHP nomination. *Preferred Alternative B2M* would run in a lidded retained-cut positioned approximately 9 feet from the building foundation and 4.5 feet from the front porch (Exhibits 8-2and 8-3). The 170-foot-long retained cut would extend north and south of the house the full width of the 50-foot boundary, but because the light rail project would be below grade, the light rail and retained cut would not be visible within the property boundary. Exhibit 8-4 depicts a bird's eye view of the existing condition and the property with *Preferred Alternative B2M*.

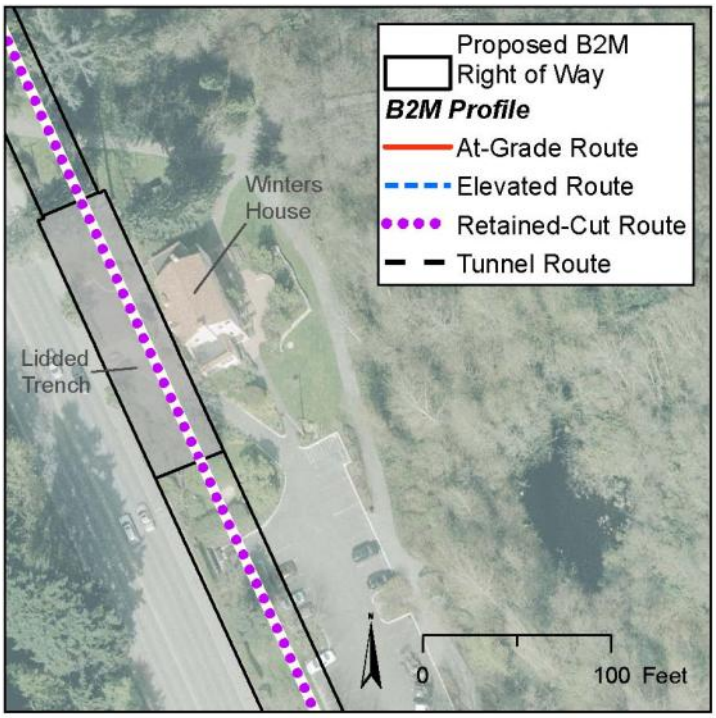
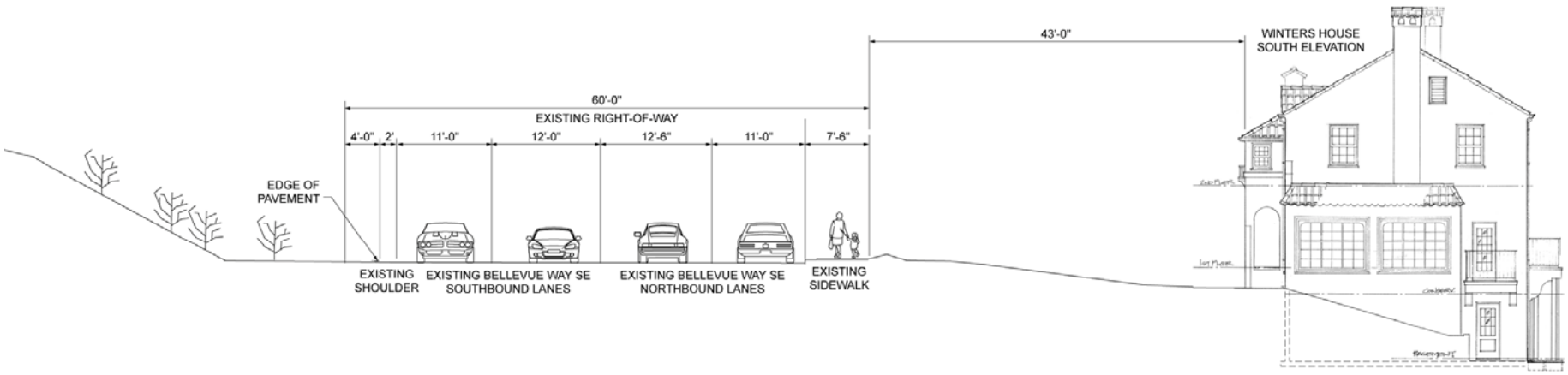


EXHIBIT 8-2
Proximity of *Preferred Alternative B2M* to Winters House

The light rail would change elements that do not contribute to the Winters House eligibility. For example, the light rail would displace the existing landscaping in front of the house. While the landscaping is mature, historic photographs and discussions with the Eastside Heritage Center, which

Existing



Preferred Alternative B2M

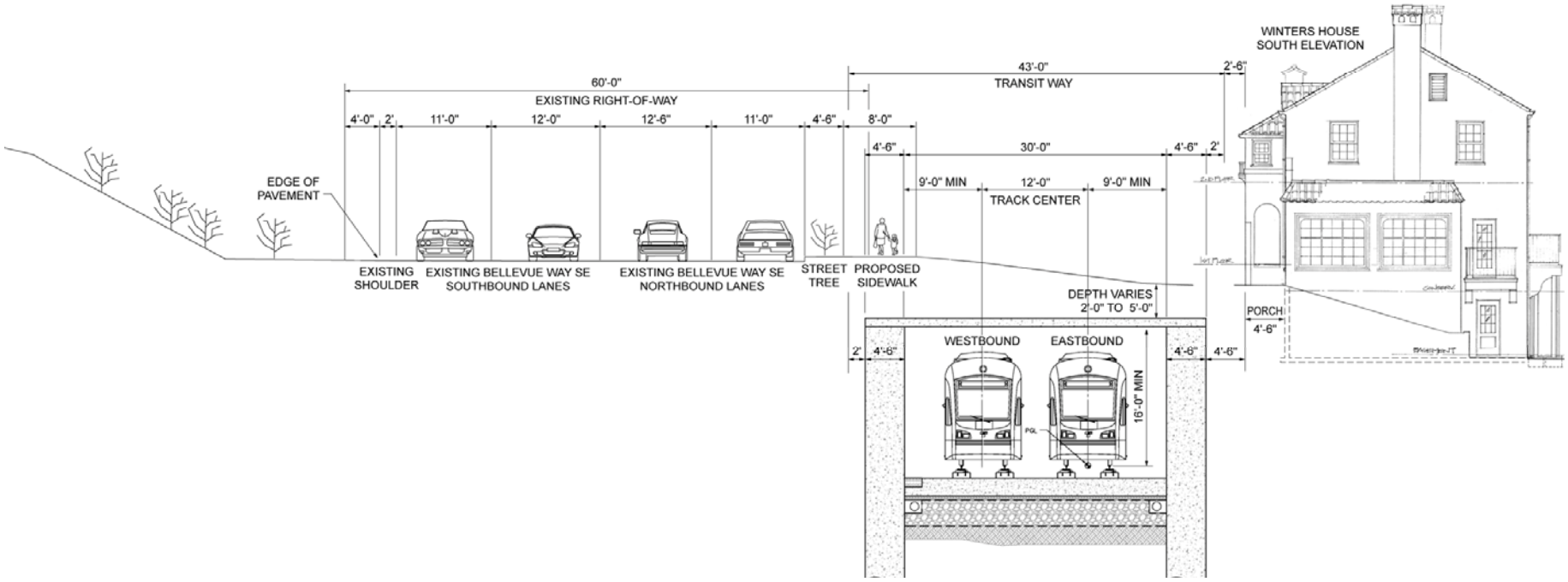


EXHIBIT 8-3
Cross Section of *Preferred Alternative B2M* Adjacent to Winters House

EXHIBIT 8-4
Winters House Bird's Eye View, Existing (left) and *Preferred Alternative B2M* (right)

currently uses the building as an office and community meeting room, have verified that the landscaping is not part of the historic context. As part of the landscape plan, the existing concrete walkway from the parking lot to the basement would be reconfigured to a combination of stairs and a winding 6-foot wide ramp, which would provide handicap accessibility between the house and the parking lot in compliance with the Americans with Disabilities Act of 1990. Additionally, the front sidewalk would be moved 5 feet into the front yard, towards the house, which will allow for a row of trees to be placed between the sidewalk and the Bellevue Way (Exhibits 8-3 and 8-4). Although they are within the 50-foot boundary, the existing concrete walkway and sidewalk are also not part of the historic context of this resource. The Winters House also includes a garage, which is no longer functional, and vehicular access to the garage and front door would not be maintained with the lidded trench. Vehicles would only be allowed access to the basement.

Furthermore, the 50-foot boundary around the house provided in the NRHP boundary justification has already been reduced on the west side due to widening of Bellevue Way SE and thus has lost integrity. While the presence of land surrounding the house has been a feature of the property since it was constructed, the setting of the residence as it relates to Bellevue Way is not a character-defining feature given this loss of integrity. Therefore, any removal or addition of plantings would not be an impact on the historic property. A Sound Transit landscape architect has prepared a conceptual landscape plan showing what might be planted above the lidded retained cut, which would be more consistent with the landscaping typical of this historic-period landscaping as shown in Exhibit 8-5. The conceptual design can be found in Appendix D1. Sound Transit would preserve, as practical, historic period plants that would be impacted by project construction such as the Ostbo rhododendrons. Final design of the landscaping would be developed in consultation with the City of Bellevue.

Although the front landscaping within the 50-foot boundary does not convey significance and is not character-defining, the house does retain its relationship to the larger surrounding property to the north, south, and east of the house. However, given that the setting has changed from a working nursery and bulb farm to the current Mercer Slough Natural Park, a large 320-acre park that contains the area associated with the original Winters House farm and beyond, the setting adjacent and behind the house is not impacted.

In addition to landscaping the property consistent with the historic-period landscape, Sound Transit would provide interpretive signage on or near the property of the house. The project would also require shifting the driveway to the Winters House parking lot, which is not original, approximately 90 feet north, with a lid over the light rail retained cut to allow automobiles to cross into the parking area. The parking area would also be shifted, slightly to the east. The relocated driveway and parking area would remain outside of the property's 50-foot boundary, and the number of spaces would remain the same. The parking area, which is currently level with the Winter's House basement, would be raised 8 to 11 feet in elevation to allow access across the new lidded trench.

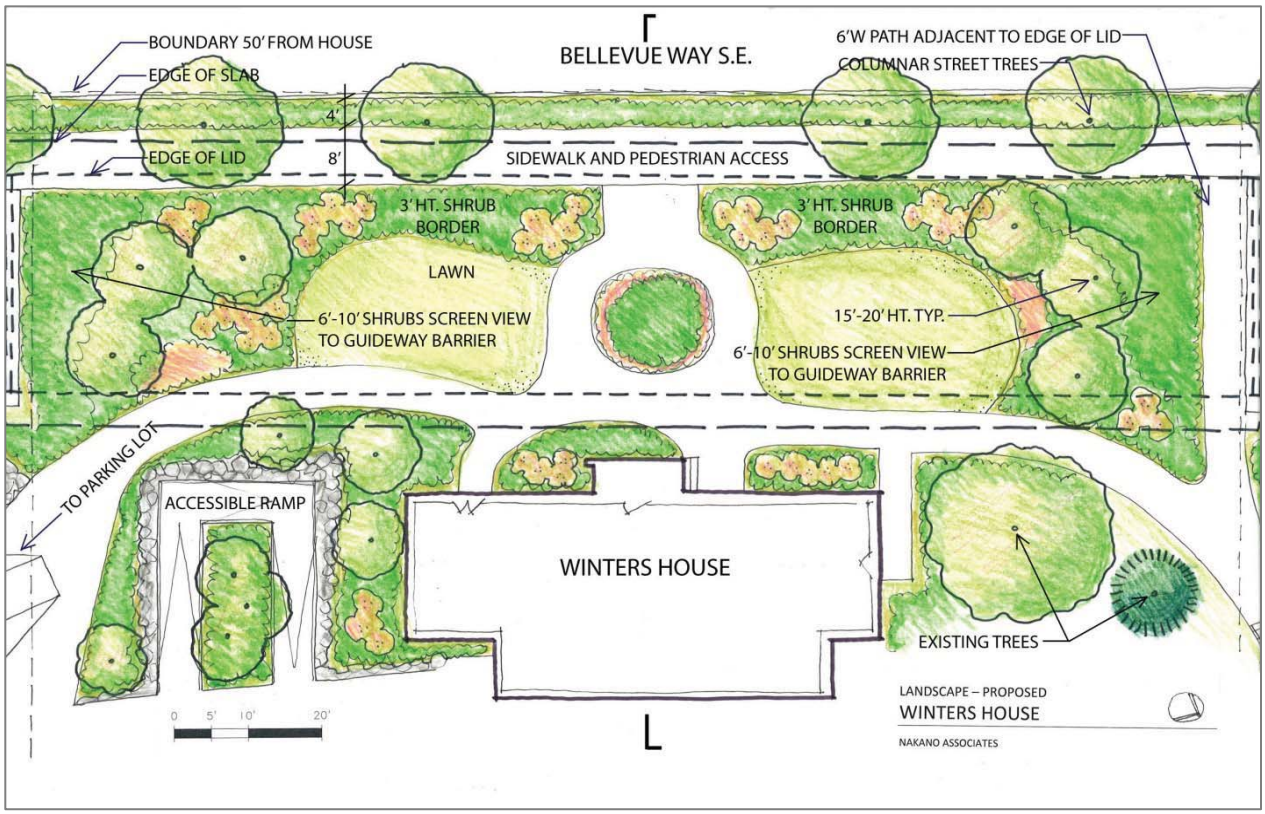


EXHIBIT 8-5
Preferred Alternative B2M Winters House Proposed Conceptual Landscape Plan

This would make the parking area level with the Winters House and would result in a visual change. Tiered retaining walls, 8 to 11 feet high, would be constructed on the east side of the parking lot along the parking area. The existing Peripheral Trail connection from the parking lot would be reconfigured to provide access from the new raised parking lot. The visual change in the parking area, associated driveways, and trailhead would not diminish the setting of the historic property as this area has already been altered from what existed adjacent to the house during the period of significance. In addition, new landscaping provided by the project would enhance the appearance of the parking lot and retaining wall.

The potential for vibration and settlement impacts on the Winters House from operation of *Preferred Alternative B2M* were evaluated using a set of building-specific outdoor and indoor vibration propagation tests as described in the FEIS. The Winters House has not been used as a residence for over 20 years and will not likely be returned to its historic use, therefore, noise and vibration are evaluated as potential impacts on an institutional land use with primarily daytime activity. Because of the close proximity of the alignment to the foundation, groundborne noise impact is projected at the Winters House, but no vibration impacts are projected. The FTA impact criterion for groundborne noise, measured in weighted decibels (dBA), is 40 dBA. The projected groundborne noise levels would range from 44 dBA to 54 dBA. Sound Transit is committed to reducing groundborne noise below FTA impact criterion and would install standard methods of vibration reduction, such as resilient fasteners, ballast mats or, a floating slab, if necessary, to eliminate the groundborne noise impact.

For the Winters House, operational vibration levels, measured in vibration velocity decibels (VdB), are projected to be 76 VdB, which is below the FTA impact criteria of 78 VdB. In addition, the projected vibration levels are well below even the most stringent criteria for damage to structures, which is 90 VdB for buildings extremely susceptible to vibration. The Winters House is in a slightly less susceptible category, which is for nonengineered timber and masonry buildings, with a 94 VdB criteria for damage.

The Criteria of Adverse Effect were applied in analyzing each aspect of *Preferred Alternative B2M*, taking into consideration the character-defining features of the property that convey its significance and qualify the property for listing in the NRHP. Despite the introduction of visual, audible, and atmospheric elements, these elements

would not diminish any extant character-defining features of the property and the operational period effects from these elements are not considered an impact. *Preferred Alternative B2M* would not diminish the property's location, because the Winters House structure would not be moved. The roadway would be the same distance from the house as existing, and the light rail facility would be in a lidded retained cut below-grade within the property's 50-foot boundary and would therefore not be visible. The project would not alter the building's design, materials, or workmanship, because the project would not alter or damage the building; vibration and vibration-induced settlement would be avoided. Operation of the project would not diminish the integrity of the property's setting as there would be no noise and vibration impacts, and the existing landscaping to be removed along Bellevue Way SE is not a characteristic that qualifies it for the NRHP. The project would not impact the larger undeveloped property surrounding the house once used for bulb farming, and, therefore, the integrity of the building's association with bulb farming and floriculture would not be diminished. In addition, the property would be landscaped after construction in a manner sensitive to the historic period. While the City of Bellevue would not receive rental income from the Winters House during construction, there would be no impacts from the project that would cause a change in the use of the structure or change economic conditions resulting in reduced maintenance of the structure. Given the above and the minimization measures discussed in Section 9.2.1.1, *Preferred Alternative B2M* would avoid impacts on the Winters House during operation.

Effects of Other B Alternatives

Alternatives B1, B2A, B2E, B3, and Alternative B3 - 114th Extension Design Option would avoid impacts on the Winters House during operation of the project. While these alternatives would encroach on the larger parcel on which the Winters House is located, no impact within the delineated historic boundary of the house would occur. For these Segment B alternatives, expansion of Bellevue Way would be limited to the existing right-of-way line at the Winters House. Alternatives B1 and B2A would be located at-grade in the center of the roadway, and, therefore, no visual, noise, or vibration impacts are anticipated on the historic setting or features contributing to the eligibility of the Winters House. Alternative B2E would be elevated to the far side of Bellevue Way, away from the Winters House, and placed up against the adjacent ridge, thus also avoiding impact on the property. Given its similar route and design, Alternative B3 and B3 - 114th Design Option would also avoid impacts on the property.

In applying the Criteria of Adverse Effect to these Segment B alternatives, none would diminish the integrity of the characteristics that enable the property to be eligible for NRHP listing, and, therefore, none would have an impact. The operation of the project would not alter the character-defining features of the former residence or its setting that convey its significance, and despite the introduction of visual, audible, and vibration elements that impact the setting of the historic property, these elements would not diminish any extant character-defining features of the property and are not considered an impact.

The operation of the alternatives would have no noise or vibration impacts, would not alter or damage the structure, would not encroach past the existing right-of-way of Bellevue Way, and would not change the existing overall transportation character of the area on the west side of the house.

Pilgrim Lutheran Church

Effects of Alternative B1

Operation of the at-grade Alternative B1 in the center of Bellevue Way would not impact the Pilgrim Lutheran Church, which is located just west of the street on the southern portion of the property. Although Bellevue Way would be realigned up to 10 feet into the property for a distance of roughly 250 feet, the parcel is large and the historic building is sufficiently distant from the portion to be acquired so that no parking would be removed and the historic property would not be impacted (Exhibit 8-6).

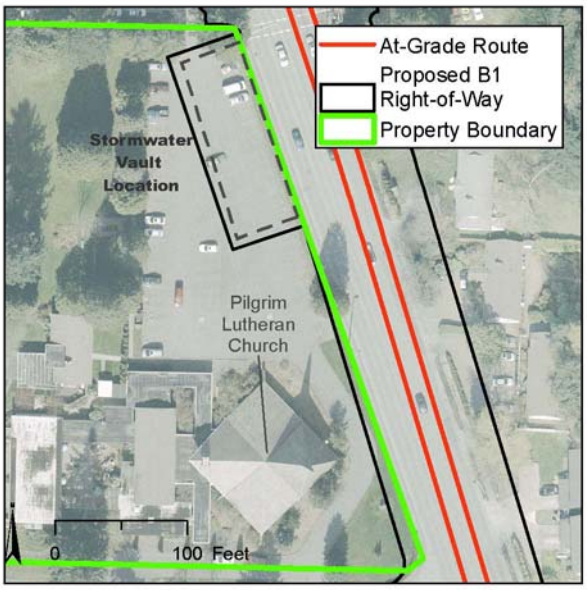


EXHIBIT 8-6
Proximity of Alternative B1 to Pilgrim Lutheran Church

The property already experiences the visual and noise impacts of heavy street traffic, and no additional impacts

are expected to occur. Vibration impacts are also not expected to reach the church structure. Access from SE 11th Street to the church would not be disrupted. Additionally, an underground stormwater detention vault is proposed for construction at the northeast corner of the property in the parking area, but operation of this facility would not impact the Pilgrim Lutheran Church. The vault would not be visible after construction, and the only surface element of the vault would be one or two manholes necessary for maintenance. No parking spaces would be removed. Maintenance would consist of periodically parking a truck at the site and opening the manholes for cleaning and maintenance, and maintenance could be scheduled to avoid major events and regular services at the church. In applying the Criteria of Adverse Effect to Alternative B1, the character-defining features of the NRHP-listed Pilgrim Lutheran Church that convey its significance and qualify the property for listing in the NRHP were considered. The building is eligible for the NRHP based on its architectural significance. The operation of the project in Alternative B1 would not alter the structure or its character-defining features. In addition, the project would not diminish its setting by introducing visual, audible, or atmospheric elements that impact the character of the setting of the historic property, because the existing setting along Bellevue Way is already characterized by transportation uses and traffic noise and there are no noise or vibration impacts anticipated. Therefore, Alternative B1 would not have an impact on Pilgrim Lutheran Church.

Summary
All of the Segment B alternatives were found to have no impact on the two historic properties identified in Segment B during operations. Where potential long-term or permanent operation impacts could occur to the Winters House from the *Preferred Alternative B2M*, project design mitigates and resolves the potential impact. Operation of *Preferred Alternative B2M* within proximity to the Winters House would include vibration mitigation measures and result in no vibration or groundborne noise impacts above FTA criteria. None of the project alternatives would result in visual impacts that could diminish the integrity of the characteristics that qualify the Winters House or Pilgrim Church for NRHP inclusion or eligibility. In addition to incorporating conditions into the project to avoid potential impacts, Sound Transit would also benefit the historic resource by restoring the front yard consistent with the historic landscape and interpretative signage.

8.3.1.3 Segment C

There are two historic properties within the APE of the Segment C alternatives - the potential eligible Surrey Downs historic district (because the district has not been delineated yet), and the former Safeway store. The APE of *Preferred Alternatives C11A* and *C9T*, and Alternatives C2T, C3T, C4A, C7E, C8E, and C9A include the Surrey Downs historic district. The APE of Alternative C1T includes the Safeway store. Alternative C14E does not include any historic properties within its APE.

Potential Surrey Downs Historic District

Effects of *Preferred Alternative C11A*
When connecting to *Preferred Alternative B2M*, *Preferred Alternative C11A* is center running, transitions from an at-grade portion to a retained fill and then an elevated profile along 112th Avenue SE, and then turns west along the south side of Main Street where it returns to a retained cut at the 108th Street Station before turning north at-grade across Main Street at 108th Avenue NE. (Exhibit 8-7). When connecting to Alternative B3 or Alternative B7, *Preferred Alternative C11A* crosses elevated over 112th Avenue SE just south of Main Street and transitions to a retained cut along the south side of Main Street to the 108th Avenue Station before turning north at 108th Avenue NE.

The *Preferred Alternative C11A* route runs close to noncontributing properties within the potential Surrey Downs historic district, along the west side of 112th Avenue SE, at the northeast corner of the neighborhood, and adjacent to noncontributing and three contributing properties along its northern Main Street end. This alternative would require the removal of noncontributing buildings along 112th Avenue SE and Main Street, several of which have been converted residences into small businesses or replaced with 2- to 3-story buildings facing Main Street. While *Preferred Alternative C11A* would remove properties along 112th Avenue SE and Main Street, no properties contributing to the historic district would be removed. Along 112th Avenue SE the first two rows of properties from the roadway are noncontributing, and properties nearest the corner of 112th Avenue SE and Main Street are also noncontributing. A minimum of one row of noncontributing properties would remain between the project and the contributing properties along 112th Avenue SE. Contributing properties nearest the proposed project would not be impacted by *Preferred Alternative C11A,* because the back yards face the light rail and both noise barriers and landscaping would screen the contributing properties from the light rail and station

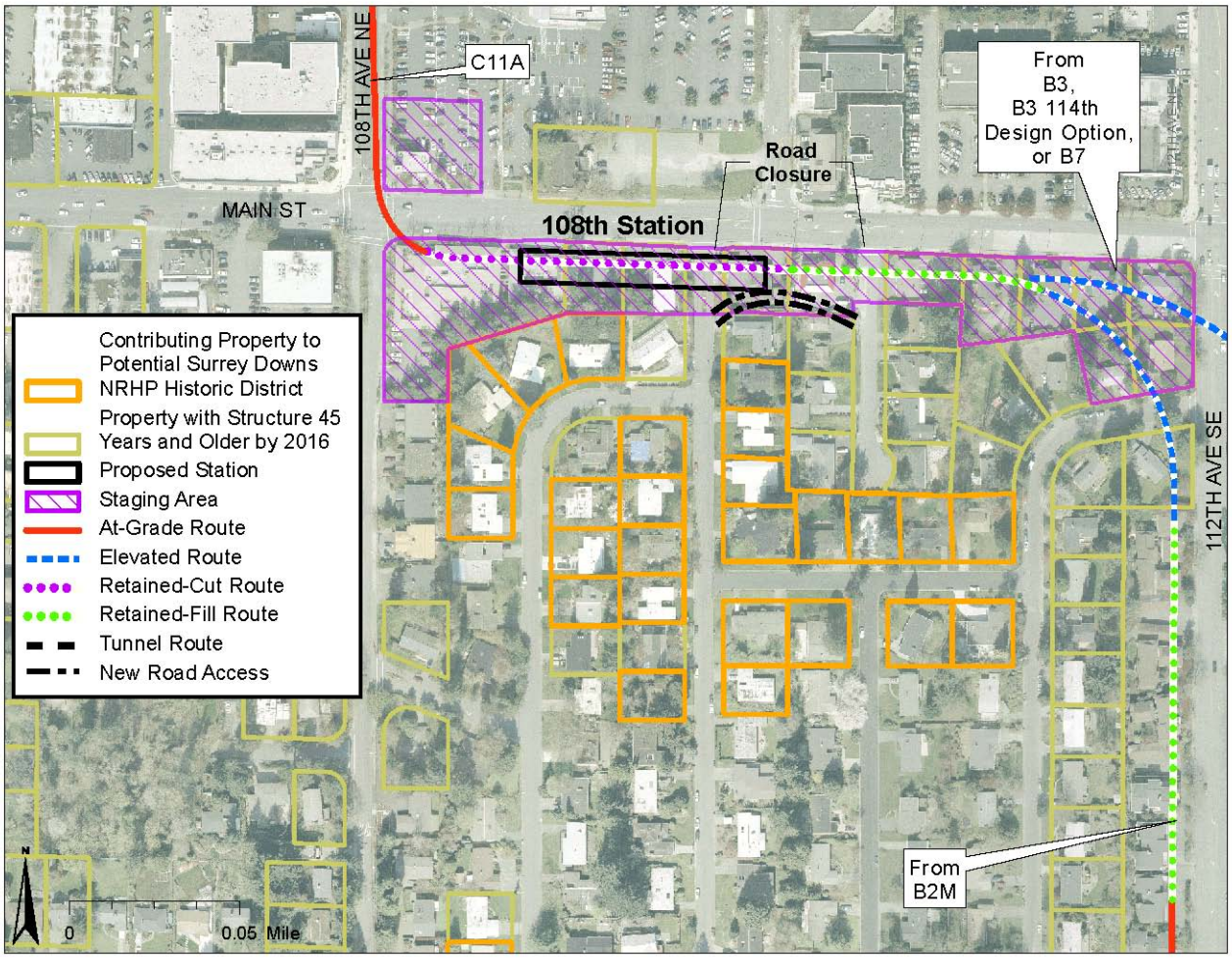


EXHIBIT 8-7
Proximity of *Preferred Alternative C11A* and Staging Area to Potential Surry Downs Historic District

area. A landscaped berm would be developed between the 108th Station and Surrey Downs neighborhood, providing a visual buffer and mitigates operational noise impacts; please refer to Exhibit 8-8. The setting of the historic district would be changed by removing noncontributing properties along 112th Avenue SE and Main Street from low-rise commercial buildings to landscaping and rail tracks. Because the structures to be removed contain businesses and commercial uses, replacing with light rail and landscaping would not change the relationship that the potential Surrey Downs Districts already maintain with the existing dense downtown development along the eastern and northern edges of the historic district. The contributing properties would still be the same distance from 112th Avenue SE and Main Street, and the light rail project would not diminish the setting of the potential district in any way that would impact its eligibility for listing in the NRHP or for its contributing properties to convey their significance and to the district as a whole. Additionally, *Preferred Alternative C11A* would close SE 4th Street access to 112th Avenue SE. However, SE 1st Place would remain open, maintaining access to 112th Avenue SE for the neighborhood, including the potential Surrey Downs District. *C11A* would also close 110th Avenue SE and 110th Place access to Main Street; alternate access points to the neighborhood from Main Street via 108th Avenue SE would continue to provide access. Collectively, closing these streets would likely reduce through traffic and maintain a more residential setting than currently exists.

Preferred Alternative C11A would have potential moderate noise impacts on three contributing properties south of the proposed 108th Station. However, these noise impacts would be eliminated with a permanent sound barrier, which may include a berm and/or sound barrier along the Main Street portion of the project.

When connecting to Alternatives B3 and B7, *Preferred Alternative C11A* would not remove any properties or change access along 112th Ave SE. One row of properties along Main Street would be permanently removed for

the light rail guideway and 108th Station the same as for connecting to *Preferred Alternative B2M* as discussed above.

Preferred Alternative C11A would include measures to ensure sensitivity to neighboring properties and to alleviate the impacts of operating the project. Landscaping and a permanent sound barrier along the south side of the guideway along Main Street and landscaping and permanent sound barrier along the west side of the guideway along 112th Avenue SE would enhance the neighborhood boundary where noncontributing properties would be removed. Such measures would eliminate the noise impacts and minimize visual impacts of project operation on the potential historic district.

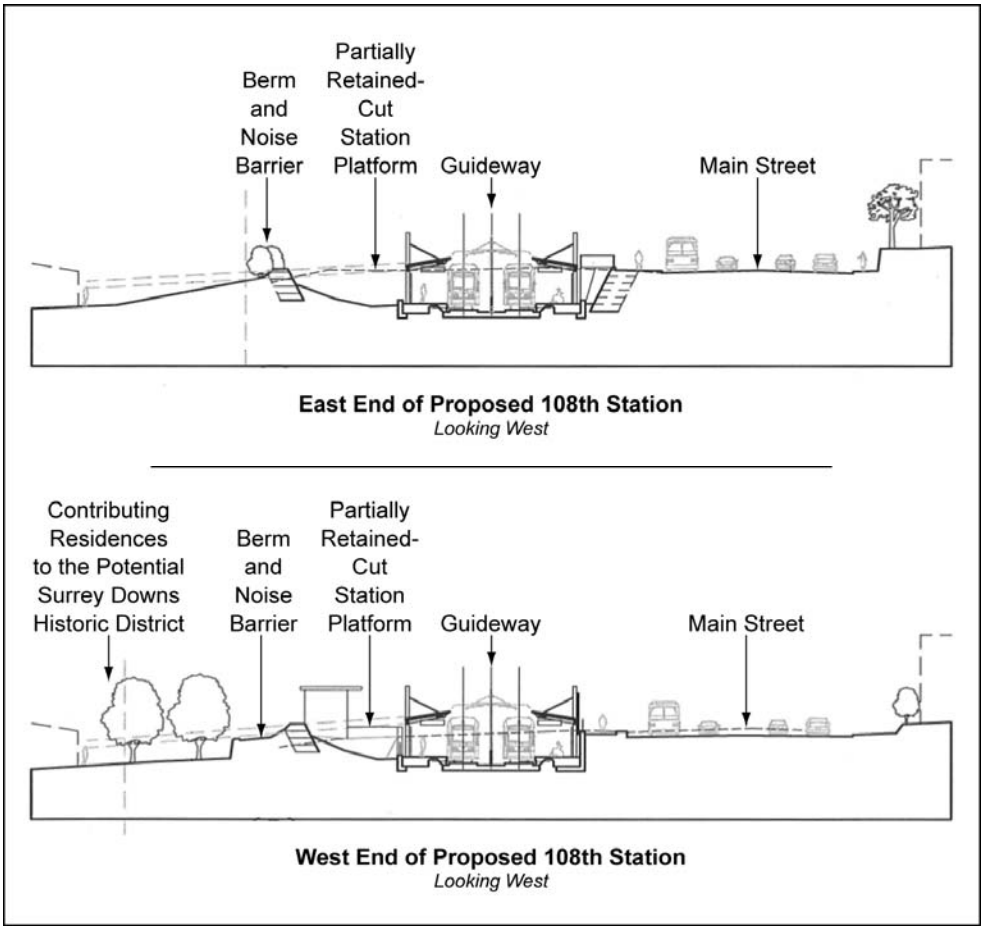


EXHIBIT 8-8
Cross-Section of Proposed 108th Station

While the setting of the area would change somewhat due to the removal of noncontributing properties and introduction of a light rail guideway with permanent sound barrier along the northern and eastern boundaries of the potential district, the impact would not diminish the historic setting within the Surrey Downs neighborhood, which is already located in a highly developed area of Bellevue. The changes to the setting would not diminish the integrity of the district and it would continue to be eligible for the NRHP.

Effects of *Preferred Alternative C9T*

Preferred Alternative C9T, when connecting to *Preferred Alternative B2M*, travels in an at-grade profile on the west side of 112th Avenue SE before becoming a retained cut as it turns west along the south side of Main Street and enters a tunnel to continue under 110th Avenue NE. When connecting to Alternatives B3 and B7, *Preferred Alternative C9T* crosses elevated over 112th Avenue SE to follow the south side of Main Street, transitioning to a tunnel before turning north under 110th Avenue NE. *Preferred Alternative C9T* does not include the 108th Avenue Station, and removes fewer properties along Main Street than *Preferred Alternative C11A*. *C9T* is buffered by noncontributing properties adjacent to the potential Surrey Downs historic district, along the west side of 112th Avenue SE, at the northeast corner of the neighborhood, and along its northern Main Street end. *Preferred Alternative C9T* would require the removal of one row of noncontributing properties along 112th Avenue SE, one noncontributing property on the second row north of SE 1st Place, and one row of noncontributing properties along Main Street between 112th Avenue SE and 110th Place before tunneling north under 110th Avenue NE.

While *Preferred Alternative C9T* would remove a number of properties along 112th Avenue SE and Main Street, and both streets border the Surrey Downs historic district, no properties contributing to the historic district or adjacent to contributing properties would be removed. Along 112th Avenue SE the first two rows of properties from the roadway are noncontributing, and properties nearest the corner of 112th Avenue SE and Main Street are also noncontributing. Contributing properties nearest the proposed project would be separated from the project

by a row of noncontributing properties and would not be impacted by the operation of *Preferred Alternative C9T* due to the distance to project.

Preferred Tunnel Alternative C9T would require closure of SE 1st Place (112th Avenue SE end) and realignment of SE 4th Street so that it connects to SE 6th Street on the other side of 112th Avenue SE (Exhibit 8-9). However, the Surrey Downs neighborhood would remain accessible from 112th Avenue SE at the realigned SE 4th Street and the areas where the streets would end, just west of 112th Avenue SE, are not adjacent to contributing properties.

When connecting to Alternatives B3 and B7, *Preferred Alternative C9T* would not remove any properties or change access along 112th Ave SE. One row of properties along Main Street between 112th Avenue SE and 110th Avenue would be permanently removed where the elevated crossing of 112th Avenue SE transitions to a tunnel on the south side of Main Street before turning north under 110th Avenue NE.

The setting of the historic district would be changed by the removal of noncontributing properties along the major roadways of 112th Avenue SE and Main Street, the at-grade light rail with a permanent sound barrier on the west side of 112th Avenue SE, light rail in a retained cut trench and tunnel portal in the vicinity of Main Street and 112th Avenue SE, and the East Main Station Design Option, if selected. However, due to the nature of the existing properties along 112th Avenue SE and Main Street near the Surrey Downs historic district, this would not be an impact. The contributing properties would be the same distance from 112th Avenue SE and Main Street, and the light rail project would not diminish the setting of the district in any way that would impact its potential for listing in the NRHP or for its contributing properties to convey their significance and that of the district as a whole. The impact would not diminish the setting within the Surrey Downs neighborhood, which is already located in a highly developed area of Bellevue. Currently the neighborhood is bounded by commercial properties,

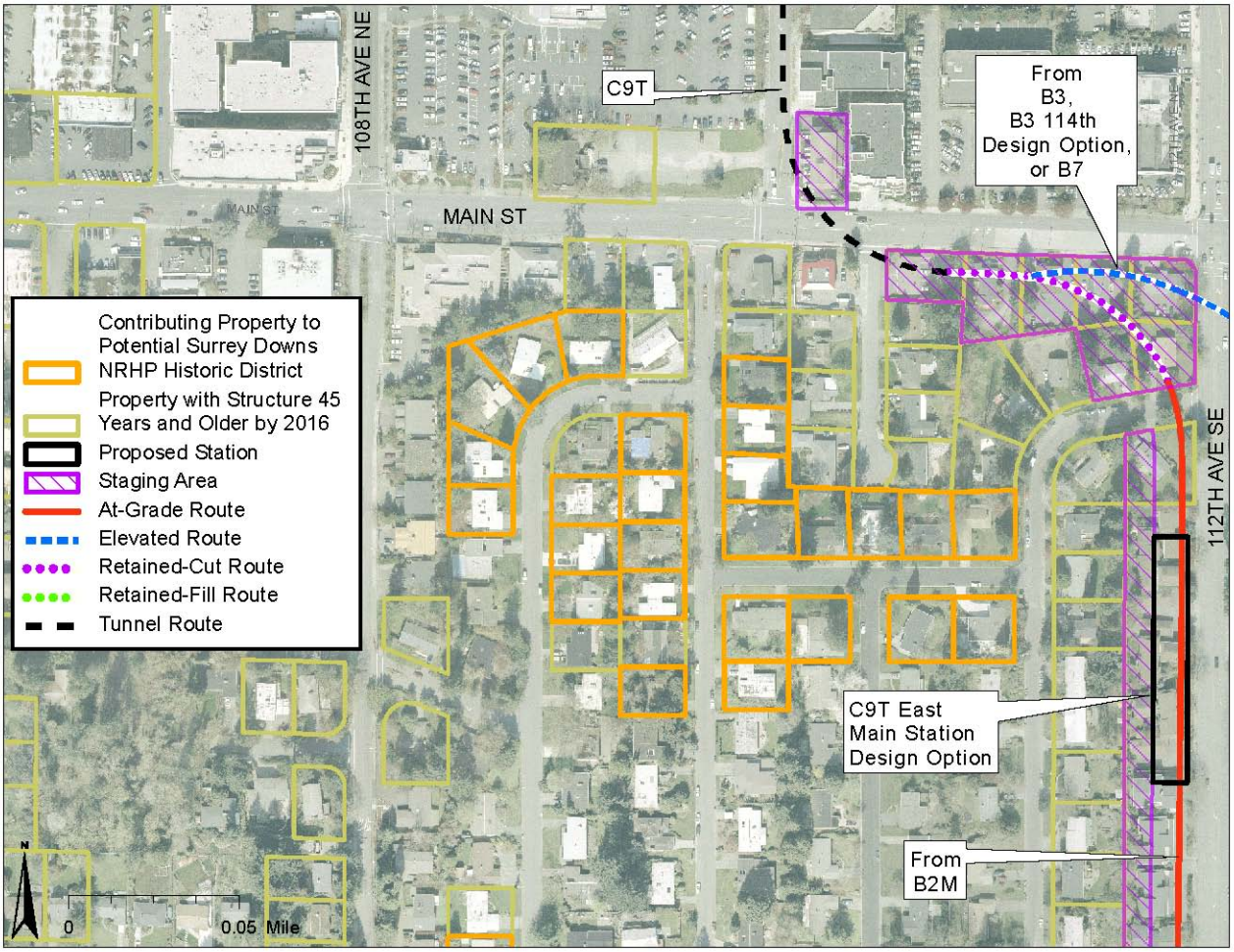


EXHIBIT 8-9
Proximity of *Preferred Alternative C9T* and Staging Area to Potential Surrey Downs Historic District

including altered noncontributing former residences, commercial developments along the south side of Main Street, and large-scale retail properties facing the neighborhood along the major thoroughfare's north side as well as by 112th Avenue SE on the east.

The surrounding environment of the subdivision is not historic, and there is no intact historic relationship between the subdivision and 112th Avenue SE or Main Street, both highly altered roadways from their historic design and use. In addition, the neighborhood is not related to the newer commercial developments opposite Main Street, which is the boundary between the larger Surrey Downs neighborhood and Downtown Bellevue. As a result the light rail features, including the East Main Station Design Option, would be consistent with the existing setting.

Preferred Alternative C9T would not impact the potential Surrey Downs historic district, which is significant for its period of development, architectural style, and the design unity and cohesiveness of portions of the subdivision. *Preferred Alternative C9T* would not change the setting of the potential Surrey Downs historic district, as all contributing elements have been avoided by the project and the district as a whole would continue to be potentially eligible for the NRHP. No contributing properties are removed or impacted by the project. Contributing properties nearest the alternative would be buffered from the project by adjacent noncontributing properties. The setting is not a character-defining feature of the district and has been substantially changed since the period of significance. In addition, the project is consistent with the transportation character of the major roadways that border the district. Project minimization efforts, such as including landscaping and a permanent sound barrier (to eliminate noise impacts to noncontributing properties) along 112th Avenue SE and the south side of the guideway along Main Street, would protect the potential historic district from intrusion into the residential setting.

Effects of Other C Alternatives

Operation of Alternatives C2T and C3T would have no visual impacts on properties that contribute to the potential Surrey Downs historic district. Vibration and noise impacts are also not anticipated during operation.

Operation of Alternative C4A would be similar to *Preferred Alternative C11A* along 112th Avenue NE would avoid impacts on properties that contribute to the Surrey Downs historic district. Almost all of the contributing properties would be screened by existing vegetation, fences, and other houses. Landscaping would be installed along the south side of the guideway along Main Street to enhance the neighborhood boundary where noncontributing properties are removed.

The elevated Alternatives C7E and C8E are not anticipated to impact properties that contribute to the Surrey Downs historic district because the alternatives are distant enough (at least 200 feet) to avoid visual and noise impacts.

Alternative C9A would be elevated and on the east side of 112th Avenue SE, so there would be no acquisition of noncontributing properties along 112th Avenue SE. Because this alternative is elevated approximately 40 feet in this area with straddle bents, this alternative would result in visual change from the introduction of these structures. In addition, permanent sound barriers would be constructed along the west side of 112th Avenue SE and the south side of Main Street adjacent to noncontributing buildings. However, the change would not lower the area's existing visual quality and is consistent with the transportation character of the corridor. In addition, the two rows of noncontributing properties along 112th Avenue SE would remain and buffer the Surrey Downs historic district from the project.

Alternative C9A would travel at-grade on the south side of Main Street, before turning north on 110th Avenue NE, and would require the removal of one row of buildings along the south side of Main Street between 112th Avenue SE and 110th Avenue NE. None of the properties to be removed contribute to the Surrey Downs historic district. The intersection of 110th Place SE would either be gated with right-in/right-out access only or closed. However, ample access to the north end of the neighborhood would remain. Similar to *Preferred Alternatives C9T* and *C11A*, this alternative would include measures to ensure sensitivity to neighboring properties and to minimize impacts of operating the project. Landscaping and a permanent sound barrier along the south side of the guideway along Main Street would enhance the neighborhood boundary where noncontributing properties would be removed. Such measures would both eliminate the noise impact and minimize visual impacts of project operation on the historic district.

Alternative C14E would avoid impacts on properties that contribute to the potential Surrey Downs historic district, because the alternative is distant enough to avoid visual change and noise impacts.

Safeway Store

There are is only one historic property in the APE for Alternative C1, the former Safeway store located at 414, 424, and 456 104th Avenue NE (Exhibit 8-10). Alternative C1T would pass under the north edge of the sidewalk as the route turns eastward from Bellevue Way NE onto NE 6th Street in Downtown Bellevue. Alternative C1T would be in a tunnel profile as it passes by the Safeway store property approximately 170 feet from the building.

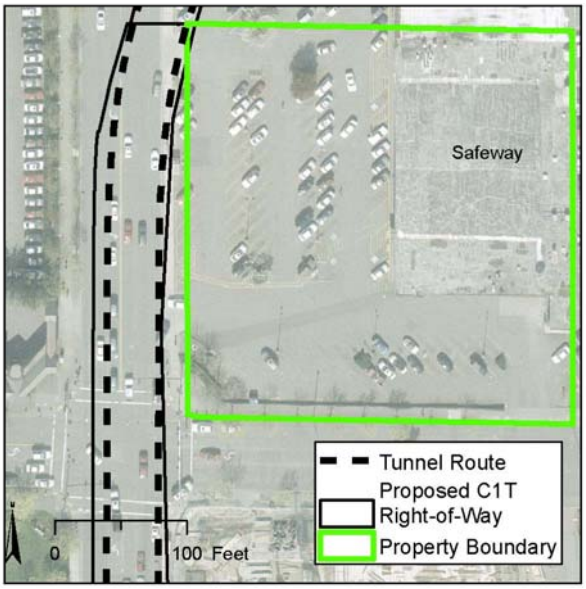


EXHIBIT 8-10
Location of Former Safeway and Surrounding Area

Since it will be located underground and considerable distance in this location, Alternative C1T would have no visual, vibration, or noise impacts during operation; therefore, no impacts to historic properties would occur from this alternative. The Safeway Store is eligible for the NRHP based on its architectural significance. The operation of the project in Alternative C1 would not alter the structure or its character-defining features.

Summary

None of the Segment C alternatives were found to have impacts on the potential Surrey Downs historic district during project operations. The alternatives would not alter or remove contributing elements to the district, and would not diminish character-defining features of the historic district, which are related to the period of construction, the architecture, and the design cohesiveness of portions of the subdivision. Applying the Criteria of Adverse Effect to all Segment C alternatives resulted in the determination that while some of the alternatives would introduce visual, audible, and atmospheric elements that change the setting of the eligible historic district, the setting is not a defining characteristic of the district, and the district would continue to be eligible for the NRHP. The district would retain its architectural cohesiveness. Due to the avoidance of all contributing properties and the minimization of impacts by the project, operation of Segment C alternatives would have no impact on the historic district.

Alternative C1T would be located underground and is therefore not anticipated to impact the historic Safeway store or any contributing element of the Safeway store.

8.3.1.4 Segment D

Effects of D Alternatives

None of the Segment D alternatives or design options have historic properties within their APE.

Former Bellevue Fire Station

Effects of Alternative D3

For Alternative D3, a narrow portion (approximately 15 feet) of the parcel that the former Bellevue Fire Station occupies would be incorporated into the project due to road reconstruction (Exhibit 8-11). However, the building is located approximately 80 feet back from the roadway, on a portion of the parcel outside of the APE, and the portion acquired is not a character-defining feature of the historic property, the significance of which is due to the building's representation of Populux architecture. Operation of the alternative would not result in visual, noise, vibration, or

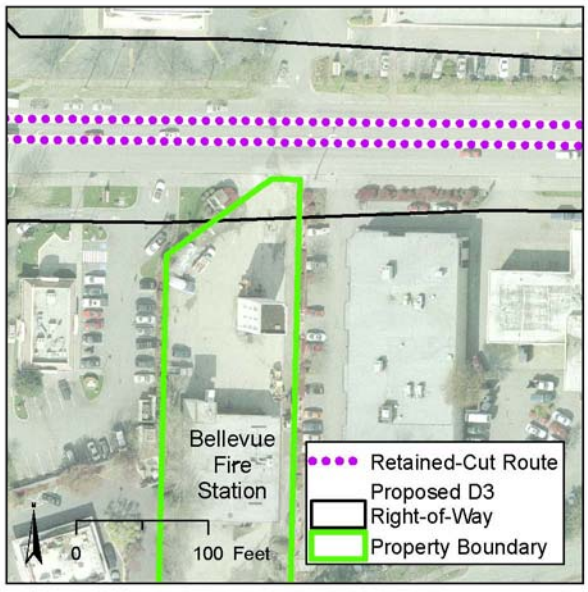


EXHIBIT 8-11
Effects of Alternative D3 on Former Bellevue Fire Station

other impacts on the property. The existing setting is characterized by major roadways: Bel-Red Road, 148th Avenue NE and NE 20th Street. Therefore widening the road and introducing the retained cut light rail is consistent with the setting and would not diminish it. Applying the Criteria of Adverse Effect, Alternative D3 would not impact the former Bellevue Fire Station because it would not alter the building nor diminish the setting.

Summary
The Segment D Alternatives were found to not impact on the historic property identified in Segment D, the former Bellevue Fire Station. No other historic properties were identified within the project APE.

8.3.1.5 Segment E

The Justice William White House and the Bill Brown Saloon are eligible for the NRHP and both within the APE of all three Segment E Alternatives—*Preferred Alternative E2* and Alternatives E1 and E4. The Dudley Carter/Haida House, not eligible for the NRHP but a Redmond Historic Landmark, is within the APE of Alternative E4.

Justice William White House, Redmond Trading Company, and Bill Brown Saloon

Effects of *Preferred Alternative E2*

Preferred Alternative E2, and the Alternative E2 - Redmond Transit Center Station Design Option that continues north on 161st Avenue NE to Redmond Transit Center, are approximately 65 feet from the Justice William White House and would not pass close enough to cause an impact on the historic setting or to potentially damage the building (Exhibit 8-12). The property is significant due to its association with individuals, William and Emma White, who built the house and set aside a portion for a hotel due to its proximity to the railroad and passenger depot. It is also significant as the best, if not the only, remaining example of Queen Anne shingle style architecture in Redmond. The house is approximately 65 feet from the guideway and is separated from the project by NE 76th Street. While *Preferred Alternative E2* and the E2 - Redmond Transit Center Design Option would introduce light rail into the setting, including a station just west of Leary Way NE, the project would be at-grade within the existing railroad right-of-way and consistent with the character of the railroad setting. The operation of passenger trains in the right-of-way is consistent with the historic use of the corridor. In addition, none of the remaining historic period buildings that contribute to the setting would be removed. Applying the Criteria of Adverse Effect, the character-defining features of the Justice William White House that convey its significance and qualify the property for listing in the NRHP would not be impacted by *Preferred Alternative E2* or the E2 - Redmond Transit Center Design Option.

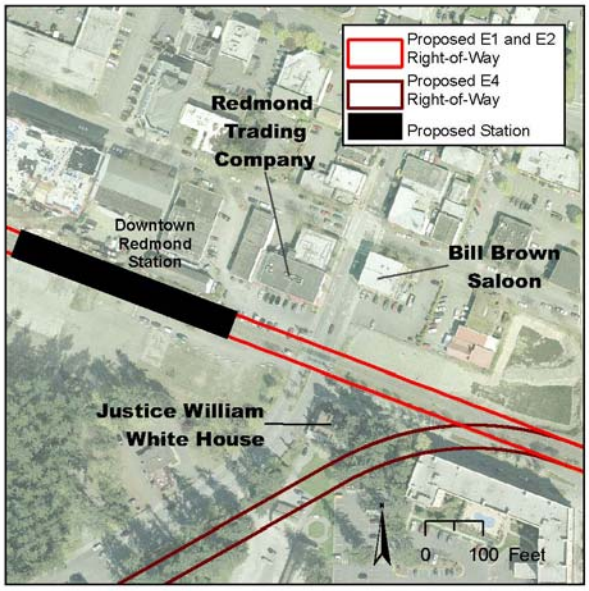


EXHIBIT 8-12
Proximity of *Preferred Alternative E2* and Alternatives E1 and E4 to Justice William White House and Bill Brown Saloon

Preferred Alternative E2 would include the Downtown Redmond Station which would be located approximately 50 feet from the Redmond Trading Company building, but would not encroach on the historic boundary of the property. None of the remaining historic period buildings that contribute to the setting would be removed. The station would be designed in coordination with the City of Redmond and the community to complement the historic setting of Downtown Redmond. Furthermore, the rail alignment and station would be located on the former BNSF corridor, and thus, would be consistent with the historic use of the corridor as a railway. *Preferred Alternative E2* would avoid impacts to the character of the setting of this historic property. No operational period impacts to the Redmond Trading Company building would occur.

Preferred Alternative E2 would pass at a sufficient distance from the Bill Brown Saloon, at least 110 feet, to avoid introducing visual, audible, and atmospheric elements that would impact the building and the character of the setting of the historic property (Exhibit 8-12). *Preferred Alternative E2* and the Downtown Redmond Station would be in the former BNSF Railway corridor, and operation of passenger trains in that right-of-way is consistent with the historic use of the corridor. In addition, none of the remaining historic period buildings that contribute to the setting would be removed. Applying the Criteria of Adverse Effect to *Preferred Alternative E2*, the character-defining features of the Bill Brown Saloon that convey its significance and qualify the property for listing in the NRHP would not be impacted.

During final design Sound Transit will work with the City of Redmond to adjust the design of *Preferred Alternative E2* within the BNSF and NE 76th Street right-of-way to accommodate the potential for future freight/commuter rail, the Central Connector utility line, the King County Trail, automobile traffic on NE76th Street as well as East Link light rail. Resulting changes may include shifting the *Preferred Alternative E2* rail alignment further from the Bill Brown Saloon and the Redmond Trading Company Building, closer to the Justice William White House. This shift in the alignment would not impact any of the three properties since *Preferred Alternative E2* would not encroach on the historic boundary, or alter the historic setting of the corridor as a railway in relation to the Justice William White House. The character-defining features of the Justice William White House and the Bill Brown Saloon that convey their significance and qualify the properties for listing in the NRHP would not be impacted by this potential shift of the alignment.

Effects of other Segment E Alternatives

The Alternative E1 route is the same at the Justice White House and the Redmond Trading Company as *Preferred Alternative E2* described above, although it does not include the Downtown Redmond Station.

Alternatives E1 and E4 would also pass at a sufficient distance from the Bill Brown Saloon to avoid impacting the character of the setting of the historic property. Alternative E1 is in the same location as *Preferred Alternative E2* near the Bill Brown Saloon, and Alternative E4 is a greater distance from the property. Applying the Criteria of Adverse Effect to Alternatives E1 and E4, the character-defining features of the Bill Brown Saloon that convey its significance and qualify the property for listing in the NRHP would not be impacted.

With Alternative E4, the project would require the relocation of the Justice William White House prior to construction. Moving the building to a new location would result in an impact on this property since it would alter the building's historic setting. Sound Transit has consulted with the City of Redmond and SHPO about moving the building to a nearby location that preserves as much of its setting, feeling, and association with the former BNSF Railway right-of-way as possible to minimize impacts from building relocation. Mitigation measures for this impact are listed in Section 9.2.2.

Alternative E4 would pass further from the Redmond Trading Company building than Alternative E2, and is thus a sufficient distance from this historic resource to avoid impacts to the character of the building's setting.

Alternative E4 would not substantially impact the Dudley Carter/Haida House, which is on the west side of NE Leary Way, opposite the light rail guideway, which would be transitioning from an elevated profile necessary to cross the Sammamish River, to at-grade. The elevated guideway would be consistent in general appearance with the bridge over the Sammamish River, but it would require the removal of mature trees along the east side of Leary Way, resulting in a decrease in visual quality. The visual impacts would be minimized with landscaping.

Summary

Preferred Alternative E2 and Alternative E1 were found to have no impact on the three historic properties identified in Segment E, the Justice William White House, the Redmond Trading Company, and Bill Brown Saloon. Operation of the proposed project alternatives would not impact the historic properties, as the properties would not be altered, the setting of the properties would remain intact, and the project is consistent with the historic use of the former BNSF Railway corridor in which it would be located. No visual, audible, or atmospheric elements that are out of character with the setting of the historic property would be introduced. Alternative E4 would result in an impact on the Justice William White House as this building would need to be relocated and its historic setting and location would be altered.

8.3.2 Effects During Construction

Construction effects on historic buildings and structures can include temporary loss of access along with visual effects, noise, vibration, and the dust and debris of construction activities. Sound Transit would implement avoidance measures to minimize these effects; however, some dust and noise are inevitable. These effects would be temporary and would not impact the properties.

Sound Transit anticipates beginning construction on the East Link Project in 2013, and construction from Seattle to Bellevue would be completed in approximately 6 years, in 2019. Construction from Bellevue to Overlake would occur in a subsequent 6-year period, from 2014 to 2020. The most intense civil construction would occur over an approximately 3-year period in most locations.

Construction activities associated with the alternatives discussed would require utility relocation, clearing and demolition, temporary roadway and lane closures, permanent acquisition of properties for stations and the routes, and temporary acquisition of properties for staging areas, hauling of materials, storing heavy equipment and materials, and light rail project construction. Construction activities would also result in temporary increases in noise, dust, and traffic congestion, but construction best management practices (BMPs) would be implemented to minimize these impacts, including standard dust and noise control measures as described in the East Link Final EIS.

This section evaluates anticipated construction impacts on historic properties identified within the project alternatives' APE, beginning with the discussion of the potential impacts for the *Preferred Alternative* for each segment.

8.3.2.2 Segment A

With the exception of I-90 between Seattle and Bellevue, historic properties along Segment A are completely separated from the project, which starts from the Downtown Seattle Transit Tunnel and continues in the center lanes of I-90. For the nonhighway (I-90) properties, no potential impacts during construction or operation are anticipated.

There are six historic properties eligible for or listed in the NRHP within the APE of Segment A: Publix Hotel, INS Building, 12th Avenue South Bridge, Will H. Thompson House, and the Mount Baker Ridge Tunnels and I-90 Lake Washington Segment. There are two additional properties eligible for listing as Seattle Landmarks, Washington Iron Works Pattern Shop and Endressen House.

Construction of Segment A is not anticipated to impact the identified historic properties. The Publix Hotel is located above the existing downtown Seattle transit tunnel, and the INS Building is situated at the east edge of the APE and would not be impacted by construction along 5th Avenue S. The project is also located far enough from the Washington Iron Works Pattern Shop that no construction activities are expected to impact the property. Construction of the at-grade route beneath the 12th Avenue South Bridge also would not impact that property. Located in the existing Mount Baker Ridge Tunnel, above which the Will H. Thompson House is situated, project construction would avoid impacts to the Thompson House.

Construction would also not impact the residence at Endressen House, given the distance of the activities from the property. Finally, construction would not impact features of the NRHP-eligible I-90 Lake Washington Segment, including the portals of the Mount Baker Ridge Tunnels, because the project will be constructed to avoid impacts to the features identified as character-defining by locating construction activities primarily within the center of I-90, which was originally designed with the intent to allow for such construction. The design, materials, and workmanship of the tunnels, portals, floating bridges, and lids will not be substantially changed. The structural integrity and intended use of the facility will be maintained. No character-defining features as identified in the NRHP Registration form for the I-90 Lake Washington Segment would be altered or removed by construction of the project. Use of the segment during construction would not impact the property in a manner that would impair future use of it as it was intended.

8.3.2.3 Segment B

There are two historic properties within the APE of the Segment B alternatives. The Winters House is within the APE of *Preferred Alternative B2M* and Alternatives B1, B2A, B2E, and B3. The Pilgrim Lutheran Church is within the APE of Alternative B1. There are no historic properties within the APE of Alternative B7.

Winters House

Effects of *Preferred Alternative B2M*

The alignment of *Preferred Alternative B2M* would run along the east side of Bellevue Way in front of the Winters House and would involve constructing a lidded retained cut within 10 feet of the base of the main structure of the NRHP-listed former residence. The lidded retained cut would be within 5 feet of the front porch of the Winters House. Construction would remove all of the vegetation in front of the house and require temporary relocation of the tenant, the Eastside Heritage Center, during construction due to loss of access. As discussed in Section 8.3.1, landscaping would be replaced after construction. The City of Bellevue owns the resource and while the City would not receive rental income from the Winters House during construction, there would be no impacts from the project that would change the long-term conditions of the house. After construction is completed, the City would continue to own and maintain the house, retaining the integrity of the building.

Constructing a lidded retained cut in this location, including construction of underground piles to structurally support the retained cut, would create the potential for vibration impacts and settlement. Given the period and type of construction of the property, there is a risk of causing impact through vibration without construction vibration-minimization techniques. The criterion for damage for this type of structure is 94 VdB or 0.2 peak particle velocity (PPV), and construction vibration could exceed this level. As a result, methods to minimize vibration during construction to prevent or limit impacts to minor cosmetic damage have been incorporated into the project as described in Appendix D1 of this report. Appendix D1 also provides further detail as to how these minimization measures will reduce construction vibration below the threshold. Minimization and avoidance techniques to prevent impacts on the property include the following:

- Photographing/inventorying the building to establish existing conditions
- Installing vibration and settlement monitoring devices and adjusting excavation methods based on monitoring results
- Using specific vibration and settlement reducing construction methods, to be determined during final design and construction; methods could include the following:
  - Using rotating/oscillating construction equipment, underpinning the house foundation and front porch, and other methods of ground improvement such as high pressure grouting
  - Constructing the retained cut side walls using slurry confinement (temporarily filling the excavated cavity with slurry material to replace removed soil) at the deepest excavation points
  - Installing a shallow temporary supporting wall to provide additional lateral support for the porch foundation footings and/or underpin the porch
- Potentially building a construction barrier around Winters House to prevent damage and minimize dust
- Applying dust control measures during construction to minimize dust (after construction, Sound Transit would clean the outside of the building and windows in a manner sensitive to the resource)
- Closing the Winters House during construction and temporarily relocating the tenant (Sound Transit will provide information to the public regarding how to access the Eastside Heritage Center during construction)
- If damage does occur, making the needed repairs consistent with U.S. Secretary of the Interior's standards for treating historic properties

The contractor would monitor vibration levels of construction equipment used for the East Link project in safe areas to anticipate vibration levels and apply avoidance measures prior to construction adjacent to the Winters House. Experience from other construction sites with similar soils has shown that by monitoring vibration and settlement during construction at the points more distant from the Winters House and incrementally upon approaching the house, the contractor can safely determine which of the vibration- and settlement-minimization and avoidance techniques would be necessary. Sound Transit will photograph and inventory the Winters House to establish existing conditions to determine if any damage is caused by construction. Utilizing these minimization and avoidance techniques would minimize the potential for vibration and settlement damage beyond minor cosmetic damage and would protect the character-defining features of the house. If damage does

occur, Sound Transit will repair the building consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*.

The character-defining features of the NRHP-listed Winters House that convey its significance and qualify the property for listing in the NRHP may be impacted. While the alternative would introduce visual and atmospheric elements that would temporarily impact the character of the property's setting along the west/front elevation, the property's front elevation has lost some integrity due to the widening of Bellevue Way. The landscaping would be replaced after construction, and the property's relationship to the larger undeveloped area previously used for bulb farming would not change during construction. Vibration and settlement minimization and avoidance techniques would make sure that the effects introduced would not diminish the character-defining features of the former residence. Construction vibration and settlement minimization and avoidance techniques incorporated as conditions of the project would avoid or minimize damage, and, if any cosmetic damage occurs, it would be repaired. After construction, the landscaping would be restored in a manner more consistent with the historic period, as discussed above under operational impacts. The Eastside Heritage Center will be able to return to the building after construction. The minimization and avoidance techniques described above, which would be implemented by Sound Transit as part of the project, would resolve the potential for impacts during construction of *Preferred Alternative B2M*. It should be noted that at the Paramount Theater in Seattle, cut and cover construction of the Central Link light rail Pine Street stub tunnel construction was completed 9 feet away from the resource without any recorded damage.

Effects of Other B Alternatives
With Alternatives B1, B2A, B3, and B3 114th Extension Design Option, construction of the at-grade guideway located in the center of Bellevue Way SE would have temporary visual and noise effects on the Winters House that are not considered an impact. The character of the setting along Bellevue Way SE does not convey or contribute to the significance of the NRHP-listed property, and, therefore, the temporary change due to construction would not be an impact. Access to the property would be maintained during construction and the tenant would not need to be relocated. Construction would not alter or damage the building. The same is true for construction of the Alternative B2E guideway on the west side of Bellevue Way SE across from the Winters House. Alternative B7 does not impact the Winters House during construction.

Summary
In applying the Criteria of Adverse Effect to each of the Segment B alternatives, and taking into consideration the character-defining features of the NRHP-listed Winters House that convey its significance and qualify the property for listing in the NRHP, the construction impacts of the non-preferred Segment B alternatives would not remove or diminish the character-defining features of the property. *Preferred Alternative B2M* has the potential to impact the Winters House during construction. Implementation of mitigation measures would resolve these potential impacts.

Pilgrim Lutheran Church

Construction of the underground stormwater detention vault at the northeast corner of the Pilgrim Lutheran Church parking lot would have temporary noise and dust effects on the church and temporarily reduce parking, but these effects would not impair the intended use of the property and are not considered an impact. Sound Transit would avoid construction during church services and special events to the extent possible, and the remainder of the parking area would be available for use.

8.3.2.4 Segment C

The two historic properties that would be impacted by Segment C alternatives are the former Safeway store at 414, 424, and 456 104th Avenue NE and the Surrey Downs historic district.

Safeway Store

The Safeway store is also considered eligible for the NRHP. While construction effects with the Alternative C1T Alternative may result in visual disturbance, some noise, and dust, these effects are limited to Bellevue Way and small portions of the sidewalk However, because C1T would only impact the sidewalk adjoining the Safeway property, which would be over 170 feet from the structure; the store is currently closed; and a preliminary land use plan application for new construction is posted on the property, these construction effects are not considered an impact.

Potential Surrey Downs Historic District

Most of the Segment C alternatives, except for Alternatives C1, C8E, C9A, and C14E, would pass close enough to the potential Surrey Downs historic district to potentially cause some construction impact. None of the Segment C alternatives or construction staging areas would involve removal of properties that contribute to the historic district.

Effects of *Preferred Alternative C11A*

Construction staging areas adjacent to the potential Surrey Downs historic district would be needed to construct *Preferred Alternative C11A*. Construction staging areas are needed before, during, and for a short time after construction work occurs to store and maintain construction equipment and material and fabricate project component. Staging areas might also include contractor trailers (which would act as temporary offices and places for contractors to meet) and construction crew parking.

Construction of *Preferred Alternative C11A* would not involve removal of properties that contribute to the Surrey Downs historic district, and the removal of the other buildings would not damage the district's setting, feeling, or association. The *Preferred Alternative C11A* when connecting from P*referred Alternative B2M* would remove properties along the south side of Main Street between 112th Avenue SE and 108th Avenue SE and a row of properties along 112th Avenue SE north of Surrey Downs Park. When connecting from B3 or B7, the construction would not require removing properties along 112th Avenue SE, but the same properties along Main Street would be removed. These parcels would be used for construction of the project and for staging. Exhibit 8-8 depicts the staging area. As shown in Exhibit 8-9, construction staging would occur adjacent to three contributing buildings near the intersection of Main Street and 108th Avenue NE. Minimization and avoidance techniques would include installation of a solid construction barrier to shield the homes from construction, and to the extent practical, preservation of the evergreen trees along the south edge of the station area, east of 108th Avenue SE. All equipment would be fenced for safety purposes. Construction staging in itself provides a buffer from construction activities.

Construction of *Preferred Alternative C11A* along Main Street and 112th Avenue SE is expected to occur largely during daytime working hours. Construction would result in some impacts on nearby residences, including any construction activities that may occur at night with visual, lighting, and noise impacts. Access to properties in the neighborhood would be altered at times during construction. Construction activities may cause dust, noise and lighting spill over to adjacent properties. These potential impacts can be minimized. Construction impact minimization measures included in the project, such as noise and dust control, would reduce construction impacts. The residences would remain habitable during the construction period.

Sound Transit would, as practical, limit construction activities that produce the highest noise levels to daytime hours, or when disturbance to sensitive receivers would be minimized. For any nighttime work, contractors would be required to meet the criteria of the noise ordinance for the city and would seek the appropriate noise variance for operation of construction equipment that could exceed allowable noise limits during nighttime hours (between 10:00 p.m. and 7:00 a.m.), on Sundays or legal holidays. Sound Transit would control nighttime construction noise levels by applying noise level limits and noise control measures to meet these noise limits. Noise control measures for nighttime and daytime may include the following efforts, as necessary, to meet required noise limits:

- Installing construction noise barrier wall by noise sensitive receivers
- Using smart back-up alarms during nighttime hours, to automatically adjust alarm levels based on background level, or use of spotters.
- Using low-noise emission equipment
- Implementing noise-deadening measures for truck loading and operations
- Monitoring and maintenance of equipment to meet noise limits
- Covering lined or covered storage bins, conveyors, and chutes with sound-deadening material
- Using acoustic enclosures, shields, or shrouds for equipment and facilities
- Using high-grade engine exhaust silencers and engine casing sound insulation
- Prohibiting aboveground jack-hammering and impact pile driving during nighttime hours
- Minimizing the use of generators to power equipment
- Limiting use of public address systems

- Grading surface irregularities on construction sites
- Using moveable noise barriers at the source of the construction activity
- Limiting certain noisy activities during nighttime hours

With impact minimization measures, including a construction barrier and noise control measures, the project would resolve the potential impacts to the potential historic district or its contributing elements.

Effects of *Preferred Alternative C9T*

Construction of *Preferred Tunnel Alternative C9T* and its construction staging areas, when connecting to *Preferred Alternative B2M*, would require removal of one row of properties on the west side of 112th Avenue SE, the south side of Main Street between 112th Avenue SE and 110th Place, and an additional property on the second row north of SE 1st Place. These parcels would be used for construction of the project and for staging (as described earlier under the *Preferred Alternative C11A)*. Exhibit 8-7 depicts the staging area. Construction and staging would not be adjacent to any contributing buildings. This alternative would have fewer impacts along Main Street than *Preferred Alternative C11A* because it does not include the 108th Avenue Station and it turns north to tunnel under 110th Avenue NE rather than continuing to 108th Avenue NE. No properties that contribute to the potential Surrey Downs historic district would be removed, and the removal of the other buildings would not damage the district's setting, feeling, and association. Construction would result in some impacts on nearby residences, including construction activities that often may occur at night with visual, lighting, and noise impacts. Access to properties in the neighborhood would be altered at times during construction. The impacts would be temporary, however. The installation of a solid construction barrier along the boundary of the construction area will reduce noise and visual impacts. Additional measures to control nighttime construction noise levels for *Preferred Alternative C11A* are discussed above.

When connecting to Alternatives B3 and B7, construction of *Preferred Alternative C9T* would remove properties near the corner of Main Street and 112th Avenue SE, and one row of properties along Main Street between 112th Avenue SE and 110th Avenue where the elevated crossing of 112th Avenue SE transitions to a tunnel on the south side of Main Street before turning north under 110th Avenue NE. These areas would be used for construction staging. In The area along Main Street, the impacts are similar to the *Preferred Alternative B2M* connection as described previously.

Effects of other Segment C Alternatives

None of their alternatives require the removal of property along 112th Avenue SE south of SE 1st Place adjacent to the potential Surrey Downs historic district.

Alternatives C2T and C3T would involve connectors from Alternatives B2A, B2E, B3, and B7. The connector from Alternative B2A to Alternatives C2T and C3T would involve boring beneath the Surrey Downs historic district, which would avoid access and visual effects. Noise and possible vibration could be noticeable to residents during construction but would not impact the buildings. Although the geotechnical analysis shows that the soils in this area are generally resistant to settlement from ground disturbance, precautions during construction and a careful monitoring program would be incorporated into the construction plan.

The connector from Alternative B2E to C3T and C2Twould use the northern area of the Surrey Downs neighborhood for construction staging at the tunnel portal. This area would extend south from Main Street to one row north of SE 2nd Street on both sides of 110th Place and starting one row back from 110th Avenue SE and between Main Street and SE 1st Place. Construction would alter access at times during construction and would produce visual, noise, dust and possible vibration impacts. The impacts would be temporary. Sound Transit would minimize visual and noise impacts through placement of a solid construction barrier between the construction area and adjacent contributing properties to the south and west as well as implement dust control measures. This area could be developed as a park after construction consistent with the City of Bellevue's Parks and Recreation Plan. With minimization measures, the potential construction impacts from Alternatives C2T and C3T to this resource would be resolved.

For connectors from Alternatives B2A and B2E to Alternative C4A, construction staging areas would be similar to the construction staging area described for *Preferred Alternative C11A*, which includes removing one to two rows of properties south of Main Street. Construction would alter access at times during construction and would produce visual, noise, dust and possible vibration impacts. The impacts would be temporary. Sound Transit would minimize visual and noise impacts through placement of a solid construction barrier between the

construction area and adjacent contributing properties to the south and west as well as implement dust control measures. For connectors from B3 and B7 to C4A, construction staging would involve a smaller area but would still be adjacent to portions of the Surrey Downs historic district. Construction of connectors to Alternative C4A would be of a shorter duration and require less nighttime construction than construction for tunnel alternatives, such as C2T, C3T, and *Preferred Alternative C9T*. With minimization measures, the potential construction impacts from Alternative C4A to this resource would be resolved. There would be no impact on the Surrey Downs historic district for connectors from B3 and B7 to C7E and C8E alternatives.

To meet required noise limits, noise control measures for nighttime and daytime for Alternatives C2T, C3T and C4A would be the same as those discussed above for *Preferred Alternative C11A*.

Alternative C9A would require similar property acquisition for construction staging as *Preferred Alternative C9T*, with the addition of one building west of 110th Place on the south side of Main. The elevated and at-grade construction for Alternative C9A would be of a shorter duration and require less nighttime construction than tunnel alternatives. Alternative C14E is located far enough away from the historic district as to have no impacts on it or on the properties within it.

Summary
In applying the Criteria of Adverse Effect to all Segment C alternatives, the character-defining features of the eligible potential Surrey Downs historic district that convey its significance and qualify the district and contributing properties for listing in the NRHP were considered. *Preferred Alternative C11A* and Alternatives C4A, C2T, and C3T would have potential impacts to this resource. These potential impacts would be resolved with construction minimization measures. Construction of these alternatives would introduce visual, audible, and atmospheric elements that temporarily change the setting of the eligible historic district. However, the alternatives would not alter or remove contributing resources to the district. The district would retain its architectural cohesiveness. In addition, project design and construction measures would further ensure that none of the effects introduced would be considered an impact. Alternative C1T runs on Bellevue Way and is 170 feet from the front of the eligible Safeway Store. Constructing this alternative might result in some visual disturbance, some noise, and dust, which would be limited to Bellevue Way. Given that the construction effects are minimal, it is not considered an impact.

8.3.2.5 Segment D

There are no historic properties within the APE of *Preferred Alternative D2A*, the D2A - 120th or NE 24th Design Options, Alternative D2E, and Alternative D5. The former Bellevue Fire Station is within the APE of Alternative D3.

Former Bellevue Fire Station

With Alternative D3, construction of the alternative in a retained cut near the former Bellevue Fire Station would not impact the property. Although part of the building's parcel is situated inside the APE, the building itself is outside the APE and would not be impacted by the construction activities proposed.

Applying the Criteria of Adverse Effect to analyze Alternative D3, the character-defining features of the property were considered. The alternative would not alter or remove the building or its architectural elements, so it would maintain its character-defining features that convey its significance. The proposed project would not result in any visual, audible, or atmospheric elements that would impact the property.

8.3.2.6 Segment E

Two historic properties, the Justice William White House and the Bill Brown Saloon, are within the APE of *Preferred Alternative E2* and Alternatives E1 and E4.

Justice William White House

Effects of *Preferred Alternative E2*
Preferred Alternative E2, and the E2 - Redmond Transit Center Design Option that continues west and turns north on 161st Avenue NE to Redmond Transit Center, would not pass close enough to the Justice William White House to cause an impact on the historic setting or to potentially damage the building during construction. *Preferred Alternative E2* would temporarily increase noise and dust and result in visual change due to construction activities, but these effects would not result in an impact. In addition, NE 76th Street and existing vegetation would buffer the house from construction activities and further minimize the visual change and dust. Project construction would not impact the character-defining features of the property.

Effects of Other E Alternatives
Alternative E1 is in the same location as *Preferred Alternative E2* near the Justice William White House. Therefore, Alternative E1 would have the same temporary noise, dust and visual effects on the property as *Preferred Alternative E2* and would not impact the property.

Alternative E4 would require relocating to the Justice William White House. Moving the building prior to construction would cause an impact, as discussed under effects during operation. Relocation would occur in a manner that avoids substantial damage to the building during transport and re-establishment, which would minimize but not fully avoid a potential impact.

Summary
In applying the Criteria of Adverse Effect to all Segment E alternatives, the character-defining features of the Justice William White House that convey its significance and qualify the property for listing in the NRHP were considered. *Preferred Alternative E2* and Alternative E1 would not pass close enough to introduce visual, audible, and atmospheric elements that would impact the character of the setting of the property. Alternative E4 would result in a potential impact due to the need to relocation the building prior to construction. Potential for damage to the building would be minimized as discussed in Section 9.2.1.

Redmond Trading Company

All of the Segment E alternatives would pass at a close enough distance that construction of these alternatives may result in visual disturbance, some noise, and dust. These affects would be temporary and would not impact the property.

Bill Brown Saloon

All of the Segment E alternatives would pass at a close enough distance that construction of these alternatives may result in visual disturbance, some noise, and dust. These affects would be temporary however would not impact the property.

8.3.3 Maintenance Facilities

None of the maintenance facilities—116th Avenue (MF1), 124th Avenue NE (MF2), SR 520 (MF3), and Redmond (MF5)—have historic properties located in their APE; therefore, no historic properties would be impacted by the construction of these facilities.

9.0 Minimization and Mitigation Measures

The Section 106 process provides a procedure to seek ways to avoid, minimize, or mitigate adverse effects on historic properties. Potential mitigation is required if project activities directly or indirectly cause adverse effects to recognized historic properties. Participants in the Section 106 process include agency officials; the ACHP; consulting parties such as the SHPO, Native American Tribes, and local government representatives; and the public, as appropriate.

Given that FTA, in consultation with SHPO, has made a determination of Adverse Effect for the project, an MOA is required pursuant to 36 CFR 800.6[c]. Adverse impacts on historic properties must be resolved through the Section 106 process by preparing an MOA. This document records the terms and conditions agreed upon to resolve the impact of the project on historic properties, and is signed by Sound Transit and FTA, the SHPO, and other consulting parties, if appropriate. Sound Transit will comply with all local ordinances on impacts to historic resources.

An MOA contains stipulations specifying avoidance, minimization, or mitigation measures to be implemented to resolve the potential impacts. A draft MOA addresses potential impacts on the Winters House, potential Surrey Downs historic district, and archaeological resources. The proposed measures for these resources are also described in this section.

9.1 Archaeological Sites

Although some potentially sensitive archaeological areas are identified, studies to date have identified no NRHP-eligible prehistoric or historic-period archaeological sites in the project APE.

Although much of the APE has seen ground disturbance, fill, and development, it is possible that one or more archaeological sites may exist beneath the ground surface in areas where project excavation would take place. Project archaeologists will conduct additional subsurface testing before construction— activities referred to as Stage 2 survey— and/or monitor ground-disturbing activities in archaeologically sensitive areas during construction.

An Archaeological Resources Monitoring and Treatment Plan (ARMTP), or an Unanticipated Discovery Plan (UDP), will be prepared based on the Archeological Survey Plan (Appendix A)to provide additional information that would guide archaeological monitoring work during East Link Project construction. FTA and Sound Transit will coordinate with SHPO, the Muckleshoot and Snoqualmie tribes, and other interested parties as appropriate, to review the plan.

In the event that significant archaeological deposits are inadvertently discovered during construction in any portion of the project area, ground-disturbing activities will be halted and the procedures of the UDP followed. If ground-disturbing activities encounter human skeletal remains during the course of construction, FTA and Sound Transit will implement relevant procedures in the UDP and follow federal and state laws regarding the discovery of human remains. If the remains are determined to be Indian, FTA and Sound Transit will notify DAHP and the affected tribes to consult regarding treatment of the remains.

9.2 Historic Buildings and Structures

The East Link *Preferred Alternative B2M* has the potential to cause an impact on the Winters House. Preferred Alternative C11A and Alternatives C4A, C2T, and C3T have the potential to cause an impact on the potential Surrey Downs historic district. The project has the potential to cause an impact on the Justice William White House through Alternative E4. Table 9-1 summarizes the historic properties; and the properties listed, or recommended as eligible for listing, in the NRHP; the mitigation or minimization measures proposed to resolve potential impacts to the resource.

9.2.1 Minimization Measures

The following minimization measures will be incorporated into the project, avoiding a potential impact n adverse effect of the project, consistent with 36 CFR Park 800.5(b). General minimization efforts to be incorporated in to the project that could further minimize effects on historic properties would include the following

- Take precautions that historic properties are protected from vibrations, excavations, and damage from heavy equipment.
- Protect facades of affected historic buildings from an accumulation of excessive dirt and dust during construction, and/or clean them in an appropriate manner at the conclusion of construction. Sound Transit would consult with the SHPO before implementing any protection or cleaning methods.
- Control fugitive dust using measures listed in the EIS Air Quality Section.
- Maintain access to historic properties to the extent possible.

The above mentioned minimization measures would resolve impacts on the Safeway Store, the Former Bellevue Fire Station, the Bill Brown Saloon, and the Redmond Trading Company. Additional, resource specific minimization measures are described below.

9.2.1.1 Winters House

All measures to minimize potential operational period impacts to the Winters House are incorporated in project design and specified in the MOA.

Operation of *Preferred Alternative B2M*

- Standard methods of vibration reduction, such as resilient fasteners or ballast mats will be incorporated into the project and a floating slab would be incorporated as necessary to reduce the level of groundborne noise and eliminate the impact.
- Landscape the area of property between the front (west elevation) of the Winters House and Bellevue Way SE to more closely reflect the landscaping of the historic period, in consultation with the City.
- Sound Transit will provide interpretive signage on or near the Winters House property in consultation with the City of Bellevue.

Construction of *Preferred Alternative B2M*

- Photograph and inventory the building to establish existing conditions.
- Install vibration and settlement monitoring devices and adjust excavation methods based on monitoring results.
- Use specific vibration- and settlement-reducing construction methods (to be determined during final design and construction); methods could include the following:
  - Using rotating/oscillating construction equipment, underpinning the house foundation and front porch, and other methods of ground improvement such as high pressure grouting
  - Constructing the retained cut side walls using slurry confinement (temporarily filling the excavated cavity with slurry material to replace removed soil) at the deepest excavation points
  - Installing a shallow temporary supporting wall to provide additional lateral support for the porch foundation footings and/or underpin the porch
- Potentially build a construction barrier around Winters House to prevent damage and minimize dust.
- Close the Winters House during construction and temporarily relocate the tenant (Sound Transit would provide information to the public regarding how to access the Eastside Heritage Center during construction).
- If damage does occur, make the needed repairs consistent with the U.S. Secretary of the Interior's standards for treating historic properties.

TABLE 9-1
Historic Properties within Project Area of Potential Effect, Eligibility, and Effect Findings

Segment	Map ID	Property Name/Type	Address	Register Status	Avoidance Minimization Mitigation	Effect Findings
A, Interstate 90	376	Publix Hotel (Seattle Chinatown NRHP/ International Special Review historic district)	504 5th Avenue South	Contributing element to NRHP and Seattle Special Review historic districts	Project avoids resource.	No Impact
	132	Immigrant Station and Assay Office	815 Airport Way South	NRHP, WHR, eSL	Project avoids resource.	No Impact
	303	Jose Rizal 12th Avenue South Bridge	12th Avenue South crossing of South Dearborn Street	NRHP, WHR, eSL	Project avoids resource.	No Impact
	166	Will H. Thompson House	3119 South Day Street	NRHP, WHR, SL	Project avoids resource.	No Impact
	I90	I-90 Lake Washington Highway Segment between mileposts 3.4 and 8.9 (includes Mount Baker Ridge Tunnel and Eastern Portals)	I-90 between mileposts 3.4 and 8.9	eNRHP, eWHR, SL[a]	Project is consistent with the character and design intent of I-90.	No Impact
	156	Endresen Residence	1402 32nd Avenue South	eSL	Project avoids resource.	No Impact
	133	Romaine Electric/Washington Iron Works Pattern Shop	1101 Airport Way South	eSL	Project avoids resource.	No Impact
B, South Bellevue	16	Frederick Winters House	2102 Bellevue Way SE	NRHP, WHR	All alternatives, except *Preferred Alternative B2M* avoid resource. *Preferred Alternative B2M* designed with minimization and mitigation measures during construction and in operations. Project would benefit the property with landscape improvements consistent with the historic period and interpretative signage.	Potential Impact for Alternative B2M only
	63	Pilgrim Lutheran Church	10420 SE 11th Street	eNRHP, eWHR	Project avoids resource; small area of parking lot is affected, away from resource.	No Impact

TABLE 9-1
Historic Properties within Project Area of Potential Effect, Eligibility, and Effect Findings

Segment	Map ID	Property Name/Type	Address	Register Status	Avoidance Minimization Mitigation	Effect Findings
C, Downtown Bellevue	various	Potential Surrey Downs historic district	Between 108th Avenue and 112th Avenue SE, south of Main Street (see Table 7-4)	Potentially eNRHP, eWHR	*Preferred Alternative C11A*: project avoids resource; resource is separated from project with landscaped buffer and noise barrier. Construction minimization measures in place.	Potential Impact
	1100	Safeway Store	414, 424, and 456 104th Avenue NE	eNRHP	Project avoids resource.	No Impact
D, Bel-Red/Overlake	104	Former Bellevue Fire Station	14822 NE Bellevue-Redmond Road	eNRHP, eWHR	Project avoids resource.	No Impact
E, Downtown Redmond	112	Justice William White House	Leary Way NE and NE 76th Street	eNRHP, eWHR, RHL	Project avoids resource, except for Alternative E4 (requires relocation of the house).	Potential Impact for Alternative E4 only
	113	Redmond Trading Company	7805 Leary Way NE	eRHL	Project avoids resource	RHL
	114	Bill Brown Saloon Building	7824 Leary Way NE	RHL, eNRHP, eWHR	Project avoids resource.	No Impact
	118	Dudley Carter/Haida House	Sammamish Slough Park	RHL	Project avoids resource.	No Impact

NRHP National Register of Historic Places

WHR Washington Heritage Register

SL Seattle Landmark

RHL Redmond Historic Landmark

e determined eligible

[a] The Mount Baker Ridge Tunnel and Eastern Tunnel Portals are also designated as Seattle Landmarks

9.2.1.2 Pilgrim Lutheran Church

Operation of Alternative B1

- Avoid stormwater vault maintenance during church services and special events to the extent possible.
- Minimize parking space obstruction during stormwater vault maintenance.

Construction of Alternative B1

- Apply typical BMPs to minimize and avoid construction impact.
- Avoid construction during church services and special events to the extent possible.
- Restore disturbed areas following construction.

9.2.1.3 Potential Surrey Downs Historic District

All measures to minimize potential operational period impacts to the Winters House are incorporated in project design and specified in the MOA.

Operation

Preferred Alternative C11A

- Install a permanent sound barrier along the south side of the guideway along Main Street to prevent noise impacts on contributing properties in the potential Surrey Downs historic district.
- Landscape along south side of the guideway and the 108th Station along Main Street where noncontributing properties are removed.

Alternative C4A

- Install a permanent sound barrier along the south side of the guideway along Main Street, adjacent to contributing properties.
- Landscape along the south side of the guideway along Main Street to enhance the neighborhood boundary where noncontributing properties are removed.

Construction

***Preferred Alternative C11A* and Alternative C4A**

- Apply typical BMPs to minimize and avoid construction impacts.
- Before construction begins, install a solid construction barrier along contributing properties south of Main Street.
- Where possible, preserve the evergreen trees along the south edge of the proposed station area, east of 108th Avenue SE.

Alternative C2T and C3T

- Apply typical BMPs to minimize and avoid construction impacts.
- Before construction begins, install a solid construction barrier along contributing properties south of Main Street.

9.2.2 Mitigation for Adverse Effects

Justice White House, Alternative E4

Consult with SHPO to determine whether an appropriate location can be found to relocate this resource. If such a location can be determined, FTA and Sound Transit would consult with SHPO, the City of Redmond, and other interested parties to develop and to determine a suitable relocation site that preserves the Justice William White House's setting, feeling, and association with the railroad, thus maintaining its eligibility for the NRHP. The relocation would be managed by qualified architects and engineers in a manner to avoid damage to the building and preserve its eligibility for listing in the NRHP. Prior to relocating the building, Sound Transit would fully record the building in its original context through a Level II Historic American Building Survey/Historic American Engineering Record documentation. This would include photographs, measured drawings, and a written history component. If alternative E4 were selected, then the MOA would be altered to include mitigation for the Justice William White House.

10.0 Cumulative Effects

Reasonably foreseeable future actions in the project vicinity would have no direct impacts on specific historic or archaeological resources in the East Link Project study area. However, cumulatively, the past, present, and future projects affect historic properties and archaeological resources. Incrementally, new infrastructure and development patterns change the historic setting of specific resources as a result of past and ongoing urbanization, particularly in Bellevue and Redmond.

East Link could affect the Winters House and the potential Surrey Downs historic district in Bellevue and the Justice William White House in Redmond. The settings surrounding these structures have already been altered by the development, increasing traffic conditions, and changes of uses surrounding them. Incrementally, East Link is part of the changing fabric of urbanization. In this regard, there is an incremental cumulative impact on historic resources. No direct or indirect impacts on archaeological resources are expected; therefore, no cumulative impact is expected.

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