

Description of the New East Link Alternatives and Design Modifications

2.1 Background

The 2008 Draft EIS evaluated a No Build Alternative and 19 build alternatives within 5 segments (A to E) for an approximately 18-mile extension of the Link light rail system from Downtown Seattle to Redmond across the I-90 bridge. Since the 2008 Draft EIS was published, the Sound Transit Board of Directors has reviewed public and agency comments, identified the preferred alternatives for each segment, and revised the preferred alternative while directing staff to include more alternatives for study. This SDEIS reviews new alternatives and modifications to existing alternatives that may result in substantial impacts not disclosed and available for public comment in the 2008 Draft EIS. New alternatives have been added to Segments B and C, and design modifications to alternatives previously studied in the Draft EIS have been added in Segments B, C, and D. Also, new information regarding the historic nature of I-90 in Segment A is included and evaluated.

The ST2 plan provides funding for an at-grade or elevated alternative in Downtown Bellevue (Segment C). For the Sound Transit Board to select a tunnel alternative in this segment, more funding sources would be required. The Sound Transit Board identified two preferred alternatives in Segment C in April 2010: *Preferred 108th NE At-Grade Alternative (C11A)* and *Preferred 110th NE Tunnel Alternative (C9T)*. *Preferred Alternative C9T* is preferred based on a term sheet executed between Sound Transit and the City of Bellevue contingent on finding more funding sources and scope reductions to reduce the affordability gap for this tunnel alternative. *Preferred Alternative C11A* is preferred if more funding and scope reductions cannot be found to afford the tunnel.

2.1.1 Alternatives Development Process

The SDEIS alternatives and design modifications were developed in response to comments received on the 2008 Draft EIS, discussions with partner agencies and community members, and direction from the Sound Transit Board. Input was received

through the public process associated with three specific studies for elements of the project in Bellevue: the *Downtown Bellevue Light Rail Alternatives Concept Design Report* (February 2010); the *112th Avenue Design Options Concept Design Report* (June 2010); and the *Evaluation of Hospital Station Options* (June 2010). Each study was cooperatively developed with staff from Sound Transit and the City of Bellevue. These studies are on the Sound Transit web site (www.soundtransit.org) and summarized in Appendix F, Public Involvement and Agency Cooperation. The City of Redmond also held workshops and community outreach meetings that helped further define modifications to Segment D and E alternatives.

The Downtown Bellevue report evaluated six alternatives; two alternatives had been analyzed in the 2008 Draft EIS, and four alternatives were new. All new downtown alternatives studied are included in this SDEIS. Following the Downtown Bellevue Study, the Hospital Station and the 112th Avenue Design Options were explored with extensive public involvement from the community and interested stakeholders. This process looked at three new locations for the Hospital Station with optional access points to the hospital district in addition to one from the 2008 Draft EIS; the location from the 2008 Draft EIS was chosen to carry forward. The 112th Avenue SE report examined six at-grade and retained-cut profiles traveling in the center and on the east and west sides of 112th Avenue SE. Based on the technical analysis and input from the community, the Sound Transit Board identified the preferred alternative as a west side-running alignment along 112th Avenue SE north of SE 6th Street.

2.1.2 Alternatives Eliminated

Comments on the 2008 Draft EIS resulted in a number of suggestions of new or previously studied alternatives. Specific responses to each letter and the suggestions will be provided in the Final EIS.

The *112th Avenue Light Rail Options Concept Design Report* evaluated six alternatives for connecting *Preferred 112th Modified Alternative (B2M)* with either

Preferred 108th At-Grade Alternative (C11A) or *Preferred 110th NE Tunnel Alternative (C9T)*, with either a portal at Main Street or NE 2nd Street. Those alternatives that were not carried forward were eliminated primarily due to noise, transportation, and construction impacts, cost, and community input.

Sound Transit reviewed four Hospital Station options with the City of Bellevue and decided to carry forward the Draft EIS alternative location based on balancing cost, accessibility, and minimization of property impacts.

Since publication of the 2008 Draft EIS, the City of Bellevue has proposed multiple new alternatives and design modifications. Sound Transit has considered each of the issues and requests made by the City of Bellevue. Many of the alternatives have been evaluated in joint studies with the City of Bellevue or other technical reviews. In July 2010, the City of Bellevue requested a series of additional design modifications. The City of Bellevue requested that the Sound Transit Board consider new modifications to Alternative B7 and *Preferred Alternative C9T*, including a new South Bellevue Park-and-Ride Station adjacent to I-90 and a NE 2nd Street portal to the *Preferred Alternative C9T* tunnel. The proposed revisions to Alternative B7 and *Preferred Alternative C9T* have not been carried forward for further study because of issues with substantially higher cost, high construction risk, and engineering feasibility issues.

The City of Bellevue also requested that Sound Transit examine two design modifications to the alignment east of the Bellevue Transit Center Station and east of I-405: 1) moving the alignment along NE 6th Street further south and 2) crossing underneath NE 8th Street east of I-405 before entering the Hospital Station. Both requests would affect the *Preferred Alternatives C11A* and *C9T* alignments similarly. Shifting the alignment to the south side of NE 6th Street is not evaluated further because it would not reduce costs and results in greater impacts to Bellevue City Hall and the Metro site

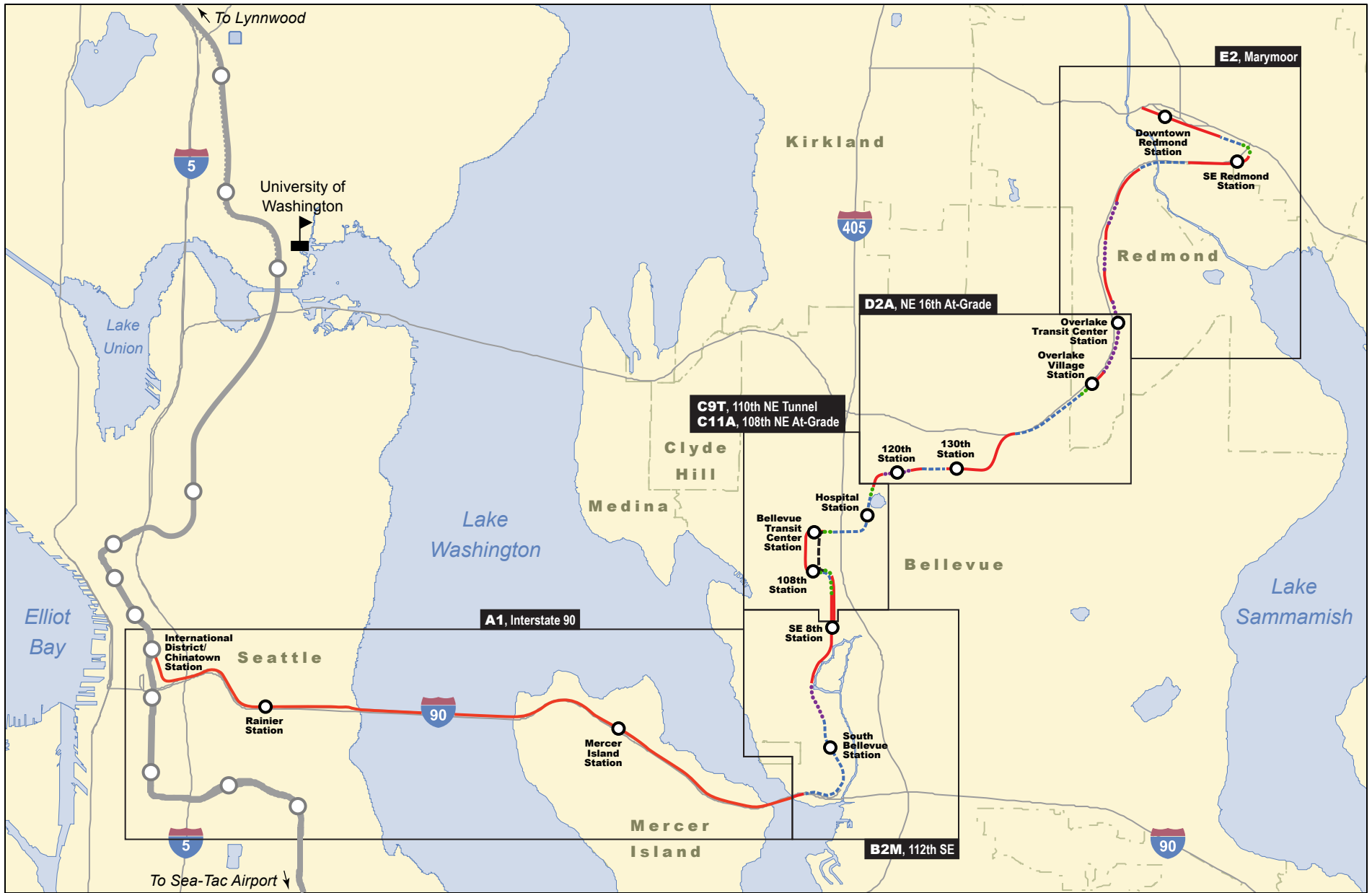
redevelopment on the vacant lot next it; would require longer span structures over I-405 and 116th Avenue NE; and would acquire an additional office building. Crossing underneath NE 8th Street is not evaluated further because it increases costs by adding a tunnel and would push the Hospital Station location further north near NE 12th Street. This station location would have less desirable access as illustrated by the *Evaluation of Hospital Station Options* study and, due to the tunnel, would be approximately 30 feet below grade, resulting in higher cost and less visibility.

2.1.3 SDEIS Preferred Alternatives

Exhibit 2-1 illustrates the preferred alternatives in all Segments, per Sound Transit Board Motions since the Draft EIS was published in 2008, and Table 2-1 describes the characteristics of the alternatives evaluated in this SDEIS. The East Link Project might be constructed in phases, depending on available funding or other factors. Sound Transit anticipates that any station including and beyond from the Hospital Station east could be considered an interim station. The minimum planned project would be to open East Link from Seattle to the Hospital Station (Segments A through C). Following are the preferred alternatives:

- Segment A: *Preferred I-90 Alternative (A1)*
- Segment B: *Preferred 112th SE Modified Alternative (B2M)*
- Segment C: *Preferred 108th NE At-Grade Alternative (C11A)* and *Preferred 110th NE Tunnel Alternative (C9T)*
- Segment D: *Preferred NE 16th At-Grade Alternative (D2A)*
- Segment E: *Preferred Marymoor Alternative (E2)*

The following subsections describe each SDEIS alternative and design modification. A separately bound document, Appendix H provides the civil drawings for each alternative.



City Limits

East Link Light Rail Alternatives

- East Link Segment
- Station

Route Profile

- At-Grade
- - - Elevated
- · - · - Retained-Cut
- · - · - Retained-Fill
- - - - Tunnel

Central Link Light Rail

- Central Link Alignment and Station

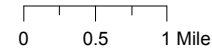


Exhibit 2-1
East Link Preferred Alternative
East Link Project

TABLE 2-1
Characteristics of SDEIS Light Rail Alternatives

Segment and Alternatives	Segment Length (miles)	Segment Travel Time (minutes)	Number of Stations	Stations (Station Parking Spaces)
Segment B, South Bellevue				
B2M to C11A	2.2	5	1	South Bellevue (1,400)
B2M to C9T	2.2	5	2	South Bellevue (1,400), SE 8th
B3 - 114th Extension Design Option	2.4	5	1	South Bellevue (1,400)
B7	2.6	5	1	118th (1,030)
Segment C, Downtown Bellevue				
C11A	2.3	7 to 10	3	108th, Bellevue Transit Center, Hospital
C9T	2.0	7	2 or 3 ^a	East Main Street, Bellevue Transit Center, Hospital
C9A	1.8	7 to 9	2 or 3 ^a	East Main Street, Bellevue Transit Center, Hospital
C14E	1.4	4	2	Bellevue Transit Center, Hospital
Segment D, Bel-Red/Overlake				
D2A	3.3	8	4	120th, 130th (300), Overlake Village (203), Overlake Transit Center (320)
D2A - NE 24 Design Option	3.5	10	4	120th, 130th (300), Overlake Village (203), Overlake Transit Center (320)
Segment E, Downtown Redmond				
E2	3.7	6	2	SE Redmond (1,400), Downtown Redmond

^a East Main Street Station is only associated with the alternative if the connection from Segment B is via Alternatives B3, B3 - 114th Extension Design Option, or B7.

2.2 Segment A, Preferred Interstate 90 Alternative (A1)

There is no change associated with the *Preferred Alternative A1*. Since the 2008 Draft EIS, WSDOT, on behalf of FHWA and in consultation with DAHP, identified segments of I-90 between I-5 and I-405 as eligible for the NRHP.

Preferred Interstate 90 Alternative (A1) would use the I-90 center roadway for the light rail guideway and for two stations. The station in Seattle between Rainier and 23rd Avenues South would have entrances from 23rd and Rainier Avenues South. The station on Mercer Island near the existing park-and-ride garage between 77th and 80th Avenues SE would have station entrances on 77th Avenue SE and 80th Avenue SE. Converting the center roadway to light rail would close the westbound 77th Avenue SE off-ramp and the eastbound direct HOV off-ramp to Island Crest Way. WSDOT and Sound Transit have agreed to include the

ramp configuration in *Preferred Alternative A1*. In addition, WSDOT and Sound Transit have identified the joint use of the D2 roadway (the HOV ramps from Seattle to I-90) as the approach for *Preferred Alternative A1*. For use of the center roadway, both the Mount Baker and Mercer Island I-90 tunnels and the floating bridge would be modified to incorporate light rail. Modifications would include changes to wall dividers, drainage, and ventilation. To equalize weight on the bridge from installing rail the roadway surfaces and southern traffic barriers would be modified. Finally, to accommodate floating bridge movement in relation to the land abutment, a specialized rail expansion joint would be installed on the bridge.

2.3 Segment B Alternatives

The *Preferred 112th SE Modified Alternative (B2M)* is a new alternative in Segment B and has been identified as the preferred alternative for Segment B developed in response to comments on the 2008 Draft EIS and at the direction of the Sound Transit Board. Additionally,

this SDEIS evaluates design modifications to alternatives B3 and B7.

2.3.2 Preferred 112th SE Modified Alternative (B2M)

The *Preferred 112th SE Modified Alternative (B2M)* (see Exhibits 2-2 and 2-3) is elevated in the I-90 center roadway, crosses over westbound I-90, and continues elevated on the east side of Bellevue Way SE to the South Bellevue Station, which is located at the current South Bellevue Park-and-Ride Lot; this alternative also maintains the westbound and eastbound I-90 HOV direct access ramps. The South Bellevue Station includes a parking structure up to five stories with 1,400 parking spaces. After leaving the station, the route transitions to a retained cut on the east side of Bellevue Way within Mercer Slough Nature Park to the intersection of Bellevue Way SE and

112th Avenue SE. In front of the Winters House, there is a lidded trench approximately 170 feet long. From this point, *Preferred Alternative B2M* has two variations that connect to one of the Segment C Preferred Alternatives: one provides a connection to the *Preferred 110th NE Tunnel Alternative (C9T)* and one connects to *Preferred 108th NE At-Grade Alternative (C11A)*. The following describes the two variations as unique to the Segment C alternative:

- When connecting to *Preferred 108th NE At-Grade Alternative (C11A)*, *Preferred Alternative B2M* transitions from a retained cut to at-grade on the east side of 112th Avenue SE. South of SE 15th Street, Preferred Alternative B2M crosses the northbound lanes of 112th Avenue SE at a gated crossing and continues north in the center of 112th Avenue SE at-grade until reaching Segment C at SE 6th Street. This variation does not have a SE 8th Station.
- When connecting to *Preferred 110th NE Tunnel Alternative (C9T)*, *Preferred Alternative B2M* transitions from retained cut to at-grade on the east side of 112th Avenue SE to the at-grade SE 8th Station north of SE 8th Street. From there, *Preferred Alternative B2M* remains at-grade until reaching Segment C at SE 6th Street.

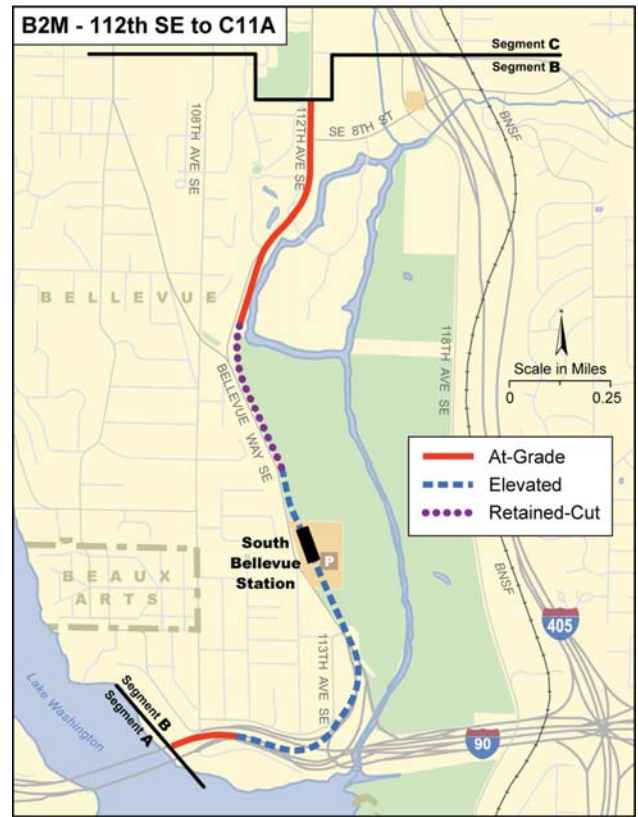


EXHIBIT 2-2
Preferred Alternative B2M to Preferred Alternative C11A

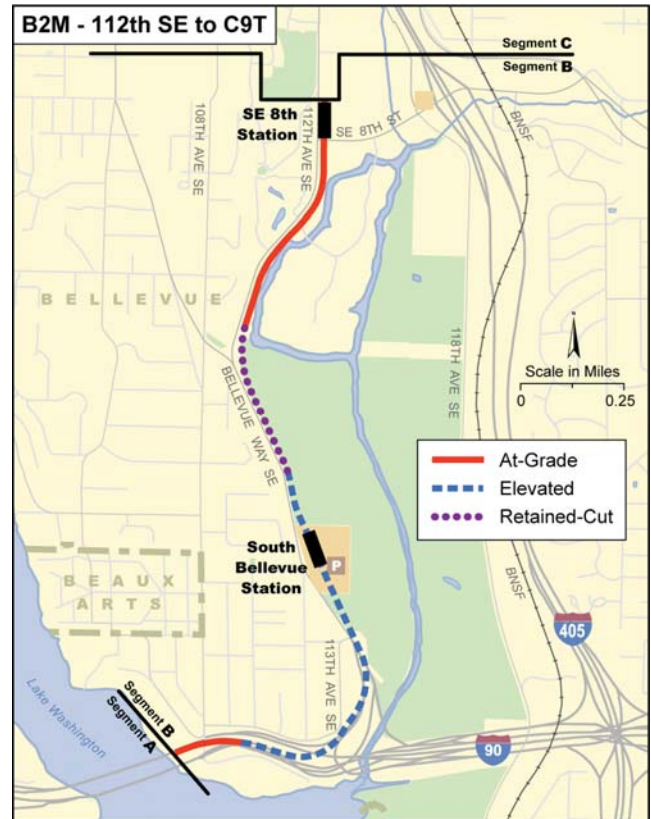


EXHIBIT 2-3
Preferred Alternative B2M to Preferred Alternative C9T

2.3.3 Alternative B3 - 114th Extension Design Option

The Alternative B3 - 114th Extension Design Option (B3 114th Design Option) is a design option to the 2008 Draft EIS Alternative B3 that crosses the northbound lanes of 112th Avenue SE at a gated crossing north of the SE 15th Street intersection, then crosses Bellefield Office Park at-grade, transitions from at-grade to elevated structure, and extends the route at SE 8th Street farther east to 114th Avenue SE. The B3 114th Design Option turns north along the east side of 114th Avenue SE (Exhibit 2-4). The extension travels through the Wilburton Park-and-Ride Lot and then crosses 114th Avenue SE to connect to Segment C.

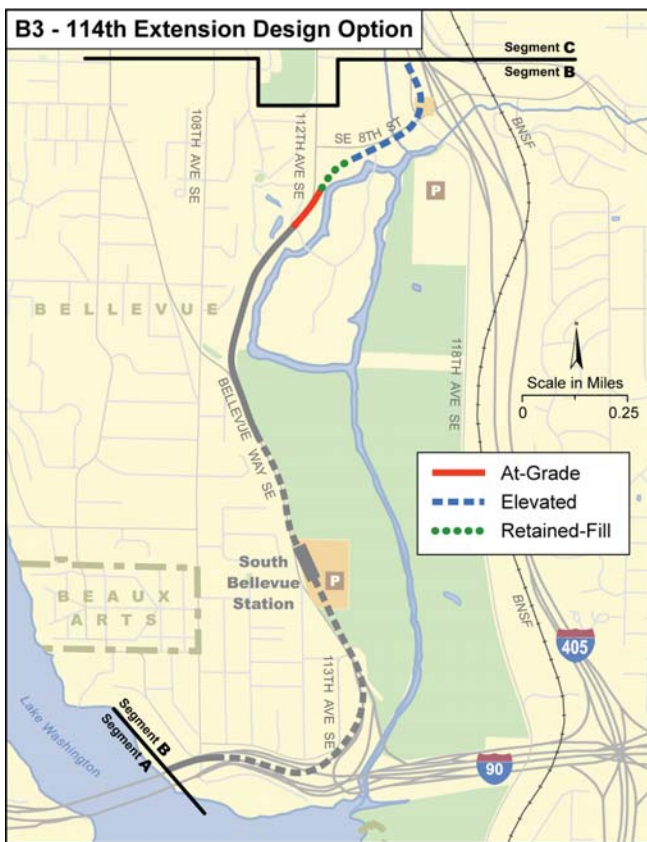


EXHIBIT 2-4
Alternative B3 - 114th Extension Design Option

2.3.4 BNSF Alternative (B7)

After the 2008 Draft EIS was published, the WSDOT I-405 South Bellevue Widening Project was completed, which included removing the Wilburton Tunnel over I-405 and widening I-405 to the west near the Alternative B7 route (Exhibit 2-5). This widening changed the topography near the route for approximately 500 feet, which changed this part of the route from at-grade to elevated. Neither the profile

elevation nor the route's horizontal alignment was changed. The I-405 South Bellevue Widening Project also constructed a sound wall between I-405 and some residences along 118th Avenue SE.

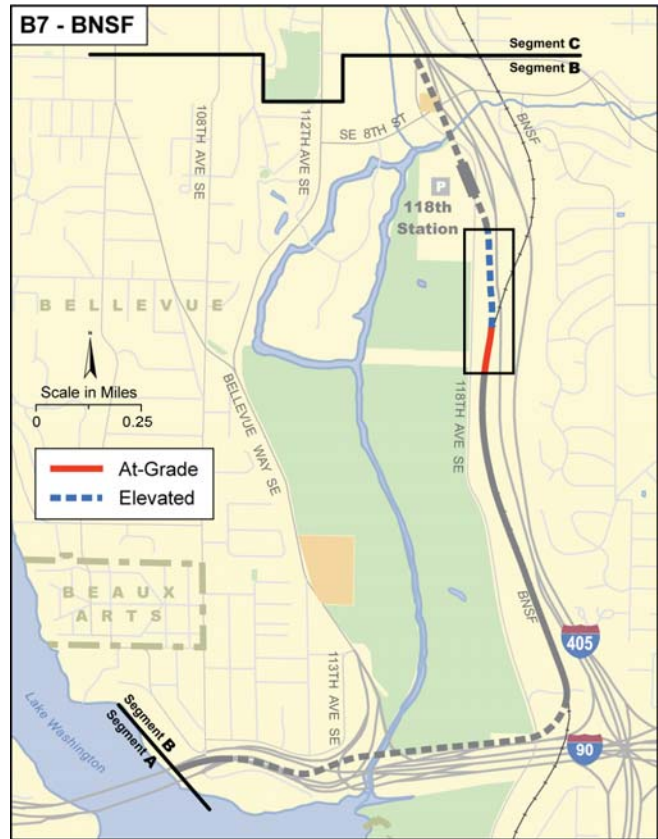


EXHIBIT 2-5
Alternative B7

2.4 Segment C Alternatives

For Segment C, Sound Transit identified the *Preferred 108th NE At-Grade Alternative (C11A)* as the preferred at-grade alternative and *Preferred 110th NE Tunnel Alternative (C9T)* as the preferred tunnel alternative. The tunnel alternative was developed in response to public comments and requests from the City of Bellevue for a less expensive tunnel alternative than those described in the 2008 Draft EIS. The ST2 plan provides funding for an at-grade or elevated alternative in Downtown Bellevue (Segment C). The Sound Transit Board would require additional funding sources in order to select a tunnel alternative in this segment. *Preferred Alternative C9T* is preferred based on a term sheet executed between Sound Transit and the City of Bellevue contingent on finding additional funding sources and scope reductions that would reduce the affordability gap for this tunnel alternative. *Preferred Alternative C11A* is preferred in

the event additional funding and scope reductions cannot be found to afford the tunnel.

In addition, Sound Transit identified another at-grade alternative, 110th NE At-Grade Alternative (C9A), and an elevated alternative, 114th NE Elevated Alternative (C14E), in Segment C for further study in this SDEIS.

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

From Segment B, Preferred 108th NE At-Grade Alternative (C11A) (see Exhibit 2-6) connects with either Preferred 112th SE Modified Alternative (B2M), Alternative B3 (including the B3 114th Design Option), or Alternative B7. Preferred Alternative C11A transitions from center-running on 112th Avenue SE to side-running on the west side, crossing the southbound lanes south of SE 6th Street. It continues north from SE 6th Street, remaining at-grade along the west side of 112th Avenue SE, transitioning from at-grade profile to retained fill on the west side of 112th Avenue SE and then becomes elevated to cross SE 1st Place. Preferred Alternative C11A then turns west along the south side of Main Street in a retained cut to the 108th Station between 108th and 110th Avenues NE. From the 108th Station, Preferred Alternative C11A turns north at-grade to cross Main Street to the center of 108th Avenue NE and continues north to NE 6th Street and turns east in the center of NE 6th Street to the at-grade Bellevue Transit Center Station located at the existing Bellevue Transit Center between 108th and 110th Avenues NE. Preferred Alternative C11A then crosses 110th Avenue NE at-grade, transitioning to a retained fill and then to an elevated profile between 110th and 112th Avenues NE before crossing 112th Avenue NE. Preferred Alternative C11A transitions from center-running on NE 6th Street between 110th and 112th Avenues NE to the north side of NE 6th Street before crossing I-405 and 116th Avenue NE. Preferred Alternative C11A then turns north along the BNSF Railway right-of-way to cross NE 8th Street and reach the elevated Hospital Station and connect with Segment D alternatives from the BNSF Railway right-of-way. The Hospital Station design, included in all Segment C alternatives, may include the development of a pedestrian or trail connection over NE 8th Street that would be designed and constructed by others provided space to accommodate.

2.4.2 Preferred 110th NE Tunnel Alternative (C9T)

From Segment B, Preferred 110th NE Tunnel Alternative (C9T) (see Exhibit 2-7) connects with either Preferred 112th Avenue SE Alternative (B2M), Alternative B3, Alternative B3 114th Design Option, or Alternative B7.

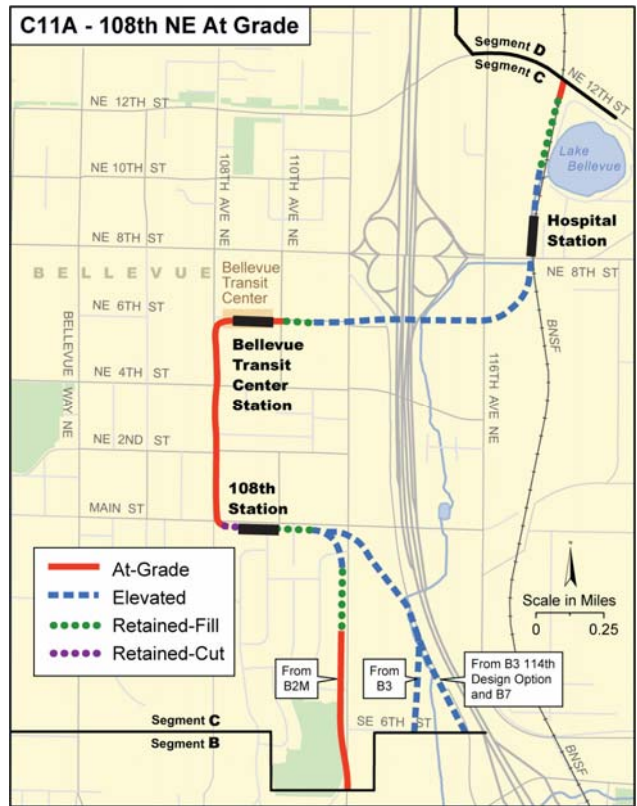


EXHIBIT 2-6 Preferred Alternative C11A

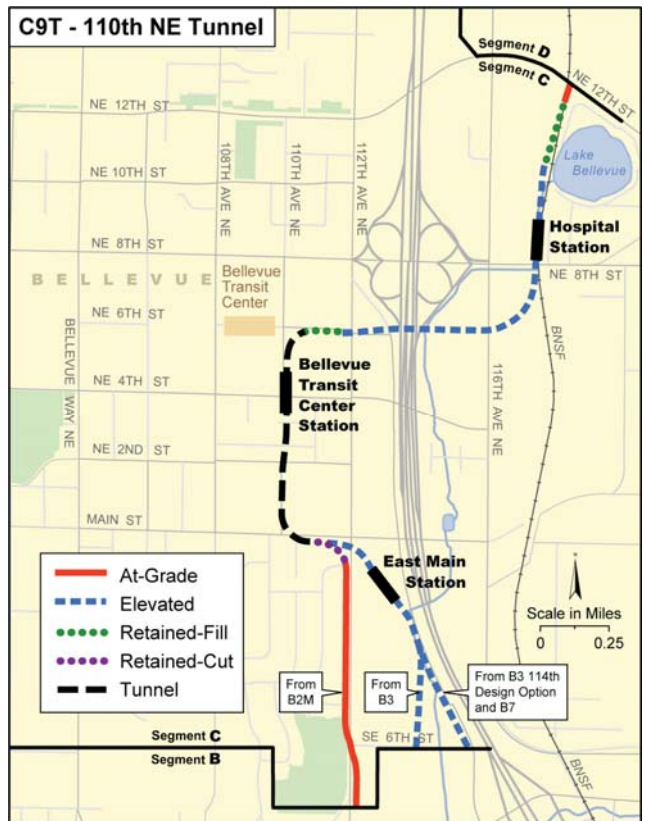


EXHIBIT 2-7 Preferred Alternative C9T

Preferred Alternative C9T begins on the east side of 112th Avenue SE and then transitions to the west side of 112th Avenue SE at SE 6th Street. *Preferred Alternative C9T* then travels at-grade on the west side of 112th Avenue SE before turning west at Main Street to enter the tunnel portal. The tunnel continues on the south side of Main Street before turning north under 110th Avenue NE. To maintain access to the Surrey Downs neighborhood, this alternative includes realigning SE 4th Street through Surrey Downs Park to connect to 112th Avenue SE further south, forming a four-way, signalized intersection at SE 6th Street.

Preferred Alternative C9T includes the Bellevue Transit Center Station at 110th Avenue NE, with a station entrance at NE 2nd Place and south of NE 6th Street and an optional entrance on the southwest corner of NE 6th Street and 110th Avenue NE. From this station, *Preferred Alternative C9T* continues north to NE 6th Street, where it turns east, exits the tunnel, and transitions to an elevated profile in the center of NE 6th Street, and then swings to the north side of NE 6th Street to cross 112th Avenue NE, I-405, and 116th Avenue NE. *Preferred Alternative C9T* then turns north along the BNSF Railway right-of-way to cross NE 8th Street and reach the elevated Hospital Station.

Preferred Alternative C9T then connects with Segment D alternatives from the BNSF Railway right-of-way.

2.4.3 110th NE At-Grade Alternative (C9A)

From Segment B, Alternative C9A connects with either Alternatives B2A, B3, B3 - 114th Extension Design Option, or B7 from the 2008 Draft EIS (see Exhibit 2-8). Alternative C9A has a SE 8th Station in Segment B if connecting to Alternative B2A or an East Main Station in Segment C if connecting to Alternatives B3, B3 114th Design Option, or B7. From the Segment B connection with B2A, Alternative C9A begins at-grade in the center of 112th Avenue SE and transitions to retained fill just north of SE 6th Street. The trackway then transitions to elevated and curves to the east side of 112th Avenue SE before crossing over 112th Avenue SE and transitioning to an at-grade alignment along the south side of Main Street. Alternative C9A includes widening 112th Avenue SE to the east for northbound traffic where the alignment is at-grade and transitions to an elevated guideway. Once the alternative is elevated, northbound traffic travels under the elevated portions before 112th Avenue SE rejoins its existing alignment. Alternative C9A heads west on Main Street before turning north in the center of 110th Avenue NE and traveling at-grade in the center of the street to NE 6th Street, where it turns east

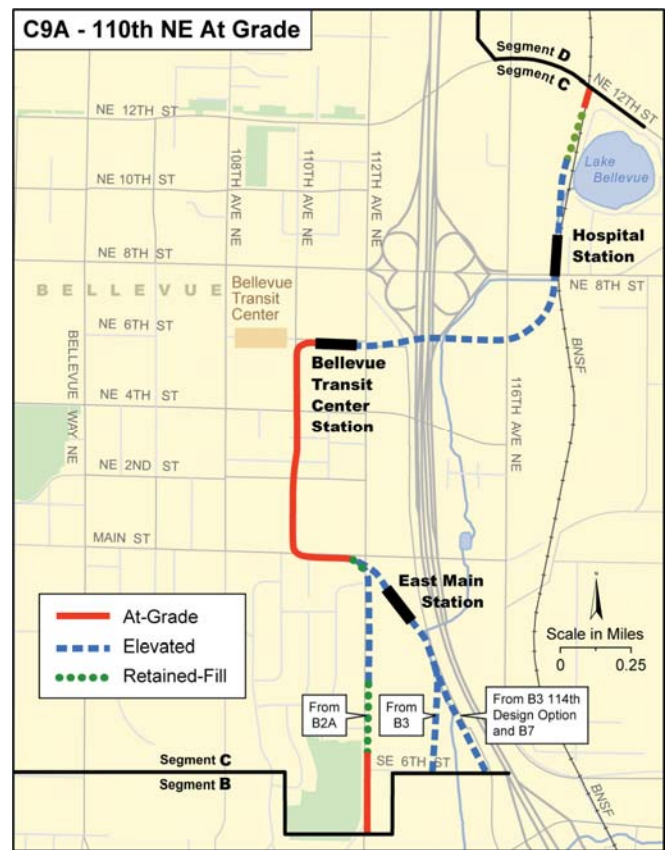


EXHIBIT 2-8
Alternative C9A

to a Bellevue Transit Center Station located between 110th and 112th Avenues NE.

From the station, this alternative travels east in an elevated profile over 112th Avenue NE, I-405, and 116th Avenue NE. Alternative C9A then turns north along the BNSF Railway right-of-way to cross NE 8th Street and reach the elevated Hospital Station and then connects with Segment D alternatives from the BNSF Railway right-of-way.

2.4.4 114th NE Elevated Alternative (C14E)

The 114th NE Elevated Alternative (C14E) connects to either Alternative B3, B3 - 114th Extension Design Option, or B7 from the 2008 Draft EIS and follows 114th Avenue SE/NE to the southwest side of the I-405 and NE 8th Street interchange (Exhibit 2-9). This alternative is elevated the entire distance and crosses over I-405 beginning at NE 6th Street. The Bellevue Transit Center Station is located on an elevated structure above 114th Avenue NE, between NE 4th and 6th Streets, east of the existing Bellevue Transit Center. To provide better access from the existing Bellevue Transit Center, a moving sidewalk connects the station to City Hall Plaza, located across the street from the Bellevue Transit Center.

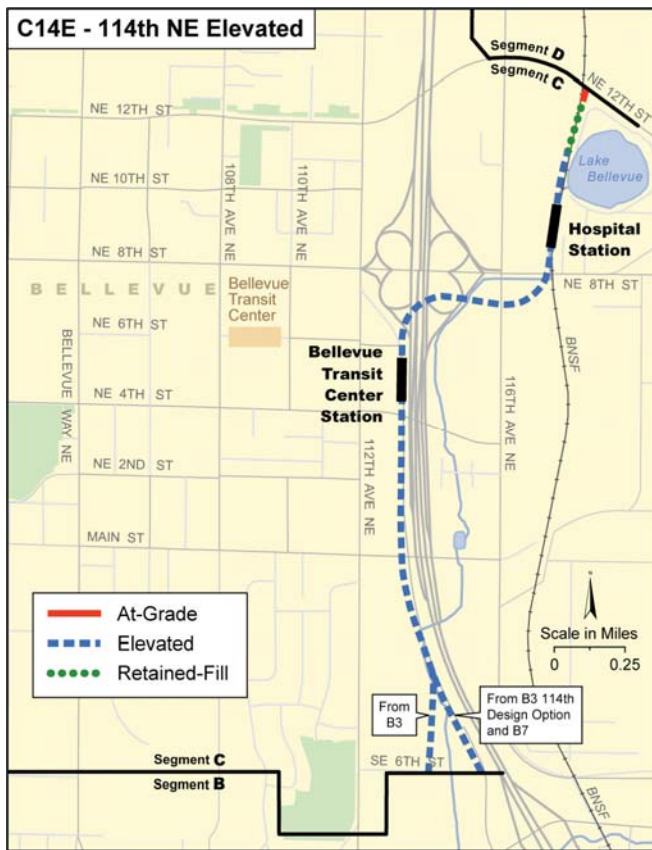


EXHIBIT 2-9
Alternative C14E

A 200-space underground parking structure could be implemented as part of a larger development project in close proximity to the Bellevue Transit Center Station. After crossing I-405, Alternative C14E crosses 116th Avenue NE in an elevated profile and then turns north in the BNSF Railway right-of-way to an elevated Hospital Station. This alternative does not include the East Main Station.

2.5 Segment D Preferred NE 16th At-Grade Alternative (D2A)

Sound Transit modified the Preferred NE 16th At-Grade Alternative (D2A) based upon comments from property owners in the corridor and the Cities of Bellevue and Redmond. Differences in the design modifications include shifting the route in the 120th Station area to the north of the original Alternative D2A route.

The Preferred NE 16th At-Grade Alternative (D2A) (see Exhibit 2-10) travels parallel to and north of a new NE 15th/16th Street corridor east from the BNSF Railway right-of-way in a mixed at-grade, retained-cut, and elevated profile.

This alternative has four stations: 120th, 130th, Overlake Village, and Overlake Transit Center. Preferred Alternative D2A exits the BNSF Railway corridor at-grade and then transitions to a retained cut under 120th Avenue NE to a retained-cut 120th Station. After leaving the station, the route continues in a retained cut under 124th Avenue NE before transitioning to an elevated profile over the Kelsey Creek West Tributary and then returns to the at-grade 130th Station, which includes a new park-and-ride lot with 300 parking spaces. Preferred Alternative D2A continues at-grade on NE 16th Street, turns in the median of 136th Place NE, and crosses NE 20th Street at-grade until it transitions to an elevated structure along the south side of SR 520. In response to a request from the City of Redmond, Preferred Alternative D2A has been revised to remain adjacent to SR 520 north of NE 24th Street, transitioning to an at-grade Overlake Village Station west of 152nd Avenue NE and next to SR 520. Preferred Alternative D2A transitions to a retained-cut profile after the station and continues along SR 520 until reaching the retained-cut Overlake Transit Center Station, which includes a proposed four-story parking structure with 320 parking spaces. King County Metro bus, Sound Transit bus, and Microsoft shuttle services are integrated into this station.

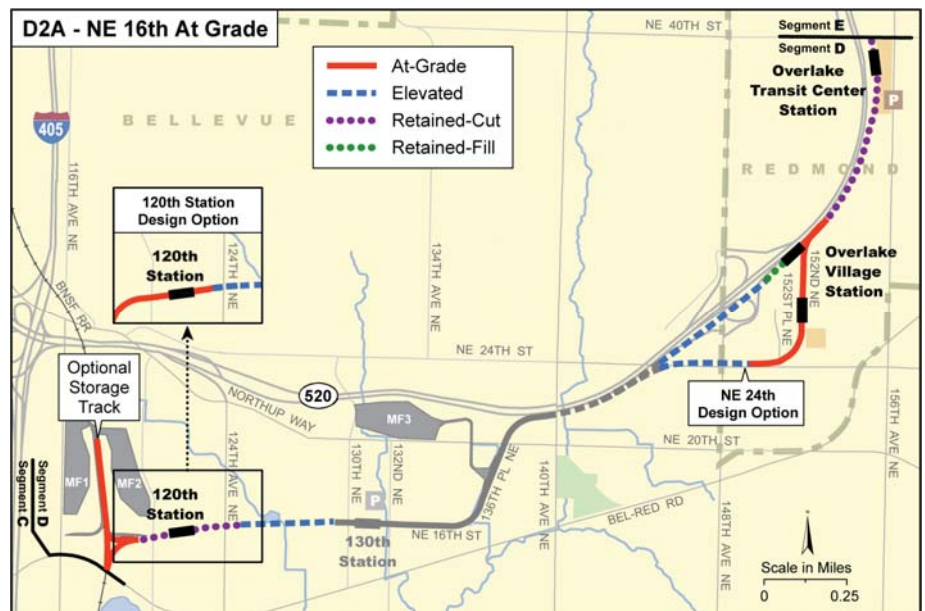


EXHIBIT 2-10
Preferred Alternative D2A

From this station, the route is on the east side of SR 520 and crosses under NE 40th Street before connecting with all Segment E alternatives. As an interim terminus, the tracks north of NE 40th Street serve as a tail track that extends 800 feet for storage and turnbacks. An additional option would be to locate the storage tracks in the BNSF Railway corridor near the Segment C connection.

Preferred Alternative D2A also includes two design options. One option (D2A 120th At-Grade Design Option) follows the same horizontal alignment between 120th and 124th Avenues NE, but it is at-grade instead of a retained cut, with an at-grade 120th Station. The second design option (D2 NE 24th Design Option) is similar to the original *Alternative D2A* evaluated in the 2008 Draft EIS near NE 24th Street and 152nd Avenue NE, but it leaves the SR 520 corridor and runs elevated along the north side of NE 24th Street. After crossing 148th Avenue NE, *Preferred Alternative D2A* becomes at-grade before turning north along the west side of 152nd Avenue NE to the Overlake Village Station and then continues north to the SR 520 right-of-way. The maintenance facilities within Segment D remain part of the East Link Project but have not changed since the 2008 Draft EIS; they are not addressed in this SDEIS.

2.6 Segment E Preferred Marymoor Alternative (E2)

In response to comments from the City of Redmond, the *Preferred Marymoor Alternative (E2)* was modified by replacing the Town Center Station and the Transit Center Station with the Downtown Redmond Station located midway between the two original stations and discontinuing the alignment up 161st Avenue NE.

Preferred Marymoor Alternative (E2) (see Exhibit 2-11) travels north, parallel to and east of SR 520 in a combination of retained-cut and at-grade profiles and transitions to an elevated profile on the south side of SR 520 in a new bridge over the Sammamish River. *Preferred Alternative E2* then descends down to at-grade straddling the SR 520 right-of-way and Marymoor Park property lines. The SE Redmond Station, parking structure, and park-and-ride lot (with 1,500 parking spaces) are located on the south side of the SR 520 and SR 202 interchange. After the station, *Preferred Alternative E2* turns west, goes under the SR 520 and SR 202 interchange, and enters the BNSF Railway right-of-way elevated over Bear Creek. *Preferred Alternative E2* then becomes at-grade to cross 170th Avenue NE and continue in the BNSF Railway corridor to the Downtown Redmond Station and terminus northwest of Leary Way. An 800-foot-long

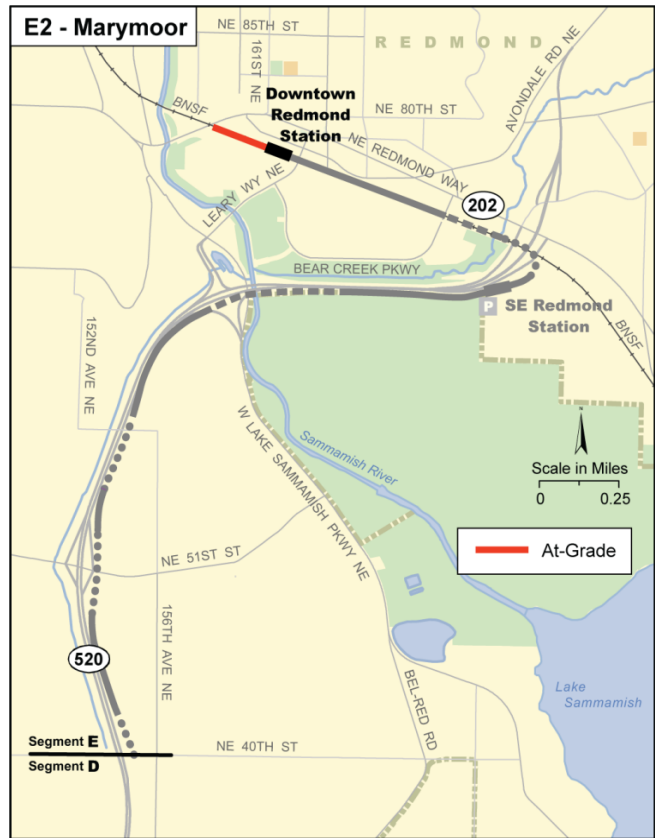
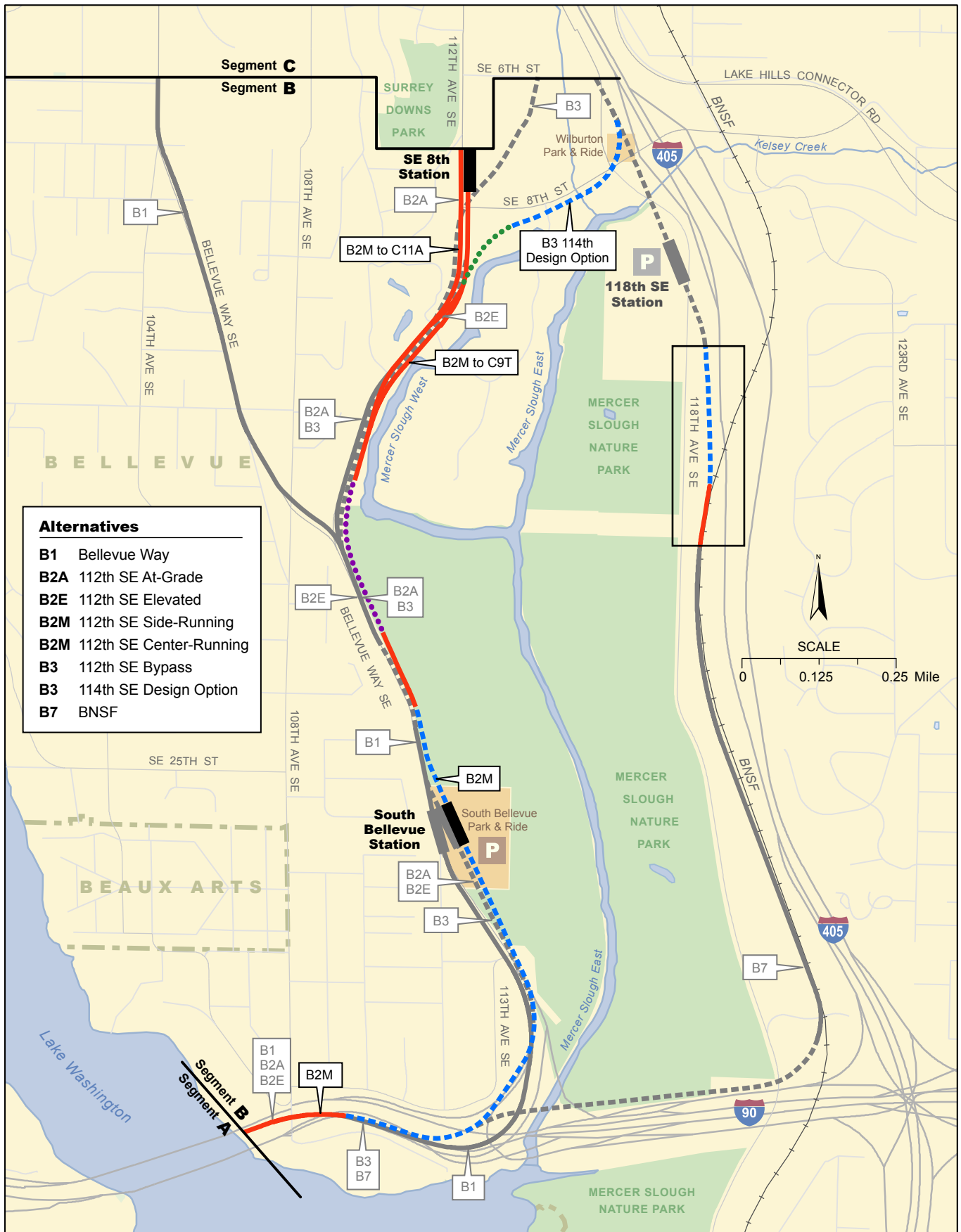


EXHIBIT 2-11
Preferred Alternative E2

tail track extends past the station for train layovers and turnbacks to a property that would include a small maintenance building, a traction-powered substation (TPSS), and parking lot. The maintenance facilities within Segment E remain a potential part of the East Link Project, but have not changed since the 2008 Draft EIS; they are not addressed in this SDEIS.

2.7 Relationship to the 2008 Draft EIS

This document focuses on the changes to project impacts identified in the 2008 Draft EIS resulting from the new alternatives or the design modifications of the existing alternatives. Sound Transit is proceeding with the additional design and environmental analysis needed to prepare the East Link Final EIS. The Final EIS will provide the responses to the comments received from the public and agencies on the 2008 Draft EIS, as well as the responses to comments on this SDEIS. Exhibits 2-12 through 2-15 illustrate the new alternatives and the design options in relation to the alternatives analyzed in the 2008 Draft EIS.



- Alternatives**
- B1** Bellevue Way
 - B2A** 112th SE At-Grade
 - B2E** 112th SE Elevated
 - B2M** 112th SE Side-Running
 - B2M** 112th SE Center-Running
 - B3** 112th SE Bypass
 - B3** 114th SE Design Option
 - B7** BNSF

Revised/New Alternatives

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

DEIS Alternatives

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

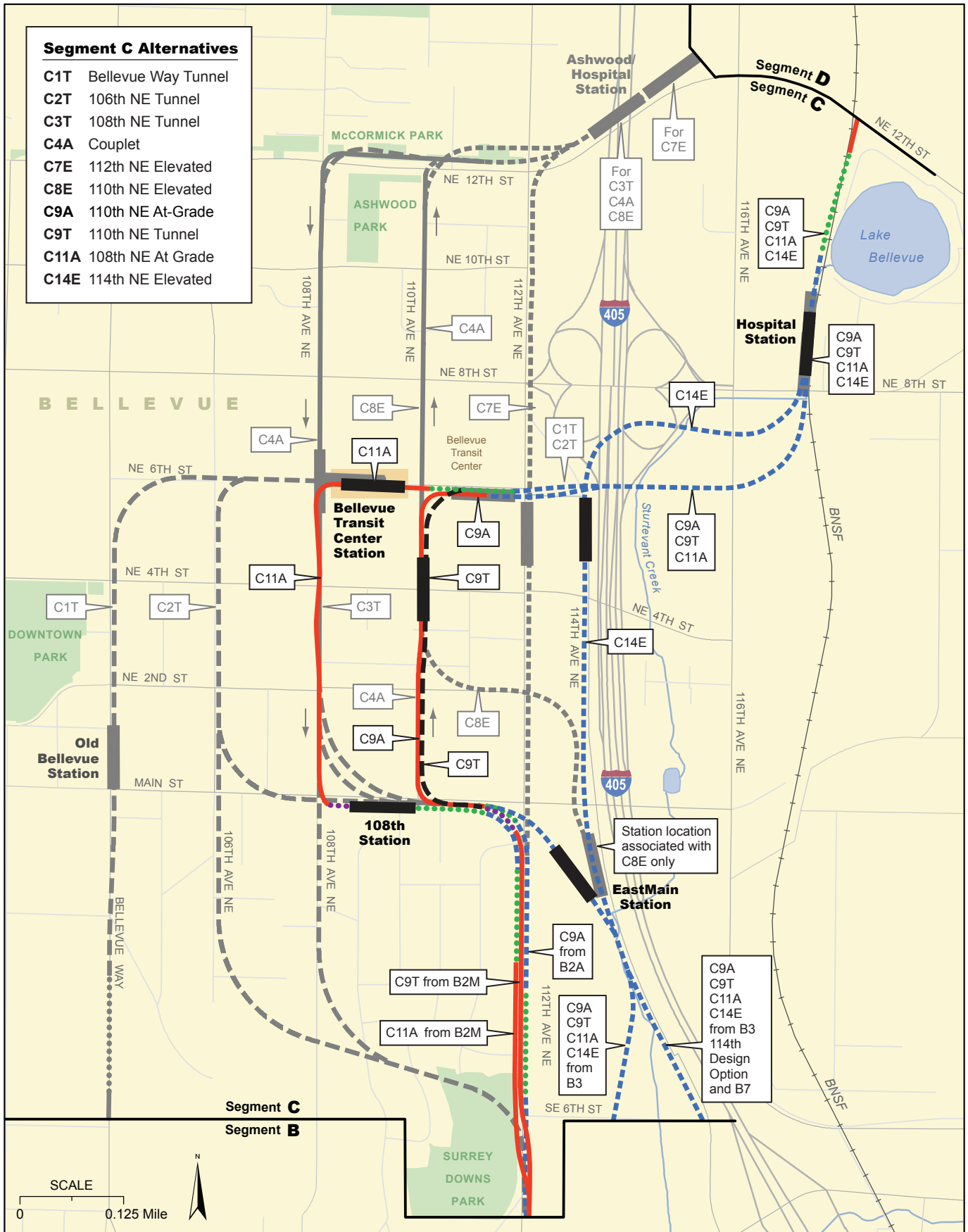
- Station
- P New and/or Expanded Park-and-Ride Lot
- A | B** Segment Limit

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

Exhibit 2-12
Segment B, South Bellevue
Alternatives
 East Link Project

Segment C Alternatives

- C1T Bellevue Way Tunnel
- C2T 106th NE Tunnel
- C3T 108th NE Tunnel
- C4A Couplet
- C7E 112th NE Elevated
- C8E 110th NE Elevated
- C9A 110th NE At-Grade
- C9T 110th NE Tunnel
- C11A 108th NE At Grade
- C14E 114th NE Elevated



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

Revised/New Alternatives

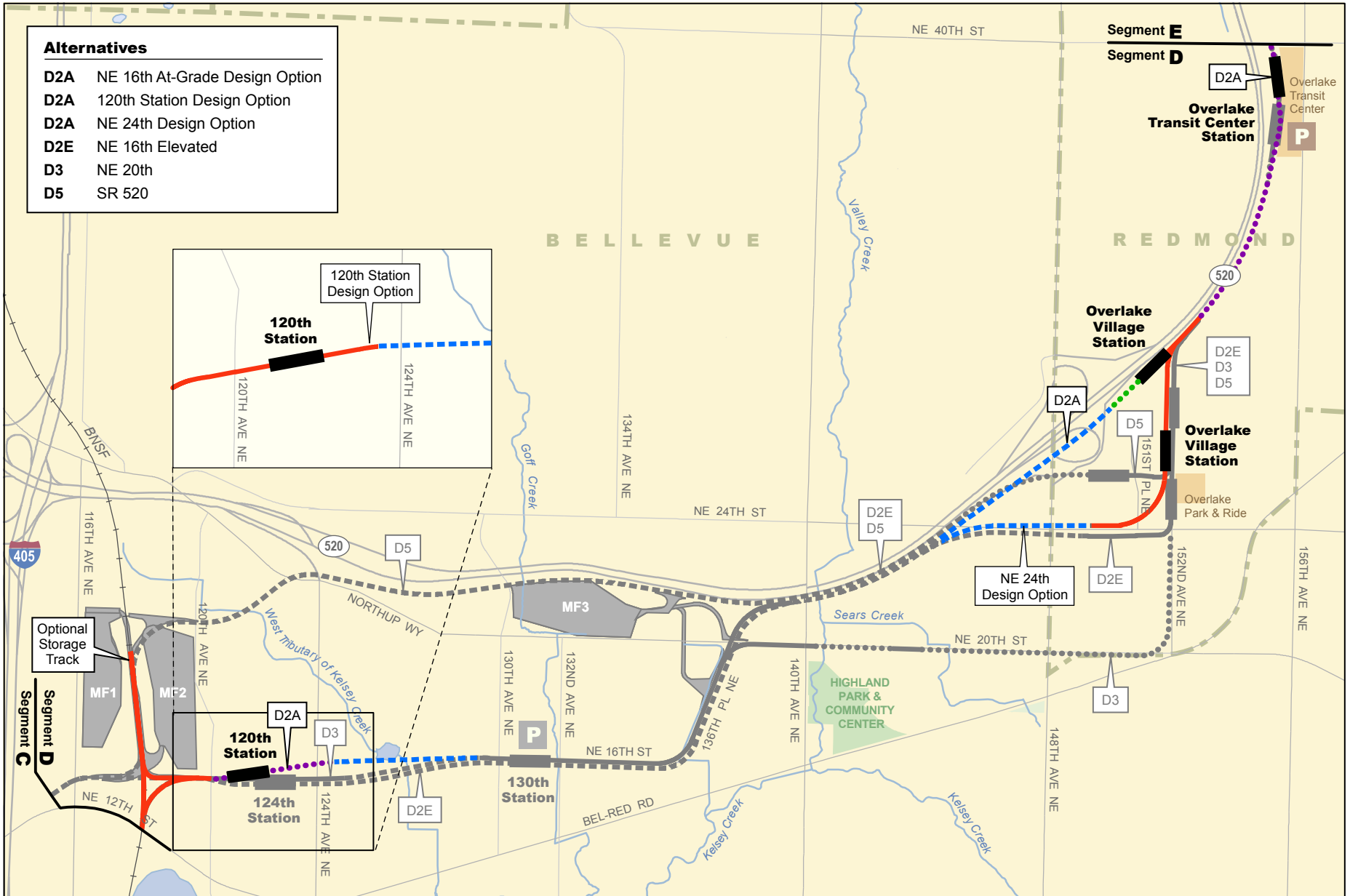
- At-Grade Route
- - - Elevated Route
- - - Retained-Cut Route
- - - Retained-Fill Route
- - - Tunnel

DEIS Alternatives

- At-Grade
- - - Elevated
- - - Retained-Cut
- - - Retained-Fill
- - - Tunnel

- Station
- P New and/or Expanded Park-and-Ride Lot
- A | B** Segment Limit

Exhibit 2-13
Segment C, Downtown Bellevue Alternatives
 East Link Project



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

- Alternatives**
- D2A NE 16th At-Grade Design Option
 - D2A 120th Station Design Option
 - D2A NE 24th Design Option
 - D2E NE 16th Elevated
 - D3 NE 20th
 - D5 SR 520

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

- DEIS Alternatives**
- At-Grade Route
 - Elevated Route
 - Retained-Cut Route
 - Retained-Fill Route

- Station
- New and/or Expanded Park-and-Ride Lot
- Maintenance Facility and Tail Track

C | D Segment Limit

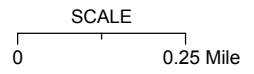
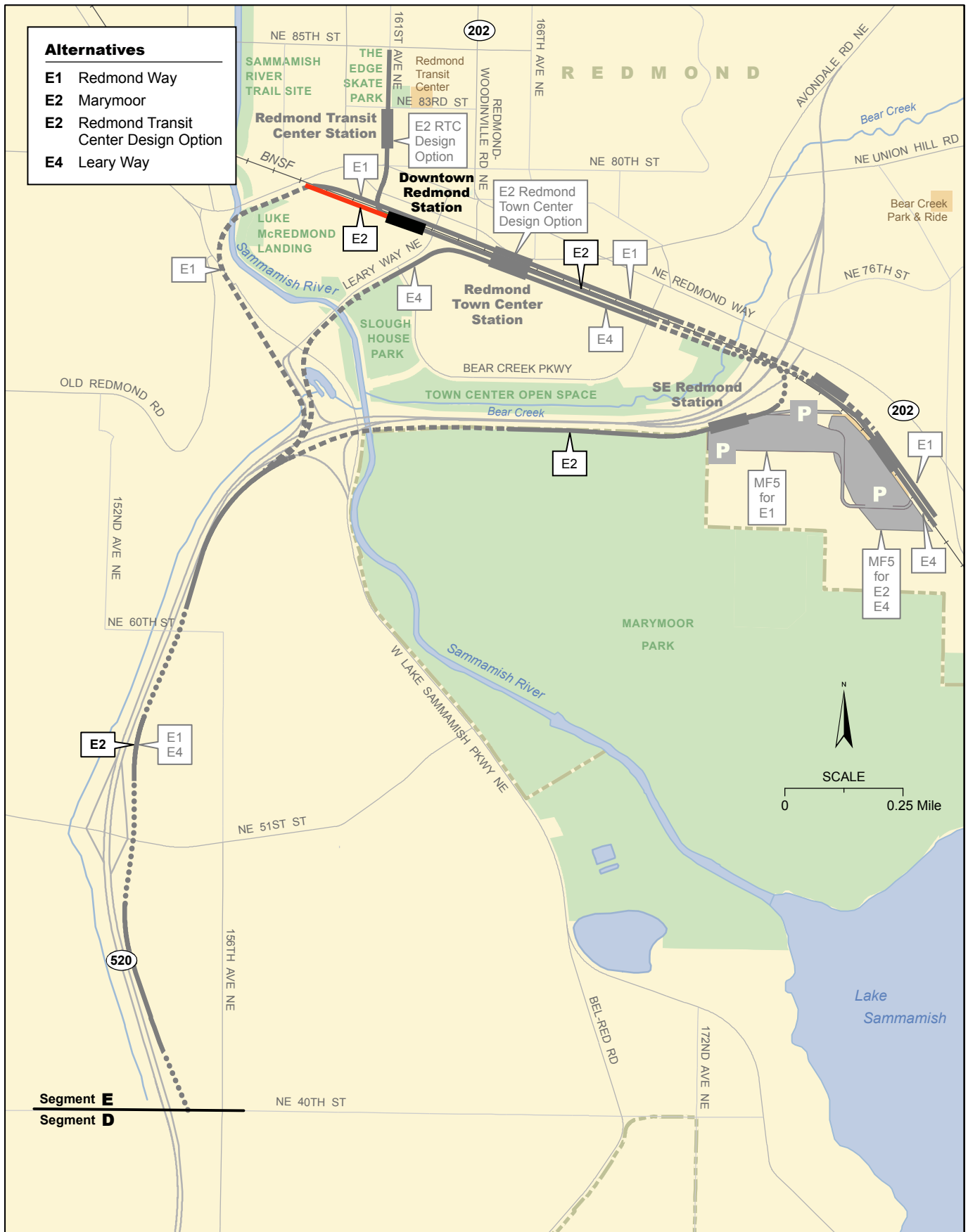


Exhibit 2-14
Segment D, Bel-Red/Overlake Alternatives
 East Link Project



Source: King County (2006).

Revised/New Alternatives

- At-Grade Route
- - - Elevated Route
- Retained-Cut Route

DEIS Alternatives

- At-Grade Route
- - - Elevated Route
- Retained-Cut Route

- Station
- P New and/or Expanded Park-and-Ride Lot
- City Limit

- D | E** Segment Limit
- Maintenance Facility and Tail Track

Exhibit 2-15
Segment E, Downtown Redmond Alternative
 East Link Project

2.8 Comparative Capital Costs

Comparative capital cost estimates for the East Link alternatives are based on conceptual engineering level of designs. Just as in the 2008 Draft EIS, the project costs for the SDEIS alternatives include the following cost elements:

- Construction costs for facilities, including the trackway and guideway, stations, maintenance facilities and associated improvements, and anticipated mitigation requirements
- Contingencies that address the varying levels of uncertainty and construction risk that have been identified for the alternatives
- Right-of-way acquisition costs, including tunnel and temporary construction easements

In addition, cost estimates for design, permitting, agency administration, program management, construction change orders, and unallocated contingency are included in the cost estimates. In the 2008 Draft EIS, all alternatives included an additional allocation for project reserve, a provision for unforeseeable cost changes included in the project cost estimates. Subsequent to the preparation of the 2008 Draft EIS, Sound Transit updated revenue forecasts to reflect the effects of the recession. The new revenue forecasts lower available funds over the life of the ST2 plan period by an estimated 25 percent. The Sound Transit Board could adjust the ST2 plan targeted opening dates for East Link in response to the updated revenue forecasts. Consequently, Sound Transit is now managing projects to the base cost estimates without project reserve. The comparative costs presented in this SDEIS reflect a range with the low end being the base cost estimates and the high end including a project reserve as in the 2008 Draft EIS. The range reflects the risk that final project costs could still exceed the base project estimate. Some alternatives also include design options that further increase the range.

2.9 Project Cost Estimates

The following subsections describe the range of cost estimates by segment to help compare alternatives that serve similar ridership markets.

2.9.1 Segment A

The conceptual engineering cost estimate for Segment A is unchanged. The range for Segment A is \$650 million (without project reserve) to \$750 million (with project reserve).

2.9.2 Segment B

The cost of the 2008 Draft EIS Segment B alternatives range from approximately \$365 million to \$550 million with and without project reserve (Exhibit 2-16). All of the new SDEIS alternatives include the cost of preserving HOV access from I-90 eastbound to Bellevue Way northbound. While the Bellevue Way Alternative (B1) remains the lowest cost overall, *Preferred 112th SE Modified Alternative (B2M)* is the second lowest with a range of \$470 to \$550 million. Additionally, *Preferred Alternative B2M* results in lower costs in Segment C for the SDEIS alternatives than Alternatives B3 or B7 because the alignment continuing north along 112th Avenue SE into downtown has less elevated structure than Alternatives B3 and B7. The cost of *Preferred Alternative B2M* as compared with Alternative B2A includes the revision to a primarily side-running alignment and the lidded retained cut in front of the Winters House.

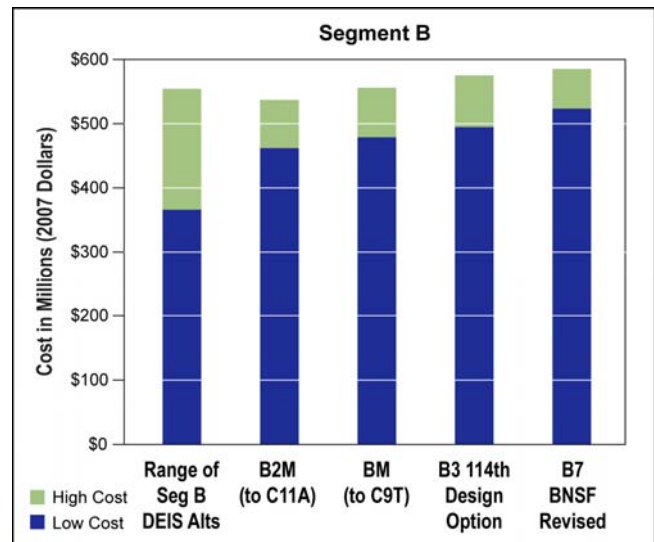


EXHIBIT 2-16
Segment B Costs

The new Alternative B3 114th Design Option and the updated Alternative B7 exceed the upper end of the 2008 Draft EIS cost range. The Alternative B3 - 114th Extension Design Option would range from \$500 million (without project reserve) to \$575 million (with project reserve) making it comparable with the most expensive Segment B alternative from the 2008 Draft EIS: the 112th SE Elevated Alternative (B2E). The primary reason for this high cost is the additional elevated trackway associated with the Alternative B3 - 114th Extension Design Option. The updated version of Alternative B7 includes additional length of elevated trackway to compensate for a change in topography from the recently completed expansion of I-405 adjacent to the B7 alignment and an additional

business displacement due to recent development. Costs for B7 range from \$515 million (without project reserve) to \$595 million (with project reserve) (Exhibit 2-16) and the alternative would be as or more expensive than the other Segment B alternatives.

2.9.3 Segment C

The cost of the 2008 Draft EIS Segment C alternatives range from approximately \$435 to \$1,615 million with and without project reserve. The SDEIS alternatives cost range with and without a project reserve is \$465 to \$1,025 million (Exhibit 2-17). The Segment C alternative cost estimates have the greatest cost range among the East Link segments due to the inclusion of at-grade, elevated, and tunnel profiles (Exhibit 2-17). The most costly SDEIS alternative is the *Preferred 110th NE Tunnel Alternative (C9T)*, which is estimated to range between \$790 million (without project reserve) and \$1,025 million (with project reserve) – still substantially less than the cost of the tunnel alternatives studied in the 2008 Draft EIS.

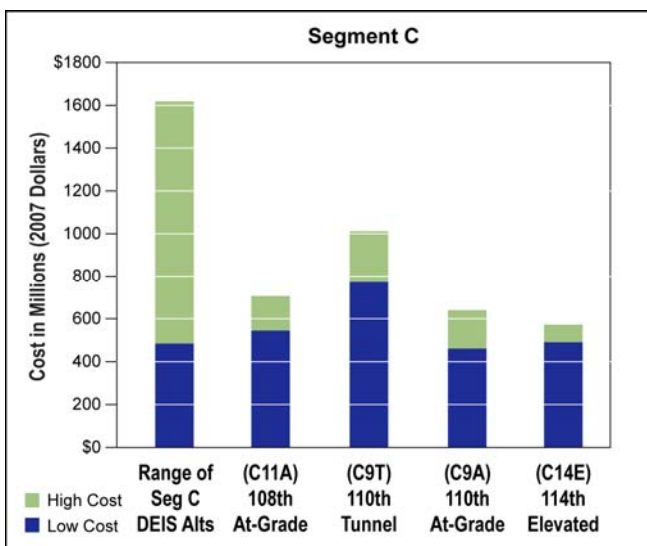


EXHIBIT 2-17
Segment C Costs

The least costly Segment C SDEIS alternative is the 110th NE At-Grade Alternative (C9A), which ranges between \$465 million (without project reserve) and \$640 million (with project reserve). The *Preferred 108th NE At-Grade Alternative (C11A)* is \$555 million (without project reserve) to \$690 (with project reserve) million. While the 114th NE Elevated Alternative (C14E) is elevated, its shorter length and lower property acquisition results in a lower overall cost estimate than the *Preferred Alternative C11A*, with a range of \$495 million (without project reserve) to \$575 million (with project reserve), but it still has higher costs than the shorter, at-grade Alternative C9A.

Table 2-2 presents another cost analysis by comparing the total costs for connections between the new and modified Segment B and C alternatives discussed here. The highest cost route combination is Alternative B7 and *Preferred Alternative C9T* without project reserve (\$1,405 million) and with project reserve (\$1,615 million). The lowest cost combination is Alternative B3 - 114th Extension Design Option and Alternative C14E without cost reserve (\$990 million) and with cost reserve (\$1,140 million). The costs for connections to *Preferred Alternative C11A* from the new or modified Segment B alternatives are slightly higher than the lowest cost combinations, all ranging between \$1,015 million and \$1,280 million.

2.9.4 Segment D

The cost of the 2008 Draft EIS Segment D alternatives range from approximately \$460 million to \$870 million with and without project reserve. The new design options for *Preferred Alternative D2A* fall within the same range (Exhibit 2-18) at \$665 to \$820 million.

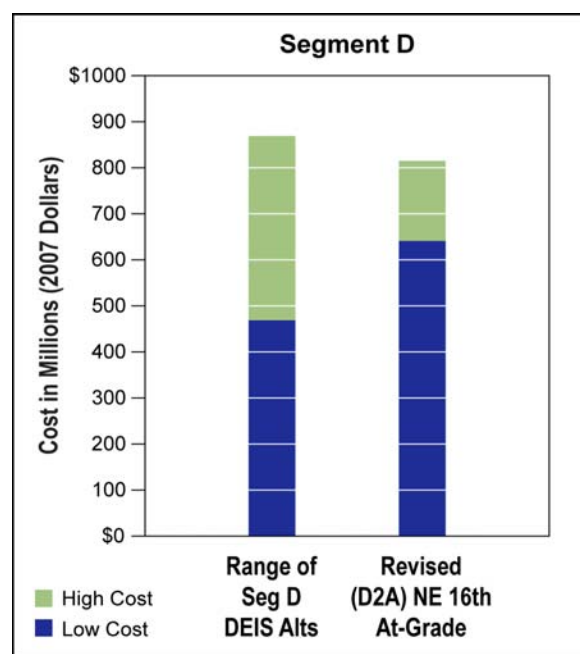


EXHIBIT 2-18
Segment D Costs

The differences among the *Preferred Alternative D2A* design options are a result of the difference between continuing along SR 520 and positioning the Overlake Village Station adjacent to SR 520 or traveling along the north side of NE 24th Street and the west side of 152nd Avenue NE; this resulted in a range of up to \$50 million savings (or close to a 10-percent savings) for continuing along SR 520.

TABLE 2-2
Total Costs of Combining New or Modified Segment B and Segment C Alternatives (\$Millions, 2007 Dollars)^a

	<i>Preferred 112th SE Modified Alternative (B2M)</i>	<i>112th SE Bypass Alternative (B3) -114th Extension Design Option</i>	<i>BNSF Alternative (B7)</i>
<i>Preferred 108th NE At-Grade Alternative (C11A)</i>	\$1,015 to \$1,170	\$1,095 to \$1,260	\$1,110 to \$1,280
<i>Preferred 110th NE Tunnel Alternative (C9T)</i>	\$1,265 to \$1,455	\$1,385 to \$1,595	\$1,405 to \$1,615
<i>110th NE At-Grade Alternative (C9A)</i>	N/A ^b	\$1,050 to \$1,210	\$1,070 to \$1,230
<i>114th NE Elevated Alternative (C14E)</i>	N/A ^b	\$990 to \$1,140	\$1,015 to \$1,165

^aHigher cost includes project reserves.

^b N/A = No combination between alternatives planned.

The savings is a result of fewer real estate acquisitions and shorter linear miles of light rail track compared with traveling on NE 24th Street and 152nd Avenue NE.

2.9.5 Segment E

The cost of the 2008 Draft EIS Segment E alternatives ranges from \$495 million to \$790 million with and without project reserve. The updated *Preferred Marymoor Alternative (E2)* costs among the lowest of the Segment E alternatives at a projected \$540 million to \$625 million, which includes the new Redmond Downtown Station. Exhibit 2-19 shows the costs range in Segment E and highlights the updated *Preferred Alternative E2* cost estimate.

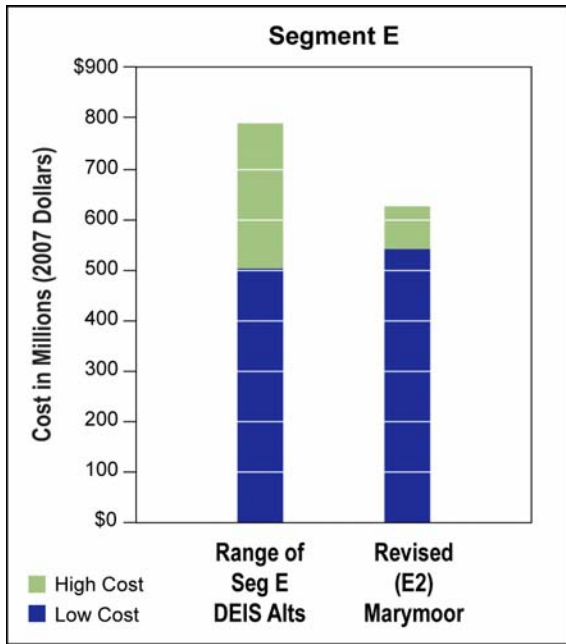


EXHIBIT 2-19
Segment E Costs

2.10 Construction Activities

Sound Transit is anticipating beginning construction on the East Link Project in as early as 2013 or 2014, and construction from Seattle to Bellevue is anticipated to be completed in approximately 6 years, followed by approximately 1 year of start-up and testing activities.

Civil construction durations for the project would range from approximately 2 to 5 years in any given portion of the corridor. Construction activities associated with the alternatives discussed in this document are consistent with those discussed in the 2008 Draft EIS. Construction would require temporary roadway and lane closures, permanent property acquisitions for stations and routes, and temporary property acquisitions as required including construction staging areas. Final construction traffic plans would be determined with the applicable jurisdictions during permitting. Property acquired for the project would be used for construction and possible construction staging. The staging area locations are preliminary and could change during final design and construction, depending on contractor needs and other factors. Construction activities would also result in temporary increases in noise, dust, and traffic congestion, but mitigation measures would be implemented to reduce these impacts. Construction easements could involve temporarily using property during construction and would be required in numerous locations along the route. In undeveloped land areas, 50- to 100-foot easements would be necessary to maneuver equipment and materials along the corridor during construction. Where the project follows an existing transportation corridor, construction activities might require narrow temporary easements from adjacent properties.

During construction, lane closures along Bellevue Way SE would be required; however, since the *Preferred*

Alternative B2M would be located east of Bellevue Way SE it is likely lane closures would be less than those required for the other Segment B alternatives along Bellevue Way, which either cross over or travel within Bellevue Way. Along 112th Avenue SE with the connection to *Preferred Alternative C9T*, the alternative would remain east of the roadway and closures are expected to be less than other alternatives that travel within 112th Avenue SE. For the variation of *Preferred Alternative B2M* that connects to *Preferred Alternative C11A*, lane closures would likely be greater because of the construction activities in median. Final construction traffic plans would be determined with the City of Bellevue prior to construction.

For *Preferred Alternative B2M*, staging would within the South Bellevue Park-and-Ride, as well as adjacent properties and on property near the northeast corner of 112th Avenue SE and SE 8th St. Beyond these staging areas, the construction corridor required for *Preferred Alternative B2M* would require a construction easement beyond the right-of-way for the alternative. It is likely 20 feet to the west and 35 feet to the east would be required for the easement.

Construction activities and impacts in Segment C would generally be the same as those described in the 2008 Draft EIS for the at-grade, tunnel, and elevated alternatives. Since the urban nature of downtown Bellevue is limited for staging areas, Sound Transit is identifying these potential areas for Segment C only. Exhibits 2-20 through 2-23 illustrate the staging areas and limits of construction for the new Segment C alternatives. Tunnel construction associated with cut-and-cover activities in downtown Bellevue would require lane or roadway closures along 110th Avenue SE. Sound Transit would maintain business access to the extent possible and coordinate with the business owners and the City when not. *Preferred NE 16th At-Grade Alternative (D2A)* would have similar construction activities and impacts as those described above and would be the same as those described in the 2008 Draft EIS. The *Preferred Marymoor Alternative (E2)* would be similar as described in the 2008 Draft EIS except that it would not require any construction along 161st Avenue NE in Redmond.

2.11 Next Steps and Schedule

Table 2-3 shows anticipated project milestones for the East Link Project SDEIS. After this SDEIS is published, the following steps are anticipated:

- **SDEIS Comment Period:** The SDEIS will be available for public and agency comment for 64 days. In addition, a public hearing will be held

during this comment period. (See the Fact Sheet at the beginning of this SDEIS for details.)

- **Final EIS:** Sound Transit, WSDOT, and FTA will prepare the Final EIS, which will document and address the comments received on the 2008 Draft EIS and this SDEIS. The Final EIS will also describe the preferred alternative and proposed mitigation commitments associated with the project.
- **Project Decision:** Once the Final EIS has been completed, the Sound Transit Board will make a final decision on the project alternative to be built, amending or confirming its previous preferred alternative identified.
- **Federal Approval:** FTA is expected to issue a document – referred to as the federal Record of Decision (ROD) – that states FTA’s project decision, identifies the alternatives considered and selected, and itemizes mitigation commitments. The ROD must be issued before any federal funding or approvals can be issued.

2.12 Benefits and Disadvantages of Delaying Project Implementation

Benefits and disadvantages of delaying the project have not changed since the 2008 Draft EIS was prepared.

TABLE 2-3
Project Milestones

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

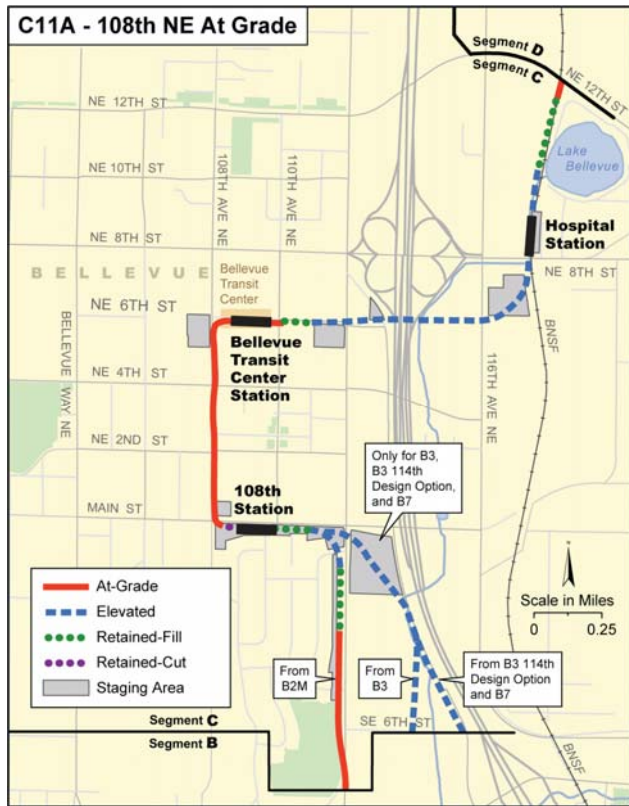


EXHIBIT 2-20 Preferred Alternative C11A Staging Areas

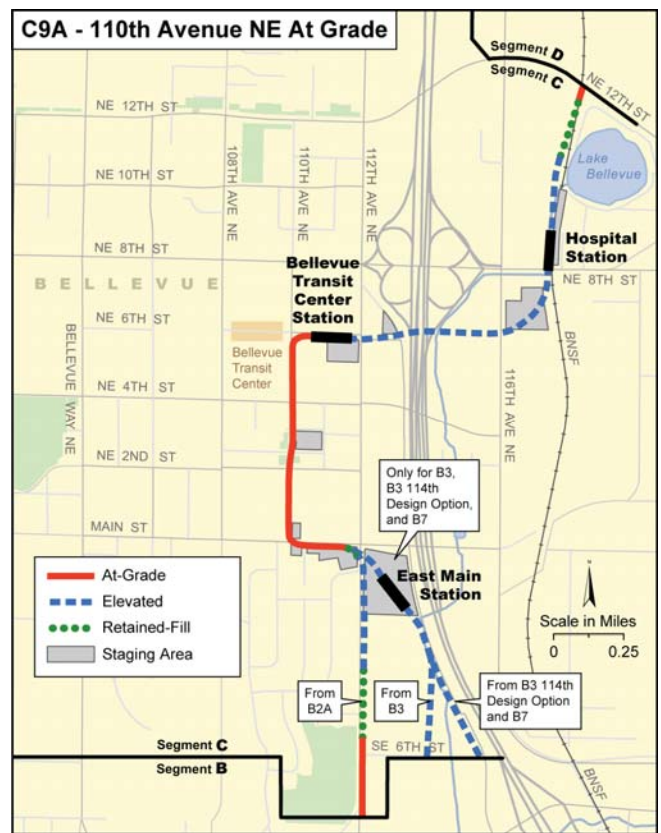


EXHIBIT 2-22 Alternative C9A Staging Areas

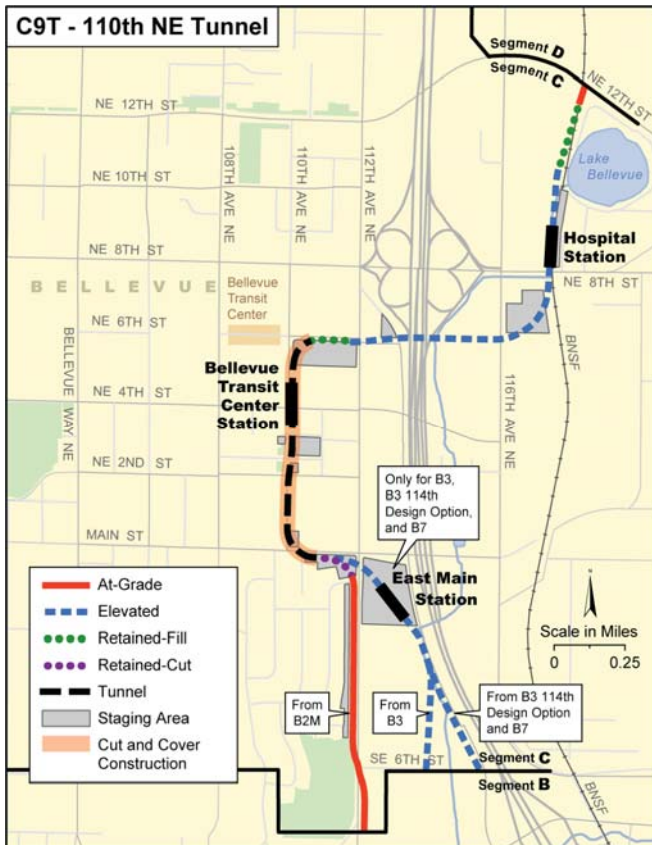


EXHIBIT 2-21 Preferred Alternative C9T Staging Areas

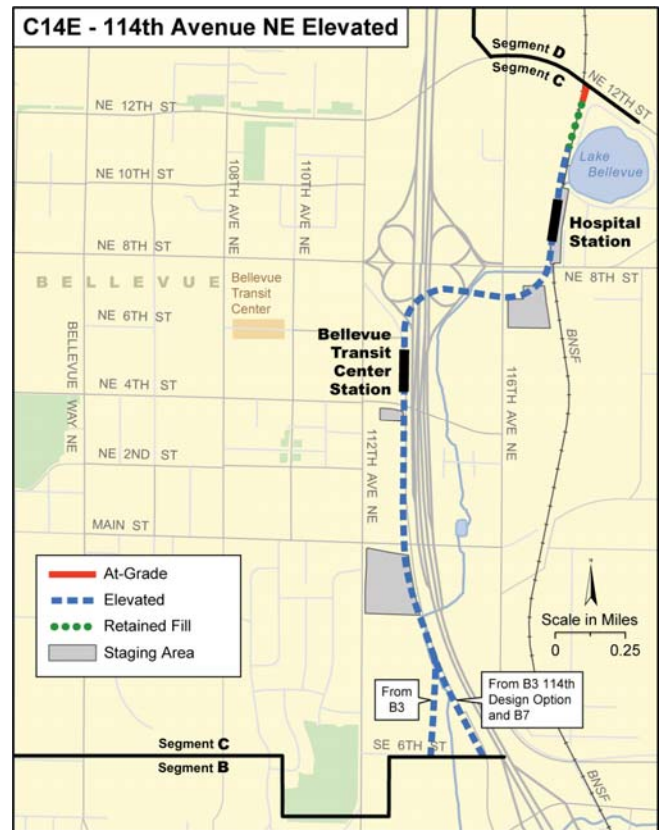


EXHIBIT 2-23 Alternative C14E Staging Areas

