

## S-1. Description of the Proposed Action

The Federal Highway Administration (FHWA), the Washington State Department of Transportation (WSDOT), and Pierce County (the lead agencies), in cooperation with the City of Lakewood and McChord Air Force Base (AFB) (U.S. Air Force), are planning to develop a new arterial roadway between Interstate 5 (I-5) and State Route (SR) 7 (Pacific Avenue).

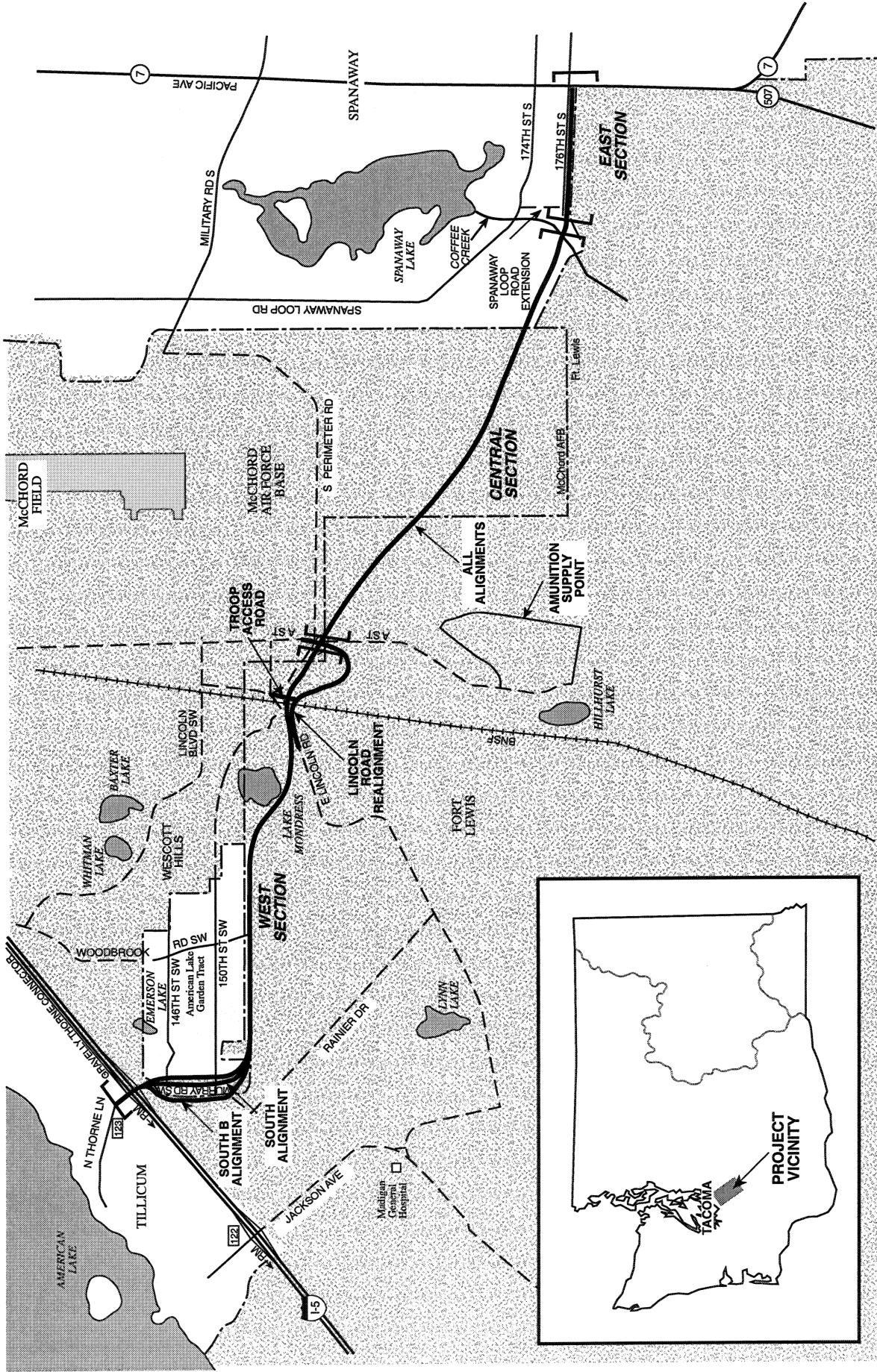
The project termini are the Thorne Lane interchange on I-5 and the intersection of 176th Street S and SR 7. The project spans 5.9 miles. The entire project is located in Pierce County in the state of Washington (Figure S.1-1).

The new roadway would provide four through lanes. Access would be limited to three signalized intersections (two in American Lake Gardens and one at Spanaway Loop Road S extension) and an interchange at “A” Street providing access to McChord AFB and Fort Lewis. The existing Thorne Lane interchange would be relocated 300 feet southwest and reconstructed to accommodate additional traffic, pass over the Burlington Northern Santa Fe (BNSF) railroad tracks southwest of I-5, and connect to a new single-lane southbound connector road southwest of the BNSF railroad tracks between Gravelly Lake Drive and Thorne Lane (Gravelly-Thorne Connector). The intersection of 176th Street S and SR 7 would be enlarged with additional lanes for turning movements. On Fort Lewis, a new overcrossing of the BNSF tracks would be constructed. Lincoln Road would be realigned to connect with the new “A” Street interchange, and a new military access road between Fort Lewis and McChord AFB would be constructed under the new overcrossing and east of the BNSF right-of-way that passes through this area.

The Cross-Base Highway would provide a necessary link in the regional transportation system by connecting existing and future residential areas in mid-Pierce County and north Thurston County with two of the largest planned employment sites in Pierce County—Frederickson and DuPont. The proposed roadway would reduce projected traffic volumes and congestion, particularly during peak periods on existing roadways such as SR 7, SR 512, SR 507, Spanaway Loop Road S, and 174th Street S. All of these roads are projected to operate at, near, or above capacity in 2025 if additional east-west capacity is not added. The Pierce County Comprehensive Plan assumes that an arterial link between the mid-Pierce County area and the cities of Lakewood and DuPont will be built; therefore, construction of the Cross-Base Highway is a top priority. In 2002, the planned highway was designated SR 704 by the Washington State Legislature.

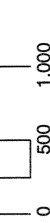
## S-2. Related Actions

The proposed Cross-Base Highway is designed to be integrated with the following proposed or completed government actions:

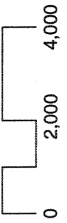


Parametrix Cross-Base EIS/554-1568-030/(09) 6/03 (K)

SCALE IN METERS



SCALE IN FEET



Military Property  
I-5 Exit Number

122

---  
Roads on Military Property  
Public Use Subject to Military Permission

---  
Military Property Boundary

Section Boundaries



**Figure S.1-1  
Vicinity Map**

- Pierce County is in the process of extending a new two- to three lane roadway, Spanaway Loop Road S, from near 174th Street S to SR 7. The portion of this new roadway between the west end of 176th Street S and SR 7 will be built following the same general alignment proposed for the westbound lanes of the Cross-Base Highway.
- 176th Street S will be widened between SR 7 and SR 161.
- McChord AFB will develop the “A” Street entrance as one of its main gates, replacing the current east entrance off of Military Road S.
- As a condition for approving any easements for constructing the Cross-Base Highway, after completion of the highway construction, McChord AFB will close Perimeter Road and 150th Street SW at the McChord AFB boundary to all public access.
- Fort Lewis is developing portions of Fort property south of American Lake Gardens to include offices, warehouses, and other structures.
- McChord AFB will continue to plan for the relocation of its runway up to 5,000 feet south, as required, to avoid conflicts with existing and future incompatible land uses north of the existing runway.
- McChord AFB will develop the Old South Gate Road entrance as the new second south entrance gate, replacing the current North Gate entrance off South Tacoma Way.

### **S-3. Alternatives Considered**

The primary alternatives considered were the No Build, Transportation Demand Management/Transportation System Management (TDM/TSM), and a series of Build Alternatives. The No Build and Build Alternatives are carried forth in the Final Environmental Impact Statement (FEIS) analyses. The TDM/TSM Alternative was dropped from detailed evaluation because it does not meet the purpose and need of the project and is not feasible to implement under established regional transportation plans and policies. Compared to the Build Alternative, the TDM/TSM Alternative provides less congestion reduction, no connectivity improvements, and no improvements in freight and goods movement or regional public transit.

#### **S.3.1 No Build Alternative**

Under the No Build Alternative, the Cross-Base Highway would not be constructed. However, other planned roadway improvements would be implemented, as well as other reasonably foreseeable projects such as the development on an industrial complex on Fort Lewis, the relocation of the McChord AFB runway, and master planned communities in mid-Pierce County. In addition, the increases in population projected for the study area, which are based on regional and local planning, would still occur.

### **S.3.2 TDM/TSM Alternative**

A wide range of TDM/TSM strategies were evaluated in conjunction with both the No Build and Build Alternatives. The TDM strategies considered were organized into the following five categories: employer-based programs, support facilities, telecommunications, transportation pricing, and land use. TSM strategies considered included (1) traditional improvements such as intersection and traffic signal enhancements, (2) transit improvements, and (3) street/highway management techniques such as ramp metering and high-occupancy vehicle (HOV) priority treatments. Intelligent Transportation System (ITS) options such as variable message signs, incident response systems, and traveler information systems were also considered.

Without a new roadway, TDM/TSM strategies considered would not meet the purpose and need for the project or satisfy many of the basic transportation improvement needs that are addressed by the Build Alternatives. The TDM/TSM Alternative would not increase the transportation system linkage and capacity between Pierce County and destinations along the I-5 Corridor nearly as much as the Build Alternatives. In addition, some elements of the TDM/TSM Alternative have implementation difficulties that may not be possible to overcome. Therefore, the alternative was eliminated from further consideration.

### **S.3.3 Build Alternatives**

Three Build Alternatives are considered in this FEIS: the South, South A, and South B alignments. The alignments vary only in American Lake Gardens between I-5 and Woodbrook Road SW. East of Woodbrook Road SW, there is only one alignment alternative considered due to the significant built and natural environment constraints in this portion of the project area (Figure 2.2-2).

The South A alignment has been selected as the preferred alternative. Of the three remaining alignments, both the South and South A alignments directly affect recreational or historic resources that are protected by Section 4(f) of the 1966 Transportation Act (see FEIS Chapter 5). The South alignment would pass through the American Lake South School, which is eligible for the National Register of Historic Places. The South A alignment would pass through the west side of the recreation field associated with Woodbrook Middle School and used for a variety of community sporting activities.

The South B alignment passes west of Murray Road SW on Fort Lewis property and avoids impacts to any Section 4(f) resources. However, Fort Lewis will not provide an easement for the new roadway in this area. Because military property cannot be acquired through condemnation, and Fort Lewis has repeatedly stated the property is not available for roadway use, the South B alignment is not a feasible alternative.

While both the South and South A alignments affect Section 4(f) resources and a portion of American Lake Gardens, South A has fewer, and more effectively mitigable, impacts. Refer to Chapter 2 for further discussion of the alternatives considered.

## S-4. Required Permits and Licenses

The project will require the following permits:

- U.S. Environmental Protection Agency (EPA) concurrence with development within a sole-source aquifer
- Section 404 permit from the U.S. Army Corps of Engineers
- Section 401 water quality certification from EPA and/or Washington State Department of Ecology (Ecology)
- Hydraulic Project Approval from Washington State Department of Fish and Wildlife
- National Pollutant Discharge Elimination System construction permit from Ecology
- Pierce County Critical Areas Approval
- City of Lakewood Street Opening Permit
- City of Lakewood Demolition Permit
- Forest Practices Permit from Washington State Department of Natural Resources

## S-5. Environmental Commitments

The following mitigation measures will be implemented for the preferred alternative:

- Limit cut and fill slopes.
- Use stormwater facilities sized to accommodate peak flow events and located away from sensitive receiving surface water bodies.
- Provide compensatory floodplain storage for encroachment into Thorne Lane Wetland and Coffee Creek/Audubon Springs.
- Comply with state and local requirements regarding erosion and sediment control plans, biofiltration swales, groundwater protection, pretreatment basins, pollutant control, and stormwater treatment.
- Comply with federal requirements for protection of the Central Pierce County Sole-Source Aquifer.
- Avoid wetlands to the extent possible, including the use of bridges over Wetland A and Audubon Springs Wetland and retaining walls adjacent to the Thorne Lane Wetland, Wetland A, and Lake Mondress, as determined by detailed design.
- Create, restore, or enhance wetlands when impacts are unavoidable.
- Identify the exact population locations of white top aster. Where impacts are unavoidable, remove the plants that would be impacted and relocate them to nearby areas with similar soils and microclimates.

- Construct security fencing with barrier, wildlife fencing, and/or noise barriers to prevent small animal passage onto the active highway.
- Provide security fencing with bottom openings to allow small animal passage under roadway.
- Where the highway crosses the BNSF railroad, provide at least 30 feet between structure abutment and railroad right-of-way to allow small animal passage under the roadway.
- On the west side of McChord AFB south approach zone, cross the small depression with a 100-foot-long structure to allow small animal passage under the roadway.
- Cross Coffee Creek with a 20-foot-wide open-bottom culvert to minimize wetland impacts and allow small animal passage.
- Develop and manage an approximately 358-acre mitigation site south of Roy to provide high-quality oak and other forests, savannas, and prairies for western gray squirrels, Mazama pocket gophers, butterflies, and other species.
- Provide noise barriers in accordance with FHWA regulations (23 CFR Part 772) for 44 residences along 176th Street S and south of equestrian businesses in American Lake Gardens, as well as other locations in American Lake Gardens and Spanaway where reasonable and feasible per WSDOT and FHWA Guidelines. This includes noise barriers to protect the American Lake South School, the Brookwood Equestrian Center, and the Woodbrook Hunt Club clubhouse, which are eligible for inclusion on the National Register of Historic Places and, therefore, require protection under Section 106 of the National Historic Preservation Act and Section 4(f) of the U.S. Department of Transportation Act of 1966.
- Coordinate construction of noise barriers to provide effective mitigation for construction noise to the extent practicable. Temporary noise barriers may also be used in sensitive areas (e.g., near a school).
- Abandon wells according to state law.
- Provide at-grade pedestrian crossing at 150th Street SW.
- Provide a pedestrian overcrossing at 146th Street SW.
- Relocate community services currently provided out of the American Lake South School buildings to another location convenient to the American Lake Gardens community.
- Relocate a Woodbrook Middle School ball field.
- Compensate for dislocated properties, including appraised market value and relocation assistance, in accordance with federal requirements.
- Provide noise barriers and a landscaped buffer to minimize adverse effects on the Woodbrook Hunt Club and Brookwood Equestrian Center.
- Use landscaping to soften visual impacts where practical. Design lighting to minimize off-site glare. Texture noise walls and plant shrubs next to walls.

- Implement construction best management practices (BMPs) to prevent, minimize, and treat (in order of preference) erosion, sedimentation, and contamination.
- Develop construction contingency and spill response plans. Perform site assessments of properties to be acquired. Conduct demolition in accordance with applicable regulations.
- Avoid construction during bald eagle nesting periods in the vicinity of nests.
- Restore wetland buffers, where possible, following construction.

## S-6. Areas of Concern or Controversy

As a result of ongoing coordination with public agencies and jurisdictions and extensive public involvement efforts, a number of issues regarding the project were identified and are addressed in the EIS. New or substantially updated information is indicated in bold. The issues are briefly noted below.

- Impacts to water quality, especially the Central Pierce County Sole-Source Aquifer.
- Impacts to wildlife, especially the western gray squirrel. **The FEIS adds additional analysis and description of the potential impacts and mitigation.**
- Concern that the roadway would divide the American Lake Gardens Community. **The designation of the South A alignment as the preferred alternative continues to divide a small portion of the community along Murray Road SW from the balance of the community.**
- Impacts from the South alignment on the American Lake South School, a Section 4(f) resource. **The designation of the South A alignment as the preferred alternative avoids the displacement impacts of the South alignment on the American Lake South School.**
- Impacts from the South A alignment on ball fields used for public recreation, a Section 4(f) resource. **The FEIS describes mitigating this impact by relocating the recreational field to an adjacent area in American Lake Gardens, resulting in no net loss of recreational capacity.**
- Availability of Fort Lewis property west of Murray Road SW for the South B alignment. **The designation of the South A alignment as the preferred alternative avoids the need to acquire property west of Murray Road SW.**
- Impacts to equestrian businesses and the Woodbrook Hunt Club caused by the new roadway separating them from Fort Lewis.
- Noise impacts to sensitive land uses. **The FEIS includes additional analysis of noise impacts and potential mitigating measures.**
- Concerns regarding residential and business displacements and relocation.
- Concern that without additional roadway capacity, increasing congestion will adversely affect the mid-Pierce County area.

- Impacts to low-income and minority populations. **The FEIS includes the results of additional community outreach.**

## **S-7. Next Steps**

Public comments on this FEIS will be accepted for 45 days following its publication. During that time, public meetings will be held to help explain the project and provide opportunities for public comments. Following the comment period, the next step is publication of a Record of Decision (ROD). The ROD will accomplish the following:

- Address comments received on the FEIS.
- Describe the lead agencies' selected alternative and explain reasons for the decision.
- Describe mitigation measures and monitoring commitments that will become part of the project.

## **S-8. Main Environmental Impacts and Mitigation**

The environmental matrix (Table S.8-1 at the end of this chapter) summarizes environmental impacts and mitigation measures that would occur under the proposed project. The proposed project would have both beneficial and adverse environmental impacts. The main beneficial environmental impacts include less congestion in mid-Pierce County and improved access to American Lake Gardens and mid-Pierce County. Improved access would support public safety by enabling faster and more direct response by emergency vehicles. The main adverse impacts include displacement of residential uses in American Lake Gardens; impacts to wildlife, wetlands, and habitat areas near the proposed highway; and impacts to a historic site.

**Table S.8-1. Environmental Impacts Summary Matrix**

No Build Alternative	All Build Alternatives	South Alignment	South A Alignment (Preferred)	South B Alignment
<b><u>TOPOGRAPHY, GEOLOGY, AND SOILS</u></b>				
<b><u>Impacts</u></b>				
None	Low risk of slope instability and low potential for continued erosion.	No unique impacts.	No unique impacts.	No unique impacts.
<b><u>Mitigation Measures</u></b>				
None	All fills should have side slopes less than 2 horizontal to 1 vertical (2H:1V). Excavated slopes should be less than 1.5H:1V. Use of BMPs would mitigate earth impacts.	No unique mitigation.	No unique mitigation.	No unique mitigation.
<b><u>WATERWAYS AND HYDROLOGY</u></b>				
<b><u>Impacts</u></b>				
None	Increased runoff volumes and rates due to more impervious surface. Increased flooding potential from increased runoff, downstream construction, and concentrated stormwater flows.	Encroachment into Thorne Lane Wetland would reduce flood storage and/or increase flooding. Potential flooding at Woodbrook Middle School athletic field near Murray Road SW/146th Street SW intersection.	More impact to Thorne Lane Wetland than South alignment.	Same as South alignment
<b><u>Mitigation Measures</u></b>				
None	Use infiltration facilities sized to accommodate peak flow events and located away from sensitive receiving surface water bodies or equivalent measures based on approved BMPs. Implement BMP regulatory guidelines. Locate new culverts to accommodate new overland flows.	Provide compensatory floodplain storage for encroachment into Thorne Lane Wetland and Coffee Creek/Audubon Springs.	Same as South alignment.	Same as South alignment.
<b><u>WATER QUALITY</u></b>				
<b><u>Impacts</u></b>				
Increased vehicle use would increase auto-generated pollutants in surface water.	Increased contaminant loading from new impervious surfaces, automobile use, landscaping and maintenance activities, and accidental spills.	No unique impacts.	No unique impacts.	Loss of one dry well.
<b><u>Mitigation Measures</u></b>				
None.	Comply with state and local requirements regarding erosion and sediment control plans, biofiltration swales, groundwater protection, pretreatment basins, pollutant control, and stormwater treatment. Meet federal requirements for protection of the Central Pierce County Sole-Source Aquifer.	No unique mitigation.	No unique mitigation.	Abandon dry well properly according to regulations.

**Table S.8-1. Environmental Impacts Summary Matrix (continued)**

No Build Alternative	All Build Alternatives	South Alignment	South A Alignment (Preferred)	South B Alignment
<b><u>WETLANDS</u></b>				
<u>Impacts</u>				
None	<p>Bridge piers in Audubon Springs Wetland would fill less than 0.01 acre of wetland. Fill 4.90 acres of various wetland buffers, based on Pierce County buffer widths.* Impacts to the Audubon Springs Wetland would include increases in noise, nest predation, and invasive species, as well as fragmenting the existing habitat to the north and south of the alignment. Similar operational impacts would occur to Lake Mondress Wetland due to the removal of 1.48 acres of buffer. Both Wetland A and Audubon Springs would be indirectly affected by bridge spanning (e.g., shade and vegetation control/removal).</p> <p>* Assumed for comparison. There is no regulatory basis for such application of Pierce County buffer widths on federal lands.</p>	<p>Fill 0.01 acre of the Thorne Lane Wetland and 0.31 acre of the associated buffer*. Impacts to wildlife habitat, water quality, and stormwater function should be minimal. The removal of trees would reduce cover and connectivity to other habitats.</p>	<p>Fill 0.01 acre of the Thorne Lane Wetland and 0.30 acre of the associated buffer*. Same impacts to wetland functions and values as South alignment.</p>	<p>Fill 0.02 acre of the Thorne Lane Wetland and 0.34 acre of the associated buffer*. Same impacts to wetland functions and values as South alignment.</p>
<u>Mitigation Measures</u>				
None	Avoid wetlands to the extent feasible; create, restore, or enhance wetland areas.	No unique mitigation.	No unique mitigation.	No unique mitigation.
<b><u>WILDLIFE, FISHERIES, AND VEGETATION</u></b>				
<u>Impacts</u>				
<p>Foreseeable future activities would impact 591 acres, converting 427 acres of existing vegetation to non-native grassland and developed area, impacting wildlife species of special interest. The planned developments would result in habitat loss, fragmentation, and disturbance from increased human activity in the area.</p>	<p>Reduced habitat quality in the area around the roadway due to noise and visual disturbance from the highway. The response to disturbance will vary depending on the species, but may impact wildlife species of special interest. Isolated/fragmented habitat north of the roadway. The highway would serve as a barrier to wildlife movement, resulting in increased wildlife/vehicle collisions. White-top aster plants near Lake Mondress would also be impacted.</p>	<p>Direct loss of approximately 173 acres of existing vegetation and wildlife habitat (permanently cleared and maintained area).</p>	<p>Same as South alignment.</p>	<p>Direct loss of approximately 177 acres of existing vegetation and wildlife habitat (permanently cleared and maintained area).</p>

**Table S.8-1. Environmental Impacts Summary Matrix (continued)**

No Build Alternative	All Build Alternatives	South Alignment	South A Alignment (Preferred)	South B Alignment
<b>WILDLIFE, FISHERIES, AND VEGETATION (continued)</b>				
<u>Mitigation Measures</u>				
Mitigation measures within unincorporated Pierce County will be established during site-specific project review by Pierce County.	Relocate white-top aster that would be impacted, control animal access to roadway, provide safe passageways; develop and manage an approximately 358-acre mitigation site south of Roy to provide high-quality oak and other forests, savannas, and prairies for western gray squirrels, Mazama pocket gophers, butterflies, and other species.	No unique mitigation.	No unique mitigation.	No unique mitigation.
<b>AIR QUALITY</b>				
<u>Impacts</u>				
Increased congestion would reduce air quality at intersections throughout the study area.	High ozone concentrations. All common segments and intersections would meet 1- and 8- hour CO standards.	Increased CO concentrations near the Thorne Lane interchange; 1- and 8- hour CO standards would be met.	Similar to South alignment.	Similar to South alignment.
<u>Mitigation Measures</u>				
None.	None required.	None required.	None required.	None required.
<b>NOISE</b>				
<u>Impacts</u>				
There would be an increase of 1 to 4 A-weighted decibels (dBA) over existing PM peak-hour sound levels due to an increase in peak-hour traffic. Four receptor locations would exceed the FHWA residential criterion of 67 dBA.	Noise levels increases of 0 to 26 dBA at the eastern end of the proposed project. Equestrian areas in American Lake Gardens would also have noise levels increased 21 to 24 dBA.	Traffic noise impacts to 158 residences and 3 equestrian areas. Sound levels would increase 0 to 24 dBA. Five receptor locations modeled would approach or exceed 67 dBA.	Traffic noise impacts to 171 residences and three equestrian areas. Sound levels would increase 0 to 24 dBA. Thirteen of the 48 receptors modeled would approach or exceed 67 dBA. The dBA would decrease at three receptor locations compared to the No Build Alternative. Noise impacts to the American Lake South School and portions of the Woodbrook Middle School would occur.	Traffic noise impacts to 164 residences and 3 equestrian areas. Sound levels would increase 3 to 24 dBA. Ten receptor locations modeled would approach or exceed 67 dBA. Noise impacts at the Clover Park Technical College landscape management training facility would occur.
<u>Mitigation Measures</u>				
None.	Noise barriers could be provided for 44 residences along 176th Street S and south of equestrian businesses in American Lake Gardens. All noise barriers will be further studied during final design for height, length, and location.	No mitigation is proposed, beyond the noise walls discussed for all Build Alternatives. Most affected residences between 150th Street SW and 146th Street SW would be displaced.	In addition to the noise barriers proposed for all Build Alternatives, provide noise barriers on both sides of the proposed highway between 150th Street SW and 146th Street SW in American Lake Gardens.	A noise wall in the area of Murray Road SW was determined to be feasible, but not reasonable with regard to cost.

**Table S.8-1. Environmental Impacts Summary Matrix (continued)**

No Build Alternative	All Build Alternatives	South Alignment	South A Alignment (Preferred)	South B Alignment
<b>ENERGY</b>				
<u>Impacts</u>				
Increased vehicle hours traveled (VHT) due to increased congestion. Unchanged vehicle miles traveled (VMT). Increased energy consumption.	Slightly increased VMT and decreased VHT compared to the No Build Alternative.	No unique impacts.	No unique impacts.	No unique impacts.
<u>Mitigation Measures</u>				
None.	None required.	None required.	None required.	None required.
<b>HAZARDOUS WASTE</b>				
<u>Operation Impacts</u>				
None.	Displacement of one inactive monitoring well. Additional risks associated with transportation operations.	No unique impacts.	No unique impacts.	Displacement of two additional monitoring wells.
<u>Mitigation Measures</u>				
None.	Abandon monitoring wells according to state law. Pretreat stormwater prior to infiltration.	No unique mitigation.	No unique mitigation.	No unique mitigation.
<b>SOCIAL ELEMENT</b>				
<u>Impacts</u>				
Increased traffic and inhibited access to community and public services.	Increased east-west access between mid-Pierce County and I-5 corridor. Reduced travel times and traffic. Potential increases in transit service. Continued pedestrian access across I-5 between Tillicum and American Lake Gardens. Conversion of Woodbrook Road from a dead-end residential street to an access road to Cross-Base Highway.	Creates a barrier and impedes access between the American Lake Gardens community and those west of Murray Road SW. Displaces the community services currently housed in the American Lake South School buildings. Impacts pedestrian access from several residences to the Woodbrook Middle School and the rest of the community. With mitigation, no disproportionate high and adverse impacts to minority and/or low-income populations.	Separates the westernmost residences, businesses, and the American Lake South School from the rest of the community. Requires relocation of Woodbrook Middle School ball field, a Section 4(f) resource. Remaining ball fields would experience noise impacts. Impedes access to Woodbrook Middle School for residents west of the Cross-Base Highway. Improves pedestrian and bicycle travel. With mitigation, no disproportionate high and adverse impacts to minority and/or low-income populations.	No unique impacts. No disproportionate high and adverse impacts to minority and/or low income populations.

**Table S.8-1. Environmental Impacts Summary Matrix (continued)**

No Build Alternative	All Build Alternatives	South Alignment	South A Alignment (Preferred)	South B Alignment
<b>SOCIAL ELEMENT (continued)</b>				
<u>Mitigation Measures</u>				
None.	Equestrian and other recreational users may enter Fort Lewis at established gates. Provide a pedestrian crossing at 150th Street SW.	Relocate community services provided through the school to a location convenient to the American Lake Gardens community. Provide pedestrian crosswalk at Cross-Base/150th Street SW intersection.	Same as South alignment. Provide barriers. Provide pedestrian overcrossing at 146th Street SW.	Technical college training facility could be relocated and the site redeveloped by Fort Lewis.
<b>LAND USE</b>				
<u>Impacts</u>				
Inconsistent with local and regional plans. Distribution of urban growth may be altered due to lack of transportation corridor.	Consistent with local and regional plans. Improved access between the two military bases. No impacts to current or potential future uses of rail corridors. Accommodation of a potential future non-motorized connection along I-5.	Limits potential land use development along Murray Road SW west of the proposed highway.	Separates the land uses along Murray Road SW west of the proposed highway from the rest of American Lake Gardens.	No unique impacts.
<u>Mitigation Measures</u>				
None.	None.	None.	None.	None.
<b>ECONOMIC ELEMENT</b>				
<u>Impacts</u>				
Continued and increasing traffic congestion resulting in difficulty accessing businesses.	Improved travel times to Lakewood would benefit local businesses. Improved travel times between Frederickson and DuPont employment centers. One business (Ferrell Gas) displaced.	Two businesses (A-1 Transmission and Woodbrook Honey) and one institution (American Lake South School) displaced. Loss of \$42,978 in property tax revenue. Minor loss of City sales tax and employment, which may be offset by business relocation within Tacoma.	A portion of one institution displaced. Loss of \$17,021 in property tax revenue. Impact to sales tax and employment similar to South alignment. Visibility to the businesses from the Cross-Base Highway would be impaired by the 12-foot noise wall. This may adversely affect A-1 Transmission by reducing drive-by business.	One business (A-1 Transmission) and a portion of one institution (technical college) displaced. Loss of \$23,289 in property tax revenue. Impact to sales tax and employment similar to South alignment. Some loss of business could occur due to the winding route of the access road making it slightly harder to access the businesses that front Murray Road SW.
<u>Mitigation Measures</u>				
None.	See Relocation section.	See Relocation section.	See Relocation section.	See Relocation section.
<b>RELOCATION</b>				
<u>Impacts</u>				
None	No displacements on the Central or Eastern Sections. Displacement of Ferrell Gas west of I-5.	42 housing units, 2 businesses, and the Clover Park Head Start/American Lake South facility would be displaced.	10 housing units and the Woodbrook Middle School ball field would be displaced.	22 housing units, 1 business, and a portion of the Clover Park Technical College landscape management training facility would be displaced.
<u>Mitigation Measures</u>				
None	Compensate for dislocated properties, including appraised market value and relocation assistance, in accordance with federal requirements.	Supply of comparable housing within a reasonable proximity is sufficient for relocation.	Supply of comparable housing within a reasonable proximity is sufficient for relocation. Ball field would be relocated nearby.	Supply of comparable housing within a reasonable proximity is sufficient for relocation.

**Table S.8-1. Environmental Impacts Summary Matrix (continued)**

No Build Alternative	All Build Alternatives	South Alignment	South A Alignment (Preferred)	South B Alignment
<b>HISTORIC AND ARCHAEOLOGICAL ELEMENT</b>				
<u>Impacts</u> None	No adverse effect to Woodbrook Hunt Club and Brookwood Equestrian Center eligible buildings. Overall roadway setting and noise increases from traffic would alter their setting.	American Lake South School, a Section 4(f) resource, would be demolished or relocated. This would be an adverse effect under Section 106 regulations.	Adverse effect on American Lake South School from loss of setting.	No adverse effect to American Lake South School.
<u>Mitigation Measures</u> None	Implement noise barriers and develop a landscaped buffer to minimize adverse effect on Woodbrook Hunt Club.	Possible relocation.	Implement landscaped noise barrier.	None.
<b>VISUAL QUALITY</b>				
<u>Impacts</u> None	Trees along the BNSF right-of-way within 20 feet of the golf course property line would be removed, and views of this area from I-5 or from the railroad tracks would change. The noise walls along the southern boundary of American Lake Gardens and in the Spanaway area would alter or obscure existing views. New views of Fort Lewis and McChord AFB from the roadway. Visual character change of undeveloped properties to a more urban setting. Reduced visual unity.	Views across American Lake Gardens and south into Fort Lewis would be blocked. Roadway would be visible from nearby areas and residences.	Similar to the South alignment, with the addition of noise walls on both sides of the highway between 150th Street SW and 146th Street SW. These noise walls would be visible from the Woodbrook Middle School, in addition to numerous residences.	Similar to the South alignment, although less visual impact on American Lake Gardens community.
<u>Mitigation Measures</u> None	Use landscaping to soften visual impacts. Design lighting to minimize off-site glare. Texture noise walls and plant shrubs next to walls.	No unique mitigation.	No unique mitigation.	No unique mitigation.
<b>CONSTRUCTION</b>				
<u>Impacts</u> None	Existing drainages could be blocked or altered during clearing and grading. Soils would be exposed. Grading would be required.	No unique impacts.	No unique impacts.	No unique impacts.
	Peak rate and stormwater discharge volume increased.	Loss of runoff storage that currently occurs in Thorne Lane Wetland. Stormwater runoff alteration near Murray Road SW.	Similar to South alignment for Thorne Lane Wetland.	Less impact than other alignments in vicinity of Murray Road SW.
	Accidental releases of fuels, oil and grease, and other construction materials, which may in turn contaminate soil, groundwater, and nearby surface water bodies, thus affecting vegetation, habitat, fish, and wildlife (fuel spills could impact fish or wildlife).	No unique impacts.	No unique impacts.	No unique impacts.

**Table S.8-1. Environmental Impacts Summary Matrix (continued)**

No Build Alternative	All Build Alternatives	South Alignment	South A Alignment (Preferred)	South B Alignment
<b>CONSTRUCTION (continued)</b>				
Impacts	Risk of sediment-laden water entering nearby water bodies.	No unique impacts.	No unique impacts.	No unique impacts.
	Temporary disturbance of vegetation. Construction activities would remove forested or scrub communities. Some small mammals and reptiles would be killed or displaced.	No unique impacts.	No unique impacts.	No unique impacts.
	Dust and particulates would increase; carbon monoxide (CO) levels may increase due to congestion at traffic detours. Spills or exposure of contaminated soils or groundwater could occur during construction. Construction would require demolition of residential dwellings where asbestos or lead paint could occur.	No unique impacts.	No unique impacts.	No unique impacts.
	Detours during road construction would affect local traffic patterns temporarily.	No unique impacts.	No unique impacts.	No unique impacts.
	Light and glare from nighttime construction activities.	No unique impacts.	No unique impacts.	No unique impacts.
	Disruptions to institutions caused by traffic delays and temporary disruptions to infrastructure. Road alterations could result in brief utility disruptions.	No unique impacts.	No unique impacts.	No unique impacts.
	Creates temporary construction jobs. Project equipment and materials purchase will provide retail sales tax revenues.	No unique impacts.	No unique impacts.	No unique impacts.
<u>Mitigation Measures</u>				
None	Implement construction BMPs to prevent, minimize, and treat (in order of preference) erosion, sedimentation, and contamination. Restore wetland buffers where possible. Develop construction contingency and spill response plans. Perform site assessments of properties to be acquired. Conduct demolition in accordance with applicable regulations. Coordinate construction of noise barriers to provide effective mitigation for construction noise to the extent practicable. Temporary noise barriers may also be used in sensitive areas (e.g., near schools).			