

Executive Summary

ES 1 Where Is the I-5 JBLM Vicinity Congestion Relief Project Located?

The I-5 JBLM Vicinity Congestion Relief Project (Project) is located in southern Pierce County generally between the Thorne Lane interchange (Exit 123) on the north and the Mounts Road interchange (Exit 116) on the south (see Figure 1.1-1 on page 2). Adjoining jurisdictions to this portion of I-5 include the southern portion of the city of Lakewood, Joint Base Lewis-McChord (JBLM), Camp Murray, and the city of DuPont. Project improvements are planned within both North and South Study Areas.

ES 2 Why Is This Project Important?

Within south Pierce County, traffic on I-5 increased 76 percent between 1986 and 2014 to over 125,000 vehicles per day (north of Center Drive), and truck volumes increased 82 percent to over 12,000 per day. The traffic increase has been influenced by both population and employment growth in south Puget Sound. No through lanes have been added to this portion of I-5 since 1975. The presence of a secure military installation on both sides of I-5 through the area limits alternate parallel routes for regional travel.

ES 3 Why Is the Project Needed and What Is Its Purpose?

Congested traffic along I-5 in the JBLM vicinity, characterized by stop-and-go conditions, has become commonplace during weekday morning (AM) and evening (PM) peak periods, as well as weekend afternoons during summer

months. Contributors to the traffic demand are both regional and local. Most of the traffic growth in the Project corridor occurred before 2003, and is associated with significant growth in Thurston and Pierce counties. Additionally, JBLM, a secure military facility, has become the biggest military installation on the West Coast and affects peak period traffic congestion levels. Existing weekday peak period travel demand along I-5 exceeds available capacity in several locations. Congestion during the PM peak period often lasts up to three hours and is expected to increase to nearly six hours by 2040.

The purpose of the proposed action is to reduce chronic traffic congestion and improve person and freight mobility along I-5 in the vicinity of JBLM while continuing to maintain access to the communities and military installations neighboring the freeway. The proposed Project would improve I-5 through the JBLM area and relieve existing and expected future congestion on I-5 within the vicinity of JBLM, improve local and mainline system efficiency, enhance mobility, improve safety, and increase transit and Transportation Demand Management (TDM) opportunities by reducing I-5 travel times and improving accessibility at Thorne Lane and Berkeley Street.

ES 4 Is the Project Included in the Adopted Planning Documents for the Region?

The need for improvement to I-5 and interchanges in the I-5 JBLM vicinity is identified in several state, regional and local planning documents. The Washington State Highway System Plan serves as the basis for the six year highway program and identifies needed improvements to the Thorne Lane interchange and I-5. The Puget Sound Regional Council

(PSRC) *Transportation 2040* plan identifies investments needed to support expected growth, and identifies needed improvements at Berkeley Street, Thorne Lane and additional capacity needs on the I-5 mainline. Additionally, JBLM, the city of Lakewood, and the city of DuPont all include goals and policies in their comprehensive planning documents addressing the need for congestion relief on I-5 and improved operations at key interchanges including Thorne Lane, Berkeley Street, and Steilacoom-DuPont Road.

ES 5 What Benefits Would the Build Alternative Provide?

The proposed Build Alternative is located in the North Study Area and would provide relief to the chronic congestion in I-5 in the JBLM vicinity. The completed Project would provide an additional lane in each direction on I-5 between Thorne Lane (Exit 123) and Steilacoom-DuPont Road (Exit 119). It would also replace the existing Thorne Lane and Berkeley Street (Exit 122) interchanges to accommodate the extra lanes on I-5, improve traffic operations at the interchanges, provide pedestrian and bicycle facilities, and provide grade-separation with the Sound Transit rail line. In 2020, the Build Alternative would reduce PM peak period travel times by approximately 13 minutes for northbound traffic between Center Drive (Exit 118) and Gravelly Lake, and by approximately 24 minutes southbound between Gravelly Lake Drive (Exit 124) and the Main Gate/41st Division Drive interchange (Exit 120). Between Main Gate/41st Division Drive and Steilacoom-DuPont Road, southbound travel time benefits decline due to congestion associated with the reduction from four to three travel lanes in the vicinity of Center Drive.

ES 6 Who Is Leading the Project?

The Federal Highway Administration (FHWA) is the lead agency for the National Environmental Policy Act compliance process. WSDOT is a co-lead agency. Both agencies are involved in design guidance and environmental oversight for the Project.

ES 7 Who Else Participated in Developing the Environmental Assessment?

As a Cooperating Agency, Joint Base Lewis-McChord participated in the development of the Environmental Assessment.

ES 8 What Alternatives Are Evaluated in This EA?

This EA compares the No Build and the Build Alternatives described further below.

ES 9 What Is the No Build Alternative?

Under the No Build Alternative, no major construction activities associated with the Build Alternative would occur. I-5 would continue to have three travel lanes in each direction and existing interchanges would not be improved. Minor construction associated with ongoing operations of I-5 may occur, but no widening or other capacity improvements would take place.

The No Build Alternative includes other currently funded or planned transportation improvement projects expected to be in operation in the Project area by 2020. These funded projects are included in the Transportation Improvement Program (TIPs) of local agencies and WSDOT's

State Transportation Improvement Plan (STIP). Pending improvements to transportation facilities on JBLM would also occur. These baseline transportation improvement projects are not specifically addressed in this environmental document, and will be the subject of separate project specific environmental review. These projects are considered in this EA in the analysis of indirect and cumulative impacts.

ES 10 What Is the Build Alternative?

The Build Alternative would construct an additional northbound and southbound travel lane on I-5 between the vicinity of Thorne Lane and the vicinity of Steilacoom-DuPont Road. It would also construct auxiliary lanes between the Berkeley Street northbound on-ramp and the Thorne Lane northbound off-ramp, and between the Thorne Lane northbound on-ramp and the Gravelly Lake Drive northbound off-ramp. The Thorne Lane and Berkeley Street overpasses would be replaced to allow for the widening of I-5 and to provide grade-separation with the Sound Transit rail line. A new local road connection for southbound traffic traveling between Gravelly Lake Drive and Thorne Lane would be constructed to improve connectivity between the Tillicum neighborhood and the rest of Lakewood. A shared use bicycle and pedestrian path would be constructed through the Project corridor, with some segments utilizing local road networks, and a new segment that would parallel I-5 adjacent to JBLM.

ES 11 When Would the Project Begin and End?

Project funding is programmed over several state budget bienniums. Funding started in July of 2015, and is programmed through 2025. The funded project is titled, I-5, Mounts Road to Thorne Lane – Corridor Improvements.

The funding will support both the final design for planned improvements, as well as construction.

ES 12 What Would Happen if the Build Alternative Is Not Constructed?

Under the No Build Alternative, congestion on I-5 in the vicinity of JBLM will continue to increase. The duration of delay on I-5 will increase resulting in longer travel times through the Project corridor, exacerbated safety issues, and potential minor increases in air emissions caused by slow traffic speeds and periodic stop-and-go conditions.

ES 13 How Would the Build Alternative Affect the Project Environment?

ES 13.1 Transportation (See Section 4.3)

Construction of the Build Alternative would reduce short-term congestion, while accommodating an increase in travel demand. The Build Alternative would carry more person trips and accommodate more traffic in the Project corridor than the No Build Alternative. It would improve interchange operations, reduce potential back-ups onto I-5, and improve safety relative to increased demand. Travel times would be 13 minutes shorter for northbound trips in the PM peak between Center Drive and Gravelly Lake Drive. Traffic operations at the Berkeley Street and Thorne Lane interchanges would be more efficient and enhance travel safety. Local connectivity with the Gravelly-Thorne connector would be improved along with bicycle/pedestrian connectivity via the proposed new shared use path adjacent to I-5. Some temporary road, intersection or lane closures may occur during construction.

ES 13.2 Air Quality (See Section 4.4)

The Build Alternative would relieve congestion and result in slight improvement in carbon monoxide (CO) concentrations over existing conditions on the Project corridor. No violations of the NAAQS for CO or Particulate Matter (PM_{2.5}) are expected. CO concentrations would remain the same or be slightly higher than with the No Build Alternative. Mobile Source Air Toxic Emissions are expected to improve over existing conditions. The Project is also expected to help reduce Greenhouse Gas (GHG) emissions by reducing stop-and-go conditions, improving speeds, improving traffic flow and providing for enhanced bicycle and pedestrian connectivity.

ES 13.3 Noise (See Section 4.5)

Projected traffic in 2040 with the Build Alternative would produce noise levels that exceed the FHWA Noise Abatement Criteria of 66 dBA for 140 receptors. Nine noise wall locations were evaluated and six walls were found to meet WSDOT criteria for feasibility, sound reduction and cost effectiveness. Four of these walls are included in the Build Alternative and will mitigate sound levels at 42 of the receptors expected to be impacted. 98 receptors would remain at noise levels above the 66 dBA threshold because noise walls in these locations were found to be ineffective at reducing noise levels or are cost prohibitive to construct. Two additional walls may be implemented if agreement can be reached with JBLM and Lincoln Military Housing about construction and long term ownership and maintenance.

ES 13.4 Geology and Soils (See Section 4.6)

The Build Alternative has the potential to increase erosion, result in long-term settlement of fill and result in seismic

stability issues with new structures. The extent of impacts depends on final design and mitigation options considered. The Build Alternative would involve new cuts and fills, retaining structures, bridges (overpasses spanning I-5), intersection modifications, stormwater treatment facilities, and infiltration facilities. Earthwork quantities will be determined in the design stage of the Project.

ES 13.5 Water Resources (See Section 4.7)

Surface water bodies (i.e. lakes and streams), groundwater resources, and floodplains are located in the immediate vicinity of I-5 in the Project area. Construction of the Build Alternative could have a temporary effect on adjacent water bodies, floodplain resources, and surface/groundwater. Once constructed, there may be an increase in runoff from the addition of paved surfaces. Runoff from new pavement will be infiltrated or similarly managed for quantity control. Encroachment into floodplain areas near Thorne Lane may occur as part of the overpass construction. Increased stormwater treatment of runoff, where currently there is none, will provide some benefit to surface water bodies and groundwater resources in the Project corridor.

ES 13.6 Wetlands (See Section 4.8)

Fourteen wetlands are located within the Project corridor. One of the wetlands, Bell Marsh, located in the southern end of the Project corridor, is a Category I wetland. Three wetlands in the Project corridor are Category II wetlands, and 10 wetlands are rated Category III wetlands. The Build Alternative would result in permanent impacts to 0.06 acre of Category II and III wetlands, and 1.1 acres of permanent impacts to wetland buffer areas. During construction,

temporary impacts would occur to 0.15 acre of wetland and 0.55 acre of wetland buffer. The Build Alternative was designed to avoid impacts to wetlands; however, total avoidance would not be possible. Impacts that could not be avoided would be mitigated through compensatory mitigation.

ES 13.7 Fish, Wildlife and Vegetation (See Section 4.9)

The Build Alternative would result in the conversion of existing vegetated land cover, which provides or supports habitat for fish and wildlife, to new paved areas, stormwater treatment facilities, or other vegetated land cover types that provide a lower level of habitat functions (e.g., forest to lawn). Cutthroat trout and kokanee salmon, as well as sculpin, are found in Murray Creek just south of the Berkeley Street interchange (Exit 122). Osprey, bald eagles, great blue heron, and purple martin are also found in the area. There are no federally-listed fish or amphibians, or suitable habitat, in the study area. The potential for federally-listed mammals (Roy Prairie pocket gopher) and listed or priority plants (water howellia, white-top aster, Torrey's peavine) to be in the Build Alternative's footprint is low, but still feasible. During construction of the Build Alternative, there may be noise impacts that affect wildlife and water quality impacts that could affect aquatic habitat and species. No sensitive fish, bird, or amphibian species or their habitats would be affected by the Build Alternative. Additional species surveys would be conducted for the pocket gopher and sensitive plant species. Use of standard impact minimization measures and best management practice would limit adverse effects.

ES 13.8 Hazardous Materials (See Section 4.10)

Soil and groundwater contamination is known to be present at several sites adjacent to or near the Build Alternative footprint. Contaminants that may be found in the soil, groundwater and/or in surface waters may include petroleum products, metals, polyaromatic hydrocarbons, and solvents including trichloroethylene (TCE). Documented groundwater contamination is known to be associated with the JBLM Logistics Center pump-and-treat system and a number of other sites. Environmental impacts may result if contaminated soils and groundwater are not properly managed. Contamination could also result if spills occur during construction and are not properly managed, resulting in contaminants reaching adjacent surface waters or seeping into groundwater.

ES 13.9 Visual Quality (See Section 4.11)

Potential impacts of the Build Alternative include three primary long-term changes to visual character: 1) Retaining walls related to construction of the interchanges, which would be prominent in the views from adjacent businesses and residential areas, predominantly in the Tillicum neighborhood (the new interchanges would be 25 to 30 feet higher than the existing overpasses at Thorne Lane and Berkeley Street); 2) Increased pavement width for I-5 to provide an added travel lane; and 3) Loss of existing trees adjacent to I-5, primarily at the Thorne Lane interchange and along the Gravelly-Thorne connector. In addition, several new noise abatement walls are proposed, which would affect current views from residential and business areas and into those same areas from I-5. The size, texture, and color of the noise walls could receive

aesthetic treatments, or enhanced landscaping could be planted to reduce the visual impact of the structures.

ES 13.10 Archaeological and Historic Resources (See Section 4.12)

Fifteen sites are recommended eligible for or previously listed on the National Register of Historic Places (NRHP). Potential temporary, indirect impacts to sites include noise, dust, mud, vibration, traffic congestion, construction traffic, loss of parking and limited access to buildings. Four sites will have direct impacts including impacts from roadway and shared-use path construction and a minor erosion of settling. As designed, the Build Alternative avoids indirect adverse effects to historic properties.

ES 13.11 Section 4(f) (See Section 4.13)

No Section 4(f) properties (publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites) would be impacted by the Build Alternative.

ES 13.12 Socioeconomics and Environmental Justice (See Section 4.14)

The areas surrounding the Thorne Lane and Berkeley Street interchanges have higher percentages of low income and minority populations than the surrounding area. The Build Alternative would provide benefits in the form of reduced congestion and improved connectivity for residents and businesses along the Project corridor. Pedestrian features on the proposed Thorne Lane overpass would improve connectivity between Woodbrook and Tillicum for residents of those areas, particularly those with limited access to vehicles. However, because the two proposed interchanges

serve an area with higher percentages of low income and minority population, the proposed Project was determined to have an unavoidable and disproportionately high and adverse impact on these populations.

ES 13.13 Land Use (See Section 4.15)

Short and longer term, temporary interchange ramp closures are anticipated during construction that would affect land accessibility. The potential disruptions would likely be greatest in the Tillicum neighborhood. However, the Project is consistent with regional, state, local, and JBLM land use plans. It would reduce the geographic isolation of the Tillicum neighborhood, add new pedestrian and bicycle facilities, and improve traffic operations in support of land use consistent with adopted plans.

ES 13.14 Utilities (See Section 4.16)

Some potential utility disruptions could occur during transitions between old and new utility connections. Disruptions are anticipated to last only a few minutes. During construction, solid waste providers would need to establish alternative routes during longer term ramp closures. Early communication with utility providers would occur during the Project design process to identify necessary relocations and establish relocation and/or mitigation plans for impacted utilities.

ES 13.15 Economics (See Section 4.17)

Analysis of potential Project-related economic effects focused primarily on Tillicum, because its landlocked position between I-5, American Lake, Camp Murray and the Tacoma Country & Golf Club makes its business community

particularly dependent on I-5 and the Thorne Lane and Berkeley Street interchanges for access. Data regarding current economic conditions in Tillicum was gathered from Washington State Departments of Revenue and Employment Security. Interviews with local business owners and managers were also conducted to gather insight regarding how they believe the proposed construction might affect them.

Construction of the proposed Build Alternative, which includes planned reconfiguration of the Thorne Lane and Berkeley Street interchanges, could create temporary economic impacts due to congestion resulting from changes in travel patterns. Efforts to minimize potential impacts include plans to construct and complete ramps for one interchange at a time allow continual access from I-5 to Tillicum. Anticipated temporary reduction in business revenue from fewer vehicles traveling to Tillicum from I-5 could be offset by higher numbers of vehicles from JBLM and Camp Murray choosing to patronize Tillicum businesses rather than accessing I-5 to conduct business elsewhere. The Build Alternative would not result in displacement of any businesses in the study area, and no long-term adverse economic impacts would be expected. The new interchange configurations would result in slightly longer travel times to reach the Tillicum commercial core from I-5, however, business owners and managers interviewed anticipate that reduced congestion at the interchanges, added capacity on I-5 and improved area connectivity would have a positive impact to Tillicum businesses.

ES 14 What Mitigation Is Proposed to Address the Build Alternative Impacts?

Mitigation is an array of actions that could be implemented to reduce the negative effects or impacts of a proposed project. Gathering environmental information early and integrating it into the design and engineering process makes it possible to avoid some impacts. In other cases, unavoidable impacts can be minimized. When impacts are unavoidable, the Project evaluates ways to compensate for these impacts. Mitigation measures include:

- ◆ **Transportation (Section 4.3)** During construction, on- and off-ramps at Thorne Lane and Berkeley Street would be scheduled for temporary closures one interchange at a time such that the other interchange continues to provide local access. Temporary northbound on- and off-ramps would be provided around construction sites to maintain access to neighborhoods and military installations. Construction Traffic Management Plans would be developed to keep three lanes of I-5 open in both the northbound and southbound direction on I-5 during daytime and peak travel times. Some temporary rerouting of public transit and school buses may be necessary.
- ◆ **Air Quality (Section 4.4)** Measures would be taken during construction to reduce dust for the protection and comfort of motorists or area residents.
- ◆ **Noise (Section 4.5)** Noise abatement walls are proposed at several locations to mitigate existing and modeled future noise levels. Construction noise levels could be mitigated by using best management practices (BMPs) such as use of mufflers and engine enclosures on heavy equipment, use of the quietest equipment available near sensitive receivers, and/or limiting equipment idling time.

- ◆ **Geology and Soils (Section 4.6)** Fill material would be placed in small batches and compacted in accordance with WSDOT specifications. Cut slopes would be of limited height and slope to minimize erosion and maximize stability. BMPs to minimize erosion, including covering exposed slopes with plastic, installing drains and/or limiting soil moving to dry weather conditions, would be implemented. Long-term mitigation to minimize erosion and maximize slope stability includes replanting vegetation (including mulching or hydroseeding). Structures such as new overpasses would be designed to meet current seismic (earthquake) standards.
- ◆ **Water Resources (Section 4.7)** A Temporary Erosion and Sediment Control Plan and a Spill Prevention, Control and Countermeasures Plan would be implemented to protect surface water and groundwater resources. BMPs such as controlling sediment laden runoff from entering streams or drainage inlets near work areas, and use of filter fabric downstream of all exposed slopes, would be used. Stormwater treatment facilities such as swales and infiltration ponds would also be constructed to treat runoff. If floodplains areas are impacted, compensatory flood storage would be provided. Work near surface water bodies may also be limited to dry weather periods to minimize impacts to streams and floodplains.
- ◆ **Wetlands (Section 4.8)** Mitigation would occur to compensate for the 0.06 acre of permanent wetland impacts. Types of mitigation that may be used include onsite restoration of disturbed wetland and buffer areas, or compensatory mitigation through the Pierce County In-Lieu Fee program for impacts to areas that cannot be restored due to fill or other permanent features.
- ◆ **Fish, Wildlife and Vegetation (Section 4.9)** Clearing limits would be contained to the minimum area necessary and marked with construction fencing. Staging areas would be a minimum of 300 feet from wetlands or streams wherever possible. The shared-use path would be designed and constructed to minimize native tree removal. Construction activities near the osprey nest should be scheduled to avoid the breeding season if practicable.
- ◆ **Hazardous Materials (Section 4.10)** During construction, BMPs would be implemented to address the potential for spills. If hazardous materials are encountered during construction, the effects would be mitigated using measures described in WSDOT's Standard Hazardous Materials Impacts and Mitigation Measures table.
- ◆ **Visual Quality (Section 4.11)** Potential mitigation measures for impacts to visual quality may include minimization of tree and shrub removal needed to construct noise barriers, application of aesthetic treatments to bridges and walls, replanting with native vegetation to maintain visual unity, replacement of trees removed for construction in accordance with the WSDOT *Roadside Policy Manual*, and special planting standards for restoration of wetlands and buffers.
- ◆ **Archaeological and Historic (Section 4.12)** Mitigation is not required for historic and archaeological resources.
- ◆ **Socioeconomic and Environmental Justice Effects (Section 4.14)** Direct compensation to individuals whose property must be purchased for WSDOT use in accordance with the Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970 (as amended). Tenants as well as landowners would be compensated. Community engagement through final design of the Project.

- ♦ **Utilities (Section 4.16)** Early and frequent communication with utility companies would occur during Build Alternative design. Relocation and/or mitigation plans for existing utilities would be designed as needed through consultation between the Project team and utility provider.
- ♦ **Economics (Section 4.17)** Staged construction of the proposed new southbound ramps Thorne Lane and Berkeley Street would minimize impacts to Tillicum. Variable message signs on I-5 and other methods would be used to inform drivers of route options to Tillicum during construction. A Traffic Management Plan would be prepared addressing traffic management and public information requirements the contractor must meet during construction.

ES 15 Public Outreach

A focused public outreach effort has been integral to defining the Build Alternative. Stakeholder feedback has been sought and used to identify improvement options, create and apply screening tools to evaluate potential solutions, and work through challenging design and environmental issues to ensure Project design reflected the needs of both I-5 users and the communities immediately adjacent to the freeway.

Public outreach has taken a variety of forms including Project open houses, neighborhood meetings, briefings and work sessions for elected officials to which the public was invited, media outreach and regular updates to the WSDOT Project website.

Central to the public outreach strategy was development and use of materials that were easy to understand by a non-technical audience. Graphics-rich materials conveyed complex

technical concepts while reader-friendly language made the study, considerations, analysis, and recommendations comprehensible to a wide audience. Further discussion of the public outreach approach and how input was used is presented in Sections 2.4 and 2.5.

ES 16 What Issues Are Controversial?

Comments regarding the Build Alternative have generally been positive as expressed through public comments received at focused public outreach meetings and via email from the I-5 JBLM Vicinity Congestion Relief website. Limited concerns have been voiced regarding potential economic impacts to Tillicum resulting from longer term ramp closures at Thorne Lane and Berkeley Street during construction. An economic study was conducted to evaluate this concern and identify potential mitigation strategies. WSDOT will continue to coordinate with the public, agencies, and tribes through design and construction of the Project.

ES 17 How Can I Learn More?

Questions regarding this Project can be directed to:

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