Chapter 3

Environmental Consequences

This chapter evaluates the environmental impacts for the new alternatives and design modifications described in Chapter 2. Some of the impacts for the alternatives evaluated in the 2008 Draft EIS are updated herein to reflect design modifications but also updates or changes to the existing environment. For example, in Segment A, the only change is the determination that a segment of I-90 in the East Link study area is eligible for the National Register for Historic Places (NRHP). This SDEIS analyzes the alternatives in Segments B, C, D, and E when the alternatives or impacts are substantially different than otherwise reported in the 2008 Draft EIS.

This SDEIS is organized by segment and by alternative, rather than by resource. The emphasis is how the new alternative or modified alternative may or may not result in impacts above the range or substantially different than impacts originally reported in the 2008 Draft EIS. Each segment begins with an overview of how the new alternatives or design modifications compare against the 2008 Draft EIS, and then the subsequent discussion by alternative discusses only resources where there are new or differing impacts and mitigation.

Environmental effects within the range of impacts—for both operation and construction—analyzed in the 2008 Draft EIS are not generally discussed in this chapter. Specifically, none of the alternatives evaluated herein would result in impacts greater than those noted in the 2008 Draft EIS for Land Use, Air Quality and Greenhouse Gases, Water Resources, Energy, Hazardous Materials, Electromagnetic Fields, Public Services, and Utilities. Air quality analysis for the worst performing intersection among the SDEIS alternatives indicates that CO2 is still well below federal standards at any of the intersections in the project area. Similarly, this SDEIS does not repeat construction impacts or mitigation measures from the 2008 Draft EIS that would occur for the new alternatives and design modifications being evaluated. Instead, this SDEIS focuses on construction impacts and mitigation measures that are unique to the new alternatives and/or design modifications.

Appendix A, Section 4(f)/6(f) Supplemental Evaluation, identifies Section 4(f) resources, historic properties eligible for the National Register of Historic Places (NRHP) and public park and recreation facilities, and Section 6(f) resources, recreation areas acquired with Land and Water Conservation Funds (LWCF), along the new East Link Project alternatives evaluated in this SDEIS and the Preferred Alternatives. This appendix discusses how these project alternatives would affect the resources; it lists impacted Section 4(f) resources that may have a *de minimis* use; it discusses the evaluation of alternatives that would avoid Section 6(f) resources; and it identifies potential measures that should be considered to minimize harm resulting from unavoidable use of Section 4(f) and Section 6(f) properties. The evaluation also documents FTA and Sound Transit consultation to date with the Department of Archaeology and Historic Preservation (DAHP) regarding historic resources and with public agencies that have jurisdiction over the Section 4(f) and Section 6(f) properties. FTA and Sound Transit initiated consultation with DAHP and the tribes in an August 24, 2006 letter. Consultation continued with DAHP after publication of the 2008 Draft EIS into 2010 with meetings and correspondence regarding concurrence determinations. Meetings were also held in 2006 with the Muckleshoot and Snoqualmie tribes regarding cultural resources. Sound Transit initiated consultation with the cities of Seattle, Bellevue, Mercer Island, and Redmond and King County in its August 2006 letter inviting the agencies to participate as cooperating agencies under NEPA. Additionally, FTA and Sound Transit invited the National Park Service to participate as a participating agency. Consultation continued through meetings with the cities, King County, and the National Park Service regarding potential project impacts on Section 4(f) and Section 6(f) resources. Table A-7 in Appendix A provides a list of consultation meetings and correspondence.

FTA determinations of effect on historic resources and Section 4(f) findings will be made after concluding the consultation with affected agencies and jurisdictions and review of public comment after publication of the SDEIS.

The 2008 Draft EIS was developed using the most applicable information available at the time. Since 2008, there have been several changes that require the analysis for the alternatives included in the SDEIS to be updated. This includes incorporating

the City of Bellevue's and City of Redmond's recently adopted land use plans, and noise information from the opening of Sound Transit's light rail service between Seattle and the Airport (Central Link). Concurrently, Sound Transit has continued design modifications to reflect comments on the 2008 Draft EIS alternatives and to respond to the Sound Transit Board's directives on the preferred alternative. Design development has benefited from additional transportation modeling, noise and vibration testing, historic and archaeological resource surveys and geotechnical investigations.

SDEIS Updates

As described below, the SDEIS analysis reflects changes to methodology or other new information for the new alternatives related to the following:

- Update to the Transportation methods and assumptions
- Updates to the Noise analysis
- Detailed Vibration study
- Additional Historic and Archaeological Resource surveys

Update to the Transportation Methods and Assumptions

To prepare for the 2008 Draft EIS, Sound Transit developed the Transportation Methods and Assumptions Report, which was reviewed and commented on by all affected jurisdictions and the Washington State Department of Transportation (WSDOT). The results are documented in Appendix H1, East Link Transportation Technical Report, of the 2008 Draft EIS. In summary, the Transportation Methods and Assumptions Report relies on the Puget Sound Regional Council (PSRC) regional transportation model to produce future forecasts.

Since 2008, there have been several changes incorporated into the transportation methods and assumptions which are reflected in the SDEIS alternatives. Three primary updates are:

- Updates to the transit and ridership forecasting to account for the voter-approved ST2 plan (Sound Transit, 2008)
- Changes due to newly adopted land use plans in Bellevue and Redmond
- Changes in project schedules for regional transportation planned projects as adopted by PSRC and WSDOT

Sound Transit analysis reflects the long-range transit plan and ridership forecasting consistent with the voter-approved ST2 plan. The future-year analysis was also updated from the 2008 Draft EIS based upon updates to the City of Bellevue's and City of Redmond's subarea land uses. These land use updates were coordinated through the PSRC.

Specifically, the Sound Transit analysis includes the adopted Bel-Red Subarea Plan and the Overlake Village Plan Update long-range plans. The City of Bellevue adopted their subarea plan in 2009, and the City of Redmond adopted updates to the Overlake Village plan in 2009, thereby reflecting a change in projected population, households, and employment in these areas. These changes influence the forecasting and operational model projections for these areas. Even though the plans were not included in the 2008 Draft EIS analysis, Sound Transit had anticipated the changes and referenced these studies, including their land use and forecasted ridership estimates, in Section 3.4.3 of the 2008 Draft EIS.

Since the 2008 Draft EIS was published, projects' schedules and agency commitments have affected several regional projects' status of being considered reasonably foreseeable. These projects mainly include local roadway projects, but changes to state highways and enhancements to Sound Transit and Metro Transit service are also included. In addition, several infrastructure projects that affect the regional traffic flow will be constructed earlier than originally scheduled. For the complete list of future projects assumed and incorporated into the traffic model, refer to Appendix D, Table D1, of this SDEIS.

Other than these changes, the methods and assumptions documented in the Transportation Methods and Assumptions Report from the 2008 Draft EIS remain constant. These updates are not expected to dramatically affect the analyses performed for the 2008 Draft EIS alternatives; however, to maintain consistency with the projected regional growth expectations, these changes are incorporated into this analysis for the SDEIS alternatives.

Due to the changes identified above from the 2008 Draft EIS, the transportation system analysis for new or modified SDEIS alternatives focused on the following three transportation elements:

- Transit, specifically ridership forecasts
- Arterial and local street operations, including intersection level of service (LOS) operations,

traffic circulation and access, safety, parking, and construction

- Nonmotorized facilities and travel

Other transportation elements discussed include traffic control, property access and circulation, parking, and traffic safety. Regional Travel, Highway Operations and Safety, Freight Mobility and Access, and Navigable Waterways sections, which appeared in the 2008 Draft EIS, are not included in the SDEIS because there are no identified effects caused by the SDEIS alternatives on those elements or because the impacts would be the same as those already discussed in the 2008 DEIS. Also, consistent with the 2008 Draft EIS, the environmental impacts are described for the two future years—2020 and 2030—for each element. The impact analysis compares the No Build Alternative with the East Link alternatives. Appendix D provides tables and exhibits supporting the conclusions and discussions for the new alternatives and design modifications in this SDEIS.

At-Grade Light Rail Peer Review

In addition to the analysis in this SDEIS, Sound Transit and the City of Bellevue cooperatively explored the new alternatives in Segment C and analyzed their effects on traffic operations using different models than applied in the 2008 Draft EIS or this SDEIS in the *Downtown Bellevue Light Rail Alternatives Concept Design Report* (Sound Transit and City of Bellevue, 2010). As validation of these results, a peer review by traffic engineering and transit operations professionals from Portland, Denver and San Diego was organized. This group concluded that the traffic modeling, simulation, and operational analysis were sufficient to compare alternatives. Based upon their extensive experience in all three cities, the panel concluded that the surface alternatives studied would have impacts on traffic operations that are similar to those of other surface light rail systems in the comparable environments of downtown Portland, Denver, and San Diego. The panel noted that most of the changes in forecasted future traffic operating conditions in Downtown Bellevue are the result of traffic volume growth and not the introduction of surface light rail.

This analysis is not used as the basis of impacts in the SDEIS because the no-build condition was not analyzed nor were the other build alternatives from the 2008 Draft EIS. Even so, some of the key findings of the Downtown Study are important to note. Specifically, two criteria (i.e., average vehicle delay for all downtown intersections and average vehicle delay for intersections adjacent to the at-grade light rail alignments) produced similar conclusions as the EIS analysis when comparing the grade-separated (C9T and C14E) and at-grade (C9A and C11A) alternatives. In both analyses, the difference between the grade-separated and the at-grade alternative for the average downtown vehicle delay was within 10 percent. The SDEIS analysis projected similar percentage differences in vehicle delay for the key affected intersections as those presented in the *Downtown Bellevue Light Rail Alternatives Concept Design Report*. Further information on downtown street operations is provided in the coauthored Sound Transit and City of Bellevue *Downtown Bellevue Light Rail Alternatives Concept Design Report*, available on the Sound Transit web site.

Updates to the Noise Analysis

Sound Transit has begun service on Central Link light rail which allows for operational noise monitoring that was not available at the time the 2008 Draft EIS was published. Noise measurements of train operations in Seattle allow more accurate noise modeling for future light rail conditions. New information includes updated reference noise levels from the existing fleet of light rail vehicles; locations of track crossovers; light rail operational characteristics for at-grade crossings, including train-mounted warning bells, and wheel squeal on curves. This section summarizes those changes and how they affect the noise analysis of the SDEIS alternatives.

Noise and Vibration

This section provides a brief introduction to noise and vibration. Details on the methods used for the noise and vibration analysis are provided in the 2008 Draft EIS, Appendix H2, *Noise and Vibration Technical Report*. The noise and vibration analysis for this SDEIS was performed using updated information provided only for the new alternatives analyzed. The update includes new train operation noise measurements, identification of track crossovers, and at-grade crossings where bells would ring. A summary of the updates is provided following the introduction to noise and vibration.

Noise is defined as unwanted sound, which is measured in terms of sound pressure level and is usually expressed in decibels (dB). The human ear is less sensitive to higher and lower frequencies than it is to mid-range frequencies. Therefore, a weighting system that filters out higher and lower frequencies in a manner similar to the human ear was developed. Measurements made with this weighting

system are termed "A-weighted" and are described in terms of "dBA" readings.

The L_{max} is the loudest instantaneous noise level during a preset measurement period. The equivalent sound level (Leq) is the level of a constant sound for a specified period of time that has the same sound energy as an actual fluctuating noise over the same period of time. The day-night sound level (Ldn) is the Leq over a 24-hour period, with a 10-dBA penalty factor added to nighttime sound levels occurring between 10 p.m. and 7 a.m. The Ldn is the primary noise level descriptor for light rail noise at residential land uses. The peak-hour Leq is used for all traffic and light rail noise analysis for locations with daytime use, such as schools and libraries.

There are two components of vibration: ground-borne noise and ground-borne vibration. Ground-borne vibration is transmitted through the ground from the vibration source to a receiver. Although ground-borne vibration attenuates over distance, some soil types transmit the vibration quite efficiently, while others do not. The response of humans, buildings, and sensitive equipment to vibration is described in this section in terms of the root-mean-square (RMS) velocity level in decibel units (VdB). As a point of reference, the average person can just barely perceive vibration velocity levels below 70 VdB. Ground-borne noise is the "rumble" that can radiate from the motion of room surfaces in buildings due to ground-borne vibration. Because airborne noise often masks ground-borne noise for above-ground (i.e., at-grade or elevated) transit systems, ground-borne noise is usually assessed for subway operations as airborne noise is not a factor. For above-grade transit systems, ground-borne noise is only assessed at buildings that have sensitive interior spaces that are well insulated from exterior noise.

FTA Impact Criteria

The impact criteria given in the *Transit Noise and Vibration Impact Assessment Manual* (FTA, revised May 2006) is based on research of community reaction to noise, and it reflects changes in noise exposure by using a sliding scale based on use. The vibration criteria is also based on use, and for most land uses is based on a single number; however, the vibration criteria also has several categories of special use buildings, such as recording studios and concert halls, where vibration and ground-borne noise can impact the facility's operations. Tables and figures of the FTA criteria, including a breakdown of moderate and severe impacts, can be found in the 2008 Draft EIS, Appendix H2, *Noise and Vibration Technical Report*.

Reference Light Rail Noise Levels

During the 2008 Draft EIS the reference noise levels used for light rail vehicles were taken from the initial noise measurements of Central Link vehicles on ballast and tie tracks in South Seattle. Since that time, updated noise measurements have shown that the noise from the trains is slightly louder than expected. Recent testing on the existing fleet of Link light rail vehicles indicates current reference noise levels range from 78 to 79 dBA at 50 feet, which is slightly louder than expected. As a result, the SDEIS analysis is using the updated reference noise level of 79 dBA at 50 feet at 40 mph, thereby resulting in higher project noise levels and an increase in the number or severity of noise impacts in some areas. The reference noise levels are used with corrections for track type, cars per train, train speed, operational schedule, and distance and topography to noise sensitive properties to predict operational noise levels.

Sound Transit continues to work on methods of reducing the effects of the higher light rail operation noise, including rail-grinding and maintenance. At this time, however, Sound Transit is using the higher bypass noise levels for the analysis to assure that all potential noise impacts are identified.

Crossovers

A second design-related issue that was updated since the 2008 Draft EIS is the location of track crossovers. A track crossover—also referred to as a switch or turnout—is a mechanical device that enables light rail vehicles to be guided from one track to another at a junction point. The crossover locations were not previously identified for the 2008 Draft EIS; however, Appendix G in this SDEIS analysis includes the crossover locations.

As the light rail vehicle wheels cross over the gap along the through tracks, a loud "ka-thunk" noise could occur along with increased vibration levels. According to the FTA's Transit Noise and Vibration Impact Assessment Manual (FTA, 2006), standard crossovers can produce maximum levels of 90 dBA at 50 feet in addition to the noise emitted by the train pass-by and can also increase vibration levels by as much as 10 vibration velocity level (VdB). This SDEIS models these noise effects and describes appropriate mitigation measures.

At-Grade Crossings, Train Bells and Gated Crossing Bells

Additional light rail noise elements not previously identified are the bells that announce a train crossing an intersection and bells at gated crossings or at a station entrance. The locations of the at-grade crossings where bells may be included are illustrated in Appendix G. The current policy for Sound Transit light rail vehicles is to sound the train-mounted bells, which produce 80 dBA at 50 feet (during daytime hours) or 72 dBA at 50 feet (during nighttime hours), two to three times as a train approaches and travels through at-grade intersections and pedestrian crossings. In addition, for those intersections where vehicles could cross the tracks due to sight limitations, or where the train is running faster than 35 mph, gated crossings with warning bells might also be required. The bells at these crossings typically sound for 10 to 20 seconds as the gates are lowered and again as the gates are raised. The sound level for the gated-crossing bells is normally set to 75 dBA at 10 feet (or 55 dBA at 100 feet). These bell sounds are also added to the SDEIS noise analysis and as impacts are identified, measures are also evaluated for their effectiveness to mitigate the noise effects. Exhibit 3-1 provides the typical noise reduction with distance for train bells and warning bells at gates.

Wheel Squeal Noise

While the 2008 Draft EIS did discuss light rail wheel squeal issues, Sound Transit has since been able to more accurately predict these noise effects. Wheel squeal is a high-frequency noise that occurs on curves due to the wheels on the train rotating at different speeds; this noise normally occurs on curves with radiuses of less than 600 feet. Sound Transit's noise analysis for this SDEIS includes an assessment of locations where wheel squeal may occur (600-foot radius curves or less) in order to thoroughly analyze any potential noise impacts. Because the magnitude of noise from wheel squeal varies with the radius a graph of noise reduction with distance was not provided.

Detailed Vibration Study

The 2008 Draft EIS noted a few residual vibration impacts after mitigation. Consistent with FTA vibration analysis guidance, as the environmental

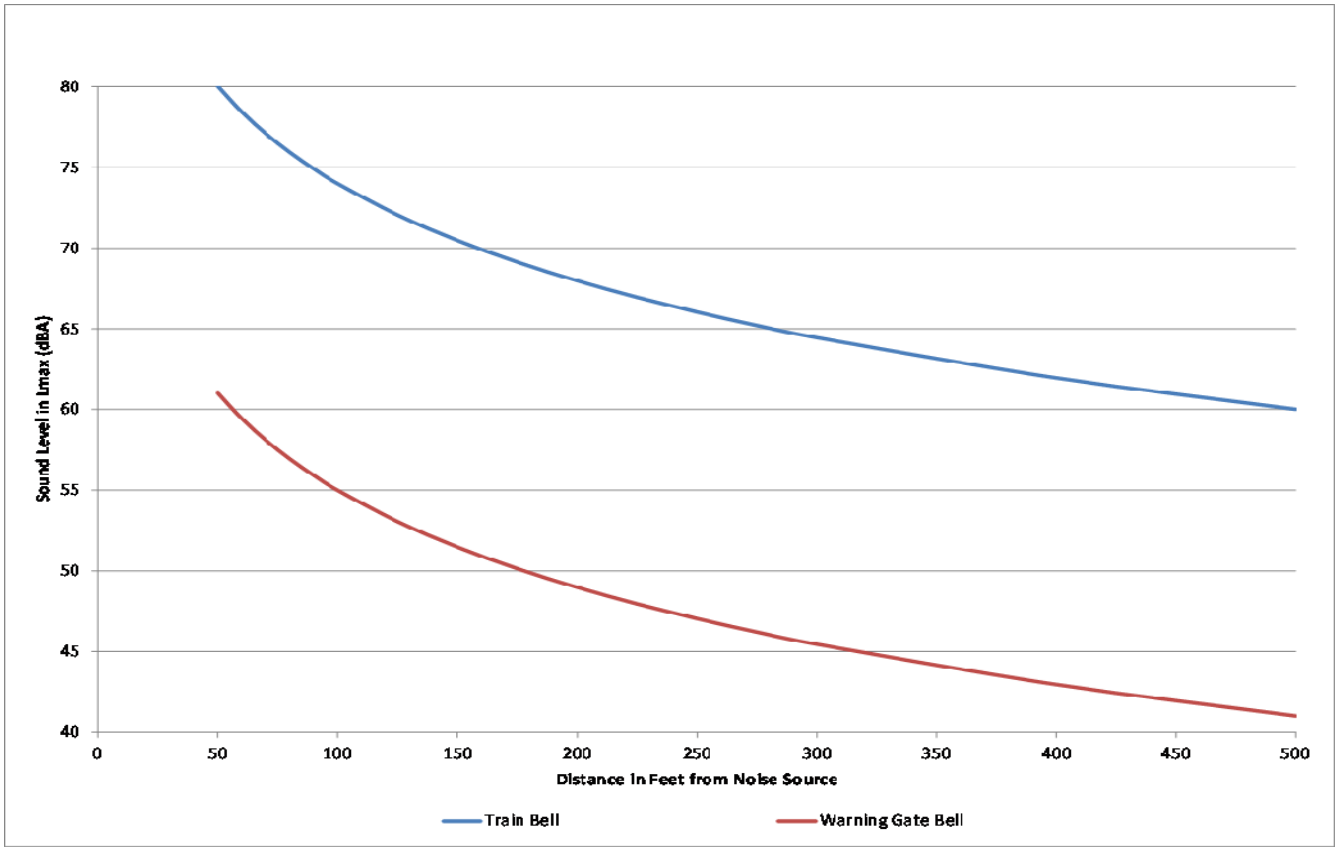


EXHIBIT 3-1
Noise level reduction with distance
(Train Bells and Warning Gate Bells)

process refines the project alternatives, the affected resources can be evaluated in more detail. This process considers the construction methods proposed adjacent to the possibly affected structures and the influence of the foundation and building materials to more accurately determine long-term vibration impacts and mitigation options; this analysis has been completed for those structures with possible vibration impacts within the project area. The study addresses vibration impacts on the SDEIS alternatives where there might be possible affected resources.

The vibration propagation test procedure assesses the ground response to vibration at locations along broad areas within a project corridor. The test basically consists of dropping a 60-pound weight from a height of 3 to 4 feet onto the ground. The analyst measures both the force of the impact and resulting vibration pulses at various distances from the ground. The relationship between the input force and the ground surface vibration—called the transfer mobility—characterizes vibration propagation through the ground at a location. These propagation data are combined with light rail vehicle characteristics to project vibration levels at locations along the project corridor. Because the results of the propagation tests are generalized for large areas of the corridor, a level of conservatism is built into the analysis. The result of this initial vibration analysis is to determine locations where vibration impact would be possible. At this point, a second set of vibration propagation tests are conducted to refine the analysis; this second set of tests can include two sets of measurements.

The first set of measurements would be additional ground-response testing in locations where impacts are projected. These site-specific tests give information regarding the ground response at a discrete location, rather than over a larger area. The second set of measurements would include building-specific, outdoor-to-indoor testing to determine the foundation response of an individual building or of a specific location within a building. Typically, large buildings (such as apartment buildings or hotels) with significant foundations provide vibration attenuation from the ground into the building. This attenuation is unique to each building, and these tests are typically performed only at sensitive locations or where vibration has been projected for buildings with large foundations.

Typically, these more accurate measurements of potential vibration effects reveal a lower potential for vibration effects than the initial projected vibration levels. This is especially true in the case of large buildings, where the foundation can substantially reduce the vibration levels from the outside to the inside of the building. The results of these more detailed analyses are recorded in the SDEIS analysis, particularly focused on alternatives nearest the Winters House and the Meydenbauer Center in Bellevue.

Ecosystems

Since the 2008 Draft EIS, additional wetland delineations have allowed for a more detailed understanding of the potential wetland and wetland buffer impacts associated with the preferred alternative. The wetland delineations are limited to areas with access permission granted. These areas included the Mercer Slough, WSDOT right-of-way, and areas within the Bel-Red corridor. As a result of these delineations, this SDEIS includes information updated since the analysis was conducted for the 2008 Draft EIS.

Geology and Soils

Since the 2008 Draft EIS was published, WSDOT has prepared a study providing greater detail on soil conditions in the I-90 corridor through the Mercer Slough. Results of this study indicate additional construction risk and potential construction and operation impacts in the Mercer Slough. The SDEIS reflects findings of WSDOT's study.

Additional Archaeological Resource Surveys

In response to DAHP comments on the 2008 Draft EIS, Sound Transit conducted additional archaeological surveys and sought more details on the impacts associated with key historic resources within the area of potential effect (APE) for the SDEIS alternatives. Sound Transit developed an archaeological survey plan for the East Link Project in a series of "stages." Stage 1 was surveyed in March, June, and July 2010 and included those areas of publicly accessible lands that are not paved or known to be overly disturbed. Stage 2 and later survey tracts are those outside of public ownership or are paved or will be otherwise less accessible when the Final EIS is prepared. Stage 2 and later surveys will be refined based on information from the Stage 1 survey and geotechnical borings and will occur once the properties have been acquired by Sound Transit after the Final EIS is completed. Information gathered from the Stage 2 survey will inform preparation of the Archaeological Resources

Monitoring and Treatment Plan (ARMTP) to be implemented during construction.

The 2010 survey tracts were selected based on two sensitivity models: the Sound Transit sensitivity mapping used in the 2008 Draft EIS and the DAHP-approved predictive model prepared by GeoEngineers, Inc. The Sound Transit sensitivity mapping prioritized areas within about one-quarter mile of waterbodies; areas on higher ground, such as terraces above waterbodies or that provide protection and/or visibility, such as bluff tops; and areas on General Land Office (GLO) plats and/or Sanborn fire insurance maps that revealed historical land use. The DAHP geographic information system (GIS)-based archaeological predictive model uses statistical methods and statewide environmental and cultural resources data, such as geology, soils, landform, and historical GLO plats correlated with locations of known archaeological sites, to determine the probability that a specific location could contain an archaeological site.

Under both sensitivity models, ten additional tracts were surveyed beyond those already surveyed during the 2008 Draft EIS as high probability for archaeological resources. While the 2007 survey was generally limited to surface investigation (except for alluvial sediments or relatively shallow historical fill), the 2010 survey focused on a systematic subsurface survey of the preferred alternative evaluated in the SDEIS in the identified survey tracts. Probes were generally spaced at about 20-meter (66-foot) intervals, and they were excavated down to sterile materials, or about 2 meters (7 feet) in depth. Excavated material was screened through one-quarter-inch mesh and examined for prehistoric- and historic-period artifacts. The survey resulted in additional documentation, but it did not result in any new archaeological sites potentially eligible for the NRHP that needed additional analysis in this SDEIS. The information gained from the survey, however, will be valuable in refining the project's future preconstruction archaeological surveys.

Environmental Analyses

The updates as described above are incorporated into this SDEIS for the new alternatives and design modifications and will also be applied to all alternatives in the Final EIS to provide a consistent analysis and assessment of environmental effects.

While changes to some of the methodologies differ from the 2008 Draft EIS, the SDEIS analyses best reflect the most current information available. Additionally, while some of the inputs to the transportation models have been updated and included in the analysis of the SDEIS alternatives, most data and model assumptions have not changed since the 2008 Draft EIS. Therefore, the conclusions and results from 2008 Draft EIS are not substantially different. Similarly, Sound Transit is dedicated to mitigating noise impacts for all sensitive receptors. As a result, this SDEIS analysis results in the same conclusion—eliminating noise impacts for all alternatives—as reported in the 2008 Draft EIS. Updates to the Historic and Archaeological Resources and Vibration assessments refine the impact and effectiveness of the mitigation measures to both the SDEIS and previous 2008 Draft EIS alternatives. Therefore, this SDEIS applies the most updated information available analyzing the new alternatives to demonstrate the range of impacts consistent with those reported in the 2008 Draft EIS.

3.1 Segment A, Preferred I-90 Alternative (A1)

The *Preferred I-90 Alternative (A1)* remains as presented in the 2008 Draft EIS; however, WSDOT, on behalf of FHWA 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:

- **Criteria A:** Associated with events that have made a significant contribution to the broad patterns of our history
- **Criteria C:** 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.
- **Criteria Consideration G:** A property achieving significance within the past fifty years is eligible if it is of exceptional importance.

The segment of I-90 between milepost 3.4 and 8.9, from the west end of the Martin Luther King Jr. Way Lid to the east end of the East Channel Lake Washington Bridges, including the roadway, ramps, lids, overcrossings, undercrossings, bridges, and tunnels, was determined eligible for the NRHP by WSDOT on behalf of the FHWA. This is a segment of the federal Interstate Highway System that was identified by the FHWA, in consultation with the Advisory Council on Historic Preservation (ACHP), to have nationally and exceptionally significant features and is, therefore, not exempt from Section 106 review based on age.

Completed between 1987 and 1992 and, therefore, less than 50 years old, the I-90 Lake Washington Segment was determined NRHP-eligible per Criteria Consideration G. This segment is of exceptional importance as one of only four Interstate Highway System segments in Washington state identified by WSDOT, in consultation with the FHWA, the Advisory Council on Historic Preservation, and the DAHP, as potentially significant segments of the Interstate Highway 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 Determination of Eligibility documentation prepared for the resource supports including this segment on that list as a feature of exceptional national significance. DAHP concurred with the determination of eligibility in its letter of November 23, 2009. 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.

Under Criterion A, this roadway is a key piece of transportation history and an important component of the Interstate Highway System because it involved innovative engineering, including the floating bridges and Mount Baker Ridge Tunnels. A distinctive aspect of the tunnels is the ornamentation of the east portals (Exhibit 3-2).

EXHIBIT 3-2
Mount Baker Ridge Tunnel, East End of I-90 Tunnel

Unique to the I-90 Lake Washington Segment was its design with a vision for the future when mass transit would be a necessity. Two middle lanes were designated for future mass transit and use as reversible commuting lanes for high-occupancy vehicles (HOV)/buses, and eventually for light rail. The Determination of Eligibility documentation notes that a central part of the roadway, separating the three-lane eastbound and three-lane westbound sections, was designed to be operated in reverse to accommodate peak-hour traffic or mass transit and emergency vehicles.

Under Criterion C, the segment involved innovative engineering, incorporating unusual and costly amenities. I-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 Lake Washington Segment of I-90 was one of the final sections that completed I-90 from Boston to Seattle. More than 25 years passed between initial planning and construction completion, 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. An extensive community and agency planning process resulted in a Memorandum of Understanding (MOU) in 1976 and included the planning for high-capacity transit in the center roadway. When U.S. Secretary of Transportation Brock Adams also signed his decision, he noted that the facility would be unique in including both highway and transit elements. Adams pointed to the three-two-three lane configuration and the environmental amenities that included covered roadway sections, landscaping, and bicycle and pedestrian trails. The final segment design minimized disruption to the community by depressing the roadway and providing overpasses widened to contain plantings and pedestrian and bicycle lanes. Two middle lanes were designated for future mass transit and use in reversible commuting for high-occupancy vehicles (HOV) and buses. Post-tensioned concrete minimized the concrete posts needed for earlier freeways, using less open space and providing more open views. Landscaped lids were introduced to provide park areas, including 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.

Operation. *Preferred Alternative A1* would be constructed within the facility's existing center roadway and would not require widening of the facility (Exhibit 3-3). *Preferred Alternative A1* is consistent with the historical aspects, features, and characteristics of this segment of I-90 and with the bridge's long-term planning objectives and would not diminish the resource as a key piece of transportation history with innovative engineering and planning for future rail transit. Due to the context of I-90 as a transportation corridor, with early planning for rail transit, and the East Link project's location in the center roadway, the project would not change the character-defining features that qualify the resource to be included in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. FTA determinations of effect will be made after concluding the consultation with affected agencies and jurisdictions and review of public comment after publication of the SDEIS.

EXHIBIT 3-3
I-90 Floating Bridges with Visual Simulation of Light Rail in Center Roadway

Construction. None of the character-defining features identified in the NRHP registration form for the I-90 Lake Washington Segment would be altered or removed by constructing the project. Construction of the project would not affect the property in a manner that would impair future use of the resource as it was intended.

Mitigation. No mitigation is proposed.

3.2 Segment B Alternatives

3.2.1 Summary of Segment B Alternatives

Sound Transit evaluated the impacts associated with the new *Preferred Alternative B2M*, Alternative B3 - 114th Extension Design Option, and modifications to Alternative B7 stemming from the construction of recent projects.

Table 3-1 presents information on those environmental resources that would be impacted as a result of the new or modified alternatives. Changes in impacts associated with Transportation; Visual and Aesthetics; Noise and Vibration; Ecosystems; Historic and Archaeological Resources; and Parkland and Open Space are discussed in the next section. *Preferred Alternative B2M*, Alternative B3 – 114th Extension Design Option, and Alternative B7 would not result in substantially different impacts for both operation and construction

TABLE 3-1
Comparison of Segment B Alternatives

Features		Range of Impacts for Draft EIS Alternatives	Alternative			
			B2M to C11A	B2M to C9T	B3 - 114th Design Option[a]	B7[b]
Number of stations		1 to 2	1	2	1	1
Estimated cost (millions, 2007 $)		$365 to 550	$470 to 540	$480 to 550	$500 to 575	$515 to 595
2030 daily ridership	Segment boardings	1,000 to 4,500	4,500	5,500	4,500	1,500
	Total East Link ridership	43,500 to 46,000[c]	49,000 to 51,500[d]	50,000	49,500	48,000
Travel time through segment (minutes)		5	5	5	5	5
Length (miles)		2.1 to 2.6	2.2	2.2	2.4	2.6
Construction risk[e]		Low	Moderate	Moderate	Low	Moderate
Environmental impacts						
Intersections Operating Worse than No Build Alternative Before Mitigation		0 to 1	0	0	0	1
Residential displacements (number of housing units)		0 to 14	1	1	1	0
Economics: business displacements (number of employees)		0 (0) to 4 (130)	0 (0)	0 (0)	12 (170)	5 (180)
Full/partial property acquisitions		3/9 to 21/173	1/10	1/15	4/15	7/8
Decrease in visual quality		No – Yes	Yes	Yes	Yes	No
Noise-impacted receptors: number of living units (number after mitigation)	Traffic-related	0 (0) to 80 (0)	0	0	20 (0)	0
	Light Rail-related	0 (0) to 98 (0)	72 (0)[f]	68 (0)[f]	81 (0)	150 (0)
Vibration-impacted buildings (number after mitigation)		0 (0) to 1 (0)	1 (0)	1 (0)	1 (0)	0
Wetland: permanent/temporary (acres)		0 to 1.8/0.1 to 2.7	<0.1/1.4	<0.1/1.4	0.2/0.6	1.8/2.9
Wetland buffer: permanent/temporary (acres)		0.8 to 3.7/0.7 to 1.8	3.0/5.6	3.7/6.7	3.6/4.8	0.4/0.7
High-value nonwetland habitat loss (acres)		0.4 to 3.0	0.4	0.6	0.5	3.0
Stream crossing		0 to 1	0	0	1	1
Parks: Permanent (area in acres before mitigation)		0.4 to 1.7	2.4	2.5	1.7	0.9
Parks: temporary		1.1 to 2.0	4.2	4.2	2.6	1.6
Historic properties (number of properties evaluated)		0-1	1	1	0	0

[a] Alternative B3 - 114th Extension Design Option addresses only the changes to Transportation; Acquisitions, Displacements, and Relocations; Noise and Vibration; Visual and Aesthetics; and Ecosystem resources. Other resources reflect impacts previously analyzed and not have changed for the Alternative B3 - 114th Extension Design Option with the 112th SE Bypass Alternative (B3) in the 2008 Draft EIS.

[b] Alternative B7 only address changes related to Acquisitions, Displacements, and Relocations; Economics; and Noise, Geology/Soils; Ecosystem. Other resource categories reflect impacts previously analyzed with the Alternative B7 in the 2008 Draft EIS.

[c] Range shown for the Draft EIS alternatives has not been updated to be consistent with the SDEIS alternatives. Updated information will be provided in the Final EIS.

[d] Higher ridership forecasts indicate signal priority for the light rail through Downtown Bellevue.

[e] Construction Risk relates to the average risk of geologic and utilities constraints relative to the other alternatives for the East Link Project. Refer to Chapter 6 in 2008 Draft EIS for a description of criteria.

[f] Some impacts would be mitigated with building sound insulation which does not reduce exterior noise levels.

as those identified in the 2008 Draft EIS for the following environmental resources: Land Use; Social Impacts, Community Facilities, and Neighborhoods; Air Quality and Greenhouse Gases; Water Resources; Energy Impacts; Hazardous Materials; Electromagnetic Fields; Public Services; and Utilities. Construction risks for all Segment B alternatives range from low to moderate. The alternatives requiring retained cut would be moderate due to extensive soil excavation.

3.2.2 Preferred 112th SE Modified Alternative (B2M)

The alignment of *Preferred Alternative B2M* is east of Bellevue Way SE and the profile is elevated, at-grade, or below Bellevue Way SE and a portion of 112th Avenue SE. As described in Section 2.4.1, *Preferred Alternative B2M* has two variations based upon the connection to the Preferred Alternative in Segment C. Any differences between the variations are described within the discussion of the environmental resource.

Transportation

Operation. This section discusses the operational transportation impacts as they relate to light rail ridership, traffic control, property access and circulation, parking, intersection operations and LOS, traffic safety, and nonmotorized facilities.

Light Rail Ridership: Table 3-1 provides information on projectwide ridership for *Preferred Alternative B2M* and the connections to the Preferred Alternative in Segment C. Overall, by year 2030, projectwide daily ridership for the *Preferred Alternative B2M* would be between 50,000 (with the connection to *Preferred Alternative C9T*) and range from 49,000 to 51,500 (with the connection to *Preferred Alternative C11A*). Compared to the other Segment B alternatives, *Preferred Alternative B2M* would have the highest number of station boardings in the segment.

Traffic Control, Property Access, and Circulation: *Preferred Alternative B2M* (with either Segment C connection) would operate in exclusive right-of-way along Bellevue Way SE. Improved station and neighborhood access would be provided along Bellevue Way SE at the south driveway to the South Bellevue Station and at SE 30th Street by installing signals and converting the center two-way left-turn lane from the South Bellevue Station to I-90 into a southbound HOV lane. With the signal at the south driveway, westbound left turns exiting the South Bellevue Station would be allowed. With the modifications along Bellevue Way, right-in and right-out access would be provided to residences south of the South Bellevue Park and Ride Station. At the SE 30th Street intersection access to the Sweylochen Boat Ramp would be right-in and right-out and the northbound left-turn into the Enatai neighborhood would be provided. The eastbound left-turn exiting the Enatai neighborhood would be prohibited.

For the connection to *Preferred Alternative C11A*, *Preferred Alternative B2M* along 112th Avenue SE transitions to at-grade center-running, south of SE 15th Street, with the light rail train crossing of the northbound lanes controlled by gates. A signalized crossing is provided at the SE 8th Street intersection which closes SE 15th Street. This variation of *Preferred Alternative B2M* would provide right-in/right-out access along 112th Avenue SE except at signalized intersections where left-turn and u-turn movements are allowed. One pedestrian, bicycle, and maintenance driveway to Lincoln Plaza just south of SE 6th Street, would be closed. However, emergency access from this driveway would be maintained. Access to this property would be maintained on SE 6th Street, which would minimize the impact.

Along 112th Avenue SE, the connection from *Preferred Alternative B2M* to *Preferred Alternative C9T* would operate on the east-side of 112th Avenue SE and would cross SE 15th Street as a gated crossing; one pedestrian, bicycle, and maintenance driveway to Lincoln Plaza just south of SE 6th Street would be closed. Access to this property is maintained on SE 6th Street, which would minimize the impact. An option with the *Preferred Alternative B2M* connection to *Preferred Alternative C9T* would close the east approach at SE 15th Street to the Bellefield Office Park. Closing SE 15th Street would eliminate the conflict between light rail and vehicles, pedestrians, and bicyclists at this location. This closure would recirculate vehicles in the office park to the intersection of 114th Avenue SE and SE 8th Street. During emergencies, SE 15th Street may need to be opened allowing for a secondary access into and out of the Bellefield Office Park.

Parking: *Preferred Alternative B2M* would remove 25 off-street parking spaces in properties along Bellevue Way SE and 112th Avenue SE. The potential for parking spillover impacts associated with the Segment B stations would be similar to or less than those analyzed in the 2008 DEIS at the SE 8th Station due to the residential parking zone for the Surrey Downs Neighborhood recently established by the City of Bellevue.

Intersection Operations and LOS: Under the No Build Alternative, four intersections would likely operate at LOS F in year 2020 with one additional intersection also operating at LOS F by year 2030. Most intersections within Segment B with *Preferred Alterative B2M* would operate similar to the No Build conditions; those that differ are described below. The project would install a signal at the southern driveway for the South Bellevue Station. Additionally, Bellevue Way SE, south of the South Bellevue Station, is modified to provide a southbound HOV travel lane with a new signal at the SE 30th Street intersection.

For the *Preferred Alternative B2M* connection to *Preferred Alternative C11A*, when the gated crossing south of SE 15th Street is activated a northbound queue would form but would not extend into the Bellevue Way SE and 112th Avenue SE intersection.

For the *Preferred Alternative B2M* connection to *Preferred Alternative C9T*, traffic would experience additional queuing at SE 8th Street and 112th Avenue SE intersection with the east side-gated crossing. An option with the *Preferred Alternative B2M* connection to *Preferred Alternative C9T* would close the east approach at SE 15th Street to the Bellefield Office Park. This closure would recirculate vehicles in the office park to the intersection of 114th Avenue SE and SE 8th Street. The resulting intersection LOS along SE 8th Street at 112th Avenue SE and at 114th Avenue SE would still meet City of Bellevue LOS standards, but there would be an increase in the northbound queuing at SE 8th Street and 114th Avenue SE. This increase could impede driveway accesses within the office park.

Traffic Safety: The variation of *Preferred Alternative B2M* that connects to *Preferred Alternative C11A* operates grade-separated and at-grade in the center median of 112th Avenue SE. The project provides signals for the at-grade crossing at SE 8th Street to assign right-of-way for light rail trains, vehicles, pedestrians, and bicycles. All other remaining cross streets (i.e., SE 15th Street) and driveways have right-in/right-out vehicle access; pedestrian or bicycle crossing of the light rail tracks is not provided at these locations, thereby reducing the light rail conflict with these travel modes.

The variation of *Preferred Alternative B2M* that connects to *Preferred Alternative C9T* is predominately grade-separated or outside of the roadway. There are few light rail interactions with vehicles, pedestrians, or bicycles on the street level, thereby reducing the light rail conflict with these travel modes. At the at-grade crossings at SE 15th and SE 8th Streets, gates and other indicators are provided to assign right-of-way for light rail trains, vehicles, pedestrians, and bicycles. An option with the *Preferred Alternative B2M* connection to *Preferred Alternative C9T* would close the east approach at SE 15th Street to the Bellefield Office Park. Closing SE 15th Street would eliminate the conflict between light rail and other modes.

Nonmotorized: There would be no additional impacts on the existing and planned future pedestrian and bicycle facilities with the *Preferred Alternative B2M* from those evaluated in the 2008 Draft EIS. A pedestrian and bicycle driveway to Lincoln Plaza on the east side of 112th Avenue SE would be closed. Alternative access is available within 300 feet on SE 6th Street. An option with the *Preferred Alternative B2M* connection to *Preferred Alternative C9T* would close the east approach at SE 15th Street to the Bellefield Office Park. This closure would recirculate pedestrians entering or exiting the office park to the intersection of 114th Avenue SE and SE 8th Street.

Construction. Construction activities would close the entire South Bellevue Park-and-Ride to allow for parking garage construction and staging. Bus stops would be relocated or otherwise addressed. Transit services and impacts during construction would be similar to those described for Alternative B2A in the 2008 Draft EIS.

The number of construction truck trips associated with the *Preferred Alternative B2M* connection to *Preferred Alternative C11A* would range from 80 to 90 per day (8 to 9 per hour based on 10-hour work day) for approximately three years. For the connection to *Preferred Alternative C9T*, truck trips would range from 60 to 70 per day (6 to 7 per hour based on 10-hour work day) for approximately four years. These numbers are slightly higher than the truck trips identified in the 2008 Draft EIS, but do not result in any additional impacts.

An estimate of the construction impact is provided based on the level of design completed to date and the known construction activities. Construction impacts at the I-90/Bellevue Way interchange could include short-term closures of the HOV ramps and the ramps to and from I-90 east. If applicable, vehicles would be detoured to the corresponding GP or HOV ramp but could also include detours to another interchange. I-90 westbound would have short-term construction impacts that would require partial closures of freeway lanes. To construct the improvements on Bellevue Way SE, south of the South Bellevue Park-and-Ride, would require lanes

to be closed on Bellevue Way SE at times to install the traffic signals and perform the necessary roadwork to provide the southbound HOV lane. Along Bellevue Way SE, between the South Bellevue Park-and-Ride and 112th Avenue SE, it is likely one lane would be closed for most of the construction period and additional lane closures would be required at certain times depending on the construction activity.

For the *Preferred Alternative B2M* variation that connects to *Preferred Alternative C11A*, lane closures that could include one northbound and one southbound lane of 112th Avenue SE from Bellevue Way SE to the Segment B boundary. For the *Preferred Alternative B2M* variation that connects to *Preferred Alternative C9T*, one northbound lane of 112th Avenue SE from Bellevue Way SE to the Segment B boundary could be closed for most of the construction period. Similar to the construction impacts on Bellevue Way SE, depending on the construction activity, more or fewer lanes could be closed along 112th Avenue SE for short periods.

Most of the construction would potentially close one northbound lane of Bellevue Way SE between the South Bellevue Park-and-Ride and 112th Avenue SE. The potential for traffic to cut through neighborhoods and bypass the construction zone on Bellevue Way SE would be low since northbound is not the congested direction on Bellevue Way SE during the afternoon peak period and alternative routes in this area are limited and circuitous.

For *Preferred Alternative B2M* that connects to *Preferred Alternative C11A*, traffic detours to other parallel arterials, such as Bellevue Way SE and SE 8th Street and regional facilities, such as I-405, would be required when construction occurs along 112th Avenue SE. The probability of traffic using 108th Avenue SE to bypass the construction zone would be discouraged by the existing traffic-calming devices (i.e., slow speeds and speed bumps) and information and signs directing vehicles to other arterials and regional facilities. Construction activities would likely close the sidewalk and require detours on the eastern side of Bellevue Way SE and 112th Avenue SE as well as a portion of the Periphery Loop trail for the entire construction duration and require detours. During construction along 112th Avenue SE for the *Preferred Alternative B2M* connection to *Preferred Alternative C9T*, northbound detour routes are available to bypass the construction activities that would minimize the potential for traffic to cut through neighborhoods.

Mitigation. A northbound right-turn pocket is proposed for the *Preferred Alternative B2M* connection to *Preferred Alternative C9T* to accommodate additional queuing at the intersections of 112th Avenue SE with SE 8th Street and SE 15th Street. This right-turn pocket provides storage for right-turning vehicles outside of the through lane, which would improve the location's traffic and safety conditions.

During construction, advanced information and signing could be provided to direct northbound vehicles to alternatives routes, such as I-405 and SE 8th Street. Additionally, information and signing could be provided to direct northbound vehicles to alternative arterials and regional facilities, such as Bellevue Way SE, north of 112th Avenue SE, and SE 8th Street via I-405. Maintenance of traffic and construction plans would continue to be refined through the final design and permitting stages of this project and subject to approval by the City of Bellevue and WSDOT.

During construction, mitigation measures for the South Bellevue Park-and-Ride closure could include the following:

- Routing transit riders using the South Bellevue Park-and-Ride to available spaces at nearby park-and-ride lots, such as the Eastgate Park-and-Ride
- Providing leased parking lots and/or new parking areas
- Revising transit services

With the sidewalk closed along Bellevue Way SE and 112th Avenue SE, methods to maintain pedestrian access could include using a protected walkway adjacent to the construction area or similar provision and notifying the public as determined appropriate by the project.

Refer to the 2008 Draft EIS for additional potential mitigation measures during construction.

Acquisitions, Displacements, and Relocations

Operation. *Preferred Alternative B2M* results in one residential displacement located within the Mercer Slough Blueberry Farm. This residential displacement occurs with all Segment B alternatives along Bellevue Way SE, but was not previously identified in the 2008 Draft EIS. The tables and maps in Appendix B, Property Acquisition, identify potentially affected parcels associated with the entire *Preferred Alternative B2M* alignment.

Mitigation. Sound Transit would compensate affected property owners according to the provisions specified in Sound Transit's adopted *Real Estate Property Acquisition and Relocation Policy, Procedures, and Guidelines* as summarized in the 2008 Draft EIS. Sound Transit would comply with appropriate provisions of the federal Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended, and the State of Washington's relocation and property acquisitions regulations (Washington Administrative Code [WAC] 468-100 and Revised Code of Washington [RCW] 8.26).

Visual and Aesthetic Resources

The Visual Resource section of the 2008 Draft EIS describes the visual quality categories used to help assess changes in the visual environment that would occur with the East Link Project. The three visual quality categories include low (areas that have low visual quality may have features that seem visually out of place, lack visual coherence, do not have compositional harmony, and contain eyesores), medium (areas that are generally pleasant appearing but may lack distinctiveness, memorability, drama, and compositional harmony, or may simply be common and ordinary landscapes), and high (areas that may be memorable, distinctive, unique in a positive way, intact natural or park-like areas, or urban areas with strong and consistent architectural and urban design features).

Operation. The primary difference between *Preferred Alternative B2M* and the other Segment B alternatives that travel along Bellevue Way SE is that *Preferred Alternative B2M* remains on the east side of Bellevue Way SE inside the Mercer Slough Nature Park boundaries. *Preferred Alternative B2M* would create visual impacts along the Mercer Slough side of its alignment. While most of the other Segment B alternatives (except Alternative B7) would generally impact views from the west side of Bellevue Way SE. While the impact is similar in that the transportation corridor widens by adding light rail, the visual effects would be on the Mercer Slough side rather than the vegetated bluff on the west side. *Preferred Alternative B2M* would approach the South Bellevue Park-and-Ride as an elevated structure and would remove more existing trees located along the western boundary of the Mercer Slough Nature Park than other Segment B alternatives that include an elevated South Bellevue Station. However, the loss of the trees and the presence of the elevated structure at the South Bellevue Station parking garage and other facilities would not change the existing medium visual quality category.

North of the South Bellevue Station the alternative transitions from elevated to at-grade and retained cut east of Bellevue Way SE, which would require removing vegetation within Mercer Slough Nature Park and adjacent street trees. Removing the vegetation would change the existing visual character of this portion of Bellevue Way SE but would open views to the east towards Mercer Slough, the blueberry farm, and hills to the east for some nearby residents. Exhibit 3-4 illustrates the location of a key observation point (KOP 1a). KOP 1a is located on the deck of a residence west of Bellevue Way SE and represents views that some residents west of Bellevue Way would have of *Preferred Alternative B2M*. The view east from this location overlooks Bellevue Way SE. As depicted in the simulation contained in Appendix C the catenaries would be visible, but the guideway and trains would be blocked because the existing vegetation would not be removed due to the shifting of the alignment to the east. The portion of the alternative in a retained cut would be less visible than elevated or at-grade profiles to nearby residents, motorists, and people walking on sidewalks. They would see the catenaries, tops of the retaining walls, fencing, and open space between the retaining walls through which the trains would pass. The fence along the retained-cut portion of the alternative that would follow Bellevue Way SE would likely be black chain link placed on top of a 2-foot-tall concrete traffic barrier adjacent to the sidewalk. The top of the fence would generally be 6 feet tall and as tall as 8 feet when the guideway transitions into a retained cut.

Views of the Winters House from Bellevue Way SE would change. Existing mature vegetation, including larger trees in front of the building, would be removed. A new entry area would be designed on top of the portion of the lid in front of the building. Exhibit 3-4 illustrates the location of the KOP in front of the Winters House (KOP 1b) on the west side of Bellevue Way SE, and Appendix C contains a simulation of *Preferred Alternative B2M* passing in front of the Winters House.

Vegetation would be replanted near both the at-grade and retained cut portions of the alignment east of Bellevue Way SE. The removal of larger trees would change the appearance of Bellevue Way SE.

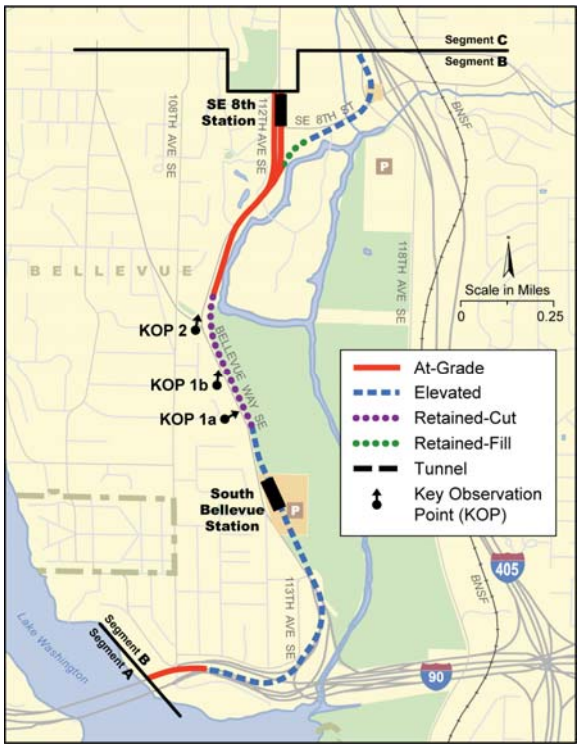


EXHIBIT 3-4
KOP Locations Segment B

Preferred Alternative B2M but it would not change the visual quality category along the Bellevue Way SE portion of the route between South Bellevue Way Park-and-Ride and 112th Avenue SE.

The most noticeable change resulting from the *Preferred Alternative B2M* would be the removal of trees along the east side of the 112th Avenue SE and Bellevue Way SE intersection affecting the visual experience for passing drivers, Periphery Loop Trail users and nearby residents. In this area, the light rail train tracks would be below the roadway in a concrete trench, until further north along 112th Avenue NE, where the trackway would be adjacent to and at the same grade as the roadway. The south portion of the landscaped median that contributes to the boulevard-like character of this part of 112th Avenue SE would remain. Trees and large shrubs contained in Mercer Slough Nature Park would be visible in the area behind the space that had been occupied by the large trees. Removing vegetation along the east side of the alternative and within Mercer Slough Nature Park would lower the visual quality of this intersection at 112th Avenue SE and Bellevue Way SE until replanted vegetation could mature and the visual quality category would return to high over time. Exhibit 3-4 illustrates the location of KOP 2, which was selected to show how the appearance of the area east of the intersection of 112th Avenue SE and Bellevue Way SE (looking north along 112th Avenue SE) would change with Alternative B2M. Appendix C contains a simulation of the changes associated with *Preferred Alternative B2M* as viewed from KOP 2.

The effects would also be viewed from parts of the Mercer Slough Nature Park, the Mercer Slough Nature Park Periphery Loop Trail (which in this area is the sidewalk adjacent to Bellevue Way SE and 112th Avenue SE), and the Water Trail. Removing street trees and trees in the construction right-of-way east of Bellevue Way SE and 112th Avenue SE would be noticeable from the loop trail and portion of the water trail in Mercer Slough West. Trees along with the blackberry-covered slope between the slough and 112th Avenue SE would be removed. They would be replaced with a retaining wall supporting the at-grade alternative, and slopes between the trackway and the slough would be replanted. People using the water trail would have upward views of the catenaries and east face of the retaining wall. The light rail would not be seen in most parts of the Mercer Slough Nature Park due the alternative's low profile and the presence of trees and large shrubs throughout much of the Park. Removal or large trees would not be noticed in most parts of the park but would be most noticed from the portion of the water trail passing through Mercer Slough West. The effect on these viewers however, would be tempered by the presence of the Bellefield Office Park, an adjacent large-scale human made complex. Therefore, *Preferred Alternative B2M* would not change the existing visual quality from these advantage points.

North of the intersection of Bellevue Way SE and 112th Avenue SE north to the Segment C boundary, *Preferred Alternative B2M* would have two variations in the connection to the *preferred alternatives C11A or C9T*. The variation of *Preferred Alternative B2M* that connects to *Preferred Alternative C11A* would transition from the east side of 112th Avenue SE to the median of 112th Avenue SE at approximately SE 15th Street. Landscaped medians along 112th Avenue SE north of this location would be removed (landscaped medians south of transition area would remain). People driving or walking along 112th Avenue SE would see the light rail track, catenaries and traffic gates at the rail crossing.

The variation connecting to *Preferred Alternative C11A* would not be as visible from Mercer Slough Nature Park or the water trail as the variation that connects to *Preferred Alternative C9T* because it would be further from the park and slough and less vegetation would be removed, but it would result in

removing some of the landscaped median between SE 15th and SE 8th Streets. The existing high visual quality category would remain because the area would still be visually memorable and vivid under both variations.

Construction. Constructing *Preferred Alternative B2M* would remove trees and other vegetation within the construction right-of-way to the east and in portions of the median of Bellevue Way SE and 112th Avenue SE. Construction activities would temporarily affect visual and aesthetic resources along portions of Bellevue Way SE and 112th Avenue SE. These activities would temporarily change views of the Winters House from Bellevue Way SE as the retained cut and associated lid are constructed.

Mitigation. Sound Transit would plant appropriate vegetation within and adjoining the project right-of-way to replace existing street trees and other visually important vegetation removed for the project, where practical.

The portion of the retained cut near the Winters House would be covered with a "lid." Although some of the existing vegetation near the Winters House would be removed, the lid would be designed to include smaller trees and other plants in order to provide an appropriate entry on the west side of the house consistent with the historic character.

Noise and Vibration

Operation. *Preferred Alternative B2M* would result in noise impacts before mitigation at 68 receptors for the variation that connects to *Preferred Alternative C9T* and 72 receptors for the variation that connects to *Preferred Alternative C11A*. Project-related noise levels along the corridor are predicted to range from 52 to 70 dBA Ldn, with the highest noise levels near crossovers before mitigation. After mitigation measures, there would be no noise impacts related to light rail (Table 3-1) for either variation of *Preferred Alternative B2M*. *Preferred Alternative B2M* noise impacts were identified at most front-line residences along the elevated guideway and near the double crossover just south of the South Bellevue Station (see Exhibit 6-1). Impacts in this area would begin at the retained fill segment on I-90 and continue along the elevated structure to just south of the Winters House to where the alternative would transition from an elevated profile to a retained cut. Four impacts in this area would be in the severe category due to the location of a crossover near SE 30th Street. The only bell-related noise in this area would occur when the train would sound a warning bell as it enters and departs from the South Bellevue Station. There are no at-grade crossings south of the 112th Avenue SE and Bellevue Way SE intersection. Impacts between I-90 and the 112th Avenue SE and Bellevue Way SE intersection would be the same regardless of the connection to the Segment C alternatives. North of the 112th Avenue SE and Bellevue Way SE intersection, as the alignment transitions to at-grade, impacts were identified at several single- and multifamily residences.

For the *Preferred Alternative B2M* variation that connects to *Preferred Alternative C11A*, there would be no impacts north of the Winters House until the alignment transitions to at-grade because of shielding from the retained cut. There would be several noise impacts at single-family homes along 112th Avenue SE and multifamily homes at the Bellefield Residential Park community, including one severe impact. Moderate and severe impacts were identified near the SE 8th Street crossing because of the added noise from the train warning bells. Further, the number of receptors impacted would be greater than for *Preferred Alternative B2M* with the connection to *Preferred Alternative C9T* because the connection to *Preferred Alternative C11A* is closer to the receptors and has at-grade crossings to the median of the roadway. Under *Preferred Alternative B2M* connection to *Preferred Alternative C11A*, most impacts could be fully mitigated; however, up to 6 multifamily units could experience exterior noise levels meeting or exceeding FTA criteria. Appendix G provides information and exhibits regarding noise impacts associated with *Preferred Alternative B2M*.

With the connection to *Preferred Alternative C9T*, all impacts north of the 112th Avenue SE intersection would be considered moderate under FTA criteria. The only at-grade crossings are at the entrance to the business park, near SE 15th Street and at SE 8th Street, where bells from the crossing gates and train warning bells would be sounded. In addition, the bells would also be sounded once as trains depart from the SE 8th Station. Moderate impacts were identified at eight single-family residences west of the SE 8th Street intersection. Noise impacts could be fully mitigated for all but six homes, which would be limited to residual exterior noise impacts.

The Mercer Slough Nature Park is located near I-90, I-405 and its western side is bordered by Bellevue Way SE, a park and ride, the Bellefield Office Park, and includes active park uses such as the Winters House, a boat launch, and the Blueberry Farm.

These uses would not be considered noise sensitive and have existing noise levels ranging from 64 to 70 dBA L_{eq} during peak traffic and light rail operating hours based on noise level readings taken along the park and just off Bellevue Way (see Exhibit G-8 in Appendix G). Interior areas of the park that are considered to be noise sensitive would meet the definition of FTA category 3 land use and have existing measured noise levels from 50 to 61 dBA L_{eq} during peak-hours.

Peak hour noise levels for the park's interior related to the light rail operations for *Preferred Alternative B2M* are predicted to range from 40 to 45 dBA L_{eq}. These levels are 5 to 18 dBA below the existing ambient and well below the FTA Category 3 criteria for this type of land use. In the active areas of the park, noise level projections for light rail operations range from 49 to 58 dBA L_{eq} during peak hours, which is 3 to 7 dBA L_{eq} below the existing levels (see Table G-2 in Appendix G for existing and predicted noise measurements).

None of the curves on *Preferred Alternative B2M* have a radius of 600-feet or less and wheel squeal is not anticipated. However, the elevated curves from I-90 to Bellevue Way, which are larger than a 600 foot curve radius, would have sound walls and be designed to provide lubrication if wheel squeal was to occur.

Noise levels related to train bells and safety gate bells near at-grade crossings are provided in Exhibit 3-1. Maximum noise levels related to the bells are 80 dBA at 50 feet for the train bells and 62 dBA at 50 feet for the warning bells at gated crossings. Noise level measurements taken along Bellevue Way recorded maximum (L_{max}) noise readings that frequently exceeded 75 dBA, including several instances with levels above 80 dBA L_{max}.

Vibration analysis at the Winters House, a historic resource listed on the NRHP, has been included because of the sensitivity of the building and the location of the lidded retained cut approximately 5 feet from the building with *Preferred Alternative B2M*. A set of building-specific outdoor-to-indoor vibration propagation tests were conducted on May 5, 2010. The outdoor tests were conducted at the approximate location of the proposed alignment, and sensors were located just outside the building and at four locations inside the building; these included two positions on the ground floor and two in the basement.

The Winters House is no longer used as a residence and is occupied by the offices of the Eastside Heritage Center and used as a public park facility open to the public; therefore, it is considered a Category 3 land use—an institutional land use with primarily daytime use—for purposes of vibration and ground-borne noise analysis. The FTA impact criteria for ground-borne noise, measured in weighted decibels (dBA), are 40 dBA. A ground-borne noise impact is projected at the Winters House due to the close proximity of the alignment to the foundation of the building. The projected ground-borne noise levels would range from 44 dBA to 54 dBA. Vibration mitigation methods, such as resilient fasteners or ballast mats, would reduce the ground-borne noise level at the Winters House but may not eliminate the impact. If necessary a floating slab track design would be included to eliminate the ground-borne noise impact.

The operational vibration levels at the Winters House, measured in vibration velocity decibels (VdB), are projected to be 76 VdB, which would be below the FTA detailed impact criteria of 78 VdB for human annoyance. The projected operational vibration levels would be 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.

Construction. Noise during construction would be consistent with the analysis in the 2008 Draft EIS for the Segment B alternatives. Constructing a retained cut near the Winters House, including construction of underground piles to structurally support the retained cut, would create the potential for vibration impacts. Given the property's period and type of construction, damage to the building could occur without construction vibration-minimization techniques. The criteria for damage for this type of structure are 94 VdB or 0.2 peak particle velocity (PPV); construction vibration is projected to be 0.2 PPV. In order to avoid vibration impacts on the Winters House, standard precautionary construction methods would be applied. Using some or all of the techniques and construction methods described below would prevent vibration damage or limit damage to minor cosmetic damage. These methods include:

- Installing monitoring equipment and monitoring vibration during construction
- Placing limits on the construction vibration levels for the contractor, with the contractor selecting one or more of the following measures

or other measures of equivalent effectiveness to limit construction:

- Using auger-drilling methods
- Using nonvibration or nonimpact methods, such as push piling, to install steel casing
- Using slurry confinement (i.e., temporarily filling the cavity with slurry material to replace the removed soil)
- Underpinning foundation and employing structural support or soil stabilization if needed
- Adjusting excavation methods based on monitoring results
- Installing a shallow temporary supporting wall
- Monitoring vibration levels associated with equipment to be used for the East Link Project at other construction sites with similar soils before project construction to determine which vibration-minimization methods would be necessary
- Beginning vibration-inducing construction at the site at points more distant from the Winters House to enable the contractor to determine which vibration-minimization methods would be necessary
- Photographing and inventorying the Winters House to establish existing conditions to determine if any damage is caused by construction and repairing the building consistent with U.S. Department of the Interior Secretary's standards for treating historic properties.

Mitigation. Mitigation related to noise from crossovers, bells, and train noise would be required in this segment. There are several methods of reducing noise and vibration from crossovers. The first method is to place them in areas with no noise or vibration sensitive receptors (i.e., residences). Because crossovers are required to be located at periodic intervals along the transit system for safety and operations, avoiding sensitive receptors is frequently not a practical option. The second mitigation option is the use of low-noise track work at crossovers where noise or vibration impacts were identified including at the SE 30th Street crossover**.**

Sound walls and building insulation would be used in the following locations, depending on the alternative, to mitigate noise impacts. When applicable, acoustical absorbent materials may be used as part of the wall design to assist with noise reduction and prevent reflections of traffic noise. Appendix G provides exhibits illustrating the location of the proposed walls described below.

- Sound walls would be constructed along the west side of the alignment from I-90 to the transition to retained cut near the Winters House (for all B2M alternatives).
- North of the Bellevue Way and 112th Avenue intersection under the *Preferred Alternative B2M* connection to *Preferred Alternative C11A*, sound walls would be constructed along the west side of 112th Avenue SE. Sound insulation to front-line single-family homes and the Bellefield Residential Park may also be needed. If required, the insulation is needed only for upper floors and is due to the proximity of the tracks and difficulty of using sound walls for alternatives running in the center of 112th Avenue SE. Openings in the walls for pedestrian and cross-street vehicle traffic would allow for noise to be transmitted toward the residences, reducing the overall effectiveness of the walls and may require sound insulation. There would also be approximately eight homes provided with sound insulation, if required, near the intersection of SE 8th Street and 112th Avenue SE.
- North of the Bellevue Way and 112th Avenue intersection under the *Preferred Alternative B2M* connection to *Preferred Alternative C9T*, sound walls along the east side of 112th Avenue SE would be used. Openings in the walls for pedestrian and cross-street vehicle traffic would allow for noise to be transmitted toward the residences, reducing the overall effectiveness of the walls and may require sound insulation. There would also be approximately eight homes provided with sound insulation, if required, near the intersection of SE 8th Street and 112th Avenue SE.

General construction noise mitigation measures are described in Section 4.7.5.3 of the 2008 DEIS. Specific measures to address vibration from construction at the Winters House are described above.

Ecosystem Resources

For ecosystem resources, impacts on wetlands and wetland buffers change from the 2008 Draft EIS because the alignment of *Preferred Alternative B2M* is east of Bellevue Way SE on the Mercer Slough side.

Operation. Permanent wetland impacts would be less than 0.1 acre, which is within the range of impacts for the 2008 Draft EIS alternatives along Bellevue Way and less than the impacts for alternatives B3 114th Design Option and B7 (Exhibit 3-5 and Table 3-1). *Preferred Alternative B2M* would result in a greater degree of permanent wetland buffer impacts than most of the other Segment B alternatives: 3 acres when connecting to *Preferred Alternative C11A* and 3.7 acres when connecting to *Preferred Alternative C9T*.

The retained cut along Bellevue Way would intercept flows from groundwater flowing into Mercer Slough from the west, but the retained cut would be sealed and allow for groundwater to flow below and around it so that groundwater would continue to reach the wetlands. Due to the size of ther Mercer Slough wetland complex, no change to wetland hydrology is expected.
Preferred Alternative B2M would permanently impact 0.6 acre of high-value nonwetland habitat, which includes the removal of some mature deciduous forest near the Bellevue Way and 112th Avenue SE intersection. Impact to this area has been minimized to the extent possible, limiting clearing of mature vegetation to the 30-foot guideway width and a 20-foot construction area on each side. Due to the amount of similar available habitat in the Mercer Slough vicinity, impacts to wildlife would not be significant. This impact would be mitigated as required by local Critical Area regulations.

Construction. Construction would temporarily impact 1.4 wetland acres and 5.6 to 6.7 acres of wetland buffers, depending on the connection to Segment C (Table 3-1). Construction would remove vegetation including some trees in the riparian buffer, between 112th Avenue SE and Mercer Slough; however, vegetation in the riparian buffer is dominated by Himalayan blackberry, which is both an upland species and a State-listed noxious weed. Once construction activities are completed, the area between the light rail and the slough, which generally ranges from 20 feet to 60 feet, could be replanted with native riparian plants, resulting in an improvement compared with the existing conditions. Impacts that are temporary but last more than one growing season will be mitigated as required by permitting agencies.

South of SE 8th Street, *Preferred Alternative B2M* crosses over a shoreline alcove of Mercer Slough approximately 5 feet wide. In order to install a bridge or precast box culvert to cross this shoreline alcove, construction of a retaining wall might be necessary to stabilize the embankment, which could require some in-water work. If any in-water work is required, the work area would be isolated from the slough channel. Near-water work may also be needed for crossing a culvert near the Bellevue Way SE and 112th Avenue SE intersection, where a small drainage empties from a 30-inch and an 18-inch culvert. The stormwater pipes have a drop of approximately 4.5 feet and will be extended using a drop structure into another section of stormwater pipe at a lower elevation. The extension will be laid in the open channel and no excavation will be necessary. The trackway will be built over the top of this on a retained fill. Armoring will be placed at and around the end of the pipe to prevent erosion.

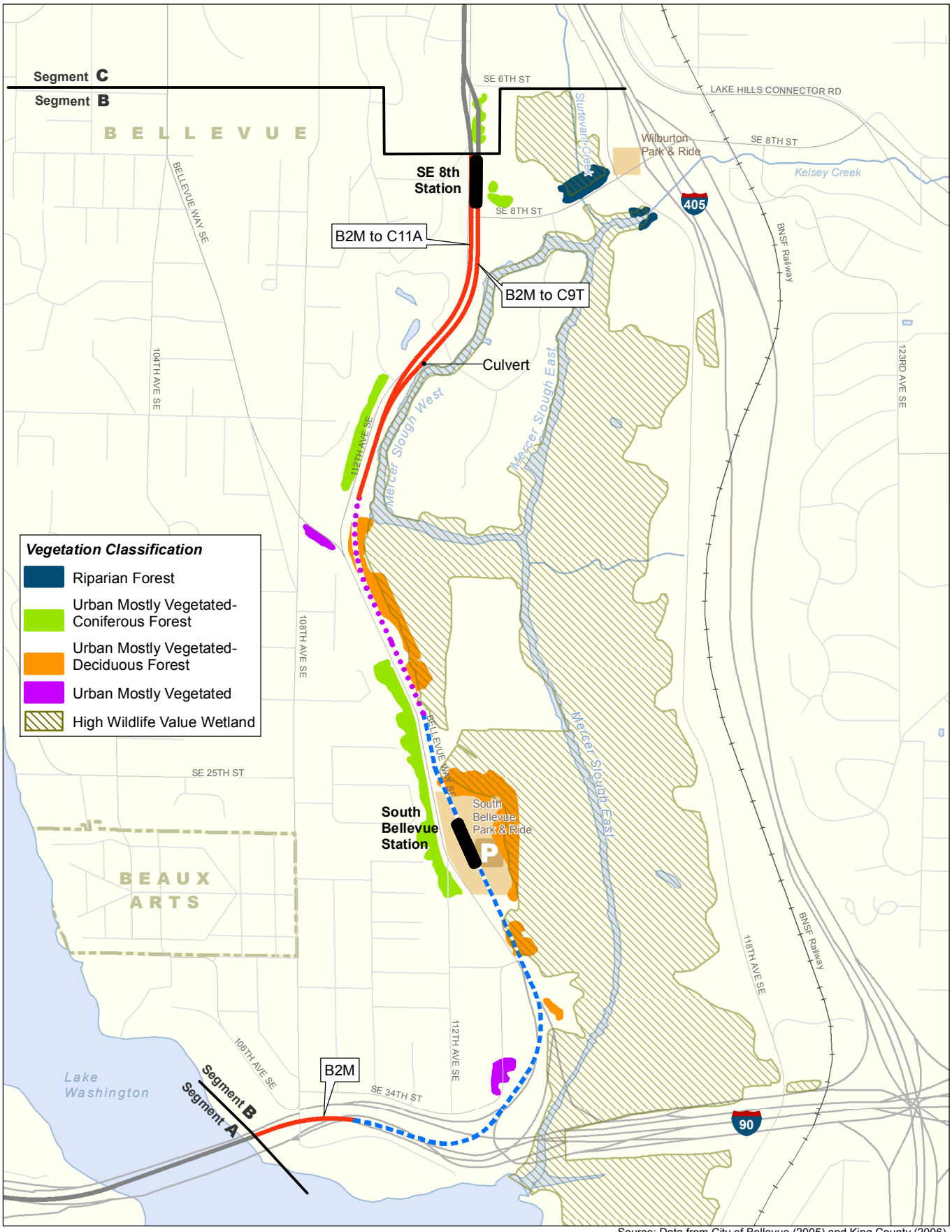
Mitigation. Mitigation measures would be the same as those identified in the 2008 Draft EIS.

Geology and Soils

The soils conditions along Mercer Slough include soft compressible peats and clays, prone to settlement as discussed in the 2008 Draft EIS. Some settlement would occur with the construction of *Preferred Alternative B2M*. Engineering design standards and best management practices are part of the project design to avoid and minimize potential impacts from settlement such as underpinning the Winters House. Detail on the precautionary measures is provided in the Noise and vibration discussion under construction.

Historic and Archaeological Resources

The Frederick Winters House, located in Mercer Slough Nature Park on the east side of Bellevue Way SE, is within the APE of *Preferred Alternative B2M*. The Winters House (Exhibit 3-6) was listed in the NRHP in 1992 based on its Spanish Eclectic architecture and its association with developments in the bulb-growing and floriculture industry in King County and Washington State. Its period of significance spans from 1929 to 1941. Formerly a residence, the offices of the Eastside Heritage Center now occupies the building. The NRHP registration form provides a boundary description that includes 50 feet of landscaping around the house, including along Bellevue Way SE.



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

Exhibit 3-5. **Ecosystems, Segment B - B2M**
East Link Project

EXHIBIT 3-6
Winters House, 2102 Bellevue Way SE, Present

EXHIBIT 3-7
January 6, 1939 Photograph of the Winters House, 2102 Bellevue Way SE (Courtesy of Eastside Heritage Center)

The property site 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 west of the Mercer Slough. While the house's orientation to Bellevue Way SE 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.
An 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 house's surrounding landscaping was found to have been altered substantially from the historic period of the residence (Exhibit 3-7).

Plantings from the period of significance have been removed. Currently, the property consists of a landscaped lawn with a central concrete pathway featuring a center planting strip just opposite of the front entrance doors. 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. Except for some mature trees beyond the rear of the residence that were once part of the larger property, the current landscape features do not in any way reflect the house's original landscape nor convey the relationship of the landscape to the structure as it was first designed, matured, and allowed to evolve during the property's historic period.

The undeveloped grounds within the surrounding and adjacent acreage are associated with Winters House, but they are no longer cultivated and no intact outbuildings remain. However, the house does retain its setting and relationship to the surrounding undeveloped property that is now Mercer Slough Nature Park.

Operation. *Preferred Alternative B2M* passes directly in front of the Winters House in a lidded retained cut. The guideway is within the 50-foot area surrounding the house that is established as the property boundary by the NRHP nomination. The eastern edge of the *Preferred Alternative B2M* right-of-way measures approximately 5 feet from the edge of the Winters House porch but is located in a lidded retained cut that is completely below grade.

Exhibit 3-8 depicts the Winters House with the proposed project, and Exhibit 3-9 shows the cross-section for *Preferred Alternative B2M* with the existing cross-section. The perspective and cross-section views illustrate minimization approaches incorporated into the project design to maintain historic integrity during light rail operation.

EXHIBIT 3-8
Winters House, Preferred Alternative B2M Birds' Eye View

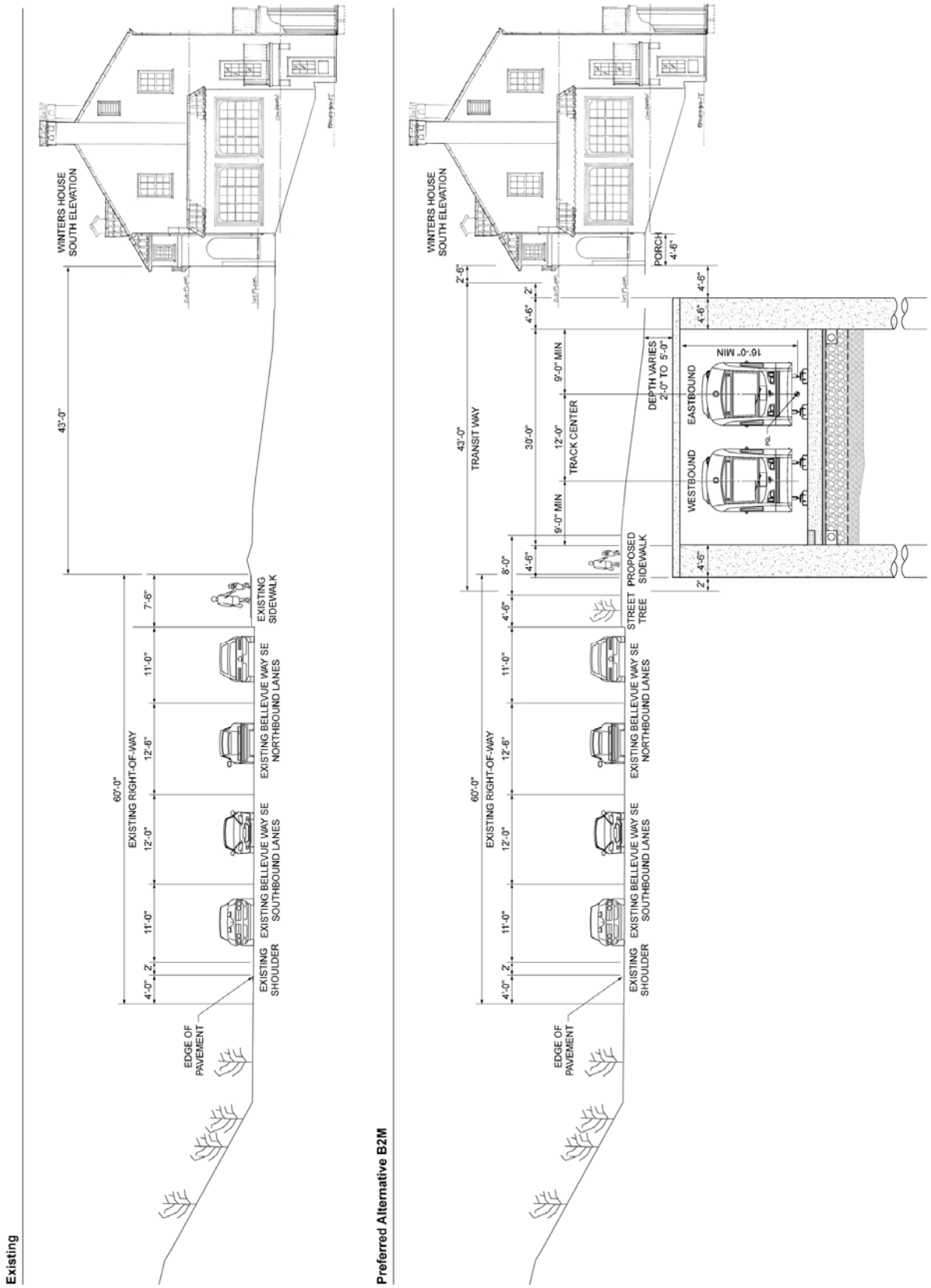


EXHIBIT 3-9
Winters House, Preferred Alternative B2M Cross-Section

These elements include placing the light rail in a 170-foot-long lidded retained cut that would extend the width of the house and the length of the 50-foot property boundary on each side of the house, as identified in the NRHP nomination. Landscaping sensitive to the historic nature of the building and setting will be installed.

Whereas the Winters House continues to fully convey its significance as outlined in its NRHP registration form, the 50-foot boundary around the house has been reduced by the widening of Bellevue Way SE, and the landscaping within this area no longer retains integrity. Although the presence of the larger land area surrounding the property on the north, south, and east sides has been a feature since it was constructed and is a character-defining feature, the setting of the residence as it relates to Bellevue Way SE is not a character-defining feature given the roadway's loss of integrity. As a result, *Preferred Alternative B2M* would not impact a historic resource related to the existing landscape.

Due to the proximity of the lidded retained cut and light rail guideway to the Winters House, the potential for vibration impacts during operation was analyzed and is described in more detail in the Noise and Vibration section above. Using standard track work, the project would likely have ground-borne noise impacts at the Winters House. As described in the Noise and Vibration section, standard methods of vibration reduction, such as resilient fasteners or ballast mats, would be incorporated into the project and reduce the level of ground-borne noise but may not eliminate the impact. Use of a floating slab, if necessary, would eliminate the ground-borne noise impact.

Sound Transit applied the Criteria of Adverse Effect (36 CFR 800.5) in analyzing each aspect of *Preferred Alternative B2M*, considering the property's character-defining features that convey its significance and qualify its listing in the NRHP.

Despite the introduction of visual, audible, and vibration elements, these elements would not damage the building or diminish the integrity of the setting.

Operation of *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, and the light rail facility would be in a lidded retained cut below grade in front of the structure and within the 50-foot property boundary on either side established by the NRHP nomination. The project would not alter the building's design, materials, or workmanship, because the project would not alter or damage the building. Operation of the project would not diminish the integrity of the property's setting as there would be no noise impacts, ground-borne noise impacts would be eliminated with vibration minimization measures incorporated in the design, 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 alter the property's feeling or association as the existing landscaping is not significant, and it would be landscaped after construction. The integrity of the building's association with bulb farming and floriculture would not be diminished, because the bulb farming no longer occurs in the area, and the area previously used for bulb farming would not be changed.

Construction. The potential for damage from vibration and settlement from construction activity near the Winters House, including construction of underground piles for retained-cut support, may exist. Methods to prevent or limit impacts such as minor cosmetic damage are incorporated as conditions of the project as described in the Noise and Vibration analysis above. The character-defining features of the NRHP-listed Winters House that convey its significance and qualify the property for listing in the NRHP would not be affected.

During construction, the Winters House would likely be closed and the offices of the Eastside Heritage Center temporarily relocated. Construction would increase dust adjacent to the building.

While construction would introduce visual, audible, and vibration elements, the project would not diminish the character-defining features of the former residence that convey its significance and would not be adverse. The project would not damage or alter the structure or affect the design, materials, and workmanship of the resource due to the construction settlement and vibration-minimization measures incorporated, and, if any cosmetic damage occurs, Sound Transit will make the needed repairs. After construction, the landscaping will be restored in a manner sensitive to the historic period. In addition, 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. The public use and the

Eastside Heritage Center would be able to return to the building after construction.

Mitigation. Based on the following measures incorporated as conditions of the project, FTA's current consideration is that the project is not anticipated to alter any of the characteristics 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. Ultimately, FTA determinations of effect will be made after concluding the consultation with affected agencies and jurisdictions and review of public comment after publication of the SDEIS.

Minimization measures will include standard vibration minimization to reduce ground-borne noise during operation below FTA criteria or installation of a floating slab, if necessary. After construction, the area over the lidded retained cut would be landscaped. As part of the project, Sound Transit would incorporate measures to prevent damage or limit damage caused by construction to minor cosmetic damage as described in the Noise and Vibration section. 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. In addition, dust control measures would be applied 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.

Parkland and Open Space

Preferred Alternative B2M would have operation and construction impacts on Mercer Slough Nature Park. As with the other Segment B alternatives, *Preferred Alternative B2M* would not impact Enatai Beach Park or Bellevue Way Greenbelt located near the intersection of Bellevue Way SE and 112th Avenue SE.

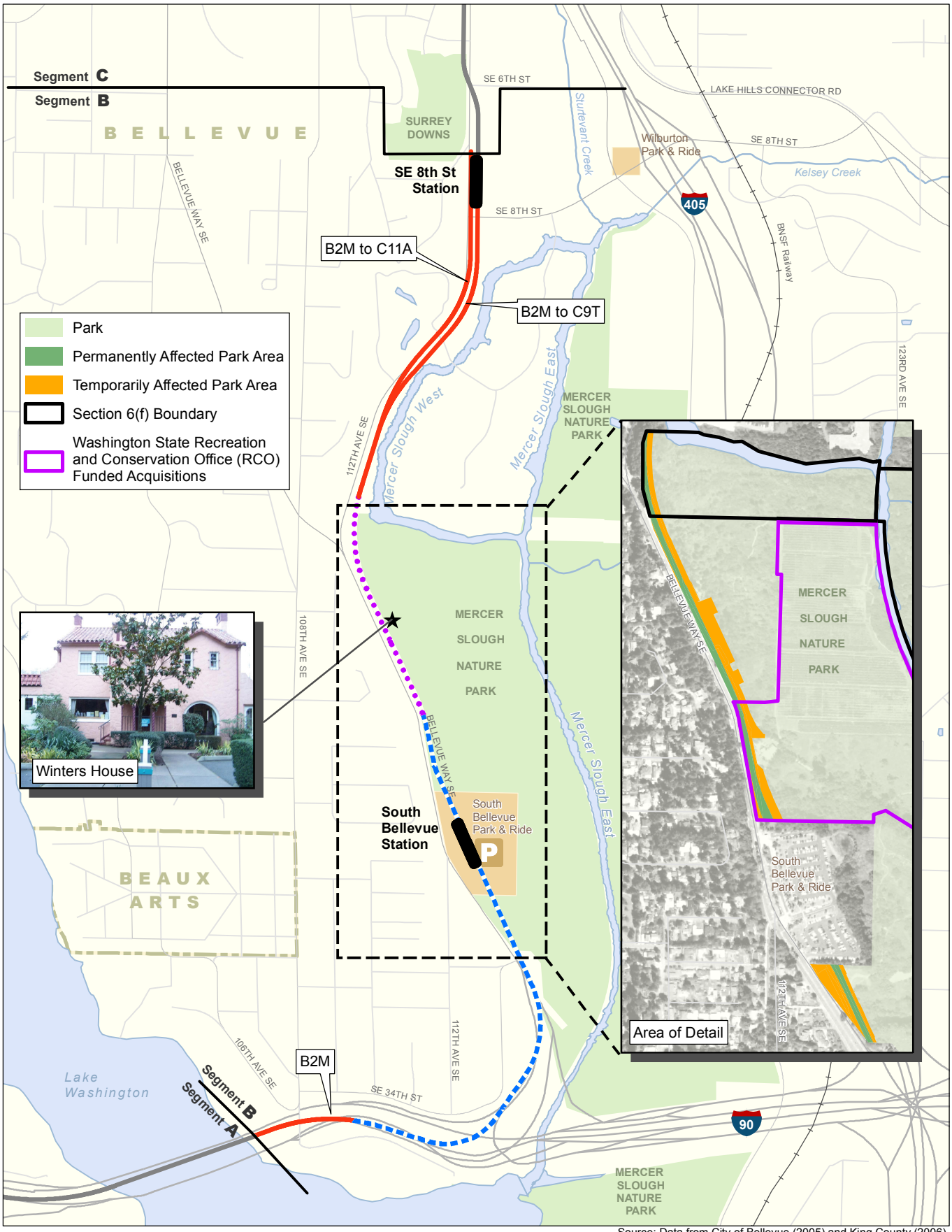
Mercer Slough Nature Park is a 320-acre community park providing wetland habitat, environmental education and awareness, agricultural heritage, maintenance of Winters House, and blueberry farm, passive recreation, nature observation, views of downtown Bellevue, and open space with pedestrian trails, a water trail, benches, and interpretive signs. Bellevue Way SE is the park's western boundary.

Portions of Mercer Slough Nature Park were acquired with Federal Land and Water Conversation Fund and Washington State Recreation and Conservation Office (RCO) funds (Exhibit 3-10). Appendix A, Section 4(f)/Section 6(f) Supplemental Evaluation, and Table A-5 therein, provides analysis of Section 6(f) and RCO conversion and acreage impact.

Operation. Because it follows the east side of Bellevue Way SE, *Preferred Alternative B2M* would result in the highest permanent property impact to Mercer Slough Nature Park when compared with the other Segment B alternatives: 2.4 acres when connecting to *Preferred Alternative C11A* and 2.5 acres when connecting to *Preferred Alternative C9T* (Table 3-1); Exhibit 3-10 depicts the impacted park area. This alternative would acquire an approximately 30- to 50-foot section of the park's western boundary for a distance of approximately 3,200 feet and would involve removing shrubs and trees. The acquisition area would be less than 1 percent of the park.

Preferred Alternative B2M would follow the length of the western edge of Mercer Slough Nature Park, east of Bellevue Way SE, and this area of the park includes trailheads and parking associated with a trailer boat launch ramp, the Blueberry Farm, and the NRHP-listed Winters House. Park users in this area include walkers and joggers along the Periphery Loop Trail sidewalk and those accessing the Winters House and blueberry farm and the park's interior trails. A 0.2-mile section of the Heritage Loop Trail parallels Bellevue Way SE below the roadway level. Bellevue Way SE, connecting I-90 to downtown Bellevue, is a prominent element along the park's edge. The impacted area is not a significant location for wildlife viewing due to the disturbance from the adjacent roadway and use of the area for the blueberry farm buildings and access.

Preferred Alternative B2M would relocate and consolidate some vehicle and pedestrian access points on the west side of the park, as depicted in Exhibit A-4 in Appendix A. The existing blueberry farm vehicle and pedestrian access would be relocated to the north to a joint access with the Winters House. A new access road just to the east of and parallel to the alignment would connect the blueberry farm and the Winters House parking areas, with the existing trail between the Winters House and farm restored. The section of the Heritage Loop Trail along Bellevue Way SE would be relocated to the east. Two existing pedestrian connections from Bellevue Way SE to the park would be removed: one at the existing blueberry farm driveway and one south of the Winters House



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

- At-Grade Route
- Elevated Route
- Retained-Cut Route
- Retained-Fill Route
- Tunnel Route
- Proposed Station
- P New and/or Expanded Park-and-Ride Lot

N

0 0.25 Mile

Exhibit 3-10. **Parks and Section 4(f), Segment B - B2M**
East Link Project

parking lot. The pedestrian access north of the Winters House would be relocated slightly south.

Although the number of pedestrian access points would be reduced by two, the park and its components would remain accessible from various points along Bellevue Way SE for both vehicles and pedestrians. In addition, consolidating the access points could be considered a benefit to the park by removing one vehicle crossing of the Periphery Loop Trail. Access to the Sweylochen Boat Ramp would become right-in/right-out only. The boat ramp would no longer be accessible from south-bound Bellevue Way. However, I-90, SE 8th Street, and I-405, which surround the park on three sides, would provide adequate access to the boat ramp. The I-90 Trail and other Mercer Slough Nature Park trails would not be affected.

As detailed in the Visual and Aesthetic Resources analysis above, *Preferred Alternative B2M* would result in visual change but would not have a visual impact on the park. The guideway, catenaries, and retaining walls would not be seen in most parts of the Mercer Slough Nature Park due the alignment's low profile. Given the presence of trees and large shrubs throughout the park, removing vegetation along the alignment would not be noticed in most areas. The visual change associated with tree removal would be most noticed from the portion of the water trail passing through Mercer Slough West. However, Bellefield Office Park buildings and parking lot and the adjacent transportation arterial currently affect the visual quality of this area. Slopes between the alignment and the slough would be replanted with native vegetation, which could be considered a visual and ecological improvement compared with the existing blackberries.

As described in the Noise and Vibration analysis above, existing noise levels in Mercer Slough Nature Park are affected by the major arterial, Bellevue Way SE, two interstate highways, I-90 and I-405, and a park and ride and office park that border the park. There are also active park uses such as the Winters House, boat launch, and Blueberry Farm along the park's western edge and only interior areas of the park are considered noise sensitive. The project noise levels would be below FTA criteria, where applicable, and lower than the park's existing noise levels. *Preferred Alternative B2M* would not impact noise levels in the park.

Preferred Alternative B2M would not substantially affect park use, the park's features, activities, and attributes, or diminish the park's value.

Construction. Construction activities associated with *Preferred Alternative B2M* would encroach into Mercer Slough Nature Park, requiring a temporary construction easement of an additional 4.2 acres beyond operation right-of-way acquisition. *Preferred Alternative B2M* would result in more temporary park acquisition for construction than the other Segment B alternatives. After construction, these areas would be restored with appropriate native vegetation.

Utility relocation and light rail construction in the western edge of Mercer Slough Nature Park would result in increased noise, dust, and temporary access restrictions to western areas of the park, although detours would be provided to maintain access to trails and the blueberry field.

The Periphery Loop Trail sidewalk on the eastern side of Bellevue Way SE would be maintained and/or relocated where necessary by providing protected sidewalk on the eastern side of Bellevue Way SE, constructing a new sidewalk on the western side of Bellevue Way SE, or other locations as agreed to with the City of Bellevue. Access to Sweylochen Boat Ramp, the I-90 Trail, or other Mercer Slough Nature Park Trails would generally be maintained during construction. Construction along 112th Avenue SE could result in increased noise and dust near the water trail but would not likely inhibit normal trail use.

With the exception of the closure of the Winters House and adjacent parking and closure of the commercial component of the blueberry farm, access would be maintained during construction through detours, and the project would not inhibit normal use of most of the park's resources. The commercial component of the blueberry farm would be relocated to enable the business to continue operation during construction. Farming operations would be maintained during construction.

Constructing *Preferred Alternative B2M* would not substantially affect park use or diminish its value due to the project's location along the park's boundary with Bellevue Way SE. Construction would not inhibit normal park access and use on the park's east side.

Mitigation. Mitigation measures to address the permanent park impacts are the same as those described in the 2008 Draft EIS and include one or more of the following: financial compensation, restoration, replacement land, and/or potential enhancement of disturbed park area. Mitigation measures implemented during construction would

be the same as those described in the 2008 Draft EIS. Mitigation measures to address Section 6(f) and RCO property conversion are discussed in Appendix A.

3.2.3 Alternative B3 - 114th Extension Design Option

This section describes only the impacts associated with the Alternative B3 - 114th Extension Design Option (B3 114th Design Option).

Transportation

B3 114th Design Option has impacts similar to those identified in the 2008 Draft EIS for Segment B for Regional Travel, Transit Service, Highway Operations and Safety, Nonmotorized Facilities, Freight Mobility and Access, and Navigable Waterways. Differences in impacts are discussed for Transit Ridership and Arterial and Local Streets.

Operation. Table 3-1 provides information on projectwide ridership for Alternative B3-114th Design Option and reflects the entire alternative. A new at-grade gated crossing of the northbound lanes on 112th Avenue SE would be located south of the SE 8th intersection; however, this gate crossing would not impact intersection operations. Similar to the *Preferred Alternative B2M*, there would be improved station and neighborhood access along Bellevue Way SE at the south driveway to the South Bellevue Station and at SE 30th Street by installing signals and converting the center two-way left-turn lane from the South Bellevue Station to I-90 into a southbound HOV lane.

Construction. During construction, transportation impacts would be the same as those described for Alternative B3 in the 2008 Draft EIS except along 112th Avenue SE, north of SE 8th Street where there would be no direct construction impacts with this alternative. Driveway access to the Bellefield Office Park from SE 8th Street may be reduced to one lane. Along 114th Avenue SE, traffic and transit impacts would be the same as those described for Alternative B3. Maintenance of traffic and construction plans would continue to be refined through the final design and permitting stages of the project and subject to approval by the City of Bellevue and WSDOT.

Mitigation. Construction mitigation would be similar to the *Preferred Alternative B2M* connection to *Preferred Alternative C11A* at the South Bellevue Station and along 112th Avenue SE between Bellevue Way SE and SE 8th Street.

Acquisitions, Displacements, and Relocations

Operation. Alternative B3 - 114th Design Option would result in a total of 4 full and 15 partial acquisitions. The portion of the alternative unique to the B3 114th Design Option requires two full property acquisitions (one associated with the Bellefield Office Park and another with the Wilburton Park-and–Ride), and five partial acquisitions along SE 8th Street and 114th Avenue SE; these acquisitions are only associated with the design option. The tables and maps in Appendix B, Property Acquisition, identify potentially affected parcels associated the entire Alternative B3 alignment.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred Alternative B2M*.

Economics

Operation. Alternative B3 - 114th Design Option would acquire 12 businesses and displace 170 employees, the most business and second highest employee displacements of any Segment B alternative (Table 3-1). The businesses displaced and employees affected are associated with acquiring a parcel containing an office building in the Bellefield Office Park; these displacements would only occur if the B3 114th Design Option is implemented. The types of businesses impacted are associated with typical office park developments and not dependent on this location. Because the businesses would be relocated, no jobs would likely be lost as a result of project construction. The property tax revenue impact would be approximately 0.02 percent of the City's budgeted 2007-2008 property tax revenues.

Mitigation. Mitigation for relocating businesses would be consistent with Sound Transit's adopted *Real Estate Property Acquisition and Relocation Policy, Procedures, and Guidelines* as summarized in the 2008 Draft EIS. Sound Transit would comply with appropriate provisions of the federal Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended, and the State of Washington's relocation and property acquisitions regulations (Washington Administrative Code [WAC] 468-100 and Revised Code of Washington [RCW] 8.26).

Visual and Aesthetic Resources

Operation. Removing the existing office building at the corner of SE 8th Street and 112th Avenue SE in the Bellefield Office Park and constructing an at-grade profile through existing parking areas would change the appearance of the corner but would not

lower the high visual quality of this portion of 112th Avenue SE. Much of the area's existing landscaping outside of the construction footprint could be retained, as could landscaped medians along 112th Avenue SE. The elevated guideway paralleling SE 8th Street and then crossing it near I-405 would be seen from some nearby office buildings and SE 8th Street. Existing street trees and a landscaped median on the south side of SE 8th Street would be removed. The elevated structure would add another transportation feature to the viewed landscape in this area in addition to I-405 and its associated ramps and would be similar in character to the other elements; it would not lower the medium to low (near I-405) visual quality of this area.

Mitigation. Sound Transit would plant appropriate vegetation to replace existing street trees and other vegetation removed for the project, as practical. The area remaining as a result of removing the office building could be designed to serve as open space.

Noise and Vibration

There are no changes in vibration; therefore, there is no discussion in this section.

Operation. The B3 114th Design Option would result in noise impacts before mitigation at 81 receptors based upon the updated analysis, which used more recent reference train noise levels described at the beginning of Chapter 3. Project related noise levels are predicted to range from 54 to 68 dBA Ldn, with the highest predicted level near the crossover north of I-90 along Bellevue Way. The elevated curves from I-90 to Bellevue Way, which are larger than a 600 foot curve radius, would have sound walls and be designed to provide lubrication if wheel squeal was to occur.

Noise levels related to train bells (80 dBA at 50 ft) and safety gate bells near at-grade crossings (62 dBA at 50 ft) are provided in Exhibit 3-1. Bell-related noise in this area would occur when the train would sound a warning bell as it enters and departs from the South Bellevue Station. In addition, there is one at-grade crossing on 112th Avenue SE as the train crosses the northbound lanes and two additional at-grade crossings for pedestrians north of SE 15th Street. The three crossings are close together and the trains would sound the warning bell when approaching these crossings. Appendix G provides additional information and exhibits regarding noise impacts associated with the B3 114th Design Option.

Mitigation. Noise impacts from the crossover would be mitigated by using noise-reducing special trackwork. Sound walls would be used in the following locations to mitigate noise impacts. Appendix G provides exhibits illustrating the location of the proposed walls described below.

- Sound walls would be used on the north and west side of the elevated structure and at-grade guideway along the I-90 corridor and Bellevue Way to the intersection of Bellevue Way and 112th Avenue SE.
- North of the Bellevue Way and 112th Avenue intersection, sound walls would be constructed on the west side of 112th Avenue SE. Sound insulation to residences in the Bellefield Residential Park may also be needed for the upper floors due to the proximity of the tracks. Openings in the walls for pedestrian and cross-street vehicle traffic would allow for noise to be transmitted toward the residences, reducing the overall effectiveness of the walls and may require sound insulation.

Ecosystems

Operation. If the B3 114th Design Option is implemented, it would avoid impacts on the Sturtevant Creek wetland and would require an additional crossing of Sturtevant Creek south of SE 8th Street. The Sturtevant Creek crossing would result in some shading but would not result in any impacts because the alternative would be elevated at a height of almost 50 feet with footings located outside of the riparian area that would span the creek, which would allow adequate light for riparian vegetation.

Construction. Vegetation in the area under the guideway would be temporarily disturbed during construction and appropriate vegetation would be planted after construction. Construction activities would not occur in Sturtevant Creek or the Sturtevant Creek wetland.

3.2.4 BNSF Alternative (B7)

As a result of recent projects completed after the 2008 Draft EIS, there are additional impacts associated with Acquisitions, Relocations, and Displacements; Economics; Ecosystems; Geology and Soil; and Noise and Vibration. The two recent projects that result in changes include the removal of the Wilburton Tunnel associated with WSDOT's widening of I-405 and the construction of new storage facility business on 118th Avenue SE.

Acquisitions, Relocations, and Displacements

Operation. A new storage facility business was constructed on a previously vacant parcel that was considered a partial acquisition; this business would

now require a full property acquisition, thereby resulting in an increase of one full acquisition and a reduction of one partial acquisition. Alternative B7 would now require a total of seven full and eight partial acquisitions.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred Alternative B2M*.

Economics

Operation. The full acquisition of the parcel identified under Acquisitions, Relocations, and Displacements would displace 1 business and an estimated 50 employees. The additional business displacement would result in a total of 5 businesses and 180 employees displaced for Alternative B7, the second-most businesses and highest employee displacements of any Segment B alternative (Table 3-1).

Mitigation. Section 3.2.3 discusses the mitigation for relocating businesses.

Noise and Vibration

As described in Section 2.3.4, the sound wall constructed by WSDOT between I-405 and residences along 118th Avenue SE has resulted in a change that required additional noise analysis and the noise analysis for the entire Alternative B7 has been updated. This includes incorporating updates to the analysis from the Central Link described at the beginning of Chapter 3. There are no changes in vibration; therefore, there is no discussion in this section.

Operation. The WSDOT sound wall would be effective at mitigating noise from light rail operations impacts in the area behind the wall, but receptors north and south of the wall would be impacted. Noise impacts associated with light rail increased from 98 impacted receptors identified in the previous analysis to 150 impacted receptors. The increase in the number of noise impacts is due to a more accurate count of units using information from the City of Bellevue and the updated analysis, which used more recent reference train noise levels. Project related noise levels are predicted to range from 54 to 74 dBA Ldn, with the highest predicted level near the crossover in the BNSF right-of-way corridor just north of I-90. Train bells used at the 118th Station would not create impacts. With the proposed mitigation measures there would be no light rail-related noise impacts (Table 3-1). Appendix G provides additional information and exhibits regarding noise impacts associated with Alternative B7.

The only somewhat tight radius curves are those from I-90 to the BNSF alignment. These curves are greater than a 600-foot radius and no wheel squeal is anticipated. These curves would be designed such that squeal reducing lubrication could be provided if necessary.

Mitigation. Noise impacts from the crossover in the BNSF right-of-way corridor would be mitigated by moving the crossover or using noise-reducing special trackwork. Appendix G provides exhibits illustrating the location of the proposed sound walls described below.

- Sound walls would be used on the north side of the elevated structure along the I-90 corridor, ending near the Bellevue Way ramps.
- Sound walls would on the west side of the at-grade alignment adjacent to the apartment complex on 118th Avenue SE off SE 32nd Street.
- Sound walls would be along the west side of the elevated guideway and at-grade alignment near condominiums at the northern end of Mercer Slough Nature Park, off 118th Avenue SE.

Ecosystems

Since the 2008 Draft EIS was published, wetland delineations have been conducted in the Mercer Slough to better reflect the permanent and temporary wetland and wetland buffer impacts.

Operation. Alternative B7 would result the same wetland impact (1.8 acres) and a lower wetland buffer impact (0.4 acre) based on the delineations.

Construction. In addition to the wetland delineations, the construction easement has been updated. Construction would increase the wetland impact to 2.9 acres. The total wetland buffer impact would be the same as the 2008 Draft EIS analysis.

Geology and Soils

The soils conditions along Mercer Slough include soft clays and peats which are prone to settlement. Recent WSDOT studies find that as the level of Lake Washington changes during annual increases and decreases, the peat causes ongoing movement of the I-90 bridge structures. The movement has resulted in the need for WSDOT to implement special bridge repairs to maintain operation and safety of the bridges. These conditions could be affected by light rail construction. Additionally, light rail operations could be affected if similar unplanned movements occurred on the new light rail bridge across the Mercer Slough.

3.3 Segment C Alternatives

3.3.1 Summary of Segment C Alternatives

Table 3-2 presents information on those environmental resources that would be impacted as a result of the new or modified alternatives. Changes in impacts associated with Transportation; Acquisitions, Displacements, and Relocations; Economics; Visual and Aesthetics; Noise and Vibration; Historic and Archaeological Resources; and Parkland and Open Space are discussed in the next section. The new Segment C alternatives would not result in substantially different impacts as the other Segment C alternatives for most of the environmental resources evaluated in the 2008 Draft EIS, including Land Use; Air Quality and Greenhouse Gases; Water Resources; Energy Impacts; Geology and Soils; Hazardous Materials; Electromagnetic Fields; Public Services; and Utilities.

TABLE 3-2
Comparison of Segment C Alternatives

Features		Range of Impacts for Draft EIS Alternatives	Alternative			
			C11A	C9T	C9A	C14E
Number of stations		1 to 2	3	2 to 3	2 to 3	2
Estimated cost (millions, 2007 $)		$435 to 1,615	$555 to 690	$790 to 1,025	$465 to 640	$495 to 575
2030 daily ridership	Segment boardings	5,500 to 8,000	8,000 to 9,000 (8,500 to 9,500)	7,000 (9,000)	7,500 to 8,000 (8,500 to 9,000)	5,500 (5,500)
	Total East Link ridership	43,500 to 46,000[a]	49,000 to 51,500[b] (48,000 to 49,500)[b]	50,000 (49,000)	48,500 to 50,500[b] (46,500 to 48,500)[b]	48,500 (46,000)
Travel time through segment (minutes)		4 to 7	7 to 10	7	7 to 9	4
Length (miles)		2.1 to 2.6	1.9 to 2.8	1.7 to 2.5	1.7	1.3
Construction risk[c]		Low to High	Moderate	High	Moderate	Low
Environmental impacts						
Intersections Operating Worse than No Build Alternative Before Mitigation		0 to 1	3	1	2	0
Residential displacements (# of housing units)		0 to 93	47	47	0 to 1	0
Economics: business displacements (# of employees)		8 (210) to 61 (830)	33 (285)	17 (200)	18 (230)	22 (485)
Full/partial property acquisitions		3/9 to 21/173	23 /35	20/12	14/14 to 18	12 /15
Neighborhood		Low	Low	Low	Low	Low
Decrease in visual quality		No to Yes	No	No	Yes	No
Noise-impacted receptors: (number after mitigation)	Traffic-related	0 (0) to 21 (0)	0	0	0	0
	Light Rail-related	0 (0) to 87 (0)	169 to 187 (0)[d]	69 to 84 (0)	178 to 195 (0)[d]	88 (0)
Vibration-impacted buildings with vibration impacts (number after mitigation)		0 (0) to 1 (0)	1 (0)	2 (0)	3 (0)	0
Wetlands: permanent/temporary (acres)		0	0/0 to <0.1	0/0 to <0.1	0/0 to <0.1	0/0 to <0.1
Wetlands buffer: permanent/temporary (acres)		0	0 to 0.1/0 to 0.1	0 to 0.1/0 to 0.1	0 to 0.1/0 to 0.1	0 to 0.1/0 to 0.1
High-value nonwetland habitat loss (acres)		0.1 to 0.5	0	0	0	0
Stream crossing		0 to 1	1	1	2	2
Parks: permanent (acres before mitigation)		0.4 to 1.7	0.5	0.6	<0.1	0
Parks: Temporary		1.1 to 2.0	0.6	0.6	<0.1	0
Historic properties (number of properties evaluated)		0-1	1	1	0	0

Note: Ridership forecasts for Segment C Alternatives connected to either: 1) *Preferred Alternative B2M* (with *Preferred Alternative C11A* and *Preferred Alternative C9T*) or 2) Alternative B3 (with alternatives C9A and C14E) are shown outside of the parentheses and forecasts shown inside the parentheses are with the connection to Alternative B7.

[a] Range shown for the Draft EIS alternatives has not been updated to be consistent with the SDEIS alternatives. Updated information will be provided in the Final EIS.

[b] Range of ridership based on level of transit signal priority provided within downtown Bellevue when connected to *Preferred Alternative B2M*.

[c] Construction Risk relates to the average risk of geologic and utilities constraints relative to the other alternatives for the East Link Project. Refer to Chapter 6 in 2008 Draft EIS for a description of criteria.

[d] Some impacts would be mitigated with building sound insulation which does not reduce exterior noise impacts. Impacts include living units and hotel units.

Impacts associated with the new Segment C alternatives would generally be the same as Alternatives C1T and C2T where the alternatives travel east from I-405. Construction risk for all Segment C alternatives ranges from low to high because of the types of impacts anticipated during construction and the construction methods. Generally, cut-and-cover tunnel construction poses high risks due to underground utilities and uncertainty regarding soil conditions. At-grade construction poses moderate risks because of the construction constraints (conflict with traffic and utilities) in the urban corridor, and elevated construction poses low risks because of the methods used to construct the elevated guideway.

3.3.2 Preferred 108th NE At-Grade Alternative (C11A)

Between Main and NE 6th Streets, *Preferred Alternative C11A* follows a similar route as Alternative C4A along Main Street and 108th Avenue NE up to NE 6th Street, except C11A has two tracks on 108th Avenue NE instead of the couplet associated with C4A.

Transportation

Operation. This section discusses the operational transportation impacts for light rail ridership, traffic control, property access and circulation, parking, intersection operations and LOS, traffic safety, and nonmotorized facilities.

Light Rail Ridership: Table 3-3 provides information on projectwide ridership for *Preferred Alternative C11A*. Overall, by year 2030, projectwide daily ridership for *Preferred Alternative C11A* would be between 49,000 and 51,500 with the connection to *Preferred Alternative B2M* and between 48,000 to 49,500 with the connection to Alternative B7. The higher ridership occurs with the provision of signal priority for light rail through downtown Bellevue. Compared to the other Segment C alternatives, *Preferred Alternative C11A* would have the highest number of station boardings in the segment.

Traffic Control, Property Access, and Circulation: *Preferred Alternative C11A* operates at-grade in the median of 112th Avenue SE and transitions to the west side of 112th Avenue SE at the SE 6th Street intersection. *Preferred Alternative C11A* operates at-grade on the west side of 112th Avenue SE before becoming elevated over SE 1st Place and then transitions back to at-grade on the south side of Main Street near 110th Avenue SE. C11A operates at-grade across Main Street into the median of 108th Avenue NE with signalized crossings at Main, NE 2nd, NE 4th, and NE 6th Streets and a mid-block pedestrian crossing north of NE 2nd Place. *Preferred Alternative C11A* continues at-grade through the Bellevue Transit Center and crosses 110th Avenue NE and transitions to elevated. As C11A operates along portions of 108th Avenue NE in the median, property access and circulation is right-in/right-out except at signalized intersections where all movements are allowed (including u-turn movements where appropriate); the northbound left-turns along 108th Avenue NE, however, would be prohibited. SE 4th Street would be closed to 112th Avenue SE. Access to SE 4th Street would be maintained via 111th Avenue SE and no impacts are anticipated. The north driveway to Surrey Downs Park would be closed.

With a connection to alternatives B3, B3 114th Design Option or B7, no traffic control, property access or circulation changes would occur along 112th Avenue SE, as *Preferred Alternative C11A* would operate grade-separated east of 112th Avenue SE before transitioning to at-grade south of Main Street, west of 112th Avenue SE.

Parking: *Preferred Alternative C11A* would remove approximately 10 on-street parking spaces and 340 off-street parking spaces. The on-street parking spaces are located along 108th Avenue NE. These off-street parking spaces are parcels along 112th Avenue SE, Main Street, NE 2nd Street, 108th Avenue NE, 112th Avenue NE, Lake Bellevue Drive, and 116th Avenue NE.

With a connection to alternatives B3, B3 114th Design Option or B7, 10 on-street parking spaces and 360 off-street parking spaces would be removed, which is more parking spaces than identified in the 2008 Draft EIS for other Segment C alternatives.

At the 108th Station, hide-and-ride parking would be unlikely as the City of Bellevue has established a Residential Parking Zone in the Surrey Downs neighborhood south of the station. Potential hide-and-ride parking at the Bellevue Transit Center and Hospital Stations would be similar as that of other Segment C alternatives that would follow a similar alignment. For private parking lots that surround stations, private owners could implement measures such as security enforcement or time-limited parking to minimize the potential for hide-and-ride activities.

Intersection Operations and LOS: In the future, several roadway projects in downtown Bellevue are assumed to be completed in the No Build Alternative. Four intersections in the study area would likely operate at LOS F under the No Build Alternative in 2020, and by the year 2030, five additional intersections would likely operate at LOS F, totaling nine intersections in year 2030 that are expected to operate at LOS F with the No Build Alternative. Most *Preferred Alternative C11A* intersections would operate similar to No Build Alternative conditions. The intersections of Main Street and 112th Avenue NE, Main Street and 108th Avenue NE, and NE 4th Street and 108th Avenue NE and would not meet City LOS standards and would operate worse than the No Build Alternative.

With a connection to alternatives B3, B3 114th Design Option or B7, operations along 112th Avenue SE would be similar to the No Build Alternative, except the intersection of Main Street and 112th Avenue NE would not meet City of Bellevue LOS standards and would operate worse than the No Build Alternative.

Traffic Safety: *Preferred Alternative C11A* operates predominately either grade-separated or at-grade in the median of 108th Avenue NE. Traffic signals are provided at the at-grade crossings on 112th Avenue SE at SE 6th Street, on 108th Avenue NE at Main Street, NE 2nd Street, NE 4th Street, NE 6th Street, and on 110th Avenue NE at NE 6th Street to assign right-of-way for light rail trains, vehicles, pedestrians, and bicycles. The planned pedestrian crossing and signal would be maintained between NE 2nd and 4th Streets on 108th Avenue NE. Where there are at-grade center median operations, all non-signalized intersections (i.e., NE 2nd Place) and driveways would provide right-in/right-out vehicle access. Where at-grade center median operations occur, all other remaining cross streets (i.e., NE 2nd Place) and driveways would have right-in/right-out vehicle access; pedestrian or bicycle crossing of the light rail tracks would not be provided, thereby reducing the light rail conflicts with these travel modes.

With a connection to alternatives B3, B3 114th Design Option or B7, *Preferred Alternative C11A* would be grade-separated east of 112th Avenue SE and cross 112th Avenue SE elevated with no vehicle, pedestrian and bicyclist conflicts.

Nonmotorized: *Preferred Alternative C11A* is not likely to impact pedestrian and bicycle facilities. The 108th Station location with the *Preferred Alternative C11A* would minimally impact nonmotorized facilities because it is located off-street, south of Main Street. The at-grade operations of the station location would be more convenient to a higher percentage of the downtown Bellevue residents and employment centers than the East Main Station location. Major pedestrian crossings and sidewalks near the Bellevue Transit Center Station area for this alternative would provide sufficient pedestrian space, although sidewalk and intersections connecting to entrances to the Bellevue Transit Center Station on 108th and 110th Avenues NE would experience some pedestrian crowding during peak periods. This station's location would require the reconfiguration of the Bellevue Transit Center. *Preferred Alternative C11A's* Bellevue Transit Center Station location would be the most convenient for transit connections and would serve the highest percentage of downtown Bellevue residents and employment centers among Segment C alternatives. There would be no differences in the impacts on pedestrian and bicycle circulation and connectivity at the Hospital Station from those evaluated in the 2008 Draft EIS.

With a connection to alternatives B3, B3 114th Design Option or B7, *Preferred Alternative C11A* would not affect pedestrian and bicycle facilities along 112th Avenue SE.

Construction. At-grade construction activities would include detour routes, short-term and long-term lane closures, loss of on-street parking, and bus route impacts similar to those described in the 2008 Draft EIS. Construction activities associated with the work over I-405 and within the BNSF Railway right-of-way would result in similar transportation impacts as those discussed for Alternatives C1T and C2T in the 2008 Draft EIS. Truck trips range from 35 to 40 per day (3 to 4 per hour based on 10-hour work day) for four years.

An estimate of the construction impacts is provided based on the level of design completed to date and the known construction activities. For most of the construction period, one eastbound lane on Main Street between 108th and 112th Avenues NE would likely be closed, but there is a possibility that more or fewer lanes could be closed for short periods, depending on construction activities. Construction activities could close lanes along 108th Avenue NE. Property access to the residences and businesses along 108th Avenue NE between Main and NE 6th Streets would be maintained to the extent possible either through access on 108th avenue NE or alternative routes. Increased congestion would likely occur on 108th Avenue NE

while 106th and 110th Avenues NE would likely also experience some increase in congestion as vehicles avoid 108th Avenue NE. With these changes to travel patterns, signal operations would be modified to optimize vehicle flow during construction. Preferred Alternative C11A could have a shorter construction duration than *Preferred Alternative C9T*.

With a connection to alternatives B3, B3 114th Design Option or B7, *Preferred Alternative C11A* would result in temporary lane closures on 112th Avenue SE south of Main Street during the construction of the elevated track across 112th Avenue SE.

Maintenance of traffic and construction plans would continue to be refined through the final design and permitting stages of this project and subject to approval by the City of Bellevue and WSDOT.

The Bellevue Transit Center would be closed during construction of the Bellevue Transit Center Station. Transit service and route modifications associated with this closure would be similar to those for Alternatives C1T and C2T. Sidewalks along Main Street and 108th Avenue NE would likely remain open on at least one side during construction, and pedestrian connections would be maintained at signals.

Mitigation. As stated previously, an at-grade peer review concluded that the overall forecasted traffic congestion in Downtown Bellevue would be an effect of future volume growth and not an at-grade light rail system. Even so, intersection impacts are noted. An eastbound right-turn pocket is proposed at Main Street and 112th Avenue NE to provide capacity for trips associated with the 108th Station. At the intersections of Main Street and 108th Avenue NE and NE 4th Street and 108th Avenue NE, mitigation to better utilize the roadway capacity could be implemented, such as providing active traffic management strategies. For example, active signing could be installed to more effectively route vehicles to less congested streets; turn movements could be restricted during congested periods, or adaptive signal controllers could be installed to better respond to changing traffic conditions.

During construction, mitigation measures for the Bellevue Transit Center closure could include the following:

- Relocating transit stops to adjacent streets
- Providing a temporary transit center at a nearby off-street location.
- Revising transit services

Refer to the 2008 Draft EIS for additional potential mitigation measures during construction.

Acquisitions, Displacements, and Relocations

Operation. With the connection from *Preferred Alternative B2M*, *Preferred Alternative C11A* would require 23 full acquisitions and 35 partial acquisitions, including 47 residential displacements consisting of 6 single-family and 41 multifamily units. The connections to *Preferred Alternative C11A* from alternatives B3, B3 114th Design Option or B7 would require 18 full and 37 partial displacements, including one residential displacement. The tables and maps in Appendix B, Property Acquisition, identify potentially affected parcels.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred Alternative B2M*.

Economics

Operation. *Preferred Alternative C11A* would displace 33 businesses and 285 employees (Table 3-2). The businesses that would be impacted are primarily along Main Street, 108th Avenue NE near the Bellevue Transit Center, and in the area around the proposed Hospital Station. For the connections to *Preferred Alternative C11A* from alternatives B3, B3 114th Design Option, or B7 there would be an additional business displacement and an additional 54 employees for a total of 34 businesses and 339 employees. The property tax revenue impact due to the properties being converted to a transportation related use would be approximately 0.08 to 0.10 percent of the City's budgeted 2007-2008 property tax revenues, depending on the Segment B connection, which is within the 0.05- to 0.17-percent range of impacts for other Segment C alternatives. Because the businesses would be relocated, no jobs would likely be lost as a result of the project.

Construction. Impacts would be similar to Alternatives C1T and C2T for the area east of the Bellevue Transit Center and Alternatives C4A and C8E, which travel along the same portions of 108th Avenue NE. For the connections from alternatives B3, B3 114th Design Option, or B7, impacts would be the same as other Segment C alternatives with the same connection.

Mitigation. Mitigation measures would include developing construction mitigation plans to address the needs of businesses during construction. Section

3.2.3 discusses the mitigation for relocating businesses.

Social Impacts, Community Facilities, and Neighborhoods

Operation. *Preferred Alternative C11A* would result in changes to the Surrey Downs neighborhood along 112th Avenue SE and Main Street not previously evaluated with the other Segment C alternatives. C11A would acquire residential properties, including 6 single-family and 41 multifamily units that currently face 112th Avenue SE. *Preferred Alternative C11A*, however, would not result in negative impacts on the quality of the Surrey Downs neighborhood. The light rail guideway would be consistent with transportation nature of the 112th Avenue SE as an arterial transportation corridor. Currently, 112th Avenue SE acts as a boundary for the eastern portion of the neighborhood. While widening the transportation corridor to include light rail would change the edge of the community, acquiring these residences would not bisect the neighborhood. Most residences that would be acquired are not in character with the overall Surrey Downs neighborhood, and due to their position facing 112th Avenue SE with no direct accessibility into the Surrey Downs neighborhood, the relocation would not affect the larger neighborhood's cohesion. Although acquiring residential properties and adding the light rail project would move a transportation element closer to the remaining residences adjacent to 112th Avenue SE, after construction there would be a buffer of approximately 50 feet between the light rail project and the neighborhood. Treatment of this buffer would include landscaping and noise mitigation. Refer to the Noise and Vibration section for complete information.

Preferred Alternative C11A would close the SE 4th Street access to 112th Avenue SE. Residents that used this access would need to use alternate access at SE 1st Place or elsewhere in the neighborhood. This change would require some residents to use a more circuitous route, but the low number of trips that this would redirect would not result in traffic impacts that would affect neighborhood quality.

Visual changes would be noticeable to some residents adjacent to the project, especially near the intersection of 112th Avenue SE and Main Street where the alternative would be elevated; however, the alternative would not lower the corridor's overall visual quality and, therefore, would not impact the overall neighborhood quality. In addition, the buffer area along 112th Avenue SE would be replanted after construction and would provide a visual buffer and an open space amenity for those nearby residences. By using an elevated structure rather than a retained fill in as much of this area as possible, a more open feel could be achieved. *Preferred Alternative C11A* would permanently acquire a portion of Surrey Downs Park, but the affected area is not associated with any recreation facilities and does not impact views from the park. Refer to the Parkland and Open Space section for additional information.

The 108th Station would be adjacent to the neighborhood, and no other land use changes would be expected from placing this station in this location because transit-oriented development (TOD) is not allowed in the single-family residential area under current zoning. For those near the station, there would be benefits associated with increased transit access. In addition, the neighborhood is an established Residential Parking Zone, which minimizes the possibility of hide-and-ride parking. There would be no noise impacts for the residences after mitigation. Refer to the Noise and Vibration section for complete information.

Construction. Constructing *Preferred Alternative C11A* would potentially result in noise and impacts on residents not affected under other 2008 Draft EIS Segment C alternatives due to construction activities in close proximity to residents along 112th Avenue SE and Main Street. Although some residents would experience impacts, the overall neighborhood cohesion would not be permanently affected. The area where properties would be acquired along 112th Avenue SE and Main Street may also be used for staging areas and to store building materials, equipment, and excavation materials. Because *Preferred Alternative C11A* follows 112th Avenue SE and Main Street, any short term affects to pedestrian and vehicular circulation are not considered a barrier to interaction. Also, Sound Transit would maintain access to adjacent properties. A barrier or fence would be provided. Construction periods would comply with local noise ordinances. After construction, this area would be restored and would act as a buffer between light rail and the neighborhood.

Mitigation. No new mitigation measures are identified beyond those listed in the 2008 Draft EIS including measures to minimize noise, dust, and, and traffic congestion. Refer to the Transportation, Noise and Vibration, and Parkland and Open Space sections for mitigation measures during operation and construction for resource specific impacts.

Visual and Aesthetic Resources

Operation. *Preferred Alternative C11A* begins in the median of 112th Avenue SE and transitions to the west side before the intersection of SE 6th Street. *Preferred Alternative C11A* would remove landscaped medians along 112th Avenue SE (south of SE 8th Street) as well as vegetation along the east side of 112th Avenue SE (including street trees north of SE 6th Street). Vegetation would be removed along the west side of 112th Avenue SE near Surrey Downs Park. KOP 3 is located on the south side of SE 6th Street near the intersection of 112th Avenue SE and provides a view to the northwest along 112th Avenue SE. This location was selected to depict changes associated with the *Preferred Alternative C11A* along 112th Avenue SE north of SE 6th Street. Exhibit 3-11 illustrates its location, and Appendix C provides a simulation of how *Preferred Alternative C11A* would appear from KOP 3.

North of Surrey Downs Park, residences and vegetation along the west side of 112th Avenue SE would be removed. *Preferred Alternative C11A* would create an open space of approximately 50 feet between the light rail and nearby residences in these areas. Removing residences and nearby vegetation would be noticeable to viewers from adjacent properties and to people travelling on 112th Avenue SE. This area would be landscaped and could be used as a park or open space as well as to buffer views from residences to the west. The presence of the project and associated landscaping would not lower the existing medium visual quality category of this area to low.

Preferred Alternative C11A would also remove residences and vegetation along the south side of Main Street, which would be visible along Main Street and 112th Avenue SE. KOP 4 is located on Main Street and is a view looking southwest towards the elevated trackway of *Preferred Alternative C11A*. Exhibit 3-11 illustrates the location of KOP 4 and Appendix C provides a simulation of how *Preferred Alternative C11A* would appear from KOP 4. Most of the 108th Station would be in a retained cut so it would have a low profile when viewed from Main Street and residents that back on to the station area.

Although removing existing trees and buildings along the south side of Main Street would lower the visual quality of this portion of Main Street, it would not change enough to lower the existing visual quality category of medium to low. During final design Sound Transit would assess whether or not the existing large coniferous trees located near the

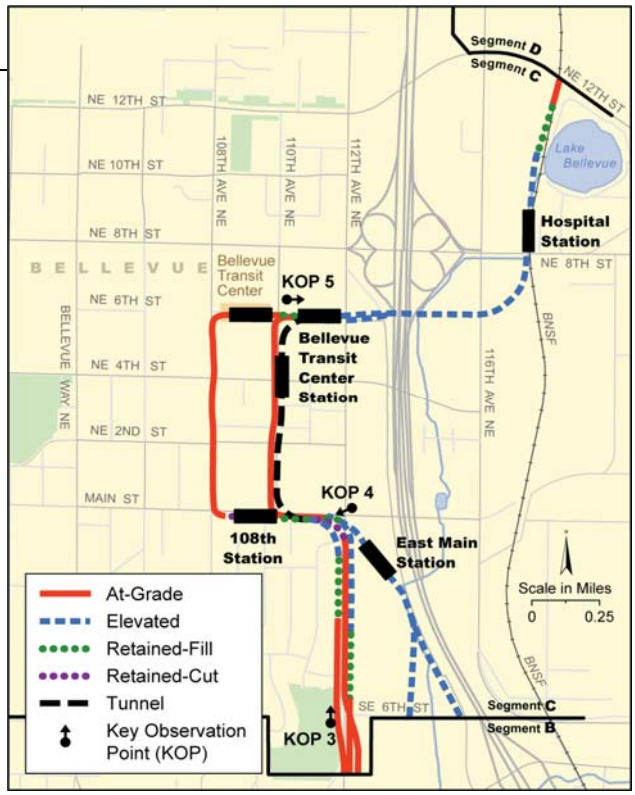


EXHIBIT 3-11
KOP Locations Segment C

108th Station could be preserved. Sound Transit's intention is to preserve the established trees to the extent practicable. The design and aesthetic treatment for the portions of the alignment along Main Street would result in a landscaped buffer and transition area between the residential neighborhood south of Main Street and the commercial areas and the city center to the north. This approach would be consistent with the City of Bellevue's Comprehensive Plan (Policy S-DT-125) regarding transitions between downtown and the residential neighborhood to the southeast of downtown.

From the 108th Street Station the alternative to the at-grade Bellevue Transit Center Station, the alternative and train would be consistent with the urban setting of 108th Street NE. Residents and others who frequent Downtown Bellevue would notice the changes to 108th Street NE, but the at-grade profile in the existing street right-of-way are visually compatible with the urban streetscape. The alternative would not lower the existing visual quality rating of 108th Street NE.

After leaving the transit center, the alternative would head east along NE 6th Street near the Meydenbaeur Conference Center. The transition from at-grade to an elevated profile would require the building of a transition structure to the elevated structure that would cross over I-405 and continue east. The structure would be visible along NE 6th

Street between the Meydenbauer Convention Center and City Hall Plaza. KOP 5 depicts the transition structure as seen from SE 6th Street near 110th Avenue SE. Appendix C contains a simulation of the changes associated with *Preferred Alternative C11A* as viewed from KOP 5. The at-grade *Preferred Alternative C11A* transition structure and elevated structure would contrast for a short portion of the streetscape but would not block views between the upper parts of the convention center and City Hall Plaza or views from the sidewalk on the north side of NE 6th Street to the sidewalk area on the south side of NE 6th Street. The elevated structure would cast shadows along NE 6th Street and 112th Avenue NE. The existing visual quality of this block of NE 6th Street would not lower the visual quality category from medium to low. The portion of the alternative that would cross over I-405 and connect with the Hospital Station would be elevated (as would the station). The alternative would be consistent with the character of this area and would have little effect on visual quality. From the Hospital Station north to the Segment D boundary the alternative would not change the low visual quality.

For the connections to *Preferred Alternative C11A* from alternatives B3, B3 114th Design Option and B7, there would be no differences in the visual impacts beyond those identified for any of the other Segment C alternatives that would connect to the B3, B3 114th Design Option, or B7 alternatives. The existing medium visual quality rating of the area would be retained.

Construction. Constructing *Preferred Alternative C11A* would remove trees, vegetation, and buildings within the construction right-of-way of 112th Avenue SE and Main Street. Construction activities would be visible during the period of construction from nearby areas and would temporarily affect visual and aesthetic resources near them.

Mitigation. Sound Transit would preserve existing trees to the extent possible and plant appropriate vegetation to replace existing street trees and other visually important vegetation removed for the project, as practical. Sound Transit will work with the City of Bellevue to ensure that the design of the portions of 112th Avenue SE and Main Street where residences would be removed is designed appropriately as open or park space (along 112th Avenue SE) and that the portion of the alignment along Main Street creates a transition area between the neighborhood south of Main Street and the more dense city center.

Noise and Vibration

Operation. *Preferred Alternative C11A* would result in noise impacts before mitigation at 187 receptors along the corridor. This is due to the alignment passing near several multifamily structures with several of those units facing the alignment. Project related noise levels prior to mitigation were predicted at 54 to 74 dBA Ldn. After mitigation measures, there would be no interior noise impacts related to light rail.

Preferred Alternative C11A noise impacts were identified at up to 29 single family units, 90 multi-family units, and 68 hotel rooms along the trackway and near crossovers on 112th Avenue SE just south of SE 6th Street; this includes several rooms at the Bellevue Club Hotel and single family units along the west side of 112th Avenue SE. Noise impacts in the area near SE 6th Street would result from the combined noise from the train, train bells, crossing gates, and the crossover. No impacts were identified at the Surrey Downs Park because under FTA criteria, active recreation areas with playfields are not considered noise sensitive. Noise impacts would be reduced to 169 receptors with the connection to either alternative B3, B3 114th Design Option, or B7.

Impacts were also identified along the transition to the 108th Station, due in part to the station's proximity to several single-family residences. Note also that the train would sound its bell as it arrives and departs the station and again as it traverses the at-grade crossing at Main Street to 108th Avenue SE.

Through the downtown area, noise impacts were also identified at several multifamily residences along 108th Avenue NE and NE 6th Street. Noise impacts were also identified at the Coast Bellevue Hotel due to crossover and train proximity and the Lake Bellevue Village Condominiums due to train proximity. The trains would sound their bells for the at-grade crossing on 112th Avenue SE and at all at-grade crossings along 108th Avenue NE, including Main, NE 2nd, 4th, and 6th Streets.

Noise levels related to train bells and safety gate bells near at-grade crossings are provided in Exhibit 3-1. Maximum noise levels related to the bells are 80 dBA at 50 feet for the train bells and 62 dBA at 50 feet for the warning bells at gated crossings. Existing maximum noise levels along 112th Avenue SE and in the downtown Bellevue area frequently exceeded 80 dBA and above 90 dBA L_{max} in some instances.

There is a potential for wheel squeal at the tight radius curves at 112th Avenue SE and Main Street,

Main Street and 108th Avenue NE, and at NE 6th Street and 108th Avenue NE. Lubricators would be installed at each of these curves as part of the project.

The vibration impacts in Segment C would be a result of the proximity of the proposed alignment and the speed of the light rail vehicles. In addition to the residential land uses in this corridor, vibration and ground-borne noise impacts were also assessed for the Meydenbauer Center. Site-specific propagation tests—specifically, outdoor to indoor vibration propagation tests—were conducted at the Meydenbauer Center on May 6, 2010. The outdoor tests were conducted at an approximate location where a number of the proposed alternatives would be located, and sensors were located just outside the building and at three locations inside the theater, including two in the seating area and one on the stage. These measurements were conducted because vibration and ground-borne noise impacts were projected for the theater during the 2008 Draft EIS. Subsequent tests found that the building foundation at the Meydenbauer Center significantly reduces the vibration and ground-borne noise levels in the building. An additional vibration propagation test was conducted in Downtown Bellevue to refine the vibration assessment for Segment C alternatives.

Preferred Alternative C11A includes one location—the Coast Bellevue Hotel—where there would be vibration impacts from the crossover; with the incorporation of special trackwork, however, there would be no vibration impacts. *Preferred Alternative C11A* would have no ground-borne noise impacts. There are no impacts to the theater in the Meydenbauer Center. Appendix G provides additional information and exhibits regarding noise impacts associated with *Preferred Alternative C11A*.

Construction. Construction activities would require the removal of residences along 112th Avenue SE and noise impacts could affect residences located to the west. In addition, construction along Main Street could also affect adjacent residences.

Mitigation. Specific mitigation measures to address noise impacts would include the following:

- Rail lubrication would be used to prevent wheel squeal at all curves with radii of less than 600 feet, including the curve from 112th Avenue SE to Main Street, Main Street at 108th Avenue NE and 108th Avenue NE at NE 6th Street.
- Sound insulation would be installed for several single-family homes and hotel rooms near SE 6th Street, if required.
- Sound insulation, as needed, would be installed to an estimated 48 or more multifamily units along 108th Avenue NE and NE 6th Street.

Sound walls and special trackwork at crossovers would be used in the following locations depending on the connection to Segment B to mitigate noise impacts. Appendix G provides exhibits illustrating the location of the proposed walls described below.

- Sound walls would be used from the retained fill transition along 112th Avenue SE, continuing north, around the curve to Main Street, and ending just west of the station near 108th Avenue NE.
- Sound walls, along with special trackwork at the crossover, would be used along the east side of the at-grade guideway near the Bellevue Club and Hotel, on the eastside of 112th Avenue SE, near SE 6th Street
- Sound walls, along with special trackwork at the crossover, would be used along the north side of the elevated guideway near the Coast Bellevue Hotel, on the eastside of I-405, near NE 8th Street. The crossover modification would also mitigate vibration impacts to the Coast Hotel.
- Sound walls would be used along the east side of the at-grade and retained fill near the Lake Bellevue Village Condominiums on Lake Bellevue, south of NE 112th Street.

Even with the recommended noise mitigation measures, there is a potential for residual exterior noise impacts at up to 72 multifamily residences; however, most units have no outdoor use, so the number could be substantially less.

Construction of *Preferred Alternative C11A* along 112th Avenue SE and Main Street is expected to occur largely during daytime working hours. If nighttime or off hours work was required, contractors would be required to meet the City's noise ordinance criteria and would seek the appropriate noise variance from the City.

Construction noise control measures would include those described in Section 4.7.5.3 of the 2008 Draft EIS.

Ecosystems

Operation. No wetland impacts would occur due to operation of *Preferred Alternative C11A*. There would be 0.1 acre of wetland buffer impacts associated with the Sturtevant Creek wetlands in an area near the Bellevue Hilton only if the connection from Segment B is via Alternative B3.

Construction. Project construction would temporarily affect less than 0.1 acre of wetland and 0.1 acre of wetland buffer if the connection is to Alternative B3.

Historic and Archaeological Resources

One historic resource—the potential Surrey Downs Historic District—is within the APE of *Preferred Alternative C11A*.

The Surrey Downs neighborhood is a potential NRHP-eligible historic district under Criteria A and C. Refer to Section 3.1 for definition information on Criteria A and C. DAHP concurred with the FTA and Sound Transit determination that 37 houses are contributing elements to a potential NRHP-eligible Surrey Downs Historic District within the Segment C area of the project APE including two new houses added since the 2008 Draft EIS. Boundaries for the district have not been defined, because they likely would extend outside of the project's APE. A district is a concentration of buildings or other properties that might or might not be individually eligible for the NRHP 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 as a contributing property, the houses must fit one of the architectural styles discussed below and not have been substantially modified (on the exterior) since their construction. Exhibit 3-12 depicts the location of inventoried properties and those properties that are contributing properties (listed in Table 3-3).

Houses in Surrey Downs that retain integrity are potentially eligible for the NRHP as a historic district because they are part of a residential subdivision developed between 1952 and1956; many of the houses represent a Pacific Northwest regional variant of the Modern architectural design style of houses are based on the designs of a prominent post-World War II residential architectural firm, Mithun & Nesland (now Mithun Partners), and the neighborhood retains a high degree of design unity and cohesiveness (Exhibits 3-13 through 3-15).

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 approximately 200 houses.

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

Field No. and Map ID	Address	Field No. and Map ID	Address
291	88 110th Avenue SE	296	10915 SE 1st Street
1	106 110th Avenue SE	293	103 109th Avenue SE
123	114 110th Avenue SE	294	114 109th Avenue SE
119	122 110th Avenue SE	295	122 109th Avenue SE
297	115 110th Avenue SE	121	128 109th Avenue SE
298	121 110th Avenue SE	359	241 109th Avenue SE
299	125 110th Avenue SE	360	301 109th Avenue SE
300	214 110th Avenue SE	361	313 109th Avenue SE
301	203 110th Place SE	363	401 109th Avenue SE
317	215 110th Avenue SE	365	409 109th Avenue SE
319	204 110th Place SE	366	412 109th Avenue SE
320	11005 SE 2nd Street	370	428 109th Avenue SE
321	11014 SE 2nd Street	371	431 109th Avenue SE
120	11022 SE 2nd Street	372	436 109th Avenue SE
322	11030 SE 2nd Street	373	442 109th Avenue SE
323	11040 SE 2nd Street	375	423 110th Avenue SE
302	11039 SE 2nd Street	406	115 109th Avenue SE
292	10904 SE 1st Street	407	109 109th Avenue SE
325	10910 SE 1st Street		

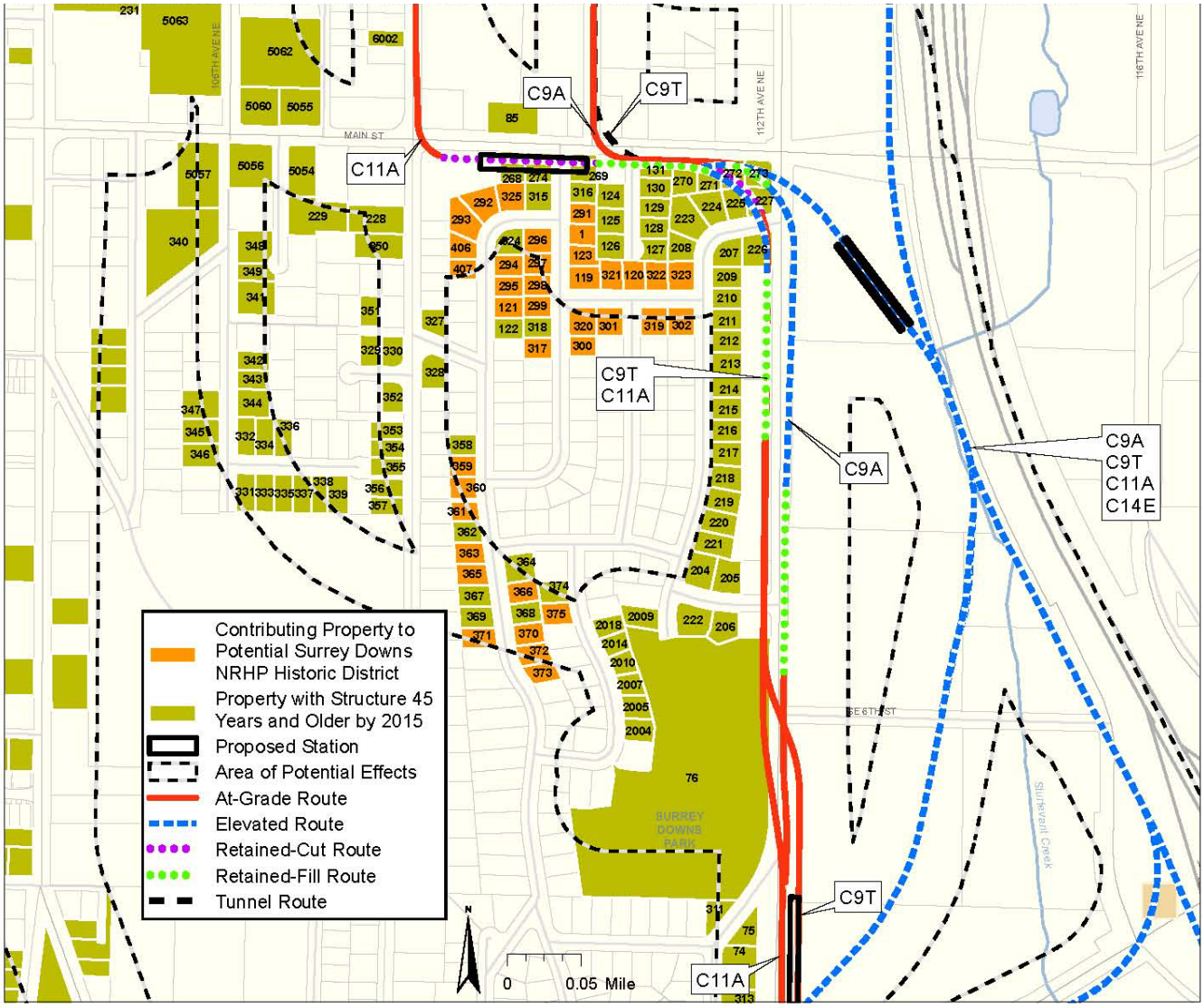


EXHIBIT 3-12
Contributing Properties for the Potential NRHP-Eligible Surrey Downs Historic District, between 108th and 112th Avenues SE, South of Main Street

Between 1954 and 1956, they built approximately 40 houses using designs purchased from the Mithun & Nesland architectural firm. Although the owners have altered many of these houses since then, some substantially, the neighborhood retains a degree of design quality and cohesiveness.

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 subdivision's varied topography, 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 houses 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).

EXHIBIT 3-13
West Side of 109th Avenue SE, Mithun & Nesland Designs

EXHIBIT 3-14
Split-Level Style at 301 109th Avenue SE

EXHIBIT 3-15
Ranch Style at 204 110th Place SE

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. Whereas many of the residences within the Surrey Downs subdivision contribute to the 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 character of those designed by Mithun & Nesland and are not contributing. Other properties that are noncontributors to the potential Surrey Downs Historic District include structures located along Main Street, the northern boundary of the subdivision. 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.

The neighborhood is located at the edge of downtown, an ever-evolving and highly developed core of Bellevue. Currently, the neighborhood is bounded by commercial properties, including altered noncontributing former residences and commercial developments along the south side of Main Street and large-scale retail properties facing the neighborhood along the major thoroughfare's north side. The subdivision's surrounding environment 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 historical design and use. In addition, the neighborhood is not related to the newer commercial developments opposite Main Street, which serve as the boundary between Surrey Downs and Downtown Bellevue.

Operation. When connecting to *Preferred Alternative B2M*, *Preferred Alternative C11A* would remove one row of noncontributing properties along 112th Avenue SE, a single row of noncontributing properties along Main Street, and one property along 111th Avenue SE (Exhibit 3-16).

While *Preferred Alternative C11A* would remove properties along 112th Avenue SE and Main Street, it would not remove any of the properties contributing to the potential district. Along 112th Avenue SE, the first two rows of properties from the roadway are noncontributing, as are properties nearest the corner of 112th Avenue SE and Main Street and just south of Main Street. Due to the nature and orientation of the properties along the eastern and northern edges of the potential district, this impact would not be adverse. One row of

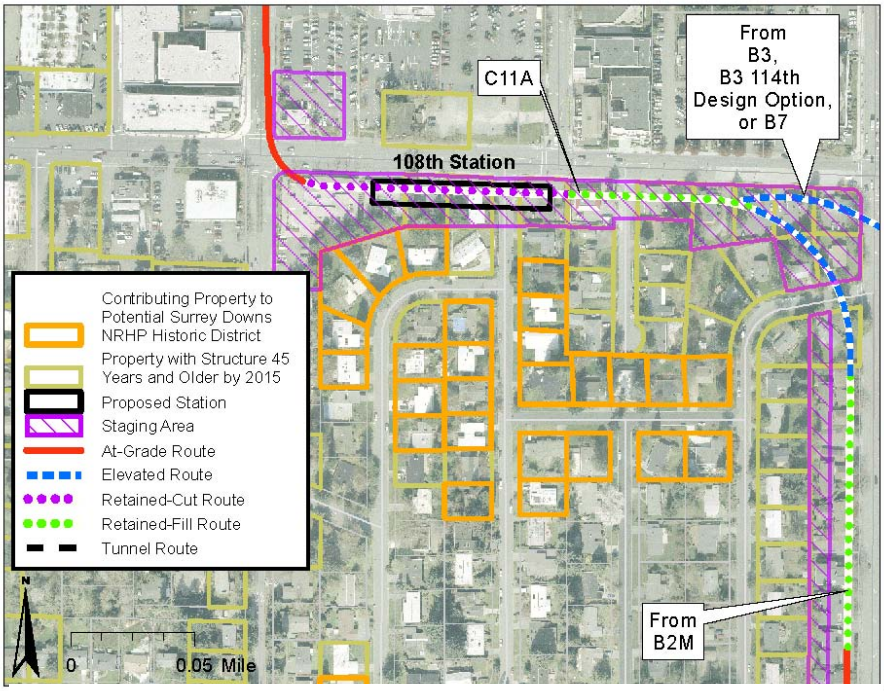


EXHIBIT 3-16
Potential Surrey Downs Historic District Effects, Preferred Alternative C11A

noncontributing properties would remain between the contributing properties and the project along 112th Avenue SE and most of Main Street. The contributing properties would be the same distance from 112th Avenue SE and Main Street, and the transit changes to each roadway would not directly impact the district setting in any way that would affect its potential for listing in the NRHP or for its contributors to convey their significance and that of the district as a whole. The project would not adversely affect the historic setting within the neighborhood of Surrey Downs.

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 north of Surrey Downs Park. *Preferred Alternative C11A* would also close 110th Avenue SE and 110th Place access to Main Street; alternative access points to the neighborhood from Main Street via 108th Avenue SE would continue to provide access.

Preferred Alternative C11A includes the 108th Station on Main Street adjacent to contributing buildings. Contributing properties nearest the proposed project would only be indirectly affected by *Preferred Alternative C11A* operation, and the noncontributing buildings in commercial use along Main Street would be removed. The potential historic district's setting would be affected by the removal of noncontributing properties along the major roadways of 112th Avenue SE and Main Street and the 108th Station. However, due to the nature of the properties along the eastern and northern edges of the potential district, this impact would not be adverse.

When connecting to alternatives B3, B3 114th Design Option, or 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.

Preferred Alternative C11A could have potential moderate noise impacts on three contributing properties south of the proposed station; however, these noise impacts would be avoided with a sound wall included along the 112th Avenue SE and Main Street portions of the project.

While *Preferred Alternative C11A* would introduce changes to the setting of the potential Surrey Downs Historic District, the project would not impact any contributing properties and minimizes effects to setting and context. During final design, Sound Transit would assess whether or not the existing large coniferous trees located next to the contributing properties near the 108th Station could be preserved. Sound Transit's intention is to preserve the established trees to the extent practicable. Project components such as landscaping and sound walls would minimize project visual and noise effects, create a buffer from the project, and enhance the neighborhood boundary where noncontributing properties would be removed.

Construction. *Preferred Alternative C11A* connecting to *Preferred Alternative B2M* would be constructed and use staging areas along or near Main Street and along 112th Avenue SE (Exhibit 3-16). When connecting to alternatives B3, B3 114th Design Option, and B7, construction of *Preferred Alternative C11A* would use properties near the corner of Main Street and 112th Avenue SE and one row of properties along Main Street.

Construction of *Preferred Alternative C11A* and its staging areas would occur adjacent to and on the edge of the potential historic district but would not remove properties that contribute to the potential historic district. In most areas, non-contributing buildings would remain between the contributing buildings and project construction except near the intersection of Main Street and 108th Avenue NE where construction would be adjacent to three contributing buildings. Construction activities could result in noise, visual and dust impacts on nearby residences. A construction fence or barrier would be erected along the edge of the construction area adjacent to residential properties. Construction truck traffic would use the Main Street and 112th Avenue SE arterials with without passing through the potential historic district. Street access to the neighborhood might be altered at times but access would be maintained during construction.

Construction of *Preferred Alternative C11A* along 112th Avenue SE and Main Street is expected to occur largely during daytime working hours. Sound Transit contractors would be required to meet the City's noise ordinance criteria during all construction and if nighttime or off hours work was required, would seek the appropriate noise variance from the City. Refer to the Noise and Vibration section for *Preferred Alternative C11A* for additional information.

The *Preferred Alternative C11A* construction impacts would be temporary, lasting about five years overall, with the most intense construction activities (demolition, clearing and heavy civil) occurring during the first couple years. Construction impact minimization measures included in the project, such as noise and dust control would reduce construction effects. Light rail project construction would not adversely affect historic structures in the potential district, would not adversely affect the potential district's setting, feeling, and association, and the residences would remain habitable during the construction period.

Mitigation. Based on the following measures incorporated as conditions of the project, FTA's current consideration is that that the project is not anticipated to alter any of the characteristics 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. FTA determinations of effect will be made after concluding the consultation with affected agencies and jurisdictions and review of public comment after publication of the SDEIS.

- Install landscaping on the west and south side of the guideway along 112th Avenue SE (connections from *Preferred Alternative B2M* only) and Main Street, respectively, to enhance the neighborhood boundary where noncontributing properties would be removed.
- Incorporate sound walls into the project design as it runs along the potential NRHP-eligible Surrey Downs Historic District consistent with the noise analysis to mitigate noise along the proposed project.
- If nighttime construction was required a noise variance would be obtained and noise control measures would be implemented as discussed in Section 4.7, Noise and Vibration, of the 2008 Draft EIS.
- Install a construction barrier or fence along the west side of the construction area along 112th Avenue SE (for connection to *Preferred Alternative B2M* only) and along the south side of the construction area along Main Street.
- Restore disturbed areas with landscaping after construction.
- Implement dust control measures.

Parkland and Open Space

Preferred Alternative C11A would impact Surrey Downs Park during project operation and construction due to the guideway's location along the eastern boundary of the park. Surrey Downs Park includes two athletic fields, a play structure, internal trails, open space, remnant stands of heritage filbert trees, the King County Courthouse, and associated parking. In March 2009, the City of Bellevue adopted the *Surrey Downs Park Master Plan* for redeveloping the park, a portion of which is currently occupied by the King County District Courthouse. Proposed improvements include new baseball fields, open space, a community garden, parking, and a recreational building.

The area of the park affected by the project is characterized by a steep slope and trees along 112th Avenue SE, vehicle access from 112th Avenue SE at the southern and northern ends of the park, a parking lot and vehicle drives just west of the slope accessing the park and King County Courthouse building, a neighborhood pedestrian access point at the southeast corner of the park at 111th Avenue SE,

and a pedestrian access from 112th Avenue SE at the northeast corner of the park.

Operation. *Preferred Alternative C11A* would acquire approximately 0.5 acre along the eastern edge of Surrey Downs Park along 112th Avenue SE for the light rail guideway (Exhibit 3-17); no active recreation facilities would be affected. The at-grade light rail guideway would encroach along the park's eastern edge, displacing the landscaping strip and large trees. In addition, the project would displace some of the parking that is used for the park and the King County Courthouse. The existing vehicle access at the southern end and the pedestrian connections on the east side of the park would not be affected, but the vehicle access point at the north end of the park would be closed. Removing the vegetation and large trees would be a visual change, but the vegetation would be replaced and eventually mature. The light rail guideway would be consistent with transportation nature of the 112th Avenue SE corridor.

Preferred Alternative C11A is not consistent with the *Surrey Downs Park Master Plan* adopted by the Bellevue City Council in March 2009. The light rail guideway would encroach into the planned garden terraces and path bordering 112th Avenue SE and would be adjacent to the area planned for the community facility. The alternative would require relocating or eliminating the proposed pedestrian access points from 112th Avenue SE at the park's northeast corner.

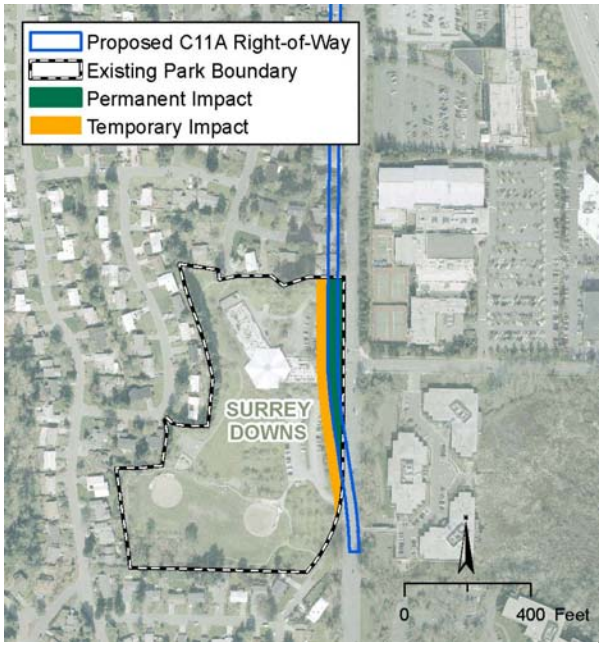


EXHIBIT 3-17
Surrey Downs Park Effects, Preferred Alternative C11A

Construction. This alternative would temporarily acquire 0.6 acre for the construction easement. Vehicle and pedestrian access to the park would be maintained during construction. Construction impacts such as noise, dust, visual change, and reduced parking could be noticed by park users but would not inhibit normal park use as active park use areas are not along 112th Avenue SE.

Mitigation. Mitigation to address permanent park impacts would include financial compensation or park replacement, including potentially developing the acquired properties adjacent to and north of the park as a potential linear park with a pedestrian connection to Surrey Downs Park. Sound Transit would coordinate with the City of Bellevue and the community to revise the *Surrey Downs Park Master Plan* to address the area affected by the light rail project. Construction impact mitigation would include a construction fence or barrier along 112th Avenue SE, dust control measures, and restoration of disturbed areas after construction.

3.3.3 Preferred 110th NE Tunnel Alternative (C9T)

Preferred Alternative C9T follows a route similar to portions of the Bellevue Way Tunnel (C1T) and 106th NE Tunnel (C2T) alternatives evaluated in the 2008 Draft EIS. East of the 110th Avenue NE and NE 6th Street intersection, *Preferred Alternative C9T* would have the same route and impacts described in the 2008 Draft EIS for Alternatives C1T and C2T.

Transportation

Operation. This section discusses the operational transportation impacts as they relate to light rail ridership, traffic control, property access and circulation, parking, intersection operations and LOS, traffic safety; and nonmotorized facilities.

Light Rail Ridership: Table 3-2 provides information on projectwide ridership for *Preferred Alternative C9T*. Overall by year 2030, projectwide ridership for *Preferred Alternative C9T* would be 50,000 with the connection to *Preferred Alternative B2M* and 49,000 with the connection to Alternative B7.

Traffic Control, Property Access, and Circulation: *Preferred Alternative C9T* transitions from the east side of 112th Avenue SE to the west side at SE 6th Street until becoming grade-separated in a tunnel under Main Street and 110th Avenue NE. This alternative is similar to Alternatives C1T and C2T once it exits the tunnel near the Bellevue Transit Center. There is one signalized crossing at 112th

Avenue SE and SE 6th Street. *Preferred Alternative C9T* would not affect roadway and property access and circulation except along 112th Avenue SE. SE 1st Street would be closed and not have access with 112th Avenue SE. Access to SE 1st Place would be maintained via 111th Avenue SE. SE 4th Street would be realigned to the intersection of 112th Avenue SE and SE 6th Street.

With a connection to alternatives B3, B3 114th Design Option or B7, *Preferred Alternative C9T* would operate the same as *Preferred Alternative C11A*.

Parking: With *Preferred Alternative C9T*, no on-street parking spaces would be removed, but 385 off-street parking spaces would be removed, which would be a greater parking impact than identified in the 2008 Draft EIS for other Segment C alternatives. These off-street parking removals would be associated with parcels along 112th Avenue SE/NE, Lake Bellevue Drive, and 116th Avenue NE and would include parking spaces for approximately 105 vehicles and 20 motorcycles at the Bellevue City Hall parking garage.

With a connection to alternatives B3, B3 114th Design Option or B7, no on-street parking spaces would be removed, but 385 off-street parking spaces would be removed, which would be a greater parking impact than was identified in the 2008 Draft EIS for other Segment C alternatives.

Intersection Operations and LOS: In the future, several roadway projects in Downtown Bellevue would likely be completed in the No Build Alternative condition. Four intersections in the study area would operate at LOS F under the No Build Alternative in 2020, and by the year 2030, five additional intersections would operate at LOS F, totaling nine intersections in year 2030 that would likely operate at LOS F with the No Build Alternative. Most intersections with the *Preferred Alternative C9T* would operate similar to No Build Alternative conditions because this alternative is mostly grade-separated from the street system. The intersection of NE 4th Street and 108th Avenue NE would not meet City intersection LOS standards and would operate slightly worse than the No Build Alternative condition with the additional drop-off and pick-up traffic at the Bellevue Transit Center Station.

With a connection to alternatives B3, B3 114th Design Option or B7, operations along 112th Avenue SE would be similar to the No Build Alternative.

Traffic Safety: *Preferred Alternative C9T* operates predominately grade-separated or outside the roadway. As a result, this alternative would have few light rail interactions with vehicles, pedestrians, or bicycles on the street level, thereby reducing the light rail conflicts with these travel modes. An at-grade crossing occurs at SE 6th Street where signals would be provided to assign right-of-way for light rail trains and vehicles.

With a connection to alternatives B3, B3 114th Design Option, or B7, *Preferred Alternative C9T* would have similar impacts as *Preferred Alternative C11A* along 112th Avenue SE.

Nonmotorized: *Preferred Alternative C9T* mostly comprises elevated and tunnel profiles north of Main Street and an at-grade profile south of Main Street, thereby resulting in minimal pedestrian and bicycle circulation impacts. At the at-grade crossing at SE 6th Street, gates would be provided to assign right-of-way for light rail trains, pedestrians and bicyclists.

Major pedestrian crossings and sidewalks near the Bellevue Transit Center Station area for *Preferred Alternative C9T* provide sufficient pedestrian space, although sidewalk and intersections connecting to entrances to the Bellevue Transit Center Station along 110th Avenue NE would experience some pedestrian crowding during peak periods. Pedestrian access between the Bellevue Transit Center Station and the Bellevue Transit Center would be through the northern station entrance on the north side of NE 4th Street with one crossing during the pedestrian-only phase at NE 6th Street and 110th Avenue NE to access the Bellevue Transit Center bus platform. An optional station entry located within the Bellevue Transit Center near the intersection of NE 6th Street and 110th Avenue NE would not require street crossings. There would be no differences in the impacts on pedestrian and bicycle circulation and connectivity at the Hospital Station from those impacts evaluated in the 2008 Draft EIS.

With a connection to alternatives B3, B3 114th Design Option or B7, *Preferred Alternative C9T* would not affect pedestrian and bicycle facilities along 112th Avenue SE.

Construction. Construction activities would require cut-and-cover techniques for the tunnel. Impacts associated with cut-and-cover construction would be similar to Alternative C2T evaluated in the 2008 Draft EIS, including detour routes, short-term and long-term lane closures, road closures, loss of on-street and periods of limited or restricted access parking, and bus route impacts. Construction

activities associated with the work over I-405 and within the BNSF Railway right-of-way would result in similar transportation impacts as those discussed for Alternatives C1T and C2T in the 2008 Draft EIS. Truck trips would range from 75 to 85 per day (7 to 9 per hour based on 10-hour work day) for up to five years. This number of truck trips is fewer than the other tunnel alternatives evaluated in the 2008 Draft EIS because the tunnel length is shorter; however, the duration is up to one year longer, resulting in a longer timeframe associated with truck trip impacts.

An estimate of the construction impacts is provided based on the level of design completed to date and the known construction activities. *Preferred Alternative C9T* would likely close one eastbound lane on Main Street between 110th and 112th Avenues NE, but there is a possibility that more or fewer lanes could be closed including full road closure depending on the construction approach. Construction activities would close lanes along 110th Avenue NE between Main and NE 6th Streets. Property access to the residences and businesses along 110th Avenue NE between Main and NE 6th Streets would be maintained to the extent possible either through access on 110th avenue NE or alternative routes. Increased congestion would likely occur on 110th Avenue NE; 108th and 112th Avenues NE would likely also experience some increased congestion as vehicles avoid 110th Avenue NE. With these changes to travel patterns, signal operations could be modified to optimize vehicle flow during construction.

With a connection to alternatives B3, B3 114th Design Option or B7, *Preferred Alternative C9T* would have similar impacts as *Preferred Alternative C11A* crossing 112th Avenue SE.

Maintenance of traffic and construction plans would continue to be refined through the final design and permitting stages of this project and subject to approval by the City of Bellevue and WSDOT.

Transit routes impacted by the *Preferred Alternative C9T* construction in downtown Bellevue would be maintained or relocated to nearby streets similar to Alternative C8E along 110th Avenue NE between Main and NE 6th streets and Alternatives C1T and C2T along NE 6th Street between 110th Avenue NE and I-405 in the 2008 Draft EIS. The Bellevue Transit Center would remain open during construction. Sidewalks along 112th Avenue, Main Street, and 110th Avenue NE would remain open on one side during construction, and pedestrian connections would be maintained at all signals. Pedestrian accesses to buildings would also be maintained.

Mitigation. Sound Transit would work with the City of Bellevue to determine how to mitigate the displaced parking spaces in the City Hall parking garage. At the intersection of NE 4th Street and 108th Avenue NE, mitigation to better utilize the roadway capacity could be implemented, such as providing active traffic management strategies. For example, active signing could be installed to more effectively route vehicles to less congested streets, turn movements could be restricted during congested periods, or adaptive signal controllers could be installed to better respond to changing traffic conditions. Refer to the 2008 Draft EIS for additional potential mitigation measures during construction.

Acquisitions, Displacements, and Relocations

Operation. With the connection from *Preferred Alternative B2M*, *Preferred Alternative C9T* would require 20 full acquisitions and 12 partial acquisitions, including 47 residential displacements (Table 3-2). Residential displacements include 6 single-family and 41 multifamily units. Impacts associated with the connections to alternatives B3, B3 114th Design Option or B7 would be the same as those described for *Preferred Alternative C11A*. Appendix B, Property Acquisitions, includes complete information on the property acquisitions.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred Alternative B2M*.

Economics

Operation. With the connection from *Preferred Alternative B2M*, *Preferred Alternative C9T* would displace 17 businesses and 200 employees. The businesses impacted are primarily located along Main Street and near the Hospital Station. Impacts associated with the connections to alternatives B3, B3 114th Design Option, or B7 would be the same as those described for *Preferred Alternative C11A*.

The property tax revenue impact would be approximately 0.06 percent of the City's budgeted 2007-2008 property tax revenues, which is within the 0.05 percent to 0.17 percent range of impacts for other Segment C alternatives.

Construction. Project economic construction impacts would result from the duration of cut-and-cover construction along 110th Avenue NE. Many of the businesses along 110th Avenue NE are offices that do not rely on drive-by traffic and would be, therefore, less affected. Because of the type of businesses affected by construction activities associated with *Preferred Alternative C9T*, the impact

would likely be less than that of Alternative C2T. East of the Bellevue Transit Center, impacts would be the same as those described in the 2008 Draft EIS for Alternatives C1T and C2T.

Mitigation. Mitigation measures would include developing construction mitigation plans to address the concerns of businesses during construction. Section 3.2.3 discusses the mitigation for relocating businesses.

Social Impacts, Community Facilities, and Neighborhoods

Operation. *Preferred Alternative C9T* would result in similar impacts for the Surrey Downs neighborhood along 112th Avenue SE as those described above under *Preferred Alternative C11A*. The differences would be in neighborhood access from 112th Avenue SE—the 108th Station is not associated with C9T—and impacts on Surrey Downs Park. *Preferred Alternative C9T* would close access to 112th Avenue SE from SE 1st Place and SE 4th Street would be redirected to a new access point at the intersection of SE 6th Street and 112th Avenue SE with signalized access to 112th Avenue SE. Impacts related to access would require a more circuitous route for some residents, but the low number of trips that this would redirect would not result in traffic impacts that would affect neighborhood quality. There also would be permanent impacts on Surrey Downs Park. *Preferred Alternative C9T* would realign SE 4th Street through the park, but no active recreation facilities would be affected. Refer to the Parkland and Open Space section for more information.

Construction. Construction impacts to neighborhoods and mitigation measures would be the same as those described above under *Preferred Alternative C11A*; but the intensity of construction impacts along Main Street would not be the same since there is no station.

Visual and Aesthetic Resources

Operation. From the connection with *Preferred Alternative B2M*, the at-grade portion of *Preferred Alternative C9T* passes through the northern part of Surrey Downs Park and would remove vegetation. A realignment of SE 4th Street through Surrey Downs Park would change the appearance of the portion of the park through which it passes, but because the area is currently partially used for parking, the visual quality of the area would not be lowered after replanting. The entry areas into the park along SE 4th Street could be enhanced as more formal entrances into both Surrey Downs Park and the Surrey Downs neighborhood.

North of the park, *Preferred Alternative C9T* would remove vegetation and residences along 112th Avenue SE. The retained-cut portion of *Preferred Alternative C9T* curves west to the tunnel portal near Main Street and would remove trees and residences. The appearance of the area along Main Street would change with *Preferred Alternative C9T*. Exhibit 3-11 indicates the location of KOP 4 (which looks along Main Street from a location on Main Street east of 112th Avenue SE). Appendix C contains a simulation of the change of the view from KOP 4. The area along the alternative would provide opportunities for landscaping that could serve as a buffer between Surrey Downs residences and the trackway as well as functioning as a transition area between the neighborhood and Downtown Bellevue. Although *Preferred Alternative C9T* would change the residential and small business character of the portion of its route along 112th Avenue SE and Main Street by replacing existing trees and buildings with a light rail guideway and tunnel portal, it would not lower the area's existing medium visual quality to low. The portion of *Preferred Alternative C9T* located within the tunnel would not result in any visual impacts. *Preferred Alternative C9T* exits the tunnel along NE 6th Street. Appendix C contains a simulation of the changes associated with *Preferred Alternative C9T* as viewed from KOP 5 as the alternative exits the tunnel portal at NE 6th Street. After exiting the tunnel and continuing east over I-405 to the Hospital Station, the impacts would be similar to those identified for *Preferred Alternative C11A*. The primary difference between this alternative and *Preferred Alternative C11A* would be the transition structure which would begin at a lower elevation (from the tunnel portal) than the at-grade *Preferred Alternative C11A*. This difference does not result in any changes to the visual quality category and impacts would be the same as those described for *Preferred Alternative C11A.*

For the connections to *Preferred Alternative C9T* from alternatives B3, B3 114th Design Option or B7 there would be no differences in the visual impacts beyond those identified for any of the other Segment C alternatives that would connect to those alternatives. The existing medium visual quality rating of the area it would pass through would be retained.

Construction. Visual construction impacts along 112th Avenue SE would be similar to those described above under *Preferred Alternative C11A*.

Mitigation. Sound Transit will plant appropriate vegetation to replace existing street trees and other vegetation that would be removed for the project, as practicable. Sound Transit will work with the City of Bellevue so that the design of the portions of 112th Avenue SE and Main Street where structures would be removed would include landscaping and would be compatible with the existing land uses.

Ecosystems

Impacts associated with ecosystems during operation and construction would be the same as those described above under *Preferred Alternative C11A*.

Noise and Vibration

Operation. *Preferred Alternative C9T* would result in noise impacts before mitigation at 69 receptors. Under the *Preferred Alternative C9T* a group of single-family residences along 112th Avenue SE, the Bellevue Club Hotel, the Coast Bellevue Hotel and the Lake Bellevue Village Condominiums would likely experience noise impacts. Noise impacts predicted at 17 single family units would include 6 severe impacts and 11 moderate impacts; the severe impacts would result from the close proximity to a crossover. Impacts would increase to noise impacts at 84 receptors with the connection to either alternative B3, B3 114th Extension Design Option, or B7 and would not impact the residences on 111th Avenue SE. There would be additional hotel impacts.

Preferred Alternative C9T noise impacts at the Bellevue Club Hotel would result partly from the combined light rail vehicle noise and train bells at the intersection of 112th Avenue SE and SE 6th Street. The severe impacts at the Coast Bellevue Hotel would be a result of a crossover and the guideway's close proximity to the building. Sixteen noise impacts, including eight severe, were also identified at the Lake Bellevue Village

Condominiums. Project-related noise levels range from 59 to 68 dBA Ldn prior to mitigation. No impacts were identified at the Surrey Downs Park, because under FTA criteria, active recreation areas with playfields are not considered noise sensitive. Appendix G provides additional information on the noise impacts associated with *Preferred Alternative C9T*.

Noise levels related to train bells (80 dBA at 50 ft) and safety gate bells near at-grade crossings (62 dBA at 50 ft) are provided in Exhibit 3-1. Recent noise level measurements along 112th Ave SE recorded maximum (L_{max}) noise readings that frequently exceeded 80 dBA, with several instances where levels exceeded 90 dBA L_{max}.

The only curves with a potential for wheel squeal are inside, or near the portal of the tunnel sections. Wheel squeal is likely at the curve from 112th Avenue SE to Main St, and lubricators would be installed. The curve from 110th Avenue NE to NE 6th Street is inside the tunnel, and wheel squeal is not predicted to be noticeable outside of the tunnel.

Preferred Alternative C9T would have one location with vibration impacts—the Coast Bellevue Hotel—and one location with ground-borne noise impacts associated with a mixed-use development on the corner of NE 4th Street and 110th Avenue NE. After mitigation, however, there would be no vibration or ground-borne noise impacts. For *Preferred Alternative C9T,* the trackway is at-grade in front of Meydenbauer Center's theater and there would be no additional attenuation of vibration or ground-borne noise from an elevated structure as there is for the *Preferred Alternative C11A*. Because of this, a ground-borne noise impact would be projected. However, this impact would be mitigated with any standard vibration minimization method.

Construction. Construction noise impacts would be similar to those described above under *Preferred Alternative C11A*.

Mitigation. Noise impacts near crossovers would be mitigated with noise-reducing special trackwork or crossover relocation. Rail lubrication would be used along the retained cut curve from 112th Avenue NE to Main Street. If wheel squeal was identified at the curve from 110th Avenue NE to the NE 6th Street elevated structure, lubricators would be installed inside the tunnel to remedy any potential for impacts.

Sound walls, building insulation, and special trackwork would be used at the following locations to mitigate noise impacts. Appendix G provides exhibits illustrating the location of the proposed walls described below:

- Sound walls would be used along the west side of the tracks between SE 6th Street and Main Street. Sound walls could be on top of retaining walls, and insulation might also be needed for any residual interior impacts.
- Special trackwork at the crossover would be used and sound walls would be used along the north side of the elevated guideway near the Coast Bellevue Hotel.

- Sound walls would be used along the east side of the elevated guideway and retained fill near the Lake Bellevue Village Condominiums.
- Mitigation to reduce noise impacts for the Bellevue Club Hotel could include insulating rooms or using sound walls near the tracks.

With the above noise mitigation measures, there are no residual exterior noise impacts under this alternative.

Mitigating the vibration impacts would include relocating the crossover to a non-noise and non-vibration sensitive location or using special trackwork adjacent to the Coast Bellevue Hotel. Measures to eliminate ground-borne noise would include using resilient fasteners, which are specially designed fasteners between the rails and the ties.

Construction noise mitigation would be the same as for *Preferred Alternative C11A*.

Historic and Archaeological Resources

The potentially NRHP-eligible Surrey Downs Historic District described above under *Preferred Alternative C11A* is within the APE of *Preferred Alternative C9T*.

Operation. *Preferred Alternative C9T* would not be adjacent to any contributing properties. It would remove one row of noncontributing properties along 112th Avenue SE and one to two rows of noncontributing properties at the northeast corner of the neighborhood where 112th Avenue SE meets Main Street when connecting to *Preferred Alternative B2M* (Exhibit 3-18). Fewer noncontributing properties would be removed along Main Street as compared with *Preferred Alternative C11A* because *Preferred Alternative C9T* enters a tunnel on the south side of Main Street and turns north to tunnel under 110th Avenue NE. The visual change to the area surrounding the potential Surrey Downs Historic District would be less than those of *Preferred Alternative C11A* because the properties along Main Street west of 110th Avenue NE would remain.

Alterations to neighborhood access would preserve other access points to 112th Avenue SE for the neighborhood.

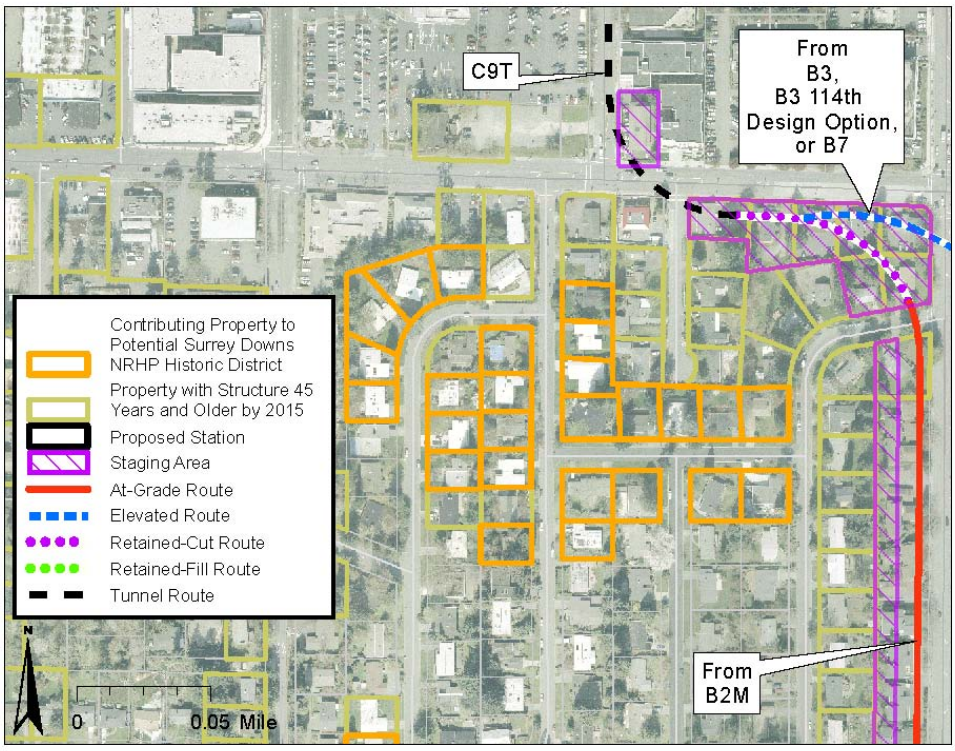


EXHIBIT 3-18
Potential Surrey Downs Historic District, Preferred Alternative C9T Effects

When connecting to alternatives B3, B3 114th Design Option or B7, *Preferred Alternative C9T* would not remove any properties or change access along 112th Ave SE. One row of noncontributing properties along Main Street between 112th Avenue SE and 110th Avenue would be permanently removed.

While *Preferred Alternative C9T* would affect the setting of the potentially NRHP-eligible Surrey Downs Historic District, the project would not affect any contributing properties and would minimize effects to setting and context. Project components such as landscaping, create a buffer from the project, and enhance the neighborhood boundary where noncontributing properties would be removed.

Construction. See Exhibit 3-18 for a depiction of the proposed construction staging areas at the intersection of Main Street and 112th Avenue NE and along 112th Avenue NE.

Because a row of noncontributing properties would remain between the construction staging areas and contributing properties, the potential historic district property would be buffered from construction effects, such as noise, dust, and visual change. In addition, minimization measures discussed for *Preferred Alternative C11A* would also be included.

When connecting to alternative B3, B3 114th Design Option or B7, construction of *Preferred Alternative C9T* would not remove properties for staging along 112th Avenue SE, except near the corner of Main Street.

Mitigation. Based on the measures to reduce operation and construction impacts incorporated as conditions of the project as previously described for *Preferred Alternative C11A*, FTA's current consideration is that the project is not anticipated to alter any of the characteristics 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. FTA determinations of effect will be made after concluding the consultation with affected agencies and jurisdictions and review of public comment after publication of the SDEIS.

Parkland and Open Space

Operation. *Preferred Alternative C9T* would permanently acquire approximately 0.5 acre of Surrey Downs Park along its northeast boundary along 112th Avenue SE for the at-grade light rail guideway and realign SE 4th Street to create a four-way intersection with SE 6th Street and 112th Avenue SE and new park vehicle entrance (see Exhibit 3-19). This area of the park is characterized by a steep slope and trees, a vehicle access at the northern end of the park, a parking lot just west of the slope accessing the park facilities and the King County Courthouse building, a portion of the Courthouse building, and a pedestrian access from 112th Avenue SE at the northeast corner of the park.

Park impacts at the northeastern end of the park along 112th Avenue SE would be similar to those for *Preferred Alternative C11A*. *Preferred Alternative C9T* would not impact the park south of SE 6th Street because the light rail guideway remains on the east side of 112th Avenue SE in this area. No active recreation facilities would be affected. The realignment of SE 4th Street would result in permanent use of park property for the roadway and would separate a small section currently occupied by the King County Courthouse and parking from the remainder of the park. The curved design of the realigned roadway would reduce cut-through traffic and maintain slow vehicle movements through the park. The proposed signal at this realigned intersection would improve park access.

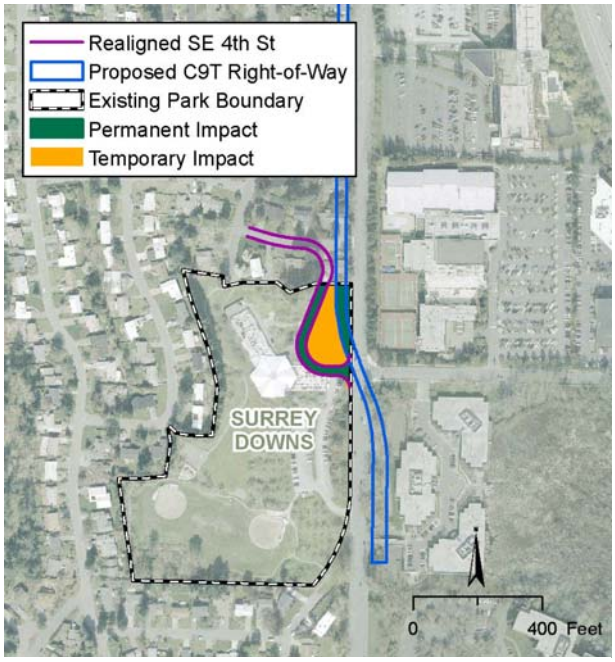


EXHIBIT 3-19
Surrey Downs Park Effects, Preferred Alternative C9T Impacts

Preferred Alternative C9T is not consistent with the *Surrey Downs Park Master Plan* adopted by the Bellevue City Council in March 2009. The project would result in similar impacts as *Preferred Alternative C11A* at the park's northeastern side, including encroachment of the light rail into the planned garden terraces and path bordering 112th Avenue SE. In addition, realigning SE 4th Street would further encroach into a portion of the area planned for the community facility. The project would require relocating or eliminating one of the two proposed pedestrian access points, with the access point at SE 6th Street combined with the realigned SE 4th Street access to the park. The project would also either relocate vehicle access from the southeast end of the park to the realignment of SE 4th Street midway along the park's eastern boundary or add a new access point at this location.

Preferred Alternative C9T would impact the City of Bellevue NE 2nd Street Pocket Park located at NE 2nd Street and 110th Avenue NE during project operation (Exhibit 3-20). These small undeveloped areas at the intersection of NE 2nd Street and 110th Avenue NE function primarily as visual green space as there are no facilities. However, the City is interested in developing these areas as a neighborhood park (City of Bellevue, *Parks and Open Space System Plan*, 2010). The northwest quadrant of the park, approximately 0.1 acre, would be incorporated into a station entrance and developed as an outdoor public plaza, consistent with the intended use of the pocket parks. A tunnel easement would be acquired under the park's northeast and southeast quadrants, and the area above the tunnel would be returned to park use after construction.

Construction. This alternative would require a 0.5-acre temporary construction easement in Surrey Downs Park. Vehicle and pedestrian access to the park from 112th Avenue SE would be maintained during construction. Construction impacts such as noise, dust, visual change, and reduced parking would be noticed by park users but would not inhibit normal use of the park.

Construction activities associated with the cut-and-cover tunnel for *Preferred Alternative C9T* would require a sliver of the NE 2nd Street Pocket Park on the east side of 110th Avenue NE, approximately 0.1 acre, for a temporary construction easement. Once construction is completed, this park area would be restored. During construction, the northeast park quadrant would be closed. Park users would experience construction noise, dust, and visual change.

Mitigation. Mitigation to address permanent park impacts would include financial compensation or park replacement. Impacts on Surrey Downs Park could also be mitigated by dedicating and developing the acquired properties adjacent to and north of the park as a potential linear park with a pedestrian connection to Surrey Downs Park. Construction impact mitigation could include a construction fence or barrier along 112th Avenue SE, dust control measures, and restoration of disturbed areas after construction. Sound Transit would coordinate with the City of Bellevue to revise the *Surrey Downs Park Master Plan* to address the location of the light rail guideway, roadway, and needed parking before the park is developed and consider opportunities to integrate the two facilities as appropriate. Sound Transit would also provide landscaping along the realigned SE 4th Street adjacent to the park.

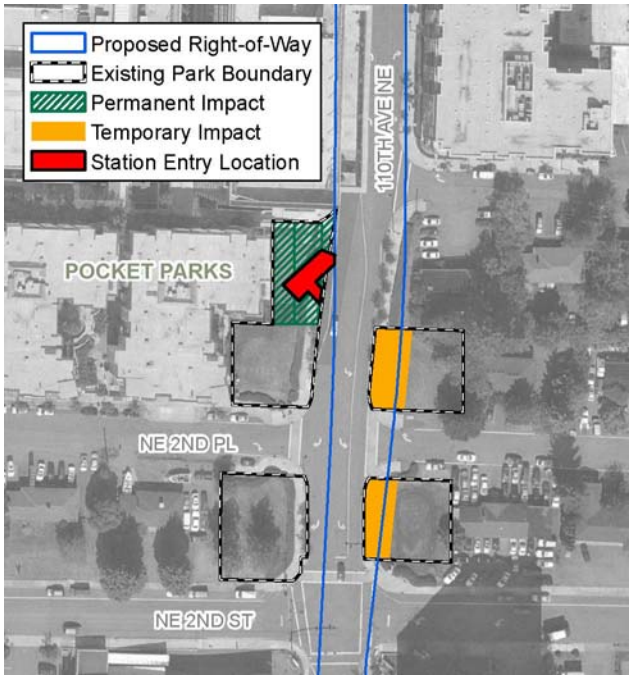


EXHIBIT 3-20
Preferred Alternative C9T, Pocket Park Impact Area

For impacts on the NE 2nd Street Pocket Park, mitigation could include developing the park's northwest quadrant as a plaza and providing a seating area at the station entrance. Construction impacts would be mitigated with the restoration of disturbed area after project construction.

3.3.4 110th NE At-Grade Alternative (C9A)

Transportation

Operation. This section discusses the operational transportation impacts that would result with *Preferred Alternative C9A* as they relate to light rail ridership, traffic control, property access and circulation, parking, intersection operations and LOS, traffic safety, and nonmotorized facilities.

Light Rail Ridership: Table 3-2 provides information on projectwide ridership for Alternative C9A. Overall, by year 2030, projectwide daily ridership for Alternative C9A would be between 48,500, and 50,500 with the connection to Alternative B2A, and it would be between 46,500 and 48,500 with the connection to Alternative B7.

Traffic Control, Property Access, and Circulation: Alternative C9A would operate at-grade in the center median of 112th Avenue SE before becoming

elevated over 112th Avenue SE and then transitioning to at-grade south of Main Street, west of 112th Avenue SE with a gated crossing to the properties south of Main Street at 110th Place SE. Right-in/right-out access would be provided at driveways, SE 4th Street and SE 1st Street. Along 112th Avenue SE northbound and southbound, U-turns would be provided at Main Street and SE 6th Street, respectively. These impacts would be similar to those described for Alternative C4A in the 2008 Draft EIS. Alternative C9A operates at-grade on the south side of Main Street and then transitions to at-grade in the center median of 110th Avenue NE with signalized crossings at Main, NE 2nd, NE 4th, and NE 6th Streets. The alternative is similar to Alternatives C1T and C2T evaluated in the 2008 Draft EIS once it becomes elevated on NE 6th Street, west of 112th Avenue NE. As Alternative C9A operates along 110th Avenue SE in the center median, property access and circulation is right-in/right-out.

With a connection to alternatives B3, B3 114th Design Option or B7, Alternative C9A would have similar effects south of Main Street as *Preferred Alternative C11A*.

Parking: Alternative C9A would remove approximately 20 on-street parking spaces and 345 off street parking spaces. Impacts on the Bellevue City Hall parking garage would be less than those described above under *Preferred Alterative C9T*.

With a connection to alternatives B3, B3 114th Design Option or B7, approximately 20 on-street parking spaces would be removed. The number of off-street parking spaces removed would be less than under *Preferred Alternative C9T*. Potential hide-and-ride parking at the Alternative C9A stations would be similar as those identified in the 2008 Draft EIS.

Intersection Operations and LOS: In the future, several roadway projects in Downtown Bellevue would likely be completed in the No Build condition. Four intersections in the study area would operate at LOS F under the No Build Alternative in 2020, and by the year 2030, five additional intersections would operate at LOS F, totaling nine intersections in year 2030 that would likely operate at LOS F with the No Build Alternative. Most Alternative C9A intersections would operate similar to No Build Alternative conditions. Along 112th Avenue SE, intersection impacts would be similar to those described for Alternative C4A. The intersections of NE 4th Street and 108th Avenue NE and NE 8th Street and 110th Avenue NE would not meet City intersection LOS standards and would operate worse than the No Build Alternative condition. Intersection delays along 110th Avenue NE would be higher with Alternative C9A than the No Build Alternative but would continue to operate within the City of Bellevue's standards.

With a connection to alternatives B3, B3 114th Design Option or B7, operations along 112th Avenue SE would be similar to the No Build Alternative.

Traffic Safety: Alternative C9A would operate at-grade in the center median along 112th Avenue SE, 108th Avenue NE, and NE 6th Street; it would operate at-grade side-aligned along Main Street, and grade-separated elsewhere. The traffic signals at the at-grade crossings of SE 6th, Main, NE 2nd, NE 4th, and NE 6th Streets would assign right-of-way for light rail trains, vehicles, pedestrians, and bicycles. Where there are at-grade center median operations, all non-signalized intersections (i.e., NE 2nd Place) and driveways would provide right-in/right-out vehicle access. Pedestrian and bicycle light rail track crossings would also not be provided at the non-signalized locations, eliminating the light rail conflict with vehicles, pedestrians and bicyclists. For the at-grade crossing of 110th Place SE, gates are provided. While the gate controls would assign right-of-way for light rail trains, vehicles, pedestrians, and bicycles, this location could provide signal-controlled access, converting the movements to right-in/right-out, or could close access and provide it via 110th Avenue SE.

With a connection to alternatives B3, B3 114th Design Option or B7, Alternative C9A would have similar impacts as *Preferred Alternative C11A* along 112th Avenue SE.

Nonmotorized: Alternative C9A would operate at-grade south of NE 6th Street and elevated or grade separated east of 112th Avenue NE. It would not impact planned bicycle or pedestrian facilities. The elevated alignment of Alternative C9A east of 112th Avenue NE would minimally impact existing or future sidewalk and bicycle facilities. Major pedestrian crossings and sidewalk near the Bellevue Transit Center Station area for Alternative C9A would provide sufficient pedestrian space, although sidewalk and intersections connecting the entrances to the Bellevue Transit Center Station along NE 6th Street would experience some pedestrian crowding during peak periods. Pedestrian access between the Bellevue Transit Center Station and the Bellevue Transit Center would be through the NE 6th Street and 110th Avenue NE intersection, which would

include a pedestrian-only phase under this alternative. There would be no differences in the impacts on pedestrian and bicycle circulation and connectivity at the Hospital Station from those impacts evaluated in the 2008 Draft EIS.

With a connection to alternatives B3, B3 114th Design Option or B7, Alternative C9A would have similar effects to pedestrian and bicycle facilities along 112th Avenue SE as *Preferred Alternative C11A*.

Construction. At-grade construction activities would include detour routes, short-term and long-term lane closures, road closures, loss of on-street parking, and bus route impacts. Construction activities associated with the work over I-405 and within the BNSF Railway right-of-way would result in similar transportation impacts as those discussed for Alternatives C1T and C2T in the 2008 Draft EIS. Truck trips would range from 25 to 30 per day (2 to 3 per hour based on 10-hour work day) for four years.

Alternative C9A is anticipated to have a shorter construction duration on 110th Avenue NE than *Preferred Alternative C9T*.

With a connection to alternatives B3, B3 114th Design Option or B7, Alternative C9A would result in temporary lane closures on 112th Avenue SE south of Main Street during overhead light rail track construction similar to *Preferred Alternative C11A*.

Maintenance of traffic and construction plans would continue to be refined through the final design and permitting stages of this project and subject to approval by the City of Bellevue and WSDOT.

Transit routes impacted by the Alternative C9A construction in downtown Bellevue would be maintained or relocated to nearby streets similar to Alternative C8E along 110th Avenue NE between Main and NE 6th Streets and Alternatives C1T and C2T along NE 6th Street between 110th Avenue NE and I-405 in the 2008 Draft EIS. The Bellevue Transit Center would remain open during construction. Sidewalks along 112th Avenue, Main Street, and 110th Avenue NE would remain open on one side during construction, and pedestrian connections would be maintained at signals.

Mitigation. Sound Transit will work with the City of Bellevue to determine how to mitigate the displaced parking spaces in the City Hall parking garage.

As stated previously in this chapter, an at-grade peer review concluded that the overall Downtown Bellevue forecasted traffic congestion is an impact of future volume growth and not an at-grade light rail system. However, two intersection impacts are noted: at the intersections of NE 4th Street and 108th Avenue NE and at NE 8th Street and 110th Avenue NE. Mitigation to better utilize the roadway capacity could be implemented, such as providing active traffic management strategies. For example, active signing could be installed to more effectively route vehicles to less congested streets, turn movements could be restricted during congested periods, or adaptive signal controllers could be installed to better respond to changing traffic conditions. Refer to the 2008 Draft EIS for additional potential mitigation measures during construction.

Acquisitions, Displacements, and Relocations

Operation. Alternative C9A would require 14 full acquisitions and 14 to 18 partial acquisitions, depending on the connection to Segment B (Table 3 2). This alternative would displace one residential property if the connection from Segment B occurs along 112th Avenue SE from Alternative B2A. Appendix B, Property Acquisitions, includes complete information on the property acquisitions.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred Alternative B2M*.

Economics

Operation. Alternative C9A would acquire 18 businesses and displace 230 employees (Table 3-2), and the impacted businesses are primarily located along Main Street and near the proposed Hospital Station. Impacts would be the same as those described for the other Segment C alternatives with a connection to alternatives B3 and B7 in the 2008 Draft EIS. Many of the businesses are not dependent on their location and because the businesses would be relocated, no jobs would likely be lost as a result of project construction. The property tax revenue impact would be approximately 0.07 percent of the City's budgeted 2007-2008 property tax revenues.

Construction. Economic impacts would be similar to Alternatives C1T and C2T for the area east of the Bellevue Transit Center and Alternatives C4A and C8E travelling along the same portions of 110th Avenue NE.

Mitigation. Mitigation measures would include developing construction mitigation plans to address the concerns of businesses during construction. Section 3.2.3 discusses the mitigation for relocating businesses.

Visual and Aesthetic Resources

Operation. With the connection from Alternative B2A, the Alternative C9A alignment would be at-grade and located in the center of 112th Avenue SE north to approximately SE 6th Street. North of SE 6th Street, the alignment would transition to retained fill and then elevated. Alternative C9A would remove landscaped medians and vegetation on the east side of 112th Avenue SE and widen 112th Avenue SE farther east. Alternative C9A also includes retained-fill transition structures to the elevated portion of the trackway and four straddle bents to cross 112th Avenue SE at Main Street. This would lower the visual quality category from medium to low in this area. The elevated profile transitions to at-grade along the south side of Main Street before turning north in the center of 110th Avenue NE where impacts would be similar to those of Alternative C4A.

Along the south side of Main Street, Alternative C9A would remove vegetation and buildings. The removal of vegetation and buildings and the presence of the elevated structure at the intersection of Main Street and 112th Avenue would change the appearance of the south side of Main Street but would not lower its existing medium visual quality category to low.

For the connections to Alternative C9A from alternatives B3, B3 114th Design Option, or B7 there are no differences in the visual impacts beyond those identified for any of the other Segment C alternatives that would connect to those alternatives. The existing medium visual quality rating of the area it would pass through would be retained.

Construction. Constructing Alternative C9A would remove trees, vegetation, and buildings within the construction right-of-way of 112th Avenue SE and the south side of Main Street. Construction activities would be visible during construction from nearby areas and would temporarily affect visual and aesthetic resources near them.

Mitigation. Sound Transit would plant appropriate vegetation within and adjoining the project right-of-way to replace existing street trees and other vegetation removed for the project as practical.

Noise and Vibration

Operation. Alternative C9A would result in noise impacts before mitigation at 178 to 195 receptors depending on the connection from Segment B. For the connection to Alternative C9A from Alternative B2A, noise impacts were identified at several single- and multifamily residences and hotel rooms along 112th Avenue SE. For the connections from B3, B3 114th Design Option and B7, the noise impacts on Main Street would be the same as other Segment C alternatives that connected to these Segment B alternatives. Under all connections to Segment B alternatives, moderate and severe impacts were identified along Main Street, and moderate impacts were identified at multifamily residences through the downtown area on 110th Avenue NE. Alternative C9A would include severe impacts at the Coast Bellevue Hotel and severe and moderate noise impacts at the Bellevue Lake Bellevue Village Condominiums.

Impacts along 112th Avenue SE would include several single-family residences near a crossover and at-grade crossing at SE 6th Street. Noise impacts were also identified at 41 multifamily units on 112th Avenue SE. Single-family noise impacts, including four severe, were identified along the transition to Main Street.

North of Main Street, noise impacts are predicted at approximately 54 multifamily residences in urban high-rise multifamily units along 110th Avenue NE and NE 6th Street. East of I-405, impacts would be the same as under *Preferred Alternatives C11A* or *C9T*. The overall range of project related noise levels for Alternative C9A would be the same regardless of connection, and varies between 56 to 76 dBA Ldn. Appendix G provides additional information and exhibits regarding noise impacts associated with Alternative C9A.

The trains would sound the bells for at-grade crossings at SE 6th Street, Main Street, and along the 110th Avenue NE crossings at NE 2nd, 4th and 6th Streets. Noise levels related to train bells and safety gate bells near at-grade crossings are provided in Exhibit 3-1. Noise level measurements taken along 112th Ave SE and in the downtown area had maximum (L_{max}) noise readings that frequently exceeded 80 dBA, with several instances with levels above 90 dBA L_{max}. There is a potential for wheel squeal at the tight radius curves at 112th Avenue SE and Main Street, Main Street and 110th Avenue NE, and at NE 6th Street and 110th Avenue NE. Lubricators would be installed at each of these curves as part of the project.

Under Alternative C9A there will also be modifications to the alignment of 112th Avenue SE. The realignment would move the northbound traffic to the east, away from the Surrey Downs residential area. The roadway modifications would also move the roadway approximately 30 feet closer to the hotel rooms at the Bellevue Club. Under WSDOT

policy, a traffic noise study is only required if the proposed realignment is expected to increase noise levels by 3 dBA or more, as this is the smallest change normally discernable by most people. Because the northbound lanes are moving farther away from the homes in the Surrey Downs area, traffic noise levels would decrease when compared to the current roadway alignment. In addition, the rooms at the Bellevue Club are currently over 150 feet from the northbound lanes, and the realignment would only move the lanes 30 feet closer. Because it takes a halving of the distance between a roadway and sensitive receiver to increase noise by 3 dBA, the roadway modification are also not predicted to increase noise at the hotel by the required 3 dBA level, and no traffic noise study for the hotel is required.

Alternative C9A has three locations where vibration impacts could occur; these locations include the Coast Bellevue Hotel, a mixed-use building on NE 4th Street and 110th Avenue, and an apartment building on Main Street. After mitigation, there would be no vibration impacts. In addition, there would be no impacts projected for Meydenbauer Center's theater because the alternative is elevated in this area.

Construction. Construction noise impacts would be similar to those described above under *Preferred Alternative C11A*.

Mitigation. Noise impacts at crossovers would be mitigated with noise-reducing special trackwork. Rail lubrication would be used where there is a potential for wheel squeal near sensitive receivers, including the curve from 112th Avenue NE to Main Street, Main Street at 110th Avenue NE, and 110th Avenue NE at NE 6th Street.

Sound walls and crossover modifications would be used in the following locations to mitigate noise impacts. Appendix G provides exhibits illustrating the location of the proposed walls described below:

- Sound walls would be used from the retained fill transition on 112th Avenue SE, continuing north, around the curve to Main Street, and ending just west of 110th Avenue NE.
- Sound walls, along with special trackwork at the crossover, would be used along the east side of the retained fill guideway near the Bellevue Club and Hotel, on the eastside of 112th Avenue SE, near SE 6th Street
- Special trackwork to reduce noise and vibration at the crossover would be used and sound walls would be used along the north side of the elevated guideway would be used near the Coast Bellevue Hotel.
- Sound walls along the east side of the elevated guideway and retained fill would be used near the Lake Bellevue Village Condominiums.

Even with the recommended noise mitigation measures, there is a potential for residual exterior noise impacts at up to 61 multifamily residences and one single-family unit. Impacts would only occur to those units with decks, so if there is no outdoor use there would not be an exterior residual impact.

Standard vibration mitigation measures, including using resilient fasteners, which are specially designed fasteners between the rails and the ties would eliminate the impact at the Coast Bellevue Hotel, and would mitigate the impacts at the mixed use building and apartment building.

Construction noise mitigation would be the same as for *Preferred Alternative C11A*.

Ecosystems

Impacts associated with ecosystems would be the same as those described above for Alternative C11A.

Historic and Archaeological Resources

Operation. Alternative C9A would be elevated and on the east side of 112th Avenue SE, so there would be no acquisition of properties along the west side of 112th Avenue SE near the potential Surrey Downs Historic District. Because this alternative would be elevated, with straddle bents, approximately 40 feet in this area, this alternative would result in visual change. In addition, sound walls would be constructed along the south side of Main Street adjacent to noncontributing structures. However, this change in visual quality would occur outside the Surrey Downs neighborhood and therefore not affect its potential eligibility for the NRHP. In addition, the two rows of noncontributing properties along 112th Avenue SE would remain between the potential Surrey Downs Historic District and 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 structures along the south side of Main Street between 112th Avenue SE and 110th Avenue NE. None of the properties that would be removed contribute to the potential Surrey Downs Historic District and the project would not be adjacent to any contributing properties. The intersection of 110th Place SE would either be gated with right-in/right-out access only or closed. However, access to the north end of the

neighborhood would remain. Alternative C9A would not alter or remove contributing resources or otherwise diminish character-defining features of the potential historic district.

Construction. 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 Street. The elevated and at-grade construction for Alternative C9A is anticipated to have a shorter duration than C11A, which includes a station on Main Street, and C9T, which is a tunnel alternative.

Mitigation. Based on the measures to reduce operation and construction impacts incorporated as conditions of the project as previously described for *Preferred Alternative C11A*, FTA's current consideration is that the project is not anticipated to alter any of the characteristics 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. FTA determinations of effect will be made after concluding the consultation with affected agencies and jurisdictions and review of public comment after publication of the SDEIS.

Parkland and Open Space

Operation. Alternative C9A would permanently acquire less than 0.1 acre of the western edge of the pocket park quadrants on the east side of 110th Avenue NE (Exhibit 3-21). Due to the area's existing transportation character, no visual impacts would be anticipated. Alternative C9A would not impact Surrey Downs Park functions and uses.

Construction. Less than 0.1 acre would be required as a temporary construction easement along the east and west sides of 110th Avenue NE. Park users would experience construction noise, dust, and visual change.

Mitigation. Mitigation to address permanent park impacts would include providing financial compensation or replacing parkland. Temporary impacts would be mitigated by restoring park property after construction.

3.3.5 114th NE Elevated Alternative (C14E)

Transportation

Operation. This section discusses the operational transportation impacts as they relate to light rail ridership, traffic control, property access and

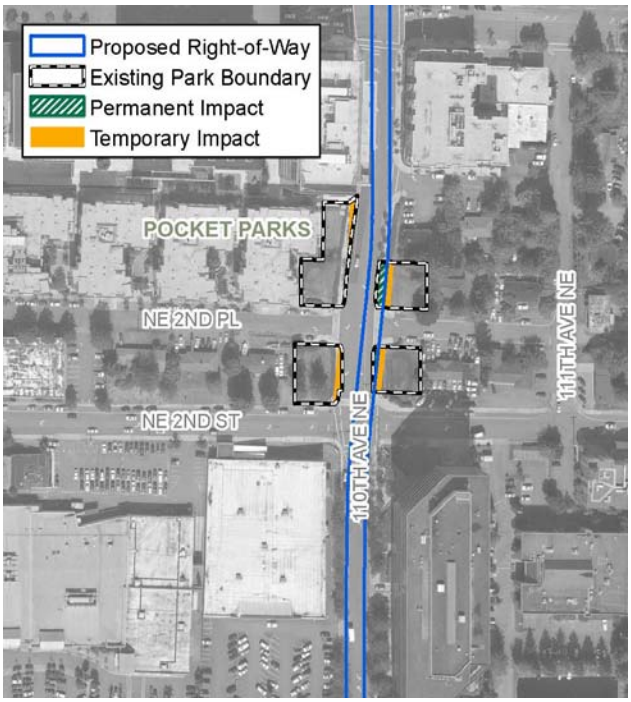


EXHIBIT 3-21
Alternative C9A Pocket Park Impact Area

circulation, parking, intersection operations and LOS, traffic safety, and nonmotorized facilities.

Light Rail Ridership: Table 3-2 provides information on projectwide ridership for Alternative C14E. Overall, by year 2030, projectwide daily ridership for Alternative C14E would be 48,500 with the connection to the Alternative B3 and 46,000 with the connection to Alternative B7. Compared to the other Segment C alternatives, Alternative C14E would have the lowest number of station boardings in the segment.

Traffic Control, Property Access, and Circulation: Alternative C14E operates grade-separated along the west side of I-405 with crossings above Main, NE 2nd, NE 4th, and NE 6th Streets before turning east over I-405, 116th Ave NE, and NE 8th Street and then entering BNSF Railway right-of-way. Because Alternative C14E is grade-separated throughout Segment C, there are no signalized crossings or access and circulation impacts.

Parking: Alternative C14E would remove no on-street parking spaces and approximately 220 off-street parking spaces. The off-street parking space removals would be associated with parcels along 114th Avenue SE/NE and 116th Avenue NE. Under the C14E Alternative, a 200-space underground parking structure could be implemented as part of a larger development project on nearby property. Potential parking hide-and-ride associated with the

Alternative C14E stations would be similar as those identified in the 2008 Draft EIS. With Alternative C14E, a 200-space underground parking structure could be implemented as part of a larger development project on nearby property.

Intersection Operations and LOS: In the future, several roadway projects in downtown Bellevue would likely be completed in the No Build Alternative condition. Four intersections in the study area would operate at LOS F under the No Build Alternative in 2020, and by the year 2030, five additional intersections would operate at LOS F, totaling nine intersections in year 2030 that would likely operate at LOS F with the No Build Alternative. Intersection operations with Alternative C14E would operate similar to the No Build Alternative condition due to the elevated alignment, Bellevue Transit Center Station location, and "kiss-and-ride" drop-off location on 114th Avenue NE.

If a contribution to a parking garage were provided to support the Bellevue Transit Center Station with Alternative C14E, stalls would need to be managed to prohibit use by non-transit passengers. Also, it is expected congestion along NE 6th Street and 112th Avenue NE would become slightly worse and possibly require additional mitigation with the additional traffic associated with a parking garage.

Traffic Safety: Alternative C14E operates entirely grade-separated, thereby resulting in no light rail conflicts with vehicles, pedestrians, or bicycles.

Nonmotorized: Alternative C14E is an elevated profile, which would minimally impact pedestrian and bicycle circulation and connectivity.

To provide connection between the Bellevue Transit Center along NE 6th Street and the Bellevue Transit Center Station along 114th Avenue NE, an elevated and covered moving walkway would be constructed as part of Alternative C14E. Because of the station location, pedestrian connections to the Bellevue Transit Center would not be as convenient, and many locations in Downtown Bellevue would be a greater distance, compared to other Segment C Alternatives, requiring additional time to reach a destination. There are no differences in the impacts on pedestrian and bicycle circulation and connectivity at the Hospital Station from those impacts evaluated in the 2008 Draft EIS.

Construction. Constructing the elevated guideway would result in impacts similar to those described for Alternatives C7E and C8E, including short-term and long-term lane closures. There are no bus routes along 114th Avenue NE, but construction may result in impacts to the NE 6th Street direct access ramps if closures are required when buses are operating. Construction activities associated with the work over I-405 and within the BNSF Railway right-of-way would result in similar transportation impacts as those described for Alternatives C1T and C2T in the 2008 Draft EIS. Truck trips range from 40 to 45 per day (4 to 5 per hour based on 10-hour work day) for up to four years.

An estimate of the construction impacts is provided based on the level of design completed to date and the known construction activities. Property and emergency access along 114th Avenue NE between Main and NE 6th Streets would be maintained either through access on 114th Avenue NE or alternate routes. This is not expected not create traffic impacts beyond this roadway but could cause some vehicle back-ups at driveways during peak periods.

During construction, transit service in downtown Bellevue would be impacted similarly to Alternative C7E as described in the 2008 Draft EIS. The bicycle route along 114th Avenue SE between SE 6th and Main Streets would likely be rerouted along SE 6th Street and 112th Avenue SE during construction. Minimal pedestrian and bicycle impacts would be likely.

Maintenance of traffic and construction plans would continue to be refined through the final design and permitting stages of this project and subject to approval by the City of Bellevue and WSDOT.

Mitigation. Refer to the 2008 Draft EIS for potential mitigation measures during construction. Otherwise, no specific mitigation is proposed for Alternative C14E.

Acquisitions, Displacements, and Relocations

Operation. Alternative C14E would require 12 full acquisitions and 15 partial acquisitions (Table 3-2). The acquisitions would be located primarily on those parcels adjacent to 114th Avenue NE and in the area near the proposed Hospital Station. This alternative would not displace residential properties. Appendix B, Property Acquisitions, includes complete information on the property acquisitions associated with Alternative C14E.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred Alternative B2M*.

Economics

Operation. Alternative C14E would displace 22 businesses and affect 485 employees (Table 3-2). Business displacements are primarily along 114th

Avenue NE and in the area of the proposed Hospital Station. The number of employees affected would be the highest of the new Segment C alternatives evaluated in this SDEIS. The initial property tax impact would be 0.10 percent and within range of the 2008 Draft EIS alternatives.

Mitigation. Mitigation measures would include developing construction mitigation plans to address the needs of businesses during construction. Section 3.2.3 discusses mitigation for relocating businesses.

Visual and Aesthetic Resources

Operation. Alternative C14E parallels I-405 and like the adjacent I-405, the elevated structure would have a transportation character and would not change the areas existing low visual quality rating category. Alternative C14E's elevated profile would be seen from the commercial and hotel uses near it and along 114th Avenue NE, but it would not block views of the Cascade Mountains from east-west running streets or areas along 108th Avenue NE (such as the City Hall Plaza or the Bellevue Transit Center Station). The tent structures proposed for the elevated station and pedestrian bridge that provide connection between 112th Avenue NE and the station, could block views of the Cascade Mountains from some viewing areas along 110th Avenue NE, NE 6th Street, and the Bellevue Transit Center. Blocking views of the Cascade Mountains may not be consistent the City of Bellevue's Comprehensive Plan Urban Design Policy UD-23 regarding the need to preserve and enhance views from public places as valuable civic assets. Exhibit 3-11 indicates the location of KOP 5 that was selected to provide a view of the elevated alignment, station, and pedestrian bridge as seen from 110th Avenue NE and NE 6th Street. Appendix C includes a simulation of Alternative C14E viewed from KOP 5. The elevated pedestrian bridge and its associated tent structures would be seen from the south side of the Meydenbauer Conference Center. These structures would be large-scale elements, but they would not be out of scale with other nearby buildings or out of character with the general area.

Mitigation. Sound Transit would plant appropriate vegetation within and adjoining the project right-of-way to replace existing street trees and other vegetation removed for the project, as practical. The tent structures could be removed to mitigate view blockage of the Cascade Mountains.

Noise and Vibration

Operation. Alternative C14E would result in noise impacts prior to mitigation at 88 receptors. Moderate noise impacts were identified at several rooms at the Bellevue Hilton Hotel and Sheraton Bellevue Hotel along 114th Avenue NE, and moderate and severe impacts were identified at the Lake Bellevue Village Condominiums due to proximity to the alignment. Project noise levels are predicted to range from 60 to 71 dBA, with the highest noise levels at the Bellevue Hilton Hotel rooms that currently face I-405. There are two crossovers associated with Alternative C14E, one is located east of the Bellevue Club with the connection to Alternative B3 and the other located north of the Coast Hotel and adjacent to I-405, and there are no impacts at these two locations.

There are no noise impacts related to wheel squeal or bells from at-grade crossings or stations associated with this alternative.

Based upon updated methodology, there would be no locations with vibration or ground-borne noise impacts.

Mitigation. As shown in Appendix G, sound walls along with potential sound insulation, if required would be used to provide noise mitigation.

- Sound walls would be installed along the west side of the guideway near the Bellevue Hilton and Bellevue Sheraton hotels.
- Sound walls would be constructed along the east side of the elevated guideway and retained fill near the Lake Bellevue Village Condominiums.

If required, sound insulation would be installed for noise impacts at up to 72 hotel rooms.

Ecosystems

Impacts associated with ecosystems would be the same as those described above for *Preferred Alternative C11A*.

3.4 Segment D Alternatives

3.4.1 Summary of Segment D Alternatives

Preferred Alternative D2A follows the same route as that described in the 2008 Draft EIS, with the exception of two design modifications that shift the 120th Station (the 124th Station in the 2008 Draft EIS) to the north and moving the Overlake Village Station and route to the SR 520 corridor instead of running it parallel to NE 24th Street as in the 2008 Draft EIS. There are also two design options associated with the alternative: the 120th At-Grade Design Option, which is an at-grade alternative at the 120th Station, and the NE 24th Design Option, which shifts the route from the SR 520 corridor to the north side of NE 24th Street and west side of 152nd Avenue NE. Table 3-4 presents information on those environmental resources that would be impacted as a result of the new or modified alternatives. These resources include Transportation; Acquisitions, Displacements, and Relocations; Economics; and Ecosystems. For all other resources *Preferred Alternative D2A* would not result in substantially different impacts evaluated in the 2008 Draft EIS. Construction risks with the Segment D alternatives would range from low to moderate, depending on the alignment type.

3.4.2 Preferred NE 16th At-Grade Alternative (D2A)

Transportation

Operation. This section discusses the operational transportation impacts as they relate to light rail ridership, traffic control, property access and circulation, parking, intersection operations and LOS, traffic safety, and nonmotorized facilities.

Light Rail Ridership: Table 3-4 provides information on projectwide ridership for *Preferred Alternative D2A* and the 120th At-Grade and NE 24th Design Options. Overall, by year 2030, projectwide daily ridership for *Preferred Alternative D2A* would be 51,000. Projectwide daily ridership for the 120th At-Grade Design Option would be 51,000 and 49,500 for the NE 24th Design Option.

TABLE 3-4
Comparison of Segment D Alternatives

			Alternatives	
Feature		**Range of Impacts for Draft EIS Alternatives**	**D2A[c]**	**D2A (NE 24th Design Option)**
Number of stations		2 to 4	4	4
Estimated cost (millions, 2007 $)		$460 to 870	$665 to 770	$710 to 820
2030 daily ridership	Segment boardings	6,000 to 6,500	7,000	6,000
	Total East Link ridership	45,500 to 46,000[a]	51,000	49,500
Travel time through segment (minutes)		7 to 10	8	10
Length (miles)		3.4 to 3.6	3.3	3.5
Construction risk[b]		Low to Moderate	Low	Low
Environmental impacts				
Intersections Operating Worse than No Build Alternative Before Mitigation		0 to 2	1-2	2
Economics: business displacements (number of employees)		41 (430) to 72 (1,480)	29 (775)	67 (1,900)
Full/partial property acquisition		3/32 to 19/97	7/47	10/56
Decrease in visual quality		No	No	No
Noise-impacted receptors: number of living units (number after mitigation)		0	0	0
Vibration-impacted buildings (number after mitigation)		0	0	0
Wetlands: permanent /temporary (acres)		0.1 to 0.5/0	0.6/0.8	0.6/0.8
Wetlands buffer: permanent/temporary operation (acres)		0.1 to 0.4/0	0.6/1.4	0.6/1.4
High-value nonwetland habitat loss (acres)		0.1 to 1.3	0.8	0.8
Stream crossings		3 to 4	4	4

[a] Range shown for the DEIS alternatives has not been updated to be consistent with the SDEIS alternatives. Updated information will be provided in the Final EIS.

[b] Construction Risk relates to the average risk of geologic and utilities constraints relative to the other alternatives for the East Link Project. Refer to Chapter 6 in 2008 Draft EIS for a description of criteria.

[c] Range includes the 120th At-Grade Design Option.

Traffic Control, Property Access, and Circulation: In the Bel-Red area, the City of Bellevue plans to extend NE 15th Street/NE 16th Street between 116th Avenue NE and 132nd Avenue NE and widens the current NE 16th Street roadway as part of the Bel-Red Subarea Plan. This roadway extension would create new signalized intersections with 120th, 124th, 130th, and 132nd Avenues NE. *Preferred Alternative D2A* is located north of the planned NE 15th Street and grade-separated beneath 120th and 124th Avenues NE, with no impacts on property access and circulation.

Preferred Alternative D2A then transitions to at-grade center-running on NE 16th Street and 136th Place NE with signalized crossings at 130th Avenue NE, 132nd Avenue NE, 136th Place NE and NE 20th Street. When *Preferred Alternative D2A* operates center-running along NE 16th Street and 136th Place NE, property access and circulation is right-in/right-out except at signalized intersections where U-turn movements are provided.

The 120th At-Grade Design Option associated with *Preferred Alternative D2A* is an at-grade profile between 120th and 124th Avenues NE along the north side on NE 15th Street, with a gated at-grade crossing at 120th Avenue NE (which is similar to Alternative D2A in the 2008 Draft EIS) and an elevated crossing at 124th Avenue NE. The NE 24th Design Option is an elevated profile along the north side of NE 24th Street transitioning to an at-grade profile between 148th and 152nd Avenues NE that proceeds north along the west side of 152nd Avenue NE. This option also includes a gated crossing at 151st Avenue NE.

With the NE 24th Design Option, driveways along the west side of 152nd Avenue NE are closed and access to these properties is provided through the intersection of 151st Avenue NE and NE 24th Street. Two driveways on the north side of NE 24th Street are closed and vehicle access to these properties is at the remaining open driveway or at 151st Avenue NE. This property access modification is different from Alternatives D2A and D2E in the 2008 Draft EIS, but because there are up to two remaining access locations, no impacts would be anticipated.

Parking: *Preferred Alternative D2A* parking impacts would remove 60 parking spaces fewer than the previous Alternative D2A resulting in approximately 316 spaces removed. With the NE 24th Design Option, parking impacts would be the same as the previous version of Alternative D2A. Potential hide-and-ride parking would be the same as previous Alternative D2A alternatives. The *Preferred Alternative D2A* Overlake Village Station location is approximately 450 feet further from the Overlake Village Park-and-Ride.

Intersection Operations and LOS: Under the No Build Alternative in 2020, three intersections would operate at LOS F, and by year 2030, six intersections would operate at LOS F. Intersection operations with *Preferred Alternative D2A* would operate similar to No Build Alternative conditions because this alternative is either grade-separated from the roadway or generally operates parallel to the major traffic movements when at-grade. At the NE 20th Street and 136th Place NE intersection, light rail travels at-grade and perpendicular to the major east-west traffic movements but the intersection would continue to meet City of Bellevue intersection LOS standards as some vehicle movements could be allowed to go when the train crosses the intersection.

With the 120th At-Grade Design Option, the intersection of NE 15th Street and 120th Avenue NE would not meet City intersection LOS standards and operate worse than the No Build Alternative condition in 2020. By 2030, the intersection would meet City LOS standards as a result of planned City of Bellevue intersection improvements along 120th Avenue NE. Both the *Preferred Alternative D2A* and the NE 24th Design Option would result in benefits over the previous versions of Alternatives D2A and D2E because light rail would no longer cross the intersection of NE 24th Street and 152nd Avenue NE due to the alignment's shift to the north side of NE 24th Street. Even so, the intersection of NE 24th Street and 152nd Avenue NE would still not meet City of Redmond intersection LOS standards due to additional trips associated with the Overlake Village Station under all Segment D Alternatives. The intersection of NE 24th Street and 151st Avenue NE would also not meet City intersection LOS standards due to driveway closures along the west side of 152nd Avenue NE and train operations.

Traffic Safety: For *Preferred Alternative D2A*, operations are predominately separated from the roadway or in the street's center median, thereby minimizing the potential of increased accident frequency. *Preferred Alternative D2A* is similar to Alternative D2A in the 2008 Draft EIS except east of 148th Avenue NE where the alternative is separated from the street system and does not interact with vehicles, pedestrians, and bicycles. For the at-grade crossings at 130th Avenue NE, 132nd Avenue NE, 136th Place NE, and NE 20th Street, signals would

assign right-of-way to light rail trains, vehicles, pedestrians, and bicycles. Where at-grade center median operations occurs, all other remaining cross streets (i.e., 134th Avenue NE) and driveways have right-in/right-out vehicle access; pedestrian or bicycle crossing of the light rail tracks would be prohibited, thereby reducing the light rail conflict with these travel modes.

For the 120th At-Grade Design Option, gates and other indicators are provided at the at-grade crossing of 120th Avenue NE to assign right-of-way for light rail trains, vehicles, pedestrians, and bicycles. For the NE 24th Design Option, gates and other indicators are provided at the at-grade crossing of 151st Avenue NE to assign right-of-way for light rail trains, vehicles, pedestrians, and bicycles.

Nonmotorized: In the Bel-Red area near the 120th and 130th Stations, pedestrian and bicycle facilities planned as part of the transportation and land use projects included in the City of Bellevue's Bel-Red Subarea Plan would support and connect to these stations. The 120th At-Grade Design Option would provide a slightly more convenient pedestrian and bicycle access to the street system because it is at-grade compared with the *Preferred Alternative D2A* retained-cut station. At the 130th Station, implementing the Bel-Red Subarea Plan would improve the pedestrian and bicycle connections to the residential and commercial land use planned near the station areas. With each Segment D alternative, a new nonmotorized, multiuse bridge over SR 520 could be constructed by others. This would provide better bicycle and pedestrian connections between the Overlake Village Station and the commercial properties north of SR 520.

Construction. Construction activities associated with *Preferred Alternative D2A* and its design options would result in similar construction impacts as those identified for Alternative D2A in the 2008 Draft EIS. With *Preferred Alternative D2A*, there would be fewer construction impacts along NE 24th Street and 152nd Avenue NE. These impacts would include short-term and long-term lane closures, the loss of on-street parking, and bus route impacts. For *Preferred Alternative D2A*, the number of truck trips range from 85 to 95 per day (8 to 10 per hour based on a 10-hour work day) for up to five years, which would be higher than the number of trips identified for Alternative D2A in the 2008 Draft EIS. The increase is four to six trucks per hour, which would not likely result in any additional impact. For the NE 24th Design Option, the number of truck trips increases to 95 to 102 per day (9 to 11 per hour based on a 10-hour work day).

An estimate of construction impacts is provided based on the level of design completed to date and the known construction activities. For Alternative D2A, property accesses along NE 16th Street and 136th Place NE would be maintained either through access on these streets or an alternate route, depending on the construction activity. This is not expected to create traffic impacts beyond this roadway due to low volume on these roadways.

Construction activities would close the entire park-and-ride facility at the Overlake Transit Center to allow for the parking garage construction. Pedestrian and bicycle impacts during construction of *Preferred Alternative D2A* would be similar to those described for Alterative D2A in the 2008 Draft EIS, except east of 148th Avenue NE. In this area, *Preferred Alternative D2A* would not close the sidewalk along one side of NE 24th Street or 152nd Avenue NE. Both design options would have similar pedestrian and bicycle impacts during construction as those described for Alternative D2A in the 2008 Draft EIS. Maintenance of traffic and construction plans would continue to be refined through the final design and permitting stages of this project and subject to approval by the cities of Bellevue and Redmond and WSDOT.

Mitigation. During project operation, the only proposed mitigation with *Preferred Alternative D2A* would be at the intersection of NE 24th Street and 152nd Avenue NE; at that location, a southbound right-turn lane could be provided due to an increase in vehicle activity associated with the Overlake Village Station.

For the 120th At-Grade Design Option, a northbound and southbound left-turn pocket could be provided to improve operations at the intersection of 120th Avenue NE and NE 15th Street until the planned City of Bellevue 120th Avenue NE improvements are built. With the NE 24th Design Option, Sound Transit proposes a westbound right-turn pocket at NE 24th Street and 151st Avenue NE to improve intersection operations and safety at this location. These improvements are in addition to the identified mitigation at NE 24th Street and 152nd Avenue NE under *Preferred Alternative D2A*.

During construction, mitigation measures for the Overlake Transit Center closure could include the following:

- Diverting vehicles using the Overlake Transit Center to available spaces at nearby park-and-ride lots
- Using leased lots as park and ride and/or providing new parking areas
- Revising transit services

Refer to the 2008 Draft EIS for additional potential mitigation measures during construction.

Acquisitions, Displacements, and Relocations

Operation. *Preferred Alternative D2A* as well as the 120th At-Grade Design Option would acquire 7 full and 47 partial property acquisitions. The NE 24th Design Option would require 10 full and 56 partial acquisitions, which are an additional 3 full and 9 partial acquisitions (Table 3-4). With *Preferred Alternative D2A*, the number of full acquisitions would be fewer because the route remains parallel to SR 520 instead of curving over to NE 24th Street. Acquisitions would increase with the NE 24th Design Option because the route shifts away from SR 520 and parallels NE 24th Street and 152nd Avenue NE. No residential properties would be displaced with *Preferred Alternative D2A*. Appendix B, Property Acquisition, provides tables and maps that identify potentially affected parcels.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred Alternative B2M*.

Economics

Operation. *Preferred Alternative D2A* would displace 29 businesses and 775 employees in Bellevue (Table 3-4). The businesses located are primarily in the areas near the proposed 120th and 130th Stations and the proposed park-and-ride facility. The 120th At-Grade Design Option would displace the same number of businesses and employees, and the NE 24th Design Option would displace 67 businesses and 1,900 employees. The additional businesses displaced by the NE 24th Design Option would be located in the business park west of the Overlake Village Station in Redmond. These employees would likely be relocated to a new location, and the jobs would not be lost. However, some displaced businesses and jobs, particularly in the Bel-Red Corridor, would probably locate outside of the City of Bellevue because of the recent zoning changes for that area.

Acquiring these properties would result in an additional loss of property tax revenue for the cities of Bellevue and Redmond. The additional loss would be 0.12 percent of budgeted 2007-2008 property tax revenues for the City of Bellevue for *Preferred Alternative D2A* and the 120th At-Grade Design Option. For the NE 24th Design Option the additional loss would be 0.14 percent of budgeted 2007-2008 property tax revenues of Bellevue and Redmond combined (0.12 percent of Bellevue and 0.15 percent of Redmond). As described in the 2008 Draft EIS, after construction, light rail would likely be a catalyst and attract new businesses and uses to the area related to TOD. TOD occurs with improved transit access that can increase the convenience and desirability of surrounding residential, commercial, and office properties. The type of development at stations with available land and supportive zoning in place tends to be more intense, mixed-use development that supports high-density residential, commercial, and office-related uses. The cities of Bellevue and Redmond have revised their comprehensive plans to encourage TOD development in station areas.

Mitigation. Section 3.2.3 discusses mitigation for relocating businesses.

Visual and Aesthetic Resources

Impacts on visual and aesthetic resources associated with *Preferred Alternative D2A* would differ from the 2008 Draft EIS only with project operation.

Operation. The only area of *Preferred Alternative D2A* where the visual quality has changed since the 2008 Draft EIS is within the easternmost half of the alternative. *Preferred Alternative D2A* parallels SR 520 for the easternmost half, and its profile includes sections of elevated, at-grade, and retained-cut-and-fill. All profiles are consistent with the large-scale transportation character of SR 520 and the industrial areas through which it travels. *Preferred Alternative D2A* would not change the visual quality rating of areas through which it would pass. The NE 24th Design Option passes through the Overlake Village in an area that has mature, tree-lined streets. Near the Overlake Village Station area, the alignment passes along the west side of 152nd Avenue NE. The alignment and station would remove existing buildings and their associated vegetation, as well as street trees. Exhibit 3-22 depicts the location for KOP 6, which is located on the east side of 152nd Avenue NE looking southwest across 152nd Avenue NE towards the station. Appendix C provides a simulation of the alignment and station as seen from this location. The at-grade alignment and station would also be consistent in character with the urban character of the areas near the station and would not change the medium visual quality category.

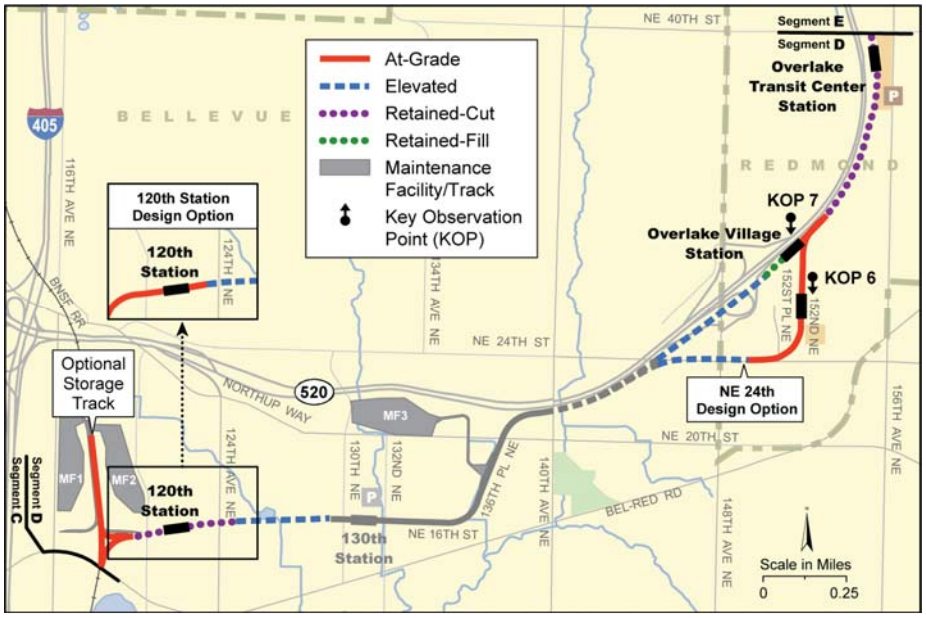


EXHIBIT 3-22
KOP Locations Segment D

Exhibit 3-22 identifies the location of KOP 7 which is located northwest (and across SR 520) looking toward the Overlake Village Station from the SR 520 Bike Trail. The viewpoint represents views from the trail, traffic along SR 520, and the trees south of SR 520. Appendix C contains a simulation of the station as seen from KOP 7. The station would be consistent with the transportation character of its location and would not change the low visual quality category along SR 520.

Noise and Vibration

Preferred Alternative D2A would not result in noise or vibration impacts because the alignment is primarily in commercial and industrial areas, or along SR 520, and no noise- or vibration-sensitive properties (i.e., residential) have been identified within proximity of areas with the potential for noise or vibration impacts.

Ecosystems

For ecosystem resources, impacts on wetlands, wetland buffers, aquatic habitat, and stream habitat would change because of the *Preferred Alternative D2A* design modifications.

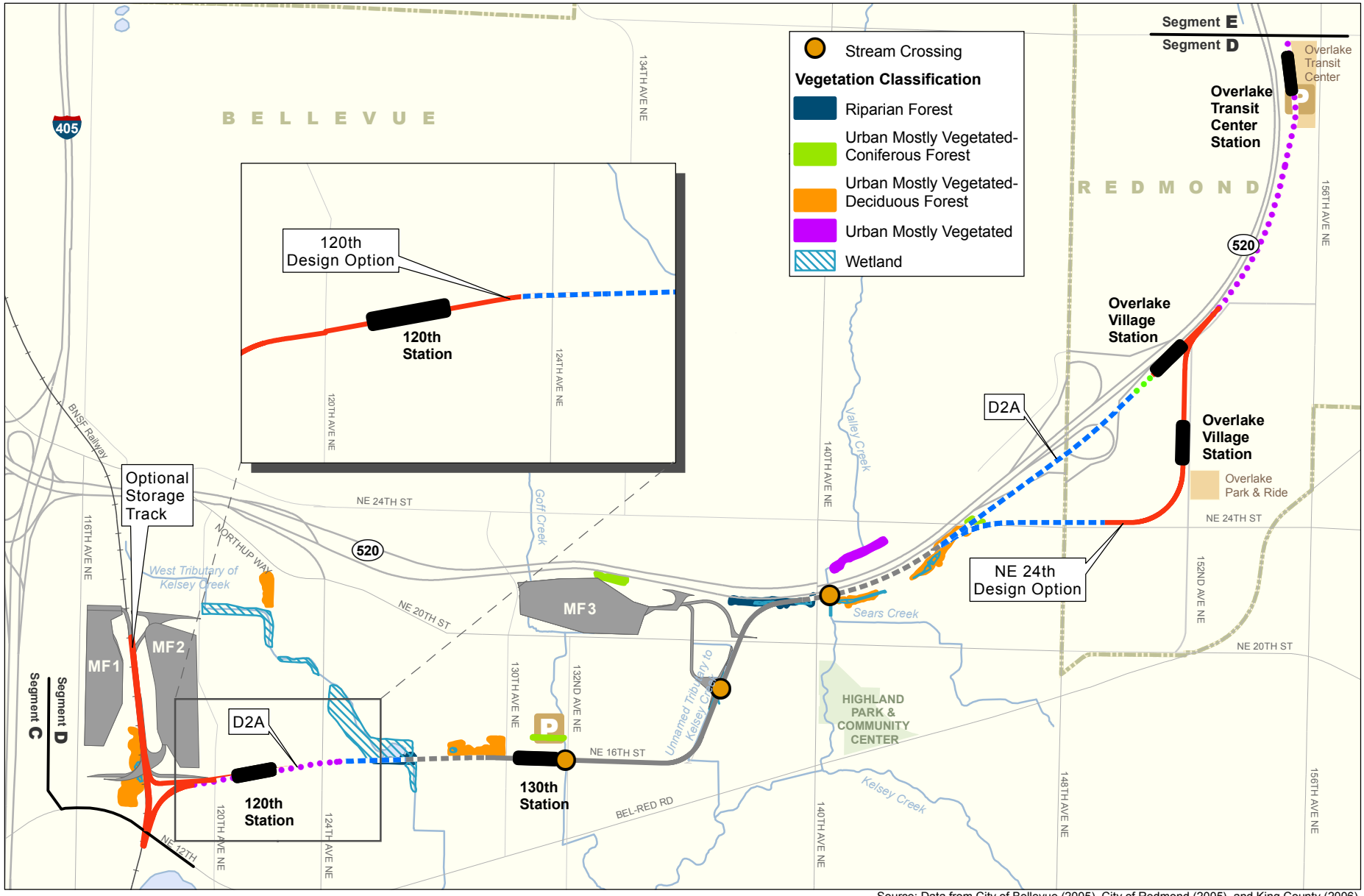
Operation. *Preferred Alternative D2A* would permanently impact approximately 0.6 acre of wetlands and 0.6 acre of wetland buffers (Table 3-4 and Exhibit 3-23). The alignment east of the 120th Station location would impact wetlands associated with the West Tributary to Kelsey Creek not previously impacted by the other Segment D alternatives (Exhibit 3-23), and *Preferred Alternative D2A* would permanently impact the wetland west of 140th Avenue NE with an at-grade profile, which in the 2008 Draft EIS was shown to be elevated in that area. Impacts on the other wetlands along the *Preferred Alternative D2A* route would be similar to those described in the 2008 Draft EIS. Impacts associated with high-value habitat loss are within the range of the Segment D alternatives (Table 3-4 and Exhibit 3-23). There would be no differences in wetland, wetland buffer, or high-value habitat impacts with either design option.

Near 136th Place NE, a portion of the nonfish-bearing Unnamed Tributary to Kelsey Creek would likely be permanently relocated into an approximate 420-foot-long culvert under the widened 136th Place NE roadway because of construction activities. This relocation would result in 0.1 acre of wetland impact, included in the total impacts discussed above.

Construction. Project construction would temporarily impact 0.8 acre of wetland and 1.4 acres of wetland buffer for *Preferred Alternative D2A* and both of the design options.

A paved lot south of the wetland and wetland buffers associated with West Tributary of Kelsey Creek east of the 120th Station (Exhibit 3-23) would be used as much as possible for construction staging and temporary access to minimize impacts on wetlands. Impacts that are temporary but last more than one growing season will be mitigated as required by permitting agencies.

Mitigation. In the area of the 130th Station, the Goff Creek crossing would be designed to be compatible with the City of Bellevue's plan to daylight Goff Creek in the future to mitigate other project impacts. Mitigation for the culverted portion of the Unnamed Tributary to Kelsey Creek may consist of enhancements to streams in the Bel-Red area.



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

Revised/New Alternatives
- At-Grade Route
- Elevated Route
- Retained-Cut Route
- Retained-Fill Route
- Tunnel Route

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

- Proposed Station
- Maintenance Facility and Access Track
- P New and/or Expanded Park-and-Ride Lot

N

0 0.25 Mile

Exhibit 3-23
Ecosystems
Segment D
East Link Project

3.5 Segment E Alternatives

As described in Section 2.7, *Preferred Alternative E2* has been modified and would end at a new station location—the Downtown Redmond Station—by remaining within the BNSF Railway corridor and avoiding the extension up 161st Avenue NE. This design modification would result in fewer transportation and property acquisition impacts (as shown in Table 3-5). The Downtown Redmond Station would serve both the Redmond Town Center and the Redmond Transit Center.

Since the 2008 Draft EIS, new operation and maintenance facilities, including a parking lot, have been added to one of the parcels, located at the end of the alternative and east of the Downtown Redmond Station, that would be acquired for a traction-powered substation (TPSS); however, constructing and operating these facilities would not result in new impacts on the environmental resources. Construction risks for the Segment E alternatives would be low based upon the required construction methods.

3.5.1 Preferred Marymoor Alternative (E2)

Transportation

Operation. Because most impacts associated with *Preferred Alternative E2* would be similar to those identified in the 2008 Draft EIS, only impacts that fall outside that range are discussed, including Transit Ridership, Arterials and Local Streets, and Nonmotorized Facilities.

Light Rail Ridership: By year 2030, projectwide daily ridership for *Preferred Alternative E2* would be 49,500 (Table 3-5).

Traffic Control, Property Access, and Circulation: Because *Preferred Alternative E2* would not travel along 161st Avenue NE, there would be no impacts associated with traffic control, property access, and circulation in this area. Impacts for remainder of the alignment would be the same as those evaluated in the 2008 Draft EIS.

Nonmotorized: Pedestrian and bicycle circulation and connectivity would be improved with development projects or planned city capital improvements. There would be no differences in impacts from those evaluated in the 2008 Draft EIS; however, because *Preferred Alternative E2* would no longer travel along 161st Avenue NE, there would be no impacts in this area. Light rail riders parking at the Redmond Transit Center Park and Ride would need to cross SR 202 with *Preferred Alternative's E2* Downtown Redmond Station location.

TABLE 3-5
Comparison of Segment E Alternatives

Feature		Range of Impacts for Draft EIS Alternatives	Alternative E2
Number of stations		2 to 3	2
Estimated cost (millions, 2007 $)		$495 to 790	$540 to 625
2030 daily ridership	Segment Boardings	3,000	3,500
	Total East Link ridership	45,500 to 46,000[a]	49,500
Travel time through segment (minutes)		7 to 10	6
Length (miles)		3.4 to 3.6	3.7
Construction risk[b]		Low to Moderate	Low
Environmental impacts			
Intersections Operating Worse than No Build Alternative Before Mitigation		2 to 4	2
Residential displacements: number of housing units		2 to 126	2
Economics: business displacements (number of employees)		7 to 24 (120 to 380)	8 (200)
Full/partial property acquisition		8 to 19/34 to 44	10/34
Parkland and open space		0.3 to 2.2	2.0
Historic properties (number of properties evaluated)		1-2	2

[a] Range shown for the DEIS alternatives has not been updated to be consistent with the SDEIS alternatives. Updated information will be provided in the Final EIS.
[b] Construction Risk relates to the average risk of geologic and utilities constraints relative to the other alternatives for the East Link Project. Refer to Chapter 6 in 2008 Draft EIS for a description of criteria.

Acquisitions, Displacements, and Relocations

Operation. The design modifications associated with *Preferred Alternative E2* result in 12 full and 30 partial property acquisitions. This would be 23 fewer property acquisitions compared with the previously analyzed alternative and would not require the residential displacements of 124 housing units. There would be two residential displacements associated with *Preferred Alternative E2*.

Mitigation. Mitigation would be the same as described above in Section 3.2.2, *Preferred AlternativeB2M*.

Economics

Operation. The design modifications associated with *Preferred Alternative E2* would result in a lower degree of economic impacts. *Preferred Alternative E2* would result in 8 business displacements affecting 200 employees. The previous alternative resulted in the displacement of 24 businesses with approximately 380 employees. The property tax revenue impact would be approximately 0.04 percent of the City's budgeted 2007-2008 property tax revenues.

Mitigation. Section 3.2.3 discusses mitigation for relocating businesses.

Historic and Archaeological Resources

There are two historic resources eligible for the NRHP within the APE of *Preferred Alternative E2*: the Justice White House and the Bill Brown Saloon.

The Justice White House (Exhibit 3-24), a Redmond Heritage Landmark eligible for the NRHP, is within the APE of *Preferred Alternative E2*. The Justice William White House is significant because its owners, William and Emma White, both played important roles in the history of Redmond and western Washington. 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

EXHIBIT 3-24
Justice William White House,
Leary Way NE and NE 76th Street

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, providing guests easy access. Justice White died in 1914, and the family lost the house to foreclosure in 1932.

The house became the clubhouse for a golf course located to the south. The golf course is now the site of the Redmond Town Center shopping center, and an architecture firm occupies the house.

The Bill Brown Saloon Building (Exhibit 3-25) is significant because of its association with the man who was mayor of Redmond from 1919 to 1948. 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.

EXHIBIT 3-25
Bill Brown Saloon Building,
7824 Leary Way NE

Brown tore it down 3 years later and constructed the brick building that stands on the corner today.

When it opened, the building housed a saloon, drugstore, and 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.

Operation. *Preferred Alternative E2* would be approximately 65 feet from the Justice White House and 110 feet from the Bill Brown Saloon (Exhibit 3-26). The project would not be close enough to damage the buildings. While *Preferred Alternative E2* would introduce light rail into the setting of these resources, 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 existing railroad setting. The operation of trains for passenger use in the right-of-way would also be consistent with the historic use of the corridor. The character-defining features that convey its significance and qualify the properties for listing in the NRHP would not be changed.

Construction. *Preferred Alternative E2* would not pass close enough to the Justice White House or the Bill Brown Saloon to affect the historic context or potentially damage the buildings during construction. Construction activities would occur across the street from the historic Justice White House, but they would not adversely affect the character-defining features or use of the historic property.

Mitigation. FTA's current consideration is that the project is not anticipated to alter any of the characteristics that qualify the properties for inclusion in the National Register in a manner that would diminish the integrity of their location, design, setting, materials, workmanship, feeling, or association. FTA determinations of effect will be made after concluding the consultation with affected agencies and jurisdictions and review of public comment after publication of the SDEIS.

Parkland and Open Space

Since preparation of the 2008 Draft EIS, the East Lake Sammamish Trail has been approved for extension in the former BNSF Railway right-of-way west of SR 520 to the Bear Creek Trail. The design modifications associated with *Preferred Alternative E2* would not change potential park impacts.

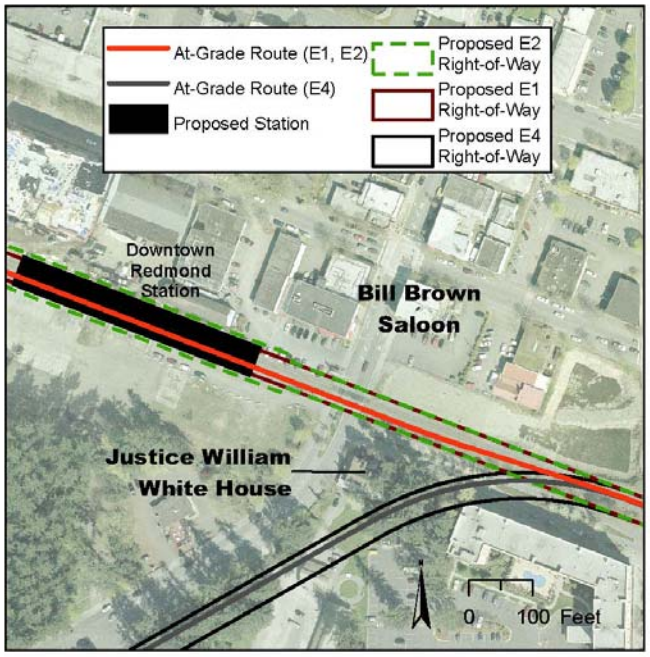


EXHIBIT 3-26
Proximity of Preferred Alternative E2 to Justice White House

Operation. The East Lake Sammamish Trail would be realigned and reconstructed in the same corridor (Exhibit 3-27), and one or more columns might be placed near the trail. Views from the trail would not be substantially impacted due to the area's existing urban character and the corridor's transportation character, including the SR 520 overpass and the former railroad corridor. Overall, project operation would not impact trail use.

Construction. During construction, parts of the trail would be closed and would require detours. The light rail project would not affect trail features, attributes or use. Temporary trail detours or protective barriers would be implemented to maintain trail use during project construction.

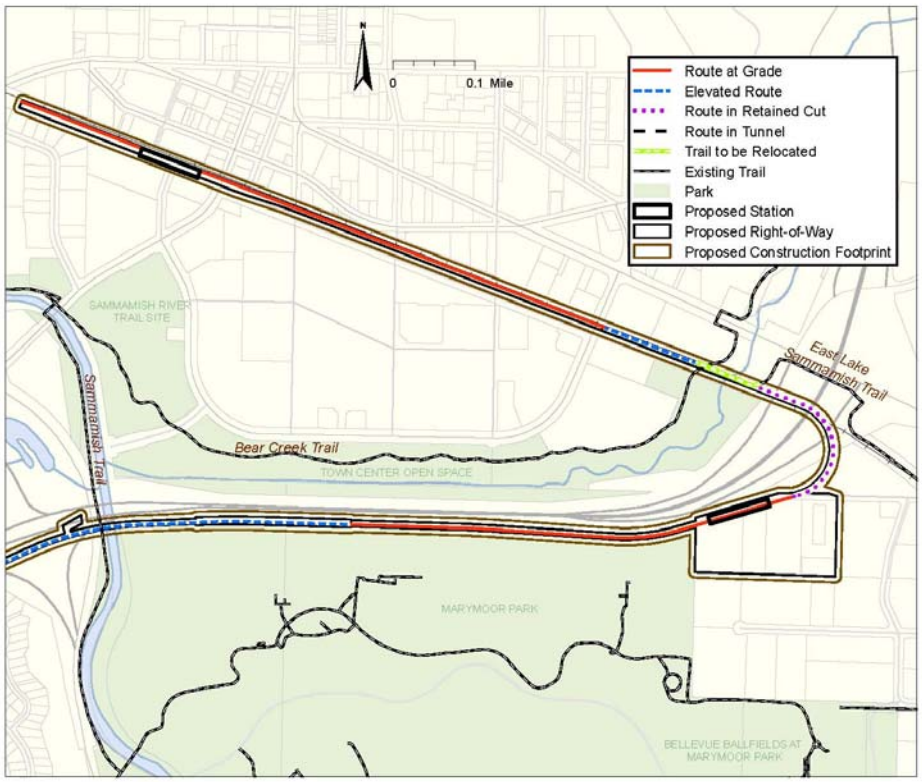


EXHIBIT 3-27
Preferred Alternative E2 Relocation of East Lake Sammamish Trail