

Appendix H
Mitigation Plan

Mitigation Plan

The mitigation plan for Federal Way Link Extension (FWLE) describes Sound Transit's mitigation commitments that will be implemented to avoid or minimize the impacts of the Preferred Alternative identified in the Final Environmental Impact Statement (EIS). Many of the potential impacts identified through the EIS process will be mitigated through incorporation of avoidance, minimization, or improvement elements that are now included in the definition and design of the project. If the Sound Transit Board ultimately selects another alternative to build differing from the Preferred Alternative, the mitigation plan will be modified accordingly.

This plan describes the mitigation measures associated with the operating (long-term) impacts of Federal Way Link first, then the measures associated with construction. The final mitigation measures will be included as conditions of the Federal Transit Administration's (FTA) Record of Decision (ROD) for the project. FTA will incorporate them in any future grant agreement that FTA may award Sound Transit for construction of the FWLE. Sound Transit will track these measures and report regularly to FTA to ensure that the mitigation commitments are being met. Where appropriate, Sound Transit will incorporate mitigation requirements into its contracting documents for final design and construction.

The mitigation measures described in Table H-1 are based on the potential mitigation measures identified in the Final EIS for the Preferred Alternative. As the project moves into final design and construction, additional design features may be identified that avoid or minimize project impacts (e.g., functional landscaping that enhances visual quality at transit facilities). FTA would review such design elements for consistency with any applicable federal grant requirements and reimbursable costs. The table also includes measures that Sound Transit proposes to take but that require the agreement of other parties. For instance, Sound Transit has identified certain intersection improvements, traffic management, safety, and parking strategies to mitigate project-related impacts, but Sound Transit does not have the sole authority to make those improvements when the facilities are owned and managed by others. Others may also have alternative plans or projects to address future conditions with or without the FWLE. In these cases, Sound Transit would coordinate with these other agencies and jurisdictions to further define and implement improvements to mitigate the FWLE's impacts. Finally, the analysis of impacts in the Final EIS assumes that the SR 509 Extension Project is built as it is defined in that project's Final EIS and Record of Decision published in 2003. Washington State Department of Transportation (WSDOT) is currently evaluating several potential design modifications. Once WSDOT makes design decisions for that project, some elements of the FWLE impact analysis and mitigation measures may need to be reevaluated. For example, highway and arterial roadway operations may change from the 2003 design. This could change the degree or nature of FWLE mitigation for traffic, traffic noise, visual quality, and/or other resources.

TABLE H-1
Mitigation Plan

Resource	Final EIS Chapter/Section	Impact Topic	Period	Mitigation Description
Transportation	3 and 5	Traffic	Long-term	<p>Mitigation will be required at intersections where the intersection level of service (LOS) will be worse than with the No Build Alternative and will not meet the applicable agency LOS standard. If an intersection is not expected to meet agency LOS standards with the No Build Alternative, mitigation would be required if the FWLE substantially degrades the intersection performance further.</p> <p>The following measures will improve the AM and PM peak intersection delay to meet LOS standards, or to achieve the same LOS or better for intersections that will be below standards with the No Build Alternative:</p> <ul style="list-style-type: none"> • SR 99 and Kent-Des Moines Road: a second northbound right-turn pocket, a new northbound left-turn pocket on SR 99. <ul style="list-style-type: none"> - Additional mitigation for the interim terminus conditions: northbound right-turn signal overlap phase, restricted westbound U-turn movement • SR 99 and S 240th Street: protected plus permissive signal phasing for eastbound and westbound approaches. <ul style="list-style-type: none"> - Additional mitigation for the interim terminus conditions: additional southbound left-turn pocket, widened S 240th Street, westbound and northbound right-turn pockets • SR 99/S 272nd Street: northbound right-turn pocket. • I-5 northbound ramps/S 272nd Street: northbound left-turn pocket. • I-5 southbound ramps/S 272nd Street: southbound right-turn pocket, rechannelized southbound approach to a shared left-through and right-turn-only lane. • Military Road S/S 272nd Street: southbound right-turn pocket. • Star Lake Road/S 272nd Street: eastbound and westbound left-turn pockets. • SR 99/S 320th Street: northbound right-turn pocket. • Military Road S/259th Place S/S Reith Road: westbound and southbound right-turn pocket. <p>Sound Transit will provide these improvements or other improvements agreed to with the agency of jurisdiction. As the project design advances, Sound Transit will continue to work with affected jurisdictions/agencies to evaluate mitigation strategies for safe, efficient operations. Final mitigation will be determined and agreed upon by Sound Transit and the affected jurisdiction(s) and agency(s). Sound Transit's contribution to improve intersections will be determined during the project permitting process. This may include contributing a proportionate share of costs to improve intersections affected by the FWLE, based on the project's proportionate ratio of trips at the intersection, or another equitable method.</p>
			Construction	<p>Sound Transit will develop a Maintenance of Traffic plan to address the effects of construction activities on the transportation system in the study area during construction. Actions in the plan could include the following:</p> <ul style="list-style-type: none"> • Conform to the <i>Manual on Uniform Traffic Control Devices</i> (FHWA, 2009) and jurisdictional agency requirements for all maintenance of traffic plans. • Install advance warning signs and highly-visible construction barriers, and use flaggers where needed. • Consider a variety of traffic and travel demand management strategies. • Clearly sign and provide reasonable detour routes when cross streets are closed for elevated guideway and trench construction. The contractor would be required to keep nearby parallel facilities open to facilitate access and mobility. • Use lighted or reflective signage to direct drivers to truck haul routes to ensure visibility during nighttime work hours. Use special lighting for work zones and travel lanes, where required.

TABLE H-1
Mitigation Plan

Resource	Final EIS Chapter/Section	Impact Topic	Period	Mitigation Description
				<ul style="list-style-type: none"> Communicate public information through tools such as print, radio, posted signs, websites, and e-mail to provide information regarding street closures, hours of construction, business access, and parking impacts. Coordinate access closures with affected businesses and residents. The contractor would be required to perform this task in coordination with Sound Transit staff. If access closures are required, property access to residences and businesses would be maintained to the extent possible. If access to the property cannot be maintained, the specific construction activity would be reviewed to determine if it could occur during non-business hours, or if the parking and users of this access (for example, deliveries) could be accommodated at an alternate location. Post advance-notice signs prior to construction in areas where construction activities would affect access to surrounding businesses. Provide regular updates to schools, emergency service providers, local agencies, solid waste utilities, and postal services, and assist public school officials in providing advance and ongoing notice to students and parents concerning construction activity near schools. Schedule traffic lane closures and high volumes of construction truck traffic during off-peak hours to minimize delays, where practical. Cover potholes and open trenches, where possible, and use protective barriers to protect drivers from open trenches. Place a temporary construction barrier near the southbound I-5 edge of pavement where barriers are not already present to separate construction activity from I-5 mainline traffic. To minimize potential freight impacts, coordinate with affected businesses throughout the construction period to notify them of lane and access closures and maintain business access as much as possible.
	3 and 5	Transit	Long-term	No mitigation is required.
			Construction	Construction of the Preferred Alternative would temporarily close the entire Star Lake Park-and-Ride. Sound Transit will mitigate this closure by routing transit riders to available spaces at other nearby park-and-ride lots or leasing parking lots and/or new parking areas in the vicinity. Sound Transit will coordinate with King County Metro on temporarily rerouting bus service as needed.
	3	Safety	Long-term and construction	No mitigation is required for operation or construction.
	3 and 5	Parking	Long-term	<p>Sound Transit will reimburse private business owners for acquired parking spaces, based on quantity of spaces lost and business type.</p> <p>Sound Transit will work with local jurisdictions to evaluate and, if necessary, implement hide-and-ride mitigation around any of the stations. If requested by local jurisdictions, Sound Transit will inventory on-street parking around a station before and after the start of light rail revenue service, and will then determine where mitigation measures would be needed in coordination with the local jurisdiction. Potential parking-control measures include parking meters, restricted parking, passenger and truck load zones, and residential parking zones (RPZs). For those agreed-to parking controls, Sound Transit will pay for signage or other parking-control installations for 1 year after the FWLE begins operating. The local jurisdictions will be responsible for monitoring and providing all enforcement and maintenance, including ongoing RPZ-related costs. Owners of off-street private lots will be responsible for monitoring and preventing potential hide-and-ride parking in their own lots.</p>
			Construction	No mitigation is required.

TABLE H-1
Mitigation Plan

Resource	Final EIS Chapter/Section	Impact Topic	Period	Mitigation Description
	3 and 5	Non-motorized facilities	Long-term and construction	No mitigation is required.
	5	Freight mobility	Long-term	No mitigation is required.
Construction			For any construction activities that might have I-5 impacts, Sound Transit will provide construction information to WSDOT for use in the state's freight notification system. Sound Transit would provide information in a format acceptable to WSDOT.	
Acquisitions, Displacements, and Relocations	4.1	Acquisitions, displacements, and relocations	Long-term and construction	Sound Transit will compensate affected property owners according to Sound Transit's adopted real estate property acquisition and relocation policy, procedures, and guidelines (Sound Transit, 2014a, b). These policies and procedures comply with the federal Uniform Relocation Act and the State of Washington's relocation and property acquisition requirements, and in some cases provide advisory services above the minimum requirements of federal and state law.
Land Use	4.2 and 5	Land use	Long-term and construction	No mitigation is required.
Economics	4.3	Economics	Long-term	No mitigation is required.
	5	Local businesses	Construction	<p>Sound Transit will develop a construction mitigation plan to address the needs of businesses in the study area during construction and will dedicate staff to work with the affected businesses. Actions in the plan could include the following:</p> <ul style="list-style-type: none"> • Provide 24-hour construction telephone hotline. • Provide business cleaning services on a case-by-case basis. • Provide detour, open-for-business, and other signage as appropriate. • Establish effective communications with the public through meetings and construction updates, alerts, and schedules. • Implement promotion and marketing measures to help affected business districts maintain their customer base. • Maintain access to each business as much as possible and coordinate with businesses during times of limited access. • Provide a community ombudsman to investigate and address complaints.
Social, Community, and Neighborhoods	4.4 and 5	Social	Long-term and Construction	No mitigation is required.
Visual and Aesthetics	4.5 and 5	Visual	Long-term	<p>As Sound Transit develops the detailed design, it will incorporate a combination of the following measures as appropriate where the FWLE lowers visual quality at locations identified in Figures 4.5-1 to 3 in Section 4.5 of the Final EIS:</p> <ul style="list-style-type: none"> • <i>Mitigation Measure 1:</i> Remaining vegetation outside of WSDOT I-5 rights-of-way might screen some views of FWLE components along I-5 from adjacent and other nearby residences. Where remaining vegetation and/or sound walls do not effectively screen views of FWLE components, Sound Transit will add new landscaping

TABLE H-1
Mitigation Plan

Resource	Final EIS Chapter/Section	Impact Topic	Period	Mitigation Description
				<p>adjacent to residential areas. As appropriate, Sound Transit will provide landscaping beyond code requirements (i.e., greater widths of planting strips or plant materials) to provide effective visual mitigation. Where appropriate and agreed upon with property owners, Sound Transit will add landscaping on private property (i.e., within the yards of adjacent residences) to help screen views of FWLE components.</p> <ul style="list-style-type: none"> • <i>Mitigation Measure 2:</i> In areas next to residences where there is not enough room to add landscaping that would screen views of FWLE sound walls, the sound walls will be treated with visually interesting elements such as design treatments that incorporate, textures, patterns, and/or color. Where appropriate, Sound Transit will consider adding lower-growing and smaller-scale landscaping along the base of sound walls adjacent to residences to soften the walls' appearance. • <i>Mitigation Measure 3:</i> Vegetation removal along the I-5 corridor within the WSDOT right-of-way as well as within Resource Conservation Areas will be minimized to the extent practicable as determined in consultation with WSDOT. When mitigation is required, Sound Transit will consult with WSDOT staff to develop appropriate site-specific measures and offsite mitigation to provide effective visual mitigation, consistent with the WSDOT <i>Roadside Policy Manual</i> (WSDOT, 2015). The manual describes the extent of the mitigation that is required for lost vegetation, vegetation types, and replacement ratios, and where replacement can occur. The manual requires that "mitigation for lost or damaged RCAs must consist of an equal value exchange that provides appropriate performance values identified in the manual." This includes replacing RCA land impacted by the project, as well as replanting that land. The manual includes permanent irrigation requirements for impacted RCAs and specific plant establishment criteria (such as a minimum 3-year plant establishment period). Sound Transit will also restore or replace impacted vegetation in the highway right-of-way outside of RCAs in accordance with the manual. Specific types, amounts, and locations for replanting will be identified in consultation with WSDOT and through development of a roadside master plan.
			Construction	<p>During construction, Sound Transit will provide visual screening for station construction and staging areas adjacent to residential areas and schools, if required by local jurisdictions. Visual screening could include a solid barrier to screen ground-level views into the construction area. When possible, Sound Transit will preserve existing vegetation to assist in screening views.</p> <p>Workers will shield nighttime construction lighting and direct it downward to avoid light spillover onto adjacent sensitive uses. Sound Transit will comply with local jurisdictional construction measures for controlling light.</p>
Air Quality and Greenhouse Gases	4.6 and 5	Air quality	Long-term	No mitigation is required.
			Construction	No mitigation is required.
Noise and Vibration	4.7	Light rail noise	Long-term	<p>Noise mitigation measures will be provided consistent with Sound Transit's Light Rail Noise Mitigation Policy (Motion No. M2004-08) and the FTA Guidance Manual (2006). During final design, all potential impacts and mitigation measures will be reviewed for confirmation, and if it is discovered that mitigation could be achieved by a less costly means or if the detailed analysis shows no impact, a mitigation measure may be eliminated or modified. Mitigation will also be determined for any new impacts identified during final design. After light rail operations have started, if the resulting noise exceeds FTA criteria, more mitigation may be required.</p> <p>Sound walls will be built where feasible and reasonable, as determined by Sound Transit, based on specific site conditions. Sound walls will be along the side of the guideway structure for elevated profiles, and will be on the ground for at-grade, retained cut, or trench profiles. Based on the EIS analysis, sound walls between 4 and 18 tall feet will be needed for 20,700 feet along the west side of the alignment and sound walls 4 to 6 feet tall will be needed for 4,700 feet along the east side of the alignment. If sound walls are not effective, then sound insulation of the building will be evaluated and provided if the interior noise level does not meet the standard in the Sound Transit Noise Mitigation Policy.</p>

TABLE H-1
Mitigation Plan

Resource	Final EIS Chapter/Section	Impact Topic	Period	Mitigation Description
				Special trackwork (e.g., movable-point or spring-rail frogs) will be used to eliminate the noise-causing gap between tracks at switches and crossovers at locations where this gap causes an impact.
	4.7	Park-and-ride noise	Long-term	Noise mitigation for the park-and-rides will include design features such as sound walls or short sound walls within the garage at the Kent/Des Moines Station.
	4.7	Traffic noise	Long-term	The proposed light rail sound walls will be modified in length and/or height in order to mitigate traffic noise impacts. The existing sound wall south of S 288th Street will be partially replaced east of the guideway where the guideway will be elevated over Bingaman Creek. A second sound wall will be constructed to the west of the guideway in this area as well if the SR 509 Extension is constructed in this area. All of the traffic noise impacts will be mitigated with sound walls.
	4.7	Vibration and groundborne noise	Long-term	No mitigation is required for groundborne noise. Vibration impacts will be mitigated with use of ballast mats or tire-derived aggregate below the light rail track or high-compliance direct-fixation (HCDF) track fasteners. If warranted, special trackwork with low-impact frogs will be used in place of a conventional frog where crossovers (the point at which two rails cross) would cause a vibration impact that cannot be mitigated through other measures. The need for vibration mitigation measures will be confirmed or modified during final design.
	5	Construction noise and vibration	Construction	Sound Transit will avoid temporary noise and vibration impacts through compliance with applicable construction permits and the BMPs that the permits will incorporate, and no additional mitigation is needed.
Water Resources	4.8 and 5	Water resources	Long-term	The Preferred Alternative would realign approximately 1,000 feet of Bingaman Creek south and north of S 288th Street. Mitigation information for this impact is in the Ecosystems mitigation below.
			Construction	No mitigation is required.
Ecosystems	4.9 and 5	Wetlands and wetland buffers	Long-term	<p>Sound Transit will mitigate long-term impacts on wetlands and wetland buffers by replacing resources through one or more of the following methods:</p> <ul style="list-style-type: none"> • Approved wetland mitigation banks • King County in-lieu fee program • Advance offsite compensatory mitigation • Project-specific mitigation developed by Sound Transit and approved by appropriate regulatory agencies <p>Sound Transit will implement compensatory mitigation in accordance with applicable federal, state, and local requirements and guidelines. Publicly or privately owned portions of the McSorley Creek Wetland may provide opportunities for mitigation through enhancement, or by removing fill materials along the perimeter of the wetlands to create and reestablish wetland acreage and function. Sound Transit will determine final wetland mitigation actions during final design and permitting.</p>
			Construction	<p>Sound Transit will restore wetlands and wetland buffers temporarily impacted by construction and will mitigate temporary impacts to them through one or more of the following methods:</p> <ul style="list-style-type: none"> • Available approved wetland mitigation banks • King County in-lieu fee program • Advance mitigation • Project-specific mitigation developed by Sound Transit <p>Compensatory mitigation will be implemented in accordance with applicable federal, state, and local requirements and guidelines. To the extent that impacts cannot be avoided, Sound Transit will provide compensatory mitigation</p>

TABLE H-1
Mitigation Plan

Resource	Final EIS Chapter/Section	Impact Topic	Period	Mitigation Description
				to achieve no net loss of ecosystem function and acreage.
	4.9	Streams	Long-term	Sound Transit will mitigate unavoidable impacts on Bingaman Creek by improving stream habitat and riparian function through replanting affected areas with native vegetation. Additional offsite mitigation may also be needed.
	4.9 and 5	Upland vegetation and wildlife	Long-term	Sound Transit will mitigate tree removal in the WSDOT right-of-way according to the WSDOT <i>Roadside Policy Manual</i> (WSDOT, 2015). Specific types, amounts, and locations for replanting are identified in consultation with WSDOT and through development of a roadside master plan. Sound Transit will comply with local jurisdictions' tree replacement requirements for tree removal outside of WSDOT right-of-way.
			Construction	To comply with the Migratory Bird Treaty Act (MBTA), Sound Transit will establish schedule restrictions for clearing activities. Clearing activities will occur outside the active bird nesting period, to the extent possible. If avoidance scheduling is infeasible, Sound Transit will work with staff at the U.S. Department of Agriculture to conduct preconstruction surveys to determine the presence or absence of nesting migratory birds in the corridor and assist Sound Transit in complying with the MBTA. Sound Transit will mitigate for temporary impacts on forested vegetation using applicable guidance from WSDOT and local jurisdiction regulations. Vegetation losses due to construction outside the long-term footprints would be temporary, as construction would be followed by site restoration and vegetation reestablishment. Vegetation plantings and restoration would only include native species.
Energy	4.10 and 5	Energy	Long-term and construction	No mitigation is required.
Geology and Soils	4.11 and 5	Geology and soils	Long-term and construction	No mitigation is required.
Hazardous Materials	4.12 and 5	Hazardous materials sites	Long-term	To mitigate potential impacts from hazardous materials sites, Sound Transit will perform a level of environmental due diligence appropriate to the size and presumed past use at all properties along the corridor before they are acquired. Phase 2 environmental site assessments will be conducted where appropriate. Where identified hazardous materials are present, Sound Transit will be responsible for remediating contaminated soil and groundwater, including any previously unknown contamination found during construction.
			Construction	No mitigation is required.
Electromagnetic Fields	4.13 and 5	Electromagnetic fields	Long-term and construction	No mitigation is required.
Public Services, Safety, and Security	4.14 and 5	Public services	Long-term and construction	No mitigation is required.
		Public schools	Long-Term	No mitigation is required.
			Construction	Sound Transit will coordinate with Federal Way Public Schools regarding construction at Mark Twain Elementary to make sure school buses can operate safely during construction and that there is safe pedestrian access. A

TABLE H-1
Mitigation Plan

Resource	Final EIS Chapter/Section	Impact Topic	Period	Mitigation Description
				construction barrier between the construction zone and the rest of the school property (the playfield, school buildings, and driveways) will be designed to address safety, security, visual effects, and noise.
Utilities	4.15 and 5	Utilities	Long-term	No mitigation is required.
			Construction	No mitigation is required.
Historic and Archaeological Resources	4.16 and 5	Historic and archaeological resources	Long-term	No mitigation is required.
			Construction	Sound Transit will develop and implement an Inadvertent Discovery Plan (IDP) to minimize the risk of damage if a currently unknown archaeological resource is discovered. The IDP will include procedures that FTA and Sound Transit will follow if human remains or cultural artifacts are discovered during construction. FTA and Sound Transit will coordinate with the State Historic Preservation Office and tribes to review the plan. Archaeologists will conduct training for contractors to help them identify potential cultural resources during construction, including protocols to implement if a potential resource is discovered.
Parkland and Open Space	4.17	Parks and open spaces	Long-term	No mitigation is required.
	5	Playfields	Construction	Sound Transit will restore temporarily impacted portions of the Mark Twain Elementary School field after construction.

References

Federal Highway Administration. 2009. *Manual on Uniform Traffic Control Devices*.

Federal Highway Administration. 2003. *Record of Decision for State Route 509: Corridor Completion/I-5/South Access Road Project*. <http://www.wsdot.wa.gov/NR/rdonlyres/71522A69-E32A-490E-B8F0-2AF8AC0B6C47/0/SR509 ROD with signature.pdf>.

Sound Transit. 2014a. *Property Acquisition and Residential Relocation Handbook*. October 2014. http://www.soundtransit.org/sites/default/files/Residential%20handbook_2014.pdf. Accessed February 26, 2016.

Sound Transit. 2014b. *Property Acquisition and Non-Residential Relocation Handbook*. October 2014. http://www.soundtransit.org/sites/default/files/Non-Residential_handbook_2014w.pdf. Accessed February 26, 2016.

Washington State Department of Transportation (WSDOT). 2015. *Roadside Policy Manual*. M3110. <http://www.wsdot.wa.gov/Publications/Manuals/M3110.htm>. August 2015.

Washington State Department of Transportation (WSDOT) and Federal Highway Administration. 2003. *SR 509 Corridor Completion/I-5/South Access Road Project Final Environmental Impact Statement*. FHWA-WA-EIS-95-02-F. January 22, 2003.

This page intentionally left blank.