



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

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February 4, 2000

Mr. Bob White  
Executive Director  
Union Station  
401 South Jackson Street  
Seattle, Washington 98104-2826

Re: Sound Transit Sounder Everett-to-Seattle Commuter Rail Project  
Record of Decision

Dear Mr. White:

Enclosed is a copy of the Record of Decision (ROD) for the Everett-to-Seattle Commuter Rail Project. Sound Transit should provide a copy of the ROD (with attachments) to the State Historic Preservation Officer (SHPO) and make the documents available to the public on request. Unless Sound Transit alters the project, the issuance of this ROD concludes the Federal Transit Administration's National Environmental Policy Act (NEPA) environmental process for Everett-to-Seattle Commuter Rail project. The Endangered Species Act (ESA) process must also be completed prior to commencement of any construction activity.

Please be advised that Sound Transit must establish a mitigation-monitoring plan and report quarterly to the FTA on its implementation. If you have additional questions or need additional assistance, please contact Linda Gehrke at (206) 220-4463.

Sincerely,

Helen M. Knoll  
Regional Administrator

Enclosure

Cc: Gene Fong, FHWA Washington Division  
Jack Gossett, US Army Corps of Engineers  
Steve Landino, NMFS  
Nancy Brennan-Dubbs, USFWS

## **RECORD OF DECISION**

### **CENTRAL PUGET SOUND REGIONAL TRANSIT AUTHORITY (SOUND TRANSIT)**

#### **Everett-to-Seattle Commuter Rail Project King and Snohomish Counties, Washington**

The Federal Transit Administration (FTA), pursuant to 23 Code of Federal Regulations (CFR) Section 771.127 and by this environmental Record of Decision (ROD), finds that the requirements of the National Environmental Policy Act (NEPA) have been satisfied, as noted herein, for the construction of a commuter rail system known as the Everett-to-Seattle Commuter Rail Project (or Sounder) by the Central Puget Sound Transit Authority (Sound Transit). This commuter rail project will serve the Cities of Everett, Mukilteo, Edmonds, possibly Shoreline, the Seattle waterfront and downtown, and possibly the Ballard neighborhood in North Seattle. The project will generally be located in existing Burlington Northern Santa Fe (BNSF) Railway Company right-of-way along an approximate 35-mile corridor between Everett and Seattle, Washington.

This Record of Decision is based on monitoring the process followed by Sound Transit in setting forth and considering the effects of the project and the available alternatives. This process culminated in the preparation of a draft and final Environmental Impact Statement (EIS), the selection of the Locally Preferred Alternative and the determinations made herein. The U.S. Army Corps of Engineers is a Cooperating Agency.

#### **EVERETT TO SEATTLE COMMUTER RAIL PROJECT/LOCALLY PREFERRED ALTERNATIVE**

The Everett-to-Seattle Commuter Rail Project to which this ROD applies will consist of construction and operation of peak-hour and potential special-event commuter rail service to and from Everett and Seattle, including the communities of Mukilteo, Edmonds, Shoreline, and Ballard. The commuter rail service will operate along the existing BNSF railroad right-of-way. The Sounder commuter rail line will connect with the Seattle-to-Tacoma Sounder commuter rail service and the Central Link Light Rail transit line between North Seattle and SeaTac, at King Street Station in Downtown Seattle.

Operating commuter rail service in this freight corridor requires improvements to the existing railroad right-of-way (corridor improvements or CIs) and commuter rail stations in the communities served. Corridor improvements include some sections of double-tracking, as well as new signal equipment. These improvements are necessary to ensure that commuter rail operations do not adversely affect freight mobility.

The commuter rail stations will generally be simple facilities consisting of a platform (up to 1,000 feet long and 15 to 20 feet wide) adjacent to each side of the tracks for passenger boarding; canopies (approximately 8 feet high) to protect passengers from the elements; fare machines; and amenities such as telephones, trash receptacles, vendor carts (e.g., for coffee), and signage. Stations will include bicycle storage facilities. Parking will be included at most stations, as well. Stations will be served by bus with a canopied bus stop. Most stations will not have any other structures. The exception to this will be King Street and Everett Stations, where the commuter rail facility will be incorporated with facilities for other transportation modes (multimodal facilities) which have undergone their own environmental review processes.

Commuter rail service between Everett and Seattle will require facilities for fueling and maintaining the locomotives, and cleaning and maintaining coaches and other equipment associated with operating the service. Light maintenance (minor routine repairs) and overnight car storage are proposed at a layover facility. This layover facility will consist of one storage track at Everett Station. Sound Transit is contracting for heavy maintenance at Amtrak's soon-to-be constructed heavy maintenance yard to be located in Seattle.

The project is more particularly described in the Summary of the Final EIS approved on December 10, 1999. (See Attachment A for a map of the Everett-to-Seattle locations and descriptions of station alternatives and corridor improvements evaluated in the Final EIS).

On November 18, 1999, the Sound Transit Board formally adopted the Everett to Seattle Commuter Rail Project Preferred Alternative. The adopted preferred alternative consists of the following:

- Operation of commuter rail service between Everett and Seattle, consisting six peak-hour weekday commuter trains between approximately 6:00 to 9:00 a.m. and 4:00 to 7:00 p.m. for a total of 12 trains per day. As planned, at least two trains during each period would continue through King Street Station to Tacoma, providing service between Everett and Tacoma on the same train. Occasional special-event service may occur.
- Development of up to six station sites: one commuter rail station alternative for Everett and Edmonds; selection of both station alternatives in Mukilteo (nearby and remote parking); and selection of the Seattle Waterfront Station alternative in Seattle. In Shoreline and Ballard, a preferred station alternative may be recommended after station funding is available. (See Attachment B for a summary of the preferred station site alternatives.)
- Selection of the Modified Corridor Improvement Alternative (MCIA). The MCIA includes all of the improvements analyzed in the Final EIS except CIs 14, 17, and 19. (See Attachment C for a summary of the preferred MCIA corridor improvements.) Improvements include new mainline track (double-tracking) to rail segments that currently have only one set of tracks (CIs 1,2,5,16, 20 and 23); installing additional crossover tracks to allow north- or south-bound trains to switch from one set of tracks to another (CIs 13, 15, 18, 21, and 22); installing computerized signals to allow bi-directional train movements and automatic switch operation (CIs 6, 7, 8, 9 and 10); and upgrading existing track rails and ties and adding storage track in existing rail yards (CIs 3, 4, 11, 12 and 24).

The MCI A includes two corridor improvements that will add a second track (double track) to the corridor's remaining single-track sections along Puget Sound between Everett and Seattle (CI 16, Mukilteo Double Track, M.P. 27.0 to 28.0; and CI 20, Woodway to Edmonds Double Track, M.P. 15.9 to 17.8). Construction of these CIs will include a combination of fill material with a 2:1 side slope and a vertical wall. (See Attachment D for a description of the required track support option.) This design, consisting of a gravity block wall with 2:1 fill below extreme high water, is a hybrid of the two designs analyzed in the Final EIS under the MCI A (fill slope and vertical wall), and was developed with intensive input from agencies and tribes during the EIS preparation and engineering design process.

## **BACKGROUND**

The Everett-to-Seattle Commuter Rail Project is a major element of the ten-year Regional Transit System Plan called *Sound Move* completed in 1993. This ten-year plan was the product of decades of mass transit planning in the Puget Sound region. In 1996, the voters in the Central Puget Sound area, which includes King, Pierce and Snohomish Counties, approved local financing for *Sound Move*, which includes a 0.4 percent sales tax and 0.3 percent motor vehicle excise tax. In May 1997, the Major Investment Study for the *Sound Move* plan was completed and was approved by the metropolitan planning organization, Puget Sound Regional Council (PSRC).

## **ALTERNATIVES CONSIDERED**

### **No Build Alternative**

The No Build Alternative assumes that Everett to Seattle commuter rail service would not be implemented, and that none of the stations or track and siding improvements considered in the EIS would be built. The only facilities that would be constructed are the multimodal facilities at Everett, Mukilteo, and Edmonds. These separate projects would not include facilities to accommodate commuter rail.

### **Station Alternatives**

Sound Transit undertook an extensive outreach and consultation effort with the goal of screening possible station site locations in each area to be served by commuter rail, and to identify reasonable and implementable station location alternatives for detailed study in the EIS. The EIS analyzed alternative station sites for each location to be served by a station. Section 2.3 of the Final EIS provides a detailed description of the station site alternatives analyzed in the EIS.

### **Corridor Improvement Alternatives**

The process for identification of corridor improvements needed to allow commuter rail to operate in the freight rail right-of-way began with identification of candidate improvements by

the BNSF Railroad in cooperation with Sound Transit. These candidate improvements included addition of a second main track and passing track in several locations. Based upon preliminary studies and field visits, several candidate corridor improvements were modified, relocated, or determined unnecessary.

The EIS analyzed construction on the east, landward side, of the right-of-way only where such construction would not increase landslide potential along Puget Sound. It also analyzed three design alternatives in locations where improvements must be on the water side of the right-of-way to avoid landslide impacts: construction of new track on a bridge structure; on top of a vertical retaining wall; and on top of a 2:1 fill slope. In addition, it analyzed a variety of construction techniques, including working from the existing track, building ahead, or barging, for those corridor improvements that could have potential adverse impacts. Section 2.4 of the Final EIS provides a detailed description of the corridor improvement alternatives analyzed in the EIS.

#### Evaluation of Alternatives

Criteria for evaluation of alternatives included community compatibility, cost, environmental impacts, political and community acceptance, ridership, and transportation impacts. After issuance of the Draft EIS and consideration of extensive public and agency comment, the Sound Transit Board identified a Preferred Alternative on November 18, 1999.

After considering all alternatives analyzed in the EIS, Sound Transit did not identify the No Build Alternative as its preference. The No Build Alternative would fail to address the need identified by federal, state, and local transportation planning efforts to implement a regional transportation system, and it would not address growth in regional travel demand and supply of planned growth with appropriate high capacity transit. Sound Transit also did not identify as its preference the station site alternatives and Corridor Improvements 14, 17, and 19, shown in Attachment E. Elimination of CIs 14, 17, and 19 (the passing tracks) significantly reduces potential adverse impacts on natural resources.

### **PUBLIC OPPORTUNITY TO COMMENT**

Public participation in the development and implementation of *Sound Move* and the Everett-to-Seattle Commuter Rail Project started with the Forward Thrust Plan in the 1960s. This public participation included the use of an advisory panel of civic leaders to provide overall guidance; review and input from subregional groups of elected officials; subarea forums; community and business meetings; and roundtable sessions to gather local input and help develop the plan.

#### EIS Scoping Process

Sound Transit distributed a Scoping Information Report on January 9, 1998, held five public meetings, and collected written comments on the environmental analysis and alternatives proposed.

During the extended 45-day scoping comment period, between January 5 and February 20, 1998, Sound Transit solicited input from citizens, organizations, and agencies to define the

alternatives included in the Draft EIS. Sound Transit distributed materials describing alternatives to approximately 2,500 households and businesses along the corridor at numerous community meetings. Several walking agency tours along the project corridor were sponsored by Sound Transit to engage citizens and agencies in exploring alternatives. The Cities of Everett, Mukilteo, Edmonds, Shoreline, Seattle, the Town of Woodway, and Ports of Everett and Seattle, were involved through special briefing sessions and on-going coordination meetings. A Scoping Summary Report (April 1998) was mailed to those who commented or attended the scoping meetings.

Sound Transit and FTA widely circulated the Draft EIS to affected local jurisdictions; regional, state, and federal agencies; community organizations; environmental and other interest groups; and interested individuals. The Draft EIS was publicly available on June 25, 1999 and its issuance was noticed in the Federal Register on June 25, 1999. Over 400 Draft EISs were distributed. An extended 45-day comment period was provided to the public, agencies, and jurisdictions to allow the opportunity to comment on the Draft EIS to Sound Transit and the FTA. Seven public hearings were held during the comment period at various locations along the project corridor to take written and oral testimony. Sound Transit received more than 1,000 comment letters or public hearing testimonies. These comments, and Sound Transit's responses, are included in the Final EIS, Volume II. Other outreach efforts during the EIS process included:

- Sound Transit mailed over 7,000 newsletters and Notice of Availability letters to residents, businesses and property owners, including those within one-half mile of each route under study.
- Sound Transit placed newspaper advertisements and held seven public hearings to educate the community on the EIS process, major findings of the EIS and how to comment on the document.
- Sound Transit made the Draft EIS and an Executive Summary describing station alternatives and corridor improvements available to the public.
- Sound Transit led at least seven field trips for agencies to view the project corridor.
- Sound Transit conducted numerous meetings with City representatives and affected property owners and individuals.

## **BASIS FOR DECISION**

The Federal Transit Administration in consultation with Sound Transit (the Central Puget Sound Regional Transit Authority) has determined that the locally preferred alternative, as put forth in the Final EIS and as described herein, meets the purpose and need for the project as described in Chapter 1 of the Final EIS, and the goals established for the project, as evaluated in the Final EIS.

### **Mode and Alignment Choice**

The purpose of the mode and alignment choice is to provide high capacity transit service among the coastal communities of Everett, Mukilteo, Edmonds, and Seattle to link into the regional transit system during peak commuter hours. The transit market area served is between Everett and Seattle west of State Route 99.

This statement of project purpose was developed in conjunction with natural resource agencies to guide the screening process to identify the range of reasonable alternatives to be considered in the EIS. That process reconfirmed the Everett-to-Seattle Commuter Rail Project as the reasonable “build” alternative and screened a variety of other mode and alignment alternatives. Section 2.7 of the EIS, Alternatives not Analyzed in Detail in the EIS, and Appendix A-3 of the EIS, Alternatives Screening, provides more information on the screening process.

#### Everett to Seattle Commuter Rail Project

The purpose of the Everett to Seattle Commuter Rail Project is to construct and operate the northern portion of a commuter rail line that connects Western Snohomish County's major activity centers to the regional transit system identified in *Sound Move* (Central Puget Sound Regional Transit Authority, 1996). The proposed project would serve the Cities of Everett, Mukilteo, and Edmonds, the Seattle waterfront and downtown Seattle. The City of Shoreline and the Ballard neighborhood in North Seattle may also be served. Implementation of the Everett-to-Seattle Commuter Rail element of *Sound Move* would achieve the following:

- Expand transit capacity among communities adjacent to Puget Sound;
- Provide travel time savings over single-occupant vehicles during commuter hours;
- Provide environmental benefits;
- Improve mobility for travel-disadvantaged residents; and
- Maintain rail freight mobility in the Everett-to-Seattle corridor.

The Everett-to-Seattle Commuter Rail Project would use existing BNSF freight railroad tracks, with freight and commuter rail operating simultaneously. A key project objective is to simultaneously operate safe, reliable commuter rail service while maintaining freight mobility. The locally preferred alternative includes improvements to tracks and other rail facilities to ensure that commuter rail does not adversely affect freight mobility.

#### Alternatives

Selection of the locally preferred alternative is based on the analysis results in the EIS, an extensive permitting agency and tribal consultation process, and on more detailed engineering and impacts analysis in two locations where the MCLA could impact Puget Sound. The locally preferred alternative minimizes impacts while meeting project objectives.

#### **MITIGATION MEASURES TO MINIMIZE HARM**

Attachment F, which is incorporated herein by reference, establishes the mitigation measures that are required of Sound Transit under this ROD. These mitigation commitments identified are based on the potential mitigation measures identified in the Final EIS. Implementation of these

mitigation measures (or commitments) provided in Attachment F and those contained in the Final EIS that may not be included in Attachment F are material conditions of this ROD and will be incorporated in any grant agreement that the FTA may award Sound Transit for the Everett-to-Seattle Commuter Rail Project. The Federal Transit Administration finds that with the accomplishments of these mitigation commitments Sound Transit will have taken all reasonable, prudent and feasible means to avoid or minimize impacts from the preferred alternative.

In addition, Sound Transit shall establish a mitigation monitoring program sufficient to achieve the mitigation measures required by this ROD. Under this program, Sound Transit will conduct regular audits and reviews for compliance with environmental mitigation commitments, including any corrective actions that may be required. On a quarterly basis, Sound Transit will submit an Everett-to-Seattle Commuter Rail Environmental Mitigation Program Status Report describing the status of the mitigation monitoring program to the FTA.

## **COMMENTS TO THE FINAL EIS AND RESPONSES**

Sound Transit provided adequate individual written responses to each comment submitter and those responses are on file with Sound Transit.

## **DETERMINATIONS AND FINDINGS**

### **Environmental Findings**

The environmental record for the Everett-to-Seattle Commuter Rail Project includes the previously referenced Draft and Final Impact Statements. These documents represent the detailed statements required by NEPA and by 49 U.S.C. Section 5324(b) on:

- The environmental impacts of the proposed project;
- The adverse environmental effects which cannot be avoided should the proposed project be implemented;
- Alternatives to the proposed project; and
- Irreversible and irretrievable impacts on the environment which may be involved in the project should it be implemented.

Having carefully considered the environmental record noted above and the written and oral comments offered by other agencies and the public on this record, the FTA has determined that adequate opportunity was afforded for the presentation of views by all parties with a significant economic, social, or environmental interest, and fair consideration has been given to the preservation and enhancement of the environment and to the interest of the community in which the project is located; and all reasonable steps have been taken to minimize adverse



environmental effects of the proposed project and, where adverse environmental effects remain, there exists no feasible and prudent alternative to avoid or further mitigate such efforts.

### **Endangered Species Act (ESA) Consultation with Resource Agencies**

The ESA of 1973, as amended, provides a means to conserve the ecosystems that threatened and endangered species depend on and to provide a program to conserve such species. The ESA requires a federal agency to ensure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of any listed species or result in direct mortality or destruction or adverse modification of critical habitat of listed species. This requirement is fulfilled by consultation and review of the proposed actions and mitigation with the appropriate agency responsible for the conservation of the affected species.

The ESA requirements have been initiated for the Sounder Commuter Rail project by the FTA through informal consultation with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). NMFS indicated that the project's effects on Chinook salmon (*Oncorhynchus tshawytscha*), a threatened species, should be evaluated in a Biological Assessment (BA). Also present in the project area is coho salmon (*Oncorhynchus kisutch*), a candidate species which does not require analysis. However, Sound Transit and the FTA chose to proactively evaluate impacts to coho in case this species becomes listed in the future. In addition, the USFWS indicated that two threatened species—bull trout (*Salvelinus confluentus*), and bald eagle (*Haliaeetus leucocephalus*)—should be evaluated. The project area also contains eelgrass, which is proposed critical habitat for salmon under ESA.

The services did not indicate that the humpback whale, leatherback sea turtle, or Steller sea lion needed to be evaluated in the BA. However, these species could potentially occur in Puget Sound and have been addressed.

During the preparation of the BA, regular informal consultations occurred between NMFS, USFWS, FTA, Sound Transit, state regulatory agencies, Indian Tribes and biologists working on the BAs, including briefing sessions, telephone updates, and periodic review drafts. Based on the analysis presented in the Final EIS and BA, FTA finds that the Preferred Alternative may affect but is not likely to adversely affect Chinook salmon, coho salmon, bull trout and bald eagles. The BA has been transmitted to the federal agencies on February 3, 2000 with a request for concurrence with these findings. FTA and Sound Transit will continue to coordinate with NMFS and USFWS until formal concurrence is reached. As referenced in the mitigation measures attached hereto, Sound Transit shall comply with conclusions and reasonable and prudent measures specified by NMFS and USFWS in the consultation process initiated under the ESA, as FTA deems appropriate. Issuance of this ROD does not constitute authority for Sound Transit to carry out any action that may adversely affect the listed species or their habitat, pending the completion of the consultation process.

### **Section 106 Compliance**

Section 106 of the National Historic Preservation Act of 1966, as amended, requires the review of federally assisted projects for impacts on districts, sites, buildings, structures, and objects listed in, or eligible for inclusion in, the National Register of Historic Places. The law

mandates that federal agencies coordinate with the State Historic Preservation Officer and obtain review and comment by the Advisory Council on Historic Preservation (ACHP) before undertaking projects that affect such properties. The ACHP has established procedures for the protection of historic and cultural properties in, or eligible for, the National Register (36 CFR Part 800). Appendix K of the Final EIS is the Historic, Cultural, and Archaeological Resources Assessment Report. Appendix K includes a detailed assessment of impacts of the various Everett-to-Seattle Commuter Rail alternatives and improvements on historic, cultural, and archaeological resources.

Sound Transit contacted several Indian tribal organizations about their concerns regarding the project, including the Duwamish Tribe, Lummi Tribe, Muckleshoot Tribe, Nisqually Tribe, Nooksack Tribe, Puyallup Tribe, Quileute Tribe, Quinault Tribe, Samish Tribe, Skagit System Cooperative, Skokomish Tribe, Snoqualmie Tribe, Stillaguamish Tribe, Tulalip Tribes, Suquamish Tribe, Swinomish Tribe, and Upper Skagit Tribe. Letters describing the project and requests for consultation were sent to the Duwamish, Muckleshoot, Snoqualmie, Suquamish, and Tulalip Tribes on May 26, 1998. A meeting was held with the Muckleshoot Tribe on June 30, 1998. Sound Transit sent a letter to all of the tribes on September 21, 1998, to describe the project, invite attendance at an October 5, 1998, field trip to view potential fill areas, and offer to meet. Follow-up telephone calls were made to continue tribal consultation. The agency's cultural resource consultant discussed tribal concerns with a representative of the Tulalip Tribes on November 24, 1998 (Williams, personal communication, 1998). Sound Transit is continuing its contacts with interested tribes.

The area of potential effect for this analysis included approximately 200 feet for the built environment and 0.25 mile for archaeological resources from alternative locations, alignments, and corridor improvements. The Washington State Office of Archaeology and Historic Preservation (OAHP) has concurred with the area of potential effect.

Appendix K, the Historic, Cultural, and Archaeological Resources Assessment Report, also specifies relevant federal, state, and local organizations and regulations; documents, contacts, and coordination, including those with Indian tribal organizations; and techniques for background research and resource impact analysis.

A historic, cultural, and archaeological inventory was undertaken to determine resources eligible for National Register listing. The inventory included in Appendix K was forwarded to the Washington State Historic Preservation Officer (SHPO). SHPO concurred with the findings of the inventory. Letters to and from SHPO documenting concurrence are included in Appendix K.

The Final EIS contains an evaluation of the effects of the alternatives on historic, cultural, and archaeological resources listed in, or determined eligible for, the National Register of Historic Places, including a comparative evaluation of impacts of the alternatives. Specific criteria of effect and adverse effect (36 CFR 800.9) were used to determine the level of impact the project could have on a historic property. An undertaking has an effect on a historic property when it alters the character-defining features that qualify it for inclusion in the National Register. Alteration of the property's location, setting, or use may be relevant, depending on the property's significant characteristics. The proposed project alternatives would have no adverse effect on historic or culturally significant properties. Final EIS Appendix K, the Historic, Cultural, and Archaeological Resources Assessment Report, documents this finding and the coordination

process. The Final EIS includes the correspondence from SHPO concurring with this finding of no adverse effect contingent upon Sound Transit carrying out detailed archeological investigation prior to construction as describe below.

#### Final Archaeological Investigation

Sound Transit shall take several steps to complete the archaeological compliance for Section 106 review under the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, *Protection of Historic and Cultural Properties*. The agency shall arrange for one or more professional archaeologists with skills in both prehistoric and historic archaeology to review the plans for the Preferred Alternative. This review shall take place shortly after completion of the 30% design plans for the project so that the archaeologist can focus on the areas to be disturbed and, at the same time, recommend alterations to the design if needed to avoid effects on archaeological resources that appear to be eligible for listing in the National Register of Historic Places (NRHP).

Work shall be conducted in consultation with the State Historic Preservation Officer (SHPO) and the Indian tribes, including the Tulalip Tribes, Suquamish Tribe, Muckleshoot Tribe, Duwamish Tribe, and Snoqualmie Tribe. Consultation shall consist of providing copies of the proposed work scope, draft reports, NRHP-eligibility determinations, treatment plans, and other work products for review, and conducting periodic meetings or fieldtrips as requested by SHPO or tribes.

The archaeologist shall review the design plans to determine where construction could affect archaeological remains that might be located in relatively undisturbed native soils. The work shall include field surveys at such locations, aided as needed by subsurface testing such as shovel probes, auger probes, backhoe trenching, or mechanical coring. If the survey reveals archaeological remains, the archaeologist shall evaluate their NRHP-eligibility through a combination of archaeological field investigations and documentary research. For NRHP-eligible resources, the archaeologist shall prepare a treatment plan stating how avoidance or mitigation and management measures will be accomplished. Sound Transit shall prepare a Memorandum of Agreement between FTA and SHPO to provide for implementation of agreed-upon mitigation measures.

If the survey reveals no archaeological remains, the archaeologist shall recommend areas where archaeological monitoring would be needed during project construction. Such recommendations shall be contained in an Unanticipated Discovery Plan, which will outline any areas to be monitored; state how the construction crew will be briefed about the archaeological work; how archaeological or human remains uncovered by construction will be protected, evaluated, and treated; how consultation with SHPO and the tribes will be accomplished; and who will be responsible for aspects of the archaeological work.

The Final EIS indicates that the Everett to Seattle Commuter Rail Project is unlikely to impact archaeological deposits that would have integrity, and thus be eligible for listing in the National Register of Historic Places. This conclusion is based on the presence of previous

development throughout the area of Potential Effect, which has disturbed the native soils and reduced the likelihood for archaeological deposits that would have integrity. In addition, the Project would involve minimal construction excavation, and additional archaeological work will be performed on the selective alternative.

#### **Section 4(f) Findings**

Section 4(f) of the Department of Transportation Act of 1966, codified at 49 U.S.C. § 303, declares that as a matter of national policy, a special effort should be made to preserve the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Transportation projects that adversely affect such resources may not be approved by the Secretary of Transportation unless a determination is made that there is no feasible and prudent alternative, and that all possible planning has been done to minimize harm (see also FTA Regulations at 23 CFR § 771.135).

Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470f) requires that federal agencies identify and assess the effects of federally assisted undertakings on historic properties. These regulations encourage maximum coordination during the National Environmental Policy Act (NEPA) environmental review process, including Section 4(f).

Constructive use (as classified by 23 CFR 771.135) would occur if proximity impacts are so severe that the projected activities, features, or attributes of the resource are “substantially impaired.” Substantial impairment occurs when the projected activities, features, or attributes of the resource are “substantially diminished” (23 CFR 771.135). Constructive use may include substantial increases in noise, impairment of aesthetic features, restriction of access, increased vibration, or ecological intrusion.

The EIS Historic, Cultural, and Archaeological Resources Section contains information that fulfills the identification and evaluation requirements of the Section 106 process, including application of the criteria of effect and adverse effect of the Section 106 regulations. The proposed project would have no adverse effect on historic or culturally significant properties; EIS Appendix K, the Historic, Cultural, and Archaeological Resources Assessment Report, also documents this finding and the coordination process.

#### **Preferred Station Site Alternatives**

Temporary construction impacts would not result in constructive use of any resources protected by Section 4(f). No portion of lands protected by Section 4(f) would be used for station platforms or parking. It is anticipated that no substantial impairment (constructive use) of any nearby land protected by Section 4(f) would occur; therefore, a Section 4(f) evaluation is not necessary and has not been prepared. Since freight trains are much longer and noisier and already operate in the BNSF corridor, potential operation impacts from the proposed commuter rail trains are expected to be minor.

#### **Preferred Corridor Improvements (MCIA)**

It is anticipated that no substantial impairment of any land protected by Section 4(f) would occur during construction; therefore, a Section 4(f) evaluation is not necessary and has not been

prepared. Freight trains that are much longer and noisier already operate in the BNSF corridor; relative potential impacts from commuter rail trains are expected to be minor and almost unnoticeable. No portion of lands protected by Section 4(f) would be acquired.

## **Environmental Justice**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.” The Department of Transportation Order (No. 5680.1) to Address Environmental Justice in Minority Populations and Low-Income Populations requires agencies to 1) explicitly consider human health and environmental effects related to transit projects that may have a disproportionately high and adverse effect on minority and low-income populations; and 2) implement procedures to provide “meaningful opportunities for public involvement” by members of these populations during project planning and development. Specifically, the DOT Order states, in part:

- b. In making determinations regarding disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancement measures that will be taken and all offsetting benefits to the affected minority and low-income populations may be taken into account, as well as the design and comparative impacts and the relevant number of similar existing system elements in non-minority and non-low-income areas.
- c. The Operating Administrators and other responsible DOT officials will ensure that any of their respective programs, policies or activities that will have a disproportionately high and adverse effect on minority populations or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect was not practicable. In determining whether a mitigation measure or an alternative is “practicable,” the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account.

The Final EIS addressed Environmental Justice to ensure that it would be achieved if commuter rail is constructed and operated. The method for this analysis was based on FTA guidance and is consistent with EPA’s *Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses* (U.S. EPA, 1998) and on Sound Transit direction.

An environmental justice population means that the population has a disproportionate number of minority or low-income residents, and is therefore susceptible to environmental justice impacts as defined above. The Sound Transit taxing district, the reference population for environmental justice analysis, was used to determine the following criteria for classifying whether a population qualifies as an environmental justice population. The use of the Sound Transit taxing district ensures that the analysis captures the broad area of benefit and influence

associated with a regional transit project. An environmental justice population has 34% or greater non-white residents, and/or 21% or greater low-income residents. This standard was agreed upon by Sound Transit and FTA in 1998 and represents a threshold one standard deviation above the percentage of minority and low-income population (respectively) in the Sound Transit taxing district. The station area demographic analysis presented in the EIS indicates that the population surrounding Seattle Alternative 6, Broad Street, could qualify as an environmental justice population because 24% of the population was low-income in 1990 (below poverty level is used as a proxy for low income). Census tract 80 encompasses the Broad Street station and lies within the Belltown neighborhood; the census tract is bounded approximately by Denny Way, Third Avenue, and Stewart Street. The percent of low-income residents in this census tract has likely decreased since 1990 due to the number of high-valued condominium projects and building improvements constructed in this area, including development and redevelopment in the Belltown neighborhood. If the percentage of low-income residents has fallen below 21%, the station area would not be classified as an environmental justice population.

Field checks and communication with agency staff were used to confirm census tract data, as well as identify any “pockets” of low economic health throughout the corridor that data did not disclose. No unique minority or low-income populations were identified along the remainder of the rail corridor from Everett to Seattle, with the exception of tribal populations, as discussed below.

Tribal populations were considered in this environmental justice analysis because of their minority status, as well as their possible dependence on marine resources and freshwater fisheries. Marine resources and freshwater fisheries are anticipated to experience impacts from the project, discussed further below. Tribes within the Puget Sound region that could be impacted include the Suquamish Indian Tribe, the Duwamish Indian Tribe, the Muckleshoot Indian Tribe, the Snoqualmie Indian Tribe, and the Tulalip Tribes. The tribal populations that could experience potential impacts are those who fish in waters through which potentially affected fish migrate (that is, fish that could be affected by loss of habitat due to the project).

No significant impacts on noise and vibration, earth, air, water, plants/animals, energy, land use, transportation, socioeconomics, public services, or utilities are expected, and the project is not anticipated to have an effect on Environmental Justice as it relates to these environmental elements or resources. EIS Appendix N documents the demographic characteristics of the reference area as a basis for disclosing the potential vulnerability of a minority or low-income population to environmental justice impacts. Although the population surrounding Seattle Station Alternative 6 could be classified as an environmental justice population, no impacts on environmental justice are anticipated because impacts on the above elements or resources are not expected.

### **Conformity with Air Quality Plans**

The Everett-to-Seattle Commuter Rail project is subject to conformity requirements imposed by the federal Clean Air Act (CAA) and the Washington Clean Air Act (WCAA). The federal CAA (40 CFR Parts 51 and 93) requires that transportation projects conform with the State Implementation Plan. Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the National

Ambient Air Quality Standards (NAAQS). The WCAA similarly states that approval or funding of a project within, or affecting a non-attainment area, is contingent on determining that it conforms with the SIP, as required by the federal CAA. In addition, under the state's Growth Management Act (GMA), regionally significant projects, such as the Sounder Commuter Rail project, must be included in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP).

The proposed Everett-to-Seattle Commuter Rail Project is included in a conforming regional transportation plan and a conforming regional Transportation Improvement Program (TIP). Specifically, this project was considered in the latest plan for PSRC, titled *1995 Metropolitan Transportation Plan: The Transportation Element of Vision 2020, The Region's Growth Management, Economic and Transportation Strategy*, as adopted in May 1995; and in the latest Regional TIP by PSRC, titled *1998-2000 Regional Transportation Improvement Program*, as approved in September 1997 and revised to include the 1998 major amendment (approved February 1999). The regional plan and regional TIP were prepared and adopted by the PSRC, reviewed by U.S. DOT, and found to fulfill federal and state air quality conformity requirements.

Local pollutant concentrations related to action alternatives of the proposed project were predicted using regulatory models and protocol. The highest predicted 8-hour CO concentration for the project opening year (2001) was 8.8 ppm with both the Everett and Edmonds station alternatives. These maximum CO concentrations are less than the 9-ppm, 8-hour standard. In the project design year (2010), the highest predicted 8-hour CO concentration of 7.7 ppm for the Everett Station Alternative also is below the level of the standard. Consequently, none of the proposed action alternatives would increase the frequency or severity of an existing violation of the CO standards, nor create a new violation of CO standards. The Everett-to-Seattle Commuter Rail Project therefore conforms at the project level with the purpose and intent of the current SIP, and fulfills the requirements of the Federal Clean Air Act Amendments of 1990 and the Washington State Clean Air Act of 1991. The overall reduction in air pollutants due to use of commuter rail instead of vehicles represents a net benefit for regional air quality.

### **Floodplains**

Pursuant to Executive Order 11988 Floodplain Management issued May 24, 1977 floodplains were assessed within the 100-year floodplains and floodways defined by the Federal Emergency Management Agency (FEMA) as well as for locations with reported flooding problems or within locally managed floodplains. A tiered screening process was used to determine that use of the existing BNSF freight railroad track was the most practicable alternative for construction and operation of the Everett-to-Seattle commuter line. This determination was based on service, performance, budget, timing, and environmental considerations (see EIS Section 2.7.5). The existing rail line crosses approximately 4,000 linear feet of the 100-year floodplain of the Snohomish River within the City of Everett.

CIs 1 and 5 of the Preferred Alternative would construct new mainline track along the existing line within the floodplain. Preferred CIs that involve siting and constructing new mainline track were selected because they meet the project purpose and need, avoid impacts on slope stability in landslide hazard areas, and impact fewer wetland and marine resources than other potential siting locations.

Where floodplain encroachments occur, the project is being designed to minimize the length of track needed for new line segments and the width of the railbed fill. Mitigation will include excavating areas not prone to flooding to compensate for loss of flood storage capacity resulting from floodplain fill. Facilities and structures within the floodplain would require flood-proofing to avoid injury and minimize damage, or service disruption during a 100-year flood. Service disruptions may occur during floods, as is currently the case on the BNSF railroad. The Preferred Alternative complies with the City of Everett Municipal Code and Section 37 of the City's Environmentally Sensitive Areas Ordinance.

Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction within the floodplain, and the proposed action includes all practicable measures to minimize potential harm to, or within, the floodplain.

### **Wetlands**

Three major federal laws apply to wetland resources: the National Environmental Policy Act (NEPA), the Clean Water Act, and the Rivers and Harbors Act. NEPA establishes the process for evaluating the environmental impacts of projects such as the Sounder Commuter Rail Project. This ROD concludes the NEPA process, which included the publication of Draft and Final EISs by FTA. The Clean Water Act, administered by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (EPA), includes two sections applicable to the Sounder Commuter Rail Project: Section 404 regulates placement of dredge or fill material into the waters of the U.S. including wetlands. Section 401 ensures that federally permitted projects are consistent with state water quality standards, certification for which is administered by the Washington Department of Ecology. The Rivers and Harbors Act's Section 10 applies to activities in, over, and affecting navigable waters to preserve the navigability of U.S. waters. The Corps of Engineers administers the permit process.

A wetland report has been prepared for the Sounder Commuter Rail Project consistent with U.S. Army Corps of Engineers guidance for conducting wetland determinations and delineations, as described in the Corps of Engineers Wetlands Delineation Manual, referred to as the 1987 manual (Environmental Laboratory 1987).

The Preferred Station Site Alternatives would not result in clearing or filling of wetlands. A possible exception would be Ballard Station Alternative 5b, which would require filling and grading approximately 0.2 acre of wetland. The Locally Preferred Ballard Station Alternative will be determined at a later time.

The Preferred Corridor Improvements (CIs) involving signal additions or improvements to existing rail lines or rail yards will affect wetlands. The five Preferred CIs that involve siting and constructing a second track (new mainline track) were identified because they meet the project purpose and need, avoid impacts on slope stability in landslide hazard areas, and impact fewer wetland and marine resources than other siting locations considered but rejected during alternatives development. Of these, CIs 1, 5, and 23 would result in construction in wetlands. The wetland that would be filled for CI 23 - Double Track, Ballard - is a vegetated ditch that could be partially reconstructed along the new track. Wetland impacts associated with CI 5 - Double Track, Sealine Junction to Rogers siding, could be minimized by construction on the east side of the existing track rather than the west side. CI 4, which involves construction of

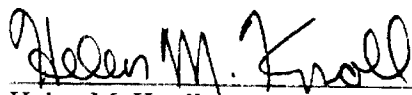


overnight storage tracks, also would result in clearing and filling 0.05 acre of wetlands. Other storage sites considered but not adopted presented potentially serious conflicts with freight operations and potential impacts on adjacent land uses. For the full wetland impact mitigation measures, see Attachment F. The No Build Alternative would avoid wetland impacts, but does not meet the project purpose and need.

The project is being designed to avoid and minimize wetland impacts where practicable alternatives to filling wetlands exist. Measures that will be implemented to mitigate impacts include use of Best Management Practices during construction and replacement of affected wetland area at a ratio as required by the Army Corps of Engineers but at a minimum of 1.5:1.

### **Coastal Zone Management Act**

Coastal Zone Management (CZM) certification is required for all federally licensed development including Army Corps of Engineers, Section 10 and Section 404 permits, and U.S. Coast Guard Bridge permits. In Washington State, the project proponents prepare the Coastal Zone Certification and submit it to the Washington State Department of Ecology (WDOE) to review. WDOE reviews the information based on state environmental and shoreline requirements. Before WDOE issues CZM certification, they require approved water quality certification (which is done by WDOE) and shoreline permits from the local jurisdictions. Sound Transit is required to comply with all CZM requirements.

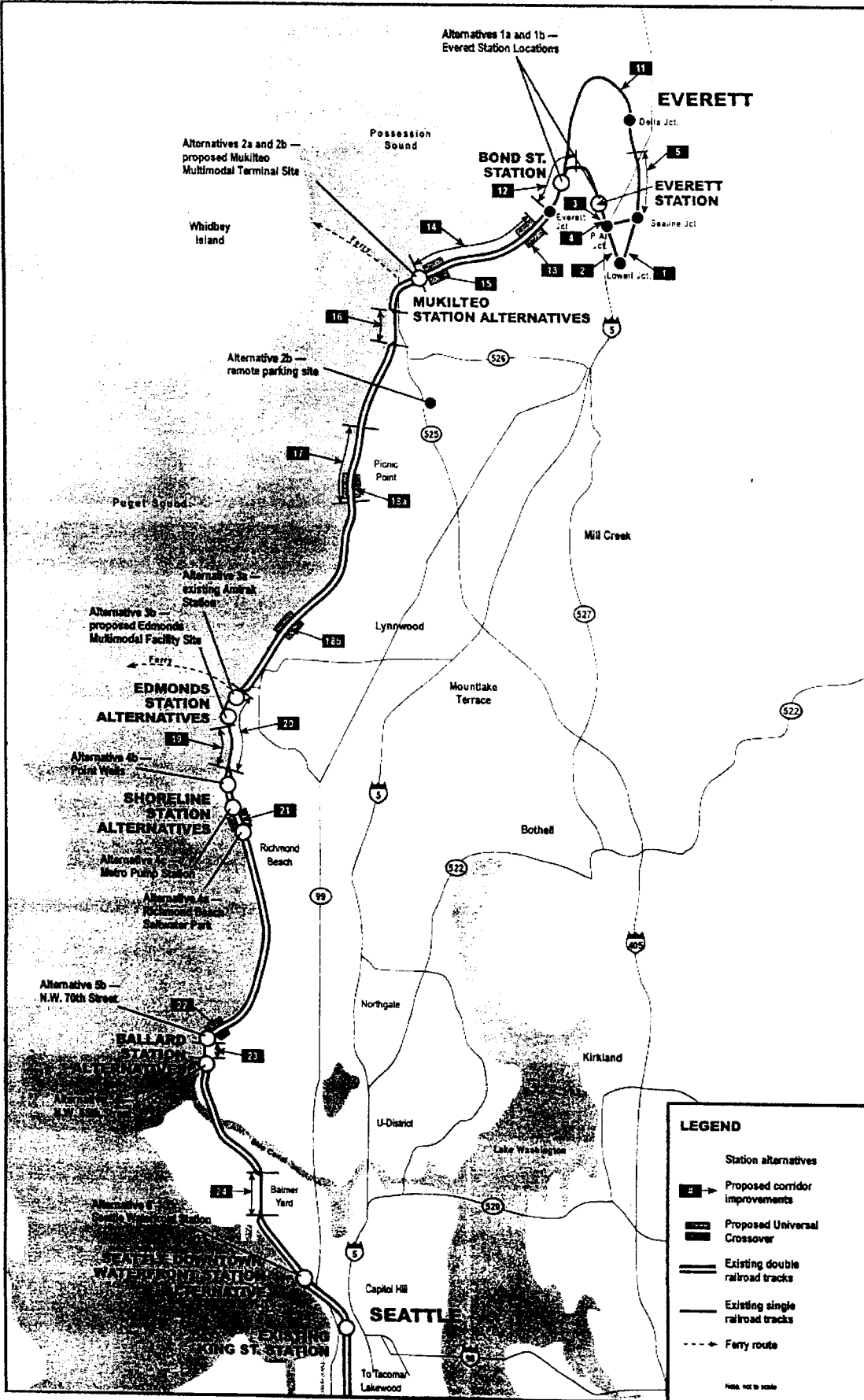


Helen M. Knoll  
Regional Administrator  
Region X  
Federal Transit Administration

Date: 2/4/00

**ATTACHMENT A.**

**Everett-to-Seattle Location and Description of Station Alternatives and Corridor Improvements**



**ATTACHMENT B**  
**Preferred Station Site Alternatives**  
 Everett to Seattle Commuter Rail Project  
 Central Puget Sound Regional Transit Authority  
 (Sound Transit)

<b>Preferred Station Site Alternatives</b>	
<i>Station Alternative</i>	<i>Jurisdiction</i>
Everett Alternative 1b – Everett Multimodal Facility (Everett Station) with parking on a surface lot located east of the BNSF railroad tracks.	City of Everett
Mukilteo Alternatives 2a and 2b – Mukilteo Multimodal Terminal Site with Nearby Parking and Parking at the Remote Lot.	City of Mukilteo
Edmonds Alternative 3a – Existing Amtrak Station	City of Edmonds
Shoreline Alternative 4b or 4c – no Preferred Alternative is recommended. (A preferred alternative may be recommended later when funding is available.)	Snohomish County (Shoreline Community)
Ballard Alternative 5a or 5b - no Preferred Alternative is recommended. (A preferred alternative may be recommended later when funding is available.)	City of Seattle
Seattle Alternative 6 – Seattle Waterfront Station at Broad Street (with King Street Station as it exists)	City of Seattle

***Detailed Descriptions of Preferred Station Site Alternatives***

***Everett Alternative 1b – Everett Multimodal Facility (Everett Station)***

The Everett Multimodal Facility (Everett Station), a separate prior project currently under final design, would serve as a commuter rail station. The proposed 1,200 spaces of commuter rail parking would also be surface parking located on the east side of the tracks. A pedestrian overpass would be provided to the multimodal facility. The proposed parking would be constructed on a surface lot located east of the BNSF railroad. The commuter rail layover facility (CI 4, overnight rail storage track) would be located at this site.

*Mukilteo Alternatives 2a and 2b – Mukilteo Multimodal Terminal Site with Nearby Parking and Parking At the Remote Lot*

This station would be north of the Mukilteo Speedway (SR 525) near the existing Mukilteo ferry dock, allowing ferry passengers to walk to the train and continue to Everett or south to Seattle. A safe and reasonable pedestrian connection would be provided between the ferry terminal and the commuter rail station. One at-grade pedestrian crossing would be provided near each end of the platforms.

One of two alternate platform designs would be selected before the station design phase. Alternate one would include a 600-foot platform on each side of the tracks. The platforms would begin about 80 feet east of SR 525. Ultimately, in a later phase, the 600-foot platforms could be extended to 1,000 feet east, and First Street could be shifted north of its existing location (toward the U.S. Government Tank Farm (Tank Farm site)). Shifting First Street north would allow the siding at the existing Tank Farm site, which is currently not in use, to be rebuilt and extended to the east. First Street is located within the existing BNSF right-of-way. The second alternate design would be to construct a single 600-foot-long center platform between the two main lines. The center platform would begin about 900 feet east of SR 525. The single platform could eventually be extended east to maximum of 1,000 feet.

Boeing needs adequate space to allow transport of major airplane components between the mainline and the spur, which is a separate track serving the Boeing facility. As a result, it will be necessary to address the space requirements of the Boeing rail spur before the ultimate 1,000-foot-long platform can be built (service would begin with a 600-foot-long platform). The commuter rail platform must ultimately be 1,000 feet in length to accommodate up to 10 car trains. The station design phase will reconcile these site layout needs with an operationally viable plan. The ultimate solution will be confirmed if and when construction of the multimodal project is determined.

It is assumed that this station would provide bus and ferry access. Basic station amenities would include canopies, fare vending machines, trash receptacles, telephones, and signage. The Preferred Alternative includes nearby parking (2a) and remote parking (2b). Parking for a maximum of 120 commuters would be provided at the Tank Farm site, which is the City's possible future multimodal terminal site. Parking for commuter rail also may also be provided at the remote lot. Sound Transit would coordinate with the City of Mukilteo and Community Transit for joint-use of the remote parking lot if Community Transit agrees to provide regular service to the commuter rail station. The commuter rail station could become an integral part of the Mukilteo Multimodal Terminal if and when that project is constructed.

*Edmonds Alternative 3a – Existing Amtrak Station*

The commuter rail station would be located at the existing Amtrak station, currently used for intercity passenger service. It would include approximately 120 parking spaces on existing surface lots near the existing station. This station would have a 1,000-foot-long platform on each side of the tracks and the basic station amenities. A safe and reasonable pedestrian connection would be provided between the ferry terminal and the commuter rail station. Pedestrians would use existing at-grade crossings to access platforms. To accommodate commuter platforms and

Corridor Improvement 20 (Woodway to Edmonds second main line), the existing main line would be shifted southeast, and the Dayton Street and Main Street BNSF at-grade crossings would be realigned. In addition, the existing Amtrak station would be relocated southeast of its existing location. The west platform would not include a canopy to avoid impacts on Railroad Avenue. Because this station also serves intercity Amtrak service and would continue to do so, a rebuilt station would include a modest structure of similar size and type as currently exists. Construction and relocation of the building would be timed and staged to ensure no adverse impact on Amtrak operations.

#### Shoreline Station

A preferred station alternative is not recommended for the City of Shoreline since funding is not yet available. Sound Transit will continue to work with the City of Shoreline regarding the location and funding for this station. The following alternative station sites analyzed in the EIS can be considered for the Ballard community when station funding is available.

#### *Alternative 4b – Point Wells*

This site is in an unincorporated area of Snohomish County, but is proposed for future annexation by the City of Shoreline or the City of Woodway. The site was initially proposed by City of Shoreline staff based on future development plans for Point Wells, which anticipate a mixture of commercial uses that could be well-served by a commuter rail station.

This station would include approximately 120 commuter rail parking spaces, a 1,000-foot-long platform on each side of the tracks, and the basic station amenities. A pedestrian overcrossing or undercrossing would provide access from the east side of the BNSF railway to the commuter parking and drop-off area on the west side.

#### *Alternative 4c – Metro Pump Station*

This station would be at the existing Metro Pump Station. It would include approximately 120 parking spaces, a 1,000-foot platform on each side of the tracks, and basic station amenities. The northern half of the west platform would be built on a wall above the high-tide line. A pedestrian overcrossing would provide access from the west side of the BNSF railway to the commuter parking and drop-off area east of the tracks.

#### Ballard Station

A preferred station alternative is not recommended for the Ballard community since funding is not yet available, and there are unresolved issues within the community and the City regarding the station location. Sound Transit will continue to work with the Ballard community and the City regarding the location and funding for this station. The following alternative station sites analyzed in the EIS can be considered for the Ballard community when station funding is available.

*Ballard Alternative 5a – N.W. 65th Street (between 62nd and 67th)*

This station includes approximately 120 parking spaces, a 1,000-foot-long platform on each side of the tracks, and the basic station amenities. Parking may be provided at the existing Elks Lodge parking lot, west of Seaview Avenue N.W. (west of Seaview Avenue N.W. and the station). Sound Transit would negotiate joint use of the Elks Club parking lot, or other specifically designated parking will be identified. A new pedestrian crossing signal would be provided on Seaview Avenue N.W. for access to the parking lot.

A pedestrian overcrossing or undercrossing would provide access across the freight rail spur and proposed extension of the Burke-Gilman Trail from the east side of Seaview Avenue N.W. to the station. Sound Transit would need to acquire property on the east side of Seaview Avenue N.W. to accommodate the pedestrian overcrossing or undercrossing. Pedestrians would use the existing pedestrian undercrossing at N.W. 65<sup>th</sup> Street for access from the Ballard neighborhood to the station platforms.

*Ballard Alternative 5b – N.W. 70<sup>th</sup> Street (between 68<sup>th</sup> and 71<sup>st</sup>)*

This station includes a 1,000-foot-long platform on each side of the tracks, canopies, fare vending machines, trash receptacles, telephones, and signage. Approximately 120 spaces of commuter rail parking may be provided at the same location described under Alternative 5a or at the Port of Seattle or another location. Sound Transit would negotiate joint use of the existing parking lots. A pedestrian overcrossing or undercrossing would provide access from the east side of the BNSF railway to the west side, where a pathway to Seaview Avenue N.W. would be provided.

*Seattle Waterfront Alternative 6 – Broad Street*

This station would serve commuters from points north and south with Downtown Seattle destinations. It also would serve Belltown residents. This station includes no new parking, but it would be served by bus and pedestrian access to and from the north downtown area.

Initially, the station would have 600-foot-long platforms and the basic amenities. Ultimately, in a later phase, the 600-foot platforms would be extended to 1,000 feet, either north or south. In the future, if Broad Street were grade-separated, the extension would be to the south; otherwise, the extension would be to the north.

**ATTACHMENT C**  
**Preferred MCIA Corridor Improvements (CIs)**  
 Everett to Seattle Commuter Rail Project  
 Central Puget Sound Regional Transit Authority  
 (Sound Transit)

<b>Preferred Alternative – MCIA Corridor Improvements (CIs)</b>		
<b>CI</b>	<b>Location</b>	<b>Description of Improvement</b>
CI 1	MP 6.40 to 0.40	<u>Third mainline</u> : construct a third mainline track in the existing single-track right-of-way of CI 2 to provide track exclusively for freight trains.
CI 2	MP 1782.20 (P.A. Junction) to 1781.20 (Lowell Junction)	<u>Second mainline track</u> : upgrade existing track used for storage (Turkey Track) to serve as the second mainline.
CI 3	Pacific Avenue to Delta Yard or other appropriate location	<u>Relocate industrial track</u> : relocate this track, which serves several industrial users, to accommodate the Everett Multimodal Facility (Everett Station) commuter rail station.
CI 4	Everett Multimodal Facility Site (Everett Station) and south about 2,900 feet	<u>Construct overnight storage track for commuter rail</u> : construct the storage track, fencing, yard lighting, drip-oil pans, and electrical connections.
CI 5	MP 7.86 to MP 10.49 (Sealine Junction to Rogers Siding)	<u>Second mainline track</u> : second track would extend to the south end of Rogers Siding at M.P. 9.75. Some relatively minor grading work is required.
CIs 6, 7, 8, 9, and 10	Various locations (Everett Junction, Delta Junction, Sealine Junction, Lowell Junction, Pacific Avenue Junction)	<u>Centralized Traffic Control (CTC)</u> : this commonly used railroad signaling system would be required to allow bi-directional train traffic and automatic switch operation. This improvement would add another metal building at each of these locations, and a single new building at Delta and Sealine Junctions.

**Preferred Alternative – MCIA Corridor Improvements (CIs)  
(continued)**

<b>CI</b>	<b>Location</b>	<b>Description of Improvement</b>
CI 11	MP 32.1 to MP 37.0 (also known as 10.9) and MP 10.9 to MP 7.86 (Bayside Line Everett Junction to Delta Junction, and Delta Junction to Sealine Junction)	<u>Upgrade Bayside Line:</u> This improvement would allow freight trains to use the existing freight rail line at increased speed, compensating for the increased distance freight trains would be required to travel when the Everett train tunnel is needed for commuter rail. The existing track would be upgraded for through-freight service.
CI 12	Everett Junction	<u>Set-out track to mainline track:</u> conversion of the setout track is an upgrade or improvement of the existing track for use as a mainline track along the existing alignment; therefore, no grading or major construction work is required.
CI 13	MP 31.3 to 31.7 (Howarth Park)	<u>Universal crossover:</u> A universal #24 crossover is made of four switches and connecting track, which allow either a southbound or northbound train to switch from one track to the other. The universal #24 crossover would be located within the 2,000-foot-long track tangent (straight track) between M.P. 31.3 and M.P. 31.7.
CI 15	M.P. 28.5 to M.P. 29.0 (Mukilteo)	<u>Universal crossover:</u> universal #24 crossover, as described under CI 13, would be located within the 2,000-foot-long track tangent between M.P. 28.5 and M.P. 29.0.
CI 16	M.P. 27.0 to M.P. 28.0 (Mukilteo)	<u>Double track:</u> a second mainline track would be added (double track) in this location to the existing single track (see Preferred Corridor Improvements section, New Second Track)
CI 18a	MP 23.5 to MP 23.9	<u>Universal #24 crossover:</u> as described under CI 13.
CI 18b	MP 18.5 to MP 18.9	<u>Universal #24 crossover:</u> as described under CI 13, would be located within the 3,000-foot-long track tangent between M.P. 18.5 and M.P. 18.9.
CI 20	MP 15.9 to MP 17.8 (Woodway to Edmonds)	<u>Second mainline track (Double Track):</u> a second track needs to be installed to supplement the single existing mainline track (see Preferred Corridor Improvements section, New Second Track).



Preferred Alternative – MCIA Corridor Improvements (CIs) (continued)		
CI	Location	Description of Improvement
CI 21	MP 14.0 to MP 14.4 (Richmond Beach)	<i>Universal crossover</i> : universal #24 crossover, as described under CI 13, would be located within the 1,500-foot-long track tangent between M.P. 14.0 and M.P. 14.4.
CI 22	MP 8.7 to MP 9.3 (Metum)	<i>Universal crossover</i> : consists of installing a crossover and signal equipment as described under CI 13.
CI 23	MP 7.3 to MP 7.8 (Ballard, Opposite Shilshole Marina)	<i>Reinstall former second mainline track</i> : proposed second mainline track would be on the east side of the existing single mainline track. This would restore the second track in the location where it previously existed; the roadbed is already in place.
CI 24	M.P. 3.28 to M.P. 5.49 (Interbay Rail Yard)	<i>Construct 2.21 miles of new second mainline track</i> : the track would be installed adjacent to the many existing tracks in the Interbay freight rail yard. This improvement also includes reconstruction of the yard track to the second mainline (1.61 miles) between M.P. 1.67 and 3.28, and installation of a #24 crossover at M.P. 5.49.

### ***Detailed Descriptions of Preferred Corridor Improvements***

The MCIA represents the minimum level of corridor improvements needed for successful operation of commuter rail in this heavily used freight rail corridor. The MCIA assumes the selection of the preferred station alternatives described above for each community served. It includes all Corridor Improvements analyzed in the FEIS except CIs 14, 17 and 19 (see Previous Table 2).

#### ***Corridor Improvement 1: Third Main Line, Lowell to Sealine Junction - M.P. 6.40 to M.P. 0.40***

Corridor Improvement 1 would provide a main line for exclusive use by freight trains. CI 1 would be constructed parallel to and approximately 25 feet east of the existing track used for storage between Lowell and Sealine Junction (Turkey Track). Some fill would be needed to accommodate the rail bed. CI 1 is needed to offset the rail capacity that would be taken for commuter trains. Commuter trains would not use this improvement. Corridor Improvement 1 would be constructed on City of Everett property that the City would provide in exchange for other BNSF property.

#### ***Corridor Improvement 2: Second Main Line - M.P. 1782.20 to M.P. 1781.20 (Lowell Junction)***

Corridor Improvement 2 would upgrade and extend the existing storage track (Turkey Track) between Lowell and Sealine Junction to serve as a main line. No new grading would be required. The existing storage track (Turkey Track), which ends at Sealine Junction, would be extended north to M.P. 1782.20 where it would tie into the existing main line. Some fill would be needed to support the track extension above the Snohomish River flood level. Corridor Improvement 2 also includes construction of a connecting track between the existing main line and CI 2. The connecting track would be between 500 and 1,000 feet long (approximately M.P. 1782.2 to M.P. 0.4). Corridor Improvement 2 would result in a new, at-grade railroad crossing on 36<sup>th</sup> Street.

*Corridor Improvement 3: Relocate Industrial Track at Pacific Avenue to Delta Yard or Other Appropriate Location*

It is necessary to relocate this track, which serves several industrial users, to accommodate the Everett Multimodal Facility (Everett Station) commuter rail station. This track would be 400 to 600 feet long. Delta Yard is an existing railroad yard, in current railroad use. This relocation of industrial track to an existing rail yard is not anticipated to result in any significant adverse impacts.

*Corridor Improvement 4: Construct Overnight Storage Track for Commuter Rail*

Commuter rail trains need to be stored overnight and then travel to the Everett Multimodal Facility (Everett Station) to begin customer service. At the close of business each day, the process needs to be repeated in reverse. Potential sites were considered at BNSF yards at Bayside and Delta, but they were rejected because they were too far away and interfered with freight operations. The site at Pacific Avenue reviewed in the EIS is feasible if two trains are stored at the platform (one behind each other) and two more are stored on track extending south of the proposed platform. This improvement consists of construction of the storage track, fencing, yard lighting, drip-oil pans, and electrical connections.

*Corridor Improvement 5: Second Main Line Track Sealine Junction to Rogers Siding - M.P. 7.86 to M.P. 10.49*

From Sealine Junction, the proposed second track would extend to the south end of Rogers Siding at M.P. 9.75. Some relatively minor grading work is required. The use of bridges or retaining walls at this site is not anticipated. The existing Rogers Siding (M.P. 10.49 to 9.75) would be upgraded with new rails and ties along its existing alignment.

*Corridor Improvements 6, 7, 8, 9, and 10: CTC (Centralized Traffic Control at various Locations: Everett Junction, Delta Junction, Sealine Junction, Lowell Junction, and Pacific Avenue Junction)*

This commonly used railroad signaling system would be required to allow bi-directional train traffic and automatic switch operation. The signal system, at each location, includes installation of prefabricated metal buildings (15 feet square by 10 feet high), underground wiring to the rails and signal masts, and/or signal bridges. Similar structures already exist at Everett, Lowell, and Pacific Avenue Junctions. This improvement would add another metal building at each of these locations, and a single new building at Delta and Sealine Junctions.

Corridor Improvement 11: Upgrade the Bayside Line Everett Junction to Delta Junction, and Delta Junction to Sealine Junction - M.P. 32.1 to M.P. 37.0 (also known as 10.9) and M.P. 10.9 to M.P. 7.86

This improvement would allow freight trains to use the existing freight rail line at increased speed, compensating for the increased distance freight trains would be required to travel when the Everett train tunnel is needed for commuter rail.

The existing track would be upgraded for through freight service. New rails and ties would be replaced as necessary. Track curves would be slightly modified to increase operating speeds to 50 miles per hour (mph) where track curvature permits. This modification would consist of adding ballast to elevate one rail to increase super-elevation to allow the train to tilt slightly at higher speeds. All work would be within the existing trackbed, and no additional tracks would be constructed. The existing siding at Bayside would be retained and the Rogers Siding lengthened as described for CI 5, above.

Corridor Improvement 12: Convert Everett Junction Set-out Track to Mainline Track

Conversion of the set-out track is an upgrade or improvement of the existing track for use as a mainline track along the existing alignment; therefore, no grading or major construction work is required.

Corridor Improvement 13: Howarth Park Universal Crossover - M.P. 31.3 to M.P. 31.7

This improvement consists of installing a crossover and signal equipment. A universal #24 crossover consists of four switches and connecting track, which allow either a southbound or northbound train to switch from one track to the other. The track work would be contained within the existing tracks or between them (they are currently 15 feet apart, measured from their centers). One signal at each switch for each track is required, or two at each end of the universal crossover, for a total of four signals.

Signals for universal crossovers either could be on approximately 20-foot-high signal masts (four separate masts) or two signals on one signal bridge (one bridge at each end) approximately 30 feet high. For this location, signal masts would be used; however, a signal bridge may be built if it is determined during final design that visual impacts would not occur. The entire length of a #24 universal crossover is approximately 1,000 feet.

This universal #24 crossover would be within the 2,000-foot-long track tangent (straight track) between M.P. 31.3 and M.P. 31.7. All work would be within the existing tracks except for the signals, which would be about 10 feet from the edge of the railroad tie, and the signal bungalow structures.

Corridor Improvement 15: Mukilteo Universal Crossovers - M.P. 28.5 to M.P. 29.0

A universal #24 crossover, as described under CI 13, would be located within the 2,000-foot-long track tangent between M.P. 28.5 and M.P. 29.0. Signal masts would be used for this location; however, a signal bridge may be built if it is determined during final design that visual

impacts would not occur. All work would be within the existing tracks except for the signals, which would be about 10 feet from the edge of the railroad tie, and the signal bungalow structures.

Corridor Improvement 16: Mukilteo Double Track - M.P. 27.0 to M.P. 28.0

It is necessary to add a second mainline track (double track) in this location to the existing single track for commuter rail operations. Between M.P. 27.0 and 28.0, there is a very steep slope adjacent to the east side of the existing main line track. Construction of a retaining wall to “cut back” the slope to provide for a new track bed at this location would be very expensive, interfere with railroad operations during construction, and could cause a major earth slide jeopardizing houses on top of the slope.

Sound Transit identified the Fill with Gravity Block Retaining Wall (Corridor Improvement Alternative 1c for CI 16 in the EIS) as the Preferred Alternative (Figure 1). This option is a composite of features analyzed in the EIS corridor improvement alternative analysis. It combines features of the fill alternatives with features of the wall alternative. This alternative has the following advantages over the other design options previously analyzed:

- It has the least fill impact on Puget Sound of the alternatives that meet the project objectives;
- Environmental agencies, including the National Marine Fisheries Service (NMFS), the U.S. Army Corps of Engineers (Corps), and the Washington Department of Fish and Wildlife (WDFW), have expressed preference for this option;
- Fills can be mostly constructed from barge-mounted equipment, thereby minimizing impacts on railroad operations; and
- It is the least expensive option that meets the project objectives.

This alternative consists of building a second track west of the existing track that is supported by an armored fill with a concrete block retaining wall above the extreme high water elevation (EHW). The retaining wall would be 15 feet from the centerline of the new track. Locating the wall closer to the track is not possible for two reasons. First, BNSF standards require a minimum 15 feet lateral clearance to edges of retained fills. Second, stability problems could occur if the wall were closer to the track since live load surcharge pressures from the trains increase as distance from the track decreases.

Below the EHW, the fill requires armoring with 3- to 5-ton quarry stone placed on a 2:1 slope. This is necessary to protect the fill against significant wave action for the intended service life of the track (about 50 years). Smaller stone or steeper slopes would cause the fill to be more susceptible to wave damage. The armoring will need a 10-foot-wide toe embedded into the beach to provide a foundation and prevent scouring of the armoring. However, the toe can be over-excavated and backfilled with up to 18 inches of beach material to restore natural habitat conditions.

*Construction*

Construction of this option is anticipated to take less than four months if it occurs in mostly dry weather. Other design options studied (vertical wall and bridge) would require 6 to 12 additional months to construct. Although these options are not recommended for other reasons (environmental impacts and cost), longer construction periods are also adverse impacts that weigh against these options.

It is anticipated that the contractor will elect to construct the new fill using barges positioned about 100 feet offshore. This method would have the least potential adverse impacts on railroad operations since equipment and staged materials would not need to be located near the track. Based upon a total fill requirement of approximately 19,000 cubic yards, there would be about 13-14 barge trips to the site. Barges would likely load at the Port of Everett.

Some impacts on eelgrass beds may occur as a result of anchor drops from the barges. These impacts may only be temporary. Construction specifications should include requirements for barge anchoring and propeller speeds to minimize impacts on eelgrass.

Corridor Improvement 18a: Universal Crossover M.P. 23.5 to 23.9

A universal #24 crossover, as described under CI 13, would be located within the tangent track, M.P. 23.5 to 23.9. Signal masts would be used in this location; however, a signal bridge may be built if it is determined during final design that visual impacts would not occur. All work would be within the existing tracks except for the signals, which would be about 10 feet from the edge of the railroad tie, and the signal bungalow structures.

Corridor Improvement 18b: Universal Crossover - M.P. 18.5 to M.P. 18.9

A universal #24 crossover, as described under CI 13, would be located within the 3,000-foot-long track tangent between M.P. 18.5 and M.P. 18.9. Signal masts would be used in this location; however, a signal bridge may be built if it is determined during final design that visual impacts would not occur. All work would be within the existing tracks except for the signals, which would be about 10 feet from the edge of the railroad tie, and the signal bungalow structures.

Corridor Improvement 20: Woodway to Edmonds - Construct Second Main Line Track (Double Track) - M.P. 15.9 to M.P. 17.8

A second track needs to be installed to supplement the single existing main line track. The topography is difficult between M.P. 15.9 and 17.0. Intertidal lagoons lie on the east side. M.P. 16 is a major slide potential area. To the west, the rock slope that forms the shoreline of Puget Sound begins approximately 5 feet from the edge of the track (10 feet from the track centerline).

Sound Transit has identified Fill with Gravity Block Retaining Wall to the East (Corridor Improvement Alternative 2c for CI 20 in the EIS) as the Preferred Alternative (Figure 1). This option is a composite of features analyzed in the EIS corridor improvement alternative analysis. It combines features of the fill alternatives with features of the wall alternative. This alternative has the following advantages over the other design options previously analyzed:

- It has the least fill impact on Puget Sound and the lagoon areas of the alternatives that meet the project objectives;
- Environmental agencies, including the NMFS, the Corp, and WDFW, have expressed preference for this option; and
- Fill materials can be hauled in by truck with minimal impacts on railroad operations.

This alternative consists of building a second track primarily east of the existing track. In the lagoon areas, the new track would be supported by an armored fill with a concrete block retaining wall above the EHW. In the northern portion of the site (STA 56+00 to 71+00), the new track would be constructed west of the existing track and would be supported by an armored fill with a concrete block retaining wall above the EHW. The retaining wall would be 15 feet from the centerline of the new track for the reasons stated above for CI 16.

Below the EHW, the fill in the Sound requires armoring with smaller 1/2 to 1-ton quarry stone placed on a 2:1 slope. Lagoon areas would require only light armoring, such as riprap. The armoring in the Sound will need a 10-foot-wide toe embedded into the beach to provide a foundation and prevent scouring of the toe of fill. However, the toe can be over-excavated and backfilled with up to 18 inches of beach material to restore natural habitat conditions.

### *Construction*

Construction of this option is anticipated to take less than six months if it occurs in mostly dry weather. Other design options studied (vertical wall and bridge) would require 12 to 18 additional months to construct. Although these options are not recommended for other reasons (environmental impacts and cost), longer construction periods are also adverse impacts that weigh against these options. Construction periods would be significantly longer for the options that build the second track on the west side. This is due to difficult accessibility by construction equipment. The shallow beach that extends over 2,000 feet into the Sound prevents the use of barges. Therefore, construction equipment would need to work along the beach and track. Since equipment would be working closer to the track, the construction period may be significantly lengthened to accommodate train operations.

It is anticipated that the contractor will elect to construct the new fill south of STA 56+00 by using trucks to haul in material from both ends of the site. There is sufficient area east of the track to allow staging of materials and construction of the new fill with minimal disruption from the railroad. North of STA 56+00 fills will likely be constructed from equipment and materials located on both sides of the existing track.

Based on a total fill requirement of 18,000 cubic yards, there would be 1,200 to 1,500 truck trips to the site. Trucks would most likely be dump trucks with pony trailers. The construction duration would most likely be about 3 months. However, the majority of fill operation may occur in a 4-to-6-week period. It is anticipated that dump trucks would follow the same route that the tankers from the Chevron terminal at Point Wells currently take. The contractor would want to deliver some material from the north to construct the fill in the Sound. The main road to access the south part of the site via the Chevron terminal is Richmond Beach Road. The north access road is Admiral Way, which is along the BNSF tracks.

### *Corridor Improvement 21: Richmond Beach Universal Crossover - M.P. 14.0 to M.P. 14.4*

A universal #24 crossover, as described under CI 13, would be located within the 1,500-foot-long track tangent between M.P. 14.0 and M.P. 14.4.

The signals either could be on approximately 20-foot-high signal masts (four separate masts) or two signals on one signal bridge (one bridge at each end) approximately 30 feet high. The entire length of a #24 universal crossover is approximately 1,000 feet, and it would be located within the 1,500-foot-long track tangent between M.P. 14.05 and M.P. 14.4. All work would occur within the existing tracks, except for the signals.

Corridor Improvement 22: Metum Universal Crossover - M.P. 8.7 to M.P. 9.3

This universal crossover would be within the 3,000-foot-long track between M.P. 8.7 and M.P. 9.3. All work would be within the existing tracks except for the signals, which would be about 10 feet from the edge of the railroad tie, and two signal bungalows (10 feet by 15 feet square, and 10 feet high of prefabricated metal), one at each end of the crossover within 10 feet of the tracks.

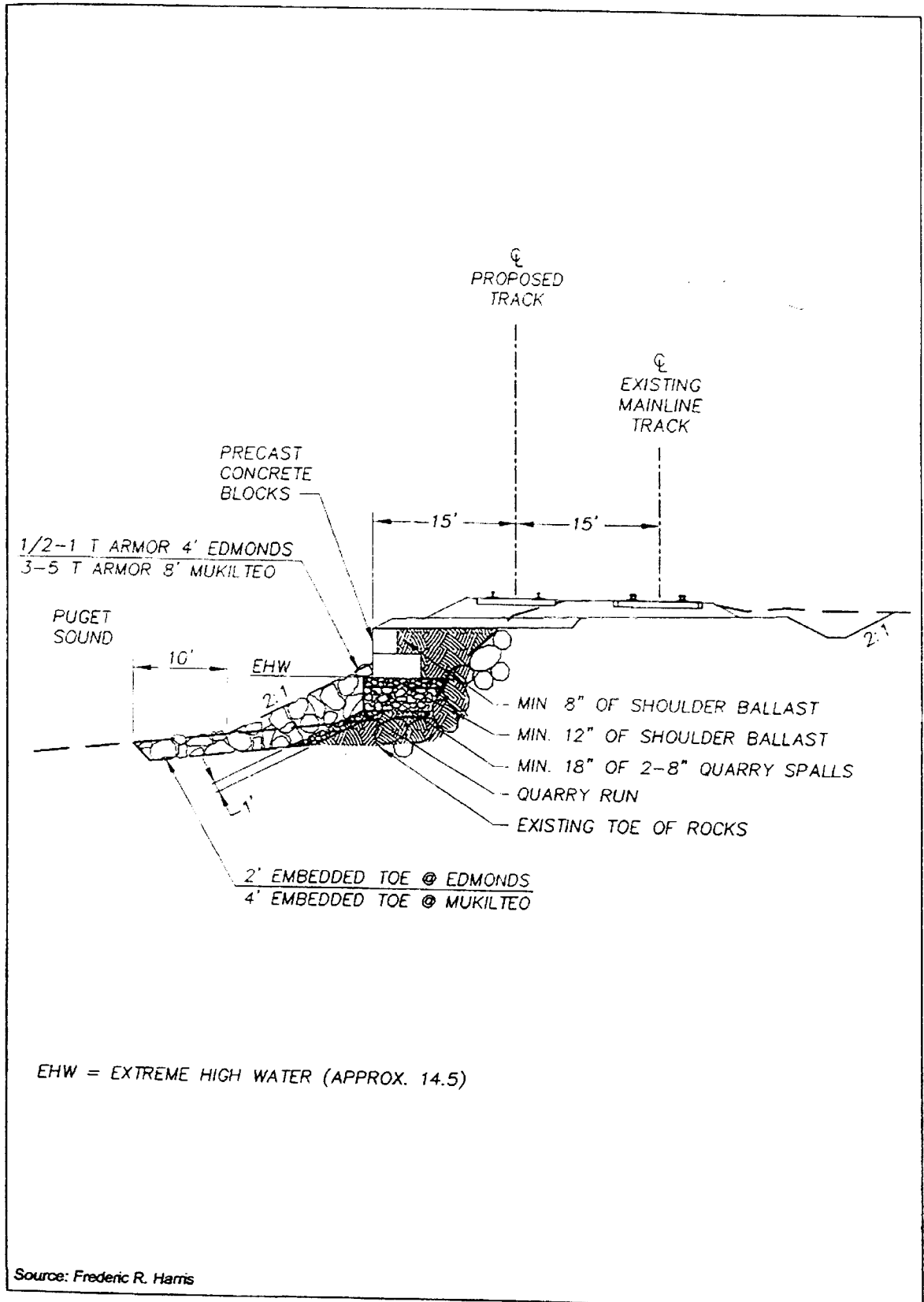
Corridor Improvement 23: Ballard – Reinstall Former Second Main Line Track - M.P. 7.3 to M.P. 7.8 (Opposite Shilshole Marina)

This proposed second mainline track would be on the east side of the existing single mainline track. This would restore the second track in the location where it previously existed. The roadbed is already in place; therefore, only minimal rough grading work is required. An 8-foot-wide concrete box culvert under both tracks would replace the existing 33-foot-long single-track bridge. Retaining walls would be placed east of the newly installed second track. The new walls would be placed in front of an existing wall, which is deteriorating, and adjacent to the existing wall. It may be necessary to replace the existing 33-foot-long bridge with a concrete box culvert approximately 6 feet long.

Corridor Improvement 24: Interbay Rail Yard – Construct 2.21 Miles of New Second Mainline Track - M.P. 3.28 to M.P. 5.49

This track would be installed adjacent to the many existing tracks in the Interbay freight rail yard. This improvement also includes reconstruction of the yard track to the second mainline (1.61 miles) between M.P. 1.67 and 3.28, and installation of a #24 crossover at M.P. 5.49. A retaining wall would be installed east of the existing access road between MP 4.0 and MP 4.2. Retaining walls also would be installed on both sides of the tracks at the north end of the Interbay yard, between MP 5.0 and MP 5.5.

**ATTACHMENT D  
PREFERRED TRACK SUPPORT OPTION  
FILL WITH GRAVITY BLOCK WALL**





**ATTACHMENT E**  
**Station Site and Corridor Improvement Alternatives Considered**  
**But Not Identified as the Preferred Alternative**  
 Everett to Seattle Commuter Rail Project  
 Central Puget Sound Regional Transit Authority  
 (Sound Transit)

<b>Station Site Alternatives Considered But Not Identified as the Preferred Alternative</b>	
<i>Station Alternatives</i>	<i>Jurisdictions</i>
<i>Everett Alternative 1a - Everett Multimodal Facility (Everett Station) and Existing Bond Street Station</i>	City of Everett
Edmonds Alternative 3b - Edmonds Multimodal Facility Site	City of Edmonds
Shoreline Alternative 4a - Richmond Beach Saltwater Park	City of Shoreline
Ballard Alternative 5a - NW 65 <sup>th</sup> Street	City of Seattle
Ballard Alternative 5b - NW 70 <sup>th</sup> Street	City of Seattle

<b>Corridor Improvements (CIs) Considered But Not Identified as the Preferred Alternative</b>		
<b>CI</b>	<b>Location</b>	<b>Description of Improvement</b>
CI 14	MP 28.47 to MP 32.2 (Mukilteo to Everett Junction)	<u>Passing track</u> : required to allow freight trains to temporarily exit the main line track to allow commuter trains to pass. Passing track is an additional third track that supplements the two mainline tracks. The proposed track could not interfere with the Boeing service track on the east side; therefore, it would have to be on the west side.
CI 17	MP 23.4 to MP 25.5 (Picnic Point)	<u>Passing track</u> : passing track (as described for CI 14) would be required in the vicinity of Picnic Point.
CI 19	MP 15.03 to MP 17.43 (Edmonds)	<u>Passing track</u> : passing track (as described for CI 14) would be required.

**ATTACHMENT F**  
**Summary of Required Mitigation Measures**  
Everett to Seattle Commuter Rail Project  
Central Puget Sound Regional Transit Authority  
(Sound Transit)

## **Introduction**

This mitigation plan describes Central Puget Sound Regional Transit Authority's (Sound Transit's) mitigation requirements for the Everett to Seattle Commuter Rail Project as imposed by the Record of Decision (ROD). Mitigation requirements (sometimes hereinafter called "mitigation measures" or "environmental commitments") identified below for the preferred station site and corridor improvement (CI) alternatives shall and must be implemented by Sound Transit if construction is undertaken on the station site or corridor improvement to which the mitigation requirements apply. Failure to do so will constitute a material deviation or violation of the terms and conditions of the ROD. In general, where the mitigation measures have not been incorporated in the project design, Sound Transit shall implement or provide funding for the implementation of the mitigation measures outlined here. The environmental commitments identified below are based on the potential mitigation measures identified in the Final EIS. To the extent that potential mitigation measures identified in the Final EIS are not specifically mentioned here (Attachment F), they are incorporated herein by reference as required mitigation measures.

## **Mitigation Measures (Environmental Commitments)**

### **1.0 EARTH**

#### **1.1 All Preferred Station Site Alternatives and Preferred Corridor Improvements**

To avoid or minimize erosion and water quality degradation during construction, Sound Transit will:

- Limit the extent of clearing and grading to minimize exposed soil.
- Route surface water through temporary drainage channels around and away from disturbed soils or exposed slopes.
- Use straw mulch and erosion-control matting to stabilize graded areas and reduce erosion and runoff impacts on slopes.
- Construct sediment ponds, check dams, and filter fences to remove as much sediment as possible prior to returning runoff to natural drainage.
- Intercept and drain groundwater when encountered.
- Incorporate contact provisions allowing temporary cessation of work under certain, limited circumstances, if weather conditions warrant.

- Provide support to cuts or fill by retaining walls or reducing the slope of the hill. Prior to filling along the hillside, install sub-drains to intercept the seepage emanating from the slope.
- Tie drainage lines from the slope into a culvert designed to replace the present open-ditch drainage system.
- Improve subsurface drainage to increase local slope stability.
- Require pile or drilled pier foundations as necessary for station improvements located over existing fill.
- Reduce or eliminate damage due to soil liquefaction by densifying or replacing any potential liquefiable materials that may be present beneath railroad embankments.
- Properly arm the fill slope against wave action and use clean soils containing little or no silt and clay as fill to reduce the potential for degradation of water quality during and after construction.
- Implement proper wet weather earthwork practices to reduce the potential exposure of soils to wet weather and keep soils compacted and protected from rainfall. Construct silt fences and detention ponds to reduce the potential construction-period erosion.
- Implement proper compaction and re-vegetation of exposed soils to reduce potential post-construction erosion.
- Where fill is exposed to wave action or flowing water, properly grade the fill to reduce the potential for erosion.
- Use construction-period drains or pumps as necessary to control anticipated near-surface groundwater.
- Remove and/or remediate contaminated sites to Washington State Department of Ecology (WDOE) standards.

### **1.2 Ballard Station Alternative 5b (If Constructed)**

Cuts into the hillside could require retaining walls, assuming walls that could stabilize the slope could be designed and constructed. Cutting into the hillside east of the mainline tracks would aggravate sliding and create the potential for loss of property. Disturbing the slope may damage adjacent properties. To avoid or minimize these potential impacts, Sound Transit will:

- Design drains in conjunction with retaining walls to increase slope stability.
- Re-work existing fills as necessary.

### **1.3 All Preferred Corridor Improvements**

**Landslide Risk:** Vibrations from construction, particularly from pile-driving, could trigger landslides in areas where slides are imminent. To avoid or minimize landslides in areas where slides are imminent, Sound Transit will:

- Reduce the potential for slides triggered by construction vibrations by the following methods: driving piles during the drier summer months when slopes are more stable; re-drilling or jetting to reduce the energy needed from pile penetration; or using auger-drilling piles that do not require driving.

- Improve drainage, construct some retaining structures, and flatten side slopes to improve slope stability in static conditions and reduce the potential for slide movement during earthquakes.

The corridor has historically been subject to landslides. Disturbance at the toes of bluffs could result in landslide risk. To avoid or minimize landslide risk, Sound Transit will:

- Reduce the potential for risk of property loss from landslides by locating proposed improvements away from potentially unstable slopes to the extent practical and by providing an instrumentation system that can detect earth movement and warn train operators.
- Construct new tracks on the west side of the alignment (where possible) to reduce the potential for damage and injury due to landslides.
- Implement a more sophisticated and closely spaced warning system in areas of moderate to high risk.
- Install instrumentation on slopes to detect small movements and give warning when the rate or magnitude of movements exceeds a given level.

**Earthquake-related Liquefaction:** The Puget Sound region is susceptible to earthquakes. Although the corridor is not exceptionally susceptible, to avoid or minimize potential impacts from liquefaction, Sound Transit will:

- Undertake additional design studies to further evaluate and, if necessary, address the possibility of liquefaction during construction.
- Conduct routine maintenance and repair to address settling of corridor improvements during operation or other movement that may be caused by liquefaction.

**Existing Contamination:** There may be contaminated soils encountered during construction of stations and corridor improvements. To avoid or minimize potential impacts from existing contamination, Sound Transit will:

- Minimize the amount of excavation required during construction to limit the amount of potentially contaminated soil encountered.
- Undertake the mitigation measures identified in the Hazardous Materials section below if contaminated soils are encountered.

## **2.0 WATER QUALITY**

### **2.1 All Preferred Station Site Alternatives**

To avoid or minimize temporary water quality degradation from increased erosion and sedimentation during construction, Sound Transit will:

- Use Best Management Practices (BMPs). Construction BMPs will include the use of silt fencing, barrier berms, plastic covering for exposed ground, sediment traps (hay bales),

temporary sediment detention basins, and restricting construction activities to dry-weather periods to contain sediment onsite.

- Perform regular maintenance as appropriate to ensure effectiveness of the construction BMPs.
- Undertake further requirements, including careful loading of all dump trucks to avoid spillage, and cleaning heavy equipment, trucks, and tires before they are allowed to drive offsite.
- Conduct regular preventative maintenance of vehicles to minimize potential leaks of fuel, oil and grease, hydraulic fluid, and other hydrocarbons during construction.
- Determine appropriate construction BMPs for the proposed facilities based on final engineering plans in compliance with local and other regulatory requirements.

To avoid or minimize temporary water quality degradation from increased erosion and sedimentation during operations, Sound Transit will:

- Use Best Management Practices (BMPs), including the following operation BMPs:
  - Implement stormwater management facilities, such as detention or retention ponds, to mitigate increases in stormwater runoff.
  - Implement wetponds, biofiltration facilities, or other approved measure to reduce water quality impacts.
  - Use oil/water separators.
  - Prepare spill response program.
- Perform regular maintenance as appropriate to ensure effectiveness of the operation BMPs.
- When possible, route stormwater runoff to existing storm sewers, provided that the existing system has adequate available capacity.
- Perform routine inspection for leaks of hazardous materials from parked rail cars at the layover facility, and drip pans could be used during minor repairs.
- To mitigate potential cumulative impacts from new impervious surface, design stormwater infiltration facilities at sites with appropriate conditions for infiltration. Such sites will have well-drained soils, a wet-season water table well below the pond bottom, and adequate protection of groundwater impacts from stormwater contaminants.

## **2.2 Mukilteo Station Alternative 2a**

Impacts from increases in the quantity and timing of stormwater runoff likely will not be significant or require mitigation because stormwater will be routed to existing storm sewers or downstream drainage ditches if adequate capacity is available. If there is no available capacity, appropriate on-site detention will be provided. Alternately, existing infrastructure will be upgraded to handle increased flows.

## **2.3 Shoreline Station Alternative 4b (If Constructed)**

Station Site Alternative 4b may require use of retaining walls and appropriate drainage systems to minimize erosion caused by slope instability. To avoid or minimize potential impacts, Sound Transit will:

- Route drainage to existing storm sewers, as is currently the case.
- Implement BMPs, including installing biofiltration areas to filter runoff, to mitigate adverse impacts on water quality caused by operation of new platforms.

#### **2.4 All Preferred Corridor Improvements (MCIA)**

Temporary water quality degradation from increased erosion and sedimentation could impact water quality in receiving surface water by increasing turbidity. Sound Transit will minimize erosion, sedimentation, and the release of pollutants to a less-than-significant level through the use of construction BMPs: silt fencing, barrier berms, plastic covering for exposed ground, sediment traps (hay bales), temporary sediment detention basins, restricting construction activities to dry-weather periods, diapering of all dump trucks to avoid spillage, and cleaning of heavy equipment trucks and tires before they are allowed to drive offsite.

Sound Transit will also perform regular preventative maintenance of vehicles to minimize potential leaks of fuel, oil and grease, hydraulic fluid, and other hydrocarbons.

In addition, Sound Transit will:

- Where existing culverts are extended or replaced, include temporary stream by-passes to minimize water quality impacts on local streams and downstream receiving waters. If replacement culverts are required, they will be sized to handle high flows during storm events, and retain/improve fish passage characteristics.
- To minimize potential water quality impacts associated with spills, implement the BNSF spill response procedures.

#### **2.5 Corridor Improvements 1, 5, 16, and 20**

Fill in the 100-year floodplain would displace water storage, potentially changing flood levels. Sound Transit will excavate areas not prone to floods to compensate for lost floodplain storage and mitigate floodplain fill impacts. Facilities or structures located in the floodplain will be flood-proofed (i.e., elevating or waterproofing all facilities) to avoid injury, damage, or service disruption during a 100-year flood. If the tracks are inundated by a 100-year flood, rail service will be discontinued, as is currently the case.

With respect to Corridor Improvements 16 and 20, Sound Transit will implement proper sizing and installation of culverts to minimize flood impacts on small streams.

### **3.0 FRESHWATER WETLANDS**

#### **3.1 All Preferred Station Site Alternatives**

To avoid or minimize impacts where wetlands are present, Sound Transit will:

- Implement standard erosion and sediment-control measures and BMPs during construction to minimize short-term impacts.
- Implement proper platform and parking lot design (where proposed) and management of stormwater runoff to minimize long-term impacts associated with station operation.
- Identify specific mitigation opportunities during project permitting, prior to final project design.
- Avoid stockpiling or staging activities in wetlands. If necessary, fence staging and stockpiling areas to avoid inadvertent disturbance of nearby wetlands.

### **3.2 Shoreline Station Alternatives 4b and Ballard Alternative 5a (If Constructed)**

Under Station Site Alternatives 4b and 5a, possible relocation or culverting existing drainage ditches could be required, but this would not directly affect wetlands. Proper placement of station platforms will avoid impacts on drainage ditches.

### **3.3 Ballard Alternative 5b (If Constructed)**

To mitigate for impacts resulting from filling and grading a portion of an existing wetland and an associated ditch at the NW 70<sup>th</sup> Street site, which also would be affected by fill required for CI 23 (see discussion under CI 23), Sound Transit will:

- Create, restore, or enhance wetlands in the vicinity of the station.

### **3.4 All Preferred Corridor Improvements (MCIA)**

To avoid or minimize impacts short-term construction impacts where wetlands are present, Sound Transit will:

- Locate staging, stockpiling and equipment storage areas in appropriate non-wetland areas to minimize impacts. Stage all construction activities from upland areas to avoid temporary impacts to wetlands. If necessary, fence staging areas to prevent inadvertent disturbance of sensitive resources adjacent to staging sites.
- To avoid and minimize the potential for erosion/sedimentation during construction, implement standard erosion and sediment-control procedures, such as installing sediment barriers around exposed soils. These procedures shall be identified in a detailed Temporary Erosion and Sediment Control Plan (TESCP) to be developed prior to project construction.
- To minimize and prevent spill or leakage of hazardous materials during construction, implement standard spill prevention measures during construction. These measures shall be identified and described in a detailed Spill Prevention, Containment, and Control Plan (SPCCP) to be developed prior to construction.

### **3.5 Corridor Improvements 1, 4, 5, and 23**

Approximately 1.25 acres of emergent/shrub wetlands will be filled to construct the new tracks for CI 1. Approximately 0.05 acres of small emergent wetland will be filled for CI 4. Approximately 0.62 acre of fill will be placed in several wetlands along the existing tracks for CI 5. Approximately 0.22 acre of fill will be placed in two small wetlands east of the tracks for CI 23. To compensate for this permanent, unavoidable filling of wetlands, Sound Transit will:

- Create, restore, and/or enhance wetlands at one or more sites identified in the Final EIS Mitigation Options Report (Appendix D-2). Mitigation will focus on replacing wetland functions lost as a result of the project. Compensation will occur in the same drainage basin and will ensure no net loss of wetland habitat.

### **3.6 Compensation Ratios**

Sound Transit shall provide full compensation for all natural resource impacts caused by construction and operation of the commuter rail project. This will include replacement of habitat on an area-for-area basis, and compensation for loss of ecosystem functions and processes. Factors that will be taken into account in determining the appropriate ratios include:

- Current ecological function of affected habitat (i.e., high function means greater ratio);
- Difficulty in replacing affected habitats (i.e., greater difficulty means higher ratio); and
- Time required for restored area to function effectively (i.e., longer time means higher ratio).

Compensation ratios will be developed based on existing baseline conditions with the concurrence of FTA. Specific ratios have yet to be determined, but the following are considered to be minimum compensation requirements for freshwater wetland fills in the Lowell area:

- Freshwater wetland fills in the Lowell area will be mitigated at a 1.5:1 or greater ratio as determined by the U.S. Army Corps of Engineers.

## **4.0 WILDLIFE HABITAT AND VEGETATION**

### **4.1 All Preferred Corridor Improvements and Station Site Alternatives**

Pursuant to Section 7 of the Endangered Species Act (ESA), a Biological Assessment (BA) of the project's effect on chinook salmon, coho salmon, bull trout and the bald eagle was prepared and forwarded to the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Based on the BA and formal comments submitted to FTA, FTA anticipates a concurrence with its finding of not likely to adversely affect on the above-mentioned species and, therefore, formal consultation has not yet been initiated. However, should formal consultation occur with USFW or NMFS and a Biological Report (BR) issued pursuant to Section 7, Sound Transit shall, as part of these mitigation measures, comply with the conclusions of the BR and any reasonable and prudent measures recommended as determined appropriate by FTA. In no event shall Sound Transit initiate any construction or construction-type activities prior to: (a) USFWS's and NMFS's concurrence with FTA's finding of "not likely to adversely affect"; or (b) the completion of formal consultation and written authorization by FTA.



#### **4.2 Shoreline Alternative 4b and Ballard Alternative 5b (If Constructed)**

Under Station Alternative 4b, a minimal amount of shrub habitat would be disturbed along the existing tracks but would not be significant. Under Station Alternative 5b, a minimal amount of habitat adjacent to the tracks would be lost, including a portion of the wetland/drainage ditch on the east side of the tracks. These impacts would not be significant. Sound Transit will:

- Mitigate for loss of wildlife habitat by enhancing habitat in the vicinity of the station or by creating or restoring new wildlife habitat in the Snohomish River estuary or other locations as part of the overall strategy for mitigating commuter rail impacts.

#### **4.3 Ballard Alternative 5a (If Constructed)**

Construction of platforms could impact a minimal amount of habitat adjacent to the tracks, including a portion of the wetland/drainage ditch on the east side of the railroad. Overall impacts would be very minor. Sound Transit will:

- Mitigate for loss of wildlife habitat through a combination of on- and offsite intertidal wetland creation or restoration, which could create new habitat for herons, shorebirds, and other wildlife. This mitigation will also compensate for loss of benthic production and will offset foraging impacts.

#### **4.4 All Preferred Corridor Improvements (MCIA)**

Construction of the new tracks on the east side of the existing tracks in Corridor Improvement 5 could require removal of up to 0.5 acre of an existing cottonwood stand. Bald eagles sometimes use large trees in this stand for perching. Most of the trees that would need to be removed are smaller trees adjacent to the tracks and not along the shoreline. If the tree removal occurs during winter, it could temporarily preclude use of the area by eagles. However, eagles could resume use of the area following construction.

Construction of the fill with block wall track support in Corridor Improvement 16 will result in filling of 1.84 acres of intertidal habitat. Loss of benthic habitat could affect the foraging base for shorebirds and shoreline-foraging mammals. However, the new fill will be re-colonized by benthic organisms following construction. Overall, foraging impacts would not be significant. The block wall at the top of the new fill may act as a partial barrier to some mammals (e.g., beaver, raccoon, coyote, and opossum) accessing the shoreline. However, most wildlife will continue to use existing access routes, including culverts, to reach the beach.

Track construction in Corridor Improvement 20 will result in filling 0.88 acre of intertidal habitat, including both nearshore and lagoon habitat. Reduction in benthic habitat could affect the foraging base for shorebirds and shoreline-foraging mammals. However, benthic organisms would re-colonize the new fill. The block wall at the top of the new fill may act as a partial barrier to some mammals (beaver, raccoon, coyote, and opossum) trying to access the

shoreline. However, most wildlife will continue to use existing access routes, including culverts, to reach the beach.

In addition, some wildlife may avoid use of the preferred Corridor Improvements because of noise disturbance during construction.

Sound Transit will:

- Mitigate for loss of wildlife habitat in the preferred Corridor Improvements through a combination of on- and offsite intertidal wetland creation or restoration, which could create new habitat for herons, shorebirds, and other wildlife. This mitigation will also compensate for loss of benthic production and will offset foraging impacts.
- Not remove any cottonwood trees used by bald eagles for perching.

#### **4.5 Corridor Improvements 16 and 20**

These CIs will be within bald eagle nesting territories. Impacts will be limited to noise disturbance during construction. None of the nests are within line-of-sight of the railroad. Sound Transit will:

- Minimize impacts on nesting bald eagles by avoiding loud construction activities within bald eagle management zones (0.25 mile of an active nest when not in line-of-sight, 0.5 mile when the activity is within line-of-sight) during some or all of the January 1 to August 15 nesting season. Specific construction windows will be negotiated with regulatory agencies prior to construction.
- Not remove any cottonwood trees used by bald eagles for perching.

### **5.0 Marine Resources**

#### **5.1 All Preferred Corridor and Station Improvements**

The mitigation measures as required in Section 4.1 above are incorporated herein by reference.

#### **5.2 Corridor Improvement 16**

Construction of the new mainline track will require filling 1.84 acres of intertidal habitat along the Mukilteo shoreline. Of this, 0.93 acre is existing rip rap and 0.91 acre is natural substrate. An additional 0.76 acre of natural substrate will be temporarily affected by placement of footings at the base of the new track support. The footings will be covered (i.e., backfilled) with at least 18 inches of natural substrate to avoid long-term impacts. The new fill will extend up to 45 feet from the base of the existing riprap (less in other areas), but will not directly affect eelgrass beds. However, direct impacts on benthic and epibenthic communities, which provide food for fish and wildlife, will occur.

The fill at the base of the block wall maintains shallow water habitat for salmon (below EHW) and minimizes voids in the rip-rap where predators can hide. Therefore, impacts on salmon migration and predation would not be significant. The new fill slope is not expected to increase beach erosion or affect littoral processes to any significant degree, and is intended to reduce beach erosion.

To avoid, minimize or mitigate for adverse impacts to marine resources, Sound Transit will:

- Mitigate unavoidable permanent impacts (placement of fill in Puget Sound) by creation, restoration, or enhancement of intertidal habitat at one or more locations on the shoreline and/or in the Snohomish estuary (see EIS Appendix D-2, Mitigation Options Report). This will offset loss of benthic habitat, mitigate impacts to bull trout, provide opportunities for salmon rearing, and provide foraging areas for fish and wildlife.
- “Key-in” the rip-rap at the base of the block wall to minimize voids (spaces) where predator fish can hide. This will minimize predation impacts on juvenile salmon.
- Mitigate for temporary impacts associated with placement of footings at the base of the new fill by stockpiling the existing beach substrate and backfilling the area following construction. Footings will have a minimum cover of 18 inches of natural beach substrate.
- Stockpile large woody debris prior to construction and replace it on the beach following construction to minimize loss of beach wrack.
- Observe agency-designated construction windows, which prohibit work in saltwater areas between February 15 and July 15 to protect bull trout and other salmonids.

To avoid, minimize or mitigate for construction-related impacts (i.e., habitat scour) caused by in-water construction, Sound Transit will:

- Minimize the number of barge trips into the shoreline area. Fewer barge trips means less total propeller scour, and avoids scouring of eelgrass, kelp, and benthic habitat.
- Stockpile construction materials away from intertidal areas, on rail cars, or on the upland side of the railroad track.
- Prepare and implement a Temporary Erosion and Sediment Control Plan (TESCP) prior to project construction.
- Prepare and implement a detailed Spill Prevention, Containment, and Control Plan (SPCCP) prior to construction.
- Use smaller tugs (to position barges) to decrease the extent of propeller scour due to their smaller propellers and shallower draft.
- Avoid setting anchors in eelgrass or kelp beds. Set anchors outside the construction footprint as much as possible to hold barges in position. Retrieve anchors and anchor cables via skiff, instead of dragging the anchors across the beach. Attach floats to anchoring cables to prevent the cables from dragging across the bottom during retrieval.
- Position tugs as far offshore as practicable to minimize propeller scour, direct propellers at angles parallel or oblique to the shore whenever practical.

- Operate the barge mounted crane only when the clamshell is completely closed to avoid releasing fill material along the entire arc of swing, if a clamshell-type bucket is used to transfer construction fill to shore.
- Prevent barges from grounding at low tide. Schedule construction during high tide, in daylight, when most upper intertidal animals are least active.
- The primary construction barge will contain winches that will allow it to be winched away from the shore to a depth sufficient enough to allow barges containing construction materials to be affixed alongside. The primary construction barge will then be winched back towards the shore via shore mounted cables, but will stay far enough offshore that several feet of water remain under all portions of the hull at all times. Which cables will have floats attached at regular intervals to avoid contacting the bottom within the intertidal zone.
- If scouring occurs as a result of inadvertent or unforeseen circumstances, an equivalent substrate material (coarse sand, gravel, or cobble) will be placed over the scoured or depressed areas to reshape the beach to pre-project beach level. Areas of scoured eelgrass and kelps will be replanted.
- Sound Transit will carefully and continuously monitor changes in beach morphology and eelgrass bed during and after construction for a period of not less than five years to ensure there are no adverse effects. The method and timing of monitoring will be determined through consultation with USFWS and as part of the Army Corps of Engineers' Section 404 permit process.

### **5.3 Corridor Improvement 20**

Impacts are similar to CI 16. The new track will require 0.88 acre of fill in Puget Sound and in two intertidal lagoons east of the tracks. The majority of the fill is on existing riprap (0.79 acre); only 0.09 acre of natural substrate will be lost. Temporary impacts from placement of footings at the base of the new fill will be 0.39 acre. The new fill will only extend beyond the existing riprap in a few localized areas. Therefore, loss of shallow water habitat for salmon is minimal. The fill will not directly affect eelgrass beds that occur offshore of the construction zone. There will be no significant changes in beach erosion or littoral transport.

Construction will not involve barges, but will require side-dumping of fill from railcars and trucks, and construction of a temporary haul road on the east side of the tracks. Trucks and other equipment may need to operate on the beach and/or in the lagoons.

Temporary impacts, including increased turbidity and potential for spillage/leakage of hazardous materials, could occur during construction.

To avoid, minimize or mitigate for adverse impacts to marine resources, Sound Transit will:

- Mitigate unavoidable permanent impacts (placement of fill in Puget Sound) by creation, restoration, or enhancement of intertidal habitat at one or more locations on the shoreline and/or in the Snohomish estuary (see EIS Appendix D-2, Mitigation Options Report). This will offset loss of benthic habitat, mitigate impacts to bull trout, provide opportunities for salmon rearing, and provide foraging areas for fish and wildlife.

- “Key-in” the riprap at the base of the block wall to minimize voids (spaces) where predator fish can hide. This will minimize predation impacts on juvenile salmon.
- Mitigate for temporary impacts associated with placement of footings at the base of the new fill by stockpiling the existing beach substrate and backfilling the area following construction. Footings will have a minimum cover of 18 inches of natural beach substrate.
- Stockpile large woody debris prior to construction and replace it on the beach following construction to minimize loss of beach wrack.
- Observe agency-designated construction windows, which prohibit work in saltwater areas between February 15 and July 15, to protect bull trout and other salmonids.

To avoid, minimize or mitigate for construction-related impacts caused by in-water construction, Sound Transit will:

- Prepare and implement a TЕСP prior to project construction.
- Prepare and implement a detailed SPCCP prior to construction.
- To mitigate for potential hazardous materials spills, store and make available spill clean-up equipment (for example, oil-absorbent pads and booms on equipment barges) onsite during construction.
- Prohibit refueling of vessels or equipment within 25 feet of MHHW.
- Implement BMPs to control erosion and sedimentation.
- Minimize use of construction equipment on the beach and in lagoon areas. If use of equipment in the lagoons is required, use timber matting or other appropriate material to protect the lagoon substrates from disturbance.
- Store spill clean-up equipment (for example, oil-absorbent pads and booms on equipment barges) onsite during construction.
- Maintain a “sounding log” on the hour to log depth of water below the hull of the primary construction barge.
- Use silt fencing/sediment barriers along haul roads and other bare soil areas to prevent erosion.

#### **5.4 Compensation Ratios**

Sound Transit shall provide full compensation for all natural resource impacts caused by construction and operation of the commuter rail project. This will include replacement of habitat on an area-for-area basis, and compensation for loss of ecosystem functions and processes. Factors that will be taken into account in determining the appropriate ratios include:

- Current ecological function of affected habitat (i.e., high function means greater ratio);
- Difficulty in replacing affected habitats (i.e., greater difficulty means higher ratio); and
- Time required for restored area to function effectively (i.e., longer time means higher ratio).

Compensation ratios will be developed based on existing baseline conditions in accordance with federal requirements. These conditions consist of intertidal beach area with natural substrate and

existing rip rap area. Specific ratios have yet to be determined, but the following are considered to be minimum compensation requirements for impacts to marine resources:

- Direct loss of Puget Sound aquatic habitat will be replaced at a minimum 1.5:1 ratio;
- By replacing natural beach aquatic habitat, improving the profile of the rip rap slope, and mitigating culvert extensions (as discussed below), the functional mitigation ratio for the project is likely to be at least 3:1. The mitigation ratio for replacement of aquatic habitat will be finalized during the Section 404 permitting process and, possibly, the ESA Section 7 formal consultation process. Mitigation for habitat replacement will occur on-site and in-kind if possible (i.e., at Point Wells), or in the Snohomish River Estuary.
- Sound Transit shall mitigate against impacts to fish habitat caused by culvert extensions by daylighting and enlarging an existing culvert and creating a new stream channel at the Edmonds Marsh or other suitable location.

## **6.0 FRESHWATER FISHERIES**

### **6.1 All Preferred Corridor and Station Improvements**

The mitigation measures as required in Section 4.1 above are incorporated herein by reference.

### **6.2 All Preferred Corridor Improvements**

With respect to CIs 1 and 5, there are no direct impacts on streams or fish. Erosion/sedimentation during construction could affect quality of runoff in trackside ditches, which outfall to the Snohomish River.

With respect to CI 16, placement of fill will likely require extension of the existing culverts at the downstream end of two unnamed stream crossings. No other impacts on the stream environment are expected. There is no documented use of these streams by salmonids. However, habitat characteristics appear suitable for coho. Increasing culvert length could reduce fish passage between the Sound and the streams.

With respect to CI 20, placement of fill on the east side of the tracks in this area will affect a portion of Deer Creek and an unnamed stream and will require extension of the existing culvert. There is no rearing or spawning habitat within 25 feet of the existing track, and use of the creeks by resident and anadromous species is considered minimal. Repeated landslides in this area have adversely affected habitat conditions near the downstream end of Deer Creek.

CI 23 involves culverting a small stream that is currently bridged. The stream conveys runoff from the hillslopes east of the tracks to the west, but does not provide habitat for fish. Therefore, impacts are negligible.

To mitigate for impacts on fish habitat, including fish passage, associated with preferred corridor improvements, Sound Transit will:

- Create, restore, and/or enhance intertidal, freshwater wetland and stream habitats at Edmonds Marsh, Maulsby Swamp, and/or other areas identified in EIS Appendix D-2, the Mitigation Options Report. Plans include daylighting a portion of the Willow Creek channel at Edmonds Marsh to improve in-stream habitat and enhance the connection to Puget Sound. Erosion/sedimentation during construction will be mitigated as discussed under Water Quality (Section 2.0).

To avoid, minimize or mitigate for potential construction-related impacts associated with preferred corridor improvements, Sound Transit will:

- Prepare and implement a TESCO prior to project construction.
- Prepare and implement a detailed SPCCP prior to construction.
- Observe designated construction windows that prohibit work in saltwater areas between March 15 and June 15 where appropriate.

### **6.3 Compensation Ratios**

Sound Transit shall provide full compensation for all natural resource impacts caused by construction and operation of the commuter rail project. This will include replacement of habitat on an area-for-area basis, and compensation for loss of ecosystem functions and processes. Factors that will be taken into account in determining the appropriate ratios include:

- Current ecological function of affected habitat (i.e., high function means greater ratio);
- Difficulty in replacing affected habitats (i.e., greater difficulty means higher ratio);
- Time required for restored area to function effectively (i.e., longer time means higher ratio);

Compensation ratios will be developed based on existing baseline conditions and in accordance with federal requirements.

## **7.0 VISUAL QUALITY**

### **7.1 All Preferred Station Site Alternatives and Preferred Corridor Improvements (MCIA)**

To avoid and minimize, minor changes in visual quality and temporary dust during construction, Sound Transit will:

- Implement a community-based design process to design a station and amenities that consider the local context and aesthetic preferences of the surrounding community. The final station design will include specific features and design elements.
- For stations with parking, include parking lot lighting with horizontal cutoffs to minimize potential glare.

### **7.2 Ballard Alternative 5a (If Constructed)**

Changes in visual quality would be especially noticeable as viewed from between six and eight Ballard residences located east of the proposed station. The station canopies would slightly degrade the overall composition of panoramic views from these residences toward the Magnolia hillside neighborhood and Puget Sound. If an overcrossing were selected, views from these residences would be diminished and degraded further. Diminished and further degraded views or a decrease in visual quality could be considered a significant impact. Selection of an undercrossing would avoid significantly diminished views from these residences.

Sound Transit will include specific features and design elements in final station design to mitigate the diminished views from six to eight nearby Ballard residences to a less than significant level.

## **8.0 AIR QUALITY**

### **8.1 All Preferred Station Alternatives**

CO concentrations around stations will be only very slightly higher or not affected at all. Overall, there will be a net improvement in air quality with the commuter rail project.

Under All Preferred Station Site Alternatives, no mitigation measures are required to mitigate traffic-related air quality impacts because projected worst-case concentrations are below applicable air quality standards. At the same time, Sound Transit will:

- Reduce emissions from construction equipment and trucks by using relatively new, well-maintained equipment.
- Avoid prolonged periods of vehicle idling and engine-powered equipment to reduce emissions.
- Schedule trucking materials to and from the project area so as to minimize congestion during peak travel times. This will minimize secondary air quality impacts caused by traffic having to travel at reduced speeds.
- Reduce dust produced by construction by the following techniques:
  - Areas of exposed soils such as storage yards and construction roadways will be sprayed with water or other dust suppressants.
  - Unpaved roads and other areas that might be exposed for prolonged periods will be paved, planted with a vegetation ground cover, or covered with gravel.
  - The amount of soils carried out of the construction area by trucks will be reduced by washing off deposits of mud, dirt, and other debris on the vehicle's body, fenders, frame, undercarriage, and wheels.
  - Covering dusty truck loads and providing adequate freeboard to prevent spillage will be implemented to minimize fugitive dust from construction trucks.
  - Soil that does escape the construction area on exiting vehicles will be reduced with an effective street-cleaning effort.

## **9.0 NOISE AND VIBRATION**

### **9.1 All Preferred Corridor Improvements (MCIA)**



Noise increases will be slight and un-noticeable compared to background levels. Although no direct construction impacts were identified, there is the potential for vibration impacts whenever pile driving is performed near vibration-sensitive structures. This is due to the changing geology the piles encounter while being driven into the earth. For this reason, it is recommended that Sound Transit perform vibration monitoring for all activities that may produce vibration levels near the USDOT maximum recommended level when there are structures near the construction activity. Sound Transit will also minimize vibration impacts by using alternative construction methods to drive piles, including using auger-cast piles (where practical).

No operational impacts were identified, and no mitigation measures are required.

## **10.0. HAZARDOUS MATERIALS**

As with any project, it may be necessary to remediate hazardous materials encountered during construction. During operation, risk of hazardous spill should be addressed.

### **10.1 All Preferred Station Site Alternatives**

Sound Transit will conduct Phase I Environmental Site Assessments (ESAs) (and Phase II ESAs, if environmental sampling is appropriate) on parcels to be acquired to identify and quantify hazardous materials concerns and cleanup responsibilities. This work will include clarification of the locations of hazardous materials releases with respect to the proposed project sites, and status of site cleanups for contaminated properties on or adjacent to the parcels to be acquired, as identified by the Phase I and II ESAs. Sound Transit will:

- Develop and implement a construction contingency plan that addresses hazardous substance identification, notification, management, remediation, and disposal. Proper demolition and disposal procedures will be developed and implemented for structures that contain asbestos, lead-based paint, or PCBs, as identified by the Phase I and II ESAs.
- Remove and/or remediate contaminated sites to DOE standards.

### **10.2 All Preferred Corridor Improvements (MCIA)**

To avoid or minimize potential impacts from hazardous materials, Sound Transit will:

- In the event of a hazardous materials spill from a commuter train, ensure that Burlington Northern Santa Fe (BNSF) Environmental Response Procedures be followed to minimize adverse impacts.
- Prior to construction of corridor improvements, encourage BNSF to develop and implement a construction contingency plan that addresses hazardous substance identification, notification, management, and disposal in the unlikely event that hazardous substances are encountered during construction.
- Remove and/or remediate contaminated sites to DOE standards.

## **11. LAND AND SHORELINE USE**

The project was found to have some potentially beneficial land use impacts. However, under Ballard Station Alternative 5a, two businesses would be required to relocate. Under CI 1, City of Everett property would be exchanged for other BNSF property. Under CI 2, GTS Drywall and Marvell Industries would be partially displaced. In addition, 5 to 10 parking spaces would be relocated at the City of Everett Animal Shelter. Under CI 4, a property owner of a light industrial commercial use would need to abandon use of a driveway located on BNSF property. Planning and coordination are required to minimize construction disruption.

Although the corridor improvements are consistent with the broad principles of the Washington State Shoreline Management Act (SMA,) some local shoreline plans along the corridor prohibit expanding railroad facilities and do not permit fill at all or permit it only under very limited circumstances. In these jurisdictions, there is an inconsistency between the local plan and the proposed project.

### **11.1 All Preferred Station Site Alternatives**

To avoid or minimize potential land and shoreline use impacts, Sound Transit will:

- Coordinate construction activities and access needs with local businesses and residents to alleviate potential disruptions associated with construction.
- Use local comprehensive plan policies and development to ensure responsive and compatible station design to promote land use compatibility at all station locations.
- In compliance with the Uniform Relocation Assistance Programs (49 CFR Part 24), provide for the payment of reasonable and necessary moving and related expenses for any land use that qualifies as displaced under this regulation (under Ballard Alternative 5a). The amount of the relocation payment is determined on a case-by-case basis. This compliance could avoid any significant displacement impacts.
- Continue to work with cities to identify changes in land use plans and zoning to encourage transit-oriented development and compatible development near stations.

### **11.2 All Preferred Corridor Improvements (MCIA)**

No mitigation measures for corridor improvement land use impacts are required or proposed beyond construction mitigation measures discussed in the Air Quality, Noise, and Transportation sections of the Final EIS.

Washington State's Growth Management Act (GMA) recognizes railroad facilities and high capacity transit facilities as essential public facilities and prohibits local plans and development regulations, including Shoreline Master Programs, from precluding such facilities. Where a local SMP would preclude siting this project, Sound Transit will work to resolve inconsistencies in the SMP.

## **12.0 HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES**

The project was found to have only insignificant temporary construction dust and traffic effects in the vicinity of identified resources. During construction, care and appropriate procedures will be necessary if any archaeological resources are encountered.

### **12.1 All Preferred Station Site Alternatives and Preferred Corridor Improvements (MCIA)**

The following mitigation for undiscovered archaeological sites is identified for All Preferred Station Site Alternatives and Preferred Corridor Improvements (MCIA) involving construction with excavation. To avoid adversely affecting undiscovered prehistoric or historic archaeological sites, Sound Transit will:

- Arrange for a professional archaeologist to review the selected alternative during final design. This review will determine if a more detailed field survey may be needed so that resources can be discovered, evaluated, and appropriately treated. Likewise, the review will determine where construction monitoring may be needed and provide for a plan to specify measures for treating resources that may be discovered during construction. Sound Transit would include subsurface testing, where needed, in additional archaeological review and survey of the selected alternative. This work would take place soon after completion of the 30 percent design drawings to recommend where avoidance or other treatment may be needed if National Register-eligible archaeological deposits are found. An unanticipated discovery plan would include provisions for treating resources, including human remains, that may be discovered during construction. The archaeological work would be conducted in consultation with the State Historic Preservation Officer and the affected Indian tribes.

### **12.2 Station Alternatives 1b and 2a, and All Preferred Corridor Improvements (MCIA) in the Ballard to Seattle and Bayside “Horn” Corridor Segments**

During construction, there will be efforts to minimize traffic congestion, dust, and noise associated with the project (see impact analysis discussed in Section 3.11 of the Final EIS – Traffic and Transportation; Section 3.2 of the Final EIS - Air Quality, and Section 3.6 of the Final EIS - Noise and Vibration). Construction activities will be short-term and not considered significant.

## **13.0 PUBLIC SERVICES AND UTILITIES**

The proposed project was found to have no significant impacts on public services and utilities.

### **13.1 All Preferred Station Site Alternatives and Preferred Corridor Improvements (MCIA)**

To avoid or minimize potential impacts on public services and utilities, Sound Transit will:

- Contact police, fire, emergency services, and utility providers to anticipate possible temporary disruptions in service during construction and ensure that emergency access is maintained.
- Protect, maintain in place, or relocate all existing utilities in coordination with the utility provider. Final engineering and design plans shall identify locations where utility changes are necessary.

#### **14.0 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**

Environmental justice impacts related to Tribal fishing could occur if there is a significant unmitigated impact on fisheries that affects tribal subsistence fishing. These impacts would be avoided by mitigating fisheries impacts.

##### **14.1 Environmental Justice – All Preferred Station Site Alternatives and Preferred Corridor Improvements (MCIA)**

Compensation for fisheries impacts through mitigation will offset potential environmental justice issues related to Tribal fishing.

##### **14.2 All Preferred Station Site Alternatives**

To avoid or minimize potential impacts on local businesses, Sound Transit will:

- Coordinate construction activities and access needs with local businesses to minimize potential disruptions.
- Concentrate potentially disruptive construction activities during non-peak business hours.
- Allow use of commuter rail parking areas by local business customers during non-commuting hours where possible.

##### **14.2 Shoreline Alternative 4b (If Constructed)**

Sound Transit will coordinate with Chevron to ensure that any potential trucking-related impacts are minimized.

#### **15.0 SAFETY AND SECURITY**

Safety, security, and pedestrian and vehicle safety issues are addressed through project design. No significant impacts are anticipated.

##### **15.1 All Preferred Station Site Alternatives**

It is anticipated that no adverse impacts on safety or security would occur; therefore, no mitigation measures are required or proposed beyond the measures integral to the project. Sound Transit will undertake the following measures that are part of the proposed project to ensure a safe and secure environment at each commuter rail station and to ensure that no adverse impact on safety or security would occur:

- Implement site planning principles and guidelines for safety and security as they relate to station design.
- Coordinate with local crime-prevention agencies to integrate security into the station planning process.
- Construct station lighting to provide observable, well-lit spaces, including walkways, canopies, and vehicle maneuvering spaces that will maximize the ability to see and be seen.
- Provide safe and adequate space for bus maneuvering, parking, passenger loading, and access.
- Use high-quality durable materials for construction.
- Clearly display transportation information and transfer schedules.
- Time bus and train transfer schedules to minimize waiting times.
- Enforce limited access to the station platforms and parking areas by signage, landscaping, design, and fencing, as appropriate.
- Conveniently locate and maintain public telephone(s) or call box(es).

Sound Transit policy states that passengers have a right to a safe and secure station environment. To ensure safety and security at stations, Sound Transit will establish the following station security guidelines:

- Sound Transit passengers and their property are protected.
- Security is coordinated throughout the system.
- Security is responsive to passenger concerns.
- Station design facilitates security.

In addition, Sound Transit will:

- Design a station security program for each station to protect passengers from crime and harassment, protect passengers' property (including vehicles) from loss or vandalism, and protect station amenities from loss or vandalism.
- License and train all security personnel to assist passengers in a reliable manner and provide information, directions, and protection.
- Ensure that security personnel also will be available to enforce parking policies and procedures established by the local law enforcement agency.
- Require all personnel that could be working on or near station platforms to undergo orientation and a rail safety-training program.

## **15.2 Pedestrian and Vehicle Safety Along the Corridor**

The addition of 12 passenger trips per day to the existing heavily used freight rail corridor represents a relatively minor proportional increase in trains; the commuter rail project would not significantly increase the likelihood of pedestrian/train or vehicle/train accidents.

An integral part of the commuter rail project will include an ongoing education effort in coordination with BNSF, which currently aggressively promotes pedestrian and vehicle safety in corridor communities and nearby schools.