

SR 167 Puyallup to SR 509

Tier II Final Environmental Impact Statement and Section 4(f) Evaluation

November 2006



Lead Agencies



Cooperating Agencies





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SR 167

Puyallup to SR 509

**Cities of Puyallup, Fife, Edgewood, Milton, and Tacoma
Pierce County, State of Washington**

Tier II Final Environmental Impact Statement

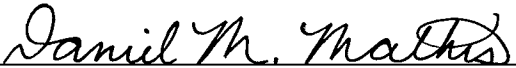
Submitted Pursuant to NEPA Section 42 U.S.C. 4332(2)(c) and SEPA RCW 43.21 C

by the

Federal Highway Administration

and the Washington State Department of Transportation

Cooperating Agencies: U.S. Army Corps of Engineers and the City of Fife



Division Administrator
Federal Highway Administration



Director, Environmental Services
Washington State Department of Transportation

11/09/06

Date of Approval

11/9/06

Date of Approval

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This report documents studies for a proposal to construct an extension of the SR 167 freeway from SR 161 (North Meridian) in the city of Puyallup to the SR 509 freeway in the city of Tacoma. The Tier II EIS evaluates the mainline alignment as proposed in Tier I and multiple design options at the SR 509, 54th Avenue East, Interstate 5, Valley Avenue, and SR 161 interchanges.

Fact Sheet

Tier II Final EIS

SR 167

Puyallup to SR 509

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Project Title

SR 167, Puyallup to SR 509 – Tier II (Final) Environmental Impact Statement

Project Location

The Federal Highway Administration (FHWA) and the Washington State Department of Transportation (WSDOT) are planning the completion of the SR 167 freeway between SR 161 (North Meridian) in North Puyallup and the SR 509 freeway in the City of Tacoma. The project would be constructed within Pierce County, Washington in the Cities of Edgewood, Fife, Milton, Puyallup, and Tacoma.

Project Description

The new freeway will replace the existing SR 167 arterial route between Puyallup and the I-5 Bay Street interchange via North Meridian and River Road. The freeway is designed as four lanes, plus inside HOV lanes between I-5 and SR 167. A portion of the project would include the re-establishment of riparian areas, with the incorporation of a bike and pedestrian path.

Project Proponent

Federal Highway Administration, Washington Division
Washington State Department of Transportation, Olympic Region

Cooperating Agencies

U.S. Army Corps of Engineers and City of Fife.

SEPA

Responsible Agency

Washington State Department of Transportation

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Proposed Implementation Date

The project is presently in the preliminary design phase. Final design will be completed after the Record of Decision has been issued. WSDOT is currently acquiring parcels needed for right-of-way within the preferred Tier I corridor from willing sellers. The remaining right-of-way will be acquired after the FEIS is approved and a Record of Decision has been issued, granting WSDOT the ability to exercise eminent domain, if necessary.

The project is currently listed in the Puget Sound Regional Council (PSRC) 20-year Long Range Plan which includes the Transportation Improvement Project (TIP) list.

The project is likely to be constructed in stages as funding sources are approved or become available through political and legislative processes. Construction on this project would not start sooner than 2009. Construction could last anywhere from ten to twelve years depending on the availability of funding.

Anticipated Permits, Approvals, and Licenses

U.S. Army Corps of Engineers

- Clean Water Act Section 404 Permit
- Section 10 Permit

Department of Archaeology and Historic Preservation

- Section 106

U.S. Coast Guard

- Rivers & Harbors Act Section 9

Puyallup Tribe

- Section 401 Water Quality Certification

- Archaeological Resources Protection Permit

Washington State Department of Ecology

- Certification of Consistency with Coastal Zone Management
- Clean Water Act Section 401 Water Quality Certification
- NPDES Permit, Section 402
- Floodplain Development Permit
- Shoreline Substantial Development Permit
- Temporary Water Quality Modification
- Hazardous Waste Tracking Form

Washington State Department of Fish and Wildlife

- Hydraulic Project Approval
- Fish Habitat Enhancement Project Application

City of Edgewood

- Critical Areas Ordinance
- Floodplain Development Permit

City Fife

- Critical Areas Ordinance
- Floodplain Development Permit
- Noise Variance

City of Milton

- Critical Areas Ordinance
- Floodplain Development Permit
- Noise Variance

City of Puyallup

- Critical Areas Ordinance
- Shoreline Substantial Development Permit
- Floodplain Development Permit
- Noise Variance

Pierce County

- Critical Areas Ordinance
- Shoreline Substantial Development Permits
- Floodplain Development Permit
- Noise Variance

Authors and Principal Contributors

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Project Schedule

Date of Issue of DEIS	February 28, 2003
Date DEIS Comments were Due	April 14, 2003
Public Hearings Held	March 18 and 20, 2003
Date of Issue of FEIS	November 2006

Agency Action and Projected Date for Action

Record of Decision: Following issuance of the Final EIS

Document Availability

Copies of this Final EIS will be available for review at WSDOT 724 Quince Street SE in Olympia, and at the following libraries:

- Pierce County Public Library System
 - Milton Branch
 - South Hill Branch
- City of Tacoma Public Library System
- City of Puyallup Public Library System
- Washington State Library System

The Final EIS Summary will be available on the project website (<http://www.wsdot.wa.gov/Projects/SR167/TacomaToEdgewood>).

Copies of the Final EIS are available on a CD from WSDOT at no cost. To obtain a copy of the Final EIS on a CD please contact Steve Fuchs at fuchss@wsdot.wa.gov or 360-709-8100.

Background Material

Background material and supporting documents for this Final EIS are available for review at WSDOT's SR 167 Extension Project Office, located at 724 Quince Street SE, Olympia, WA 98504-7375. Please contact Steve Fuchs at fuchss@wsdot.wa.gov or 360-709-8100.

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Abbreviations and Acronyms

Tier II Final EIS

SR 167

Puyallup to SR 509

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Abbreviations and Acronyms

ACM	Asbestos Containing Materials	EO	Executive Order
ADA	Americans with Disabilities Act	EPA	U.S. Environmental Protection Agency
ADT	Average Daily Traffic	ESA	Endangered Species Act
AHS	Archaeological and Historical Services	ESU	Evolutionary Significant Unit (NOAA Fisheries)
AKART	All known, available, and reasonable methods of prevention, control, and treatment	EWU	Eastern Washington University
AQMP	Air Quality Maintenance Plans	FAZ	Forecast Analysis Zones
ASTM	American Society for Testing and Materials	FC	Fecal coliform
B	Business	FEIS	Final Environmental Impact Statement
BA	Biological Assessment	FEMA	Federal Emergency Management Agency
BLM	Bureau of Land Management	FHWA	Federal Highway Administration
BMA	Biodiversity Management Area	FIRM	Flood Insurance Rate Map
BMP	Best Management Practice	FOHW	Friends of the Hylebos Wetlands
BNSF	Burlington Northern Santa Fe	FPPA	Farmland Protection Policy Act
CAA	Clean Air Act	GIS	Geographical Information System
CAC	Citizen's Advisory Committee	GMA	Growth Management Act
CC	Community Commercial	gpm	Gallons per minute
CEECO	Coast Engineering and Equipment Company	HAL	High Accident Locations
cfs	Cubic feet per second	HCM	Highway Capacity Manual
CG	General Commercial	Hg	Mercury
CO	Carbon Monoxide	HOV	High Occupancy Vehicle
COE	U.S. Army Corps of Engineers	HPA	Hydraulics Project Approval
CTED	Department of Community, Trade, and Economic Development	HSPF	Hydrological Simulation Program Fortran
CTR	Commute Trip Reduction	IAC	Office of the Interagency Committee
Cu	Copper	IDT	Interdisciplinary Team
CWA	Clean Water Act	IRIS	EPA Integrated Risk Information System
DAHP	Washington State Department of Archaeology and Historic Preservation	ITS	Intelligent Transportation System
dB	Decibel	JARPA	Joint Aquatic Resources Permit Application
dBA	A-weighted decibels	LBP	Lead Based Paint
DDHV	Directional Daily Hourly Volume	LEDPA	Least Environmentally Damaging Practicable Alternative
DEIS	Draft Environmental Impact Statement	Leq	Equivalent sound level
DNR	Washington State Department of Natural Resources	Leq(h)	Equivalent sound level measured over a 1-hour period
DNS	Determination of Non-Significance (SEPA)	Leq(24)	Equivalent sound level for a 24-hour period
DO	Dissolved oxygen	Lmax	Maximum sound level
DOH	Washington State Department of Health	LOS	Level-of-Service
DPS	Distinct Population Segment (USFWS)	LU	Landscape Unit
DR	Discipline Report	LWD	Large Woody Debris
Ecology	Washington State Department of Ecology	M-1	Light Manufacturing
		MBTA	Migratory Bird Treaty Act
		MDR	Multi-Family Neighborhood

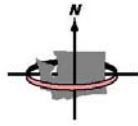
MIS	Major Investment Study	SAC	Signatory Agency Committee
MOA	Memorandum of Agreement	SB	Southbound
mg/L	Milligrams per liter	sec/veh	Seconds per vehicle
MSAT	Mobile Source Air Toxics	SEPA	State Environmental Policy Act
MTP	Metropolitan Transportation Plan	SFR	Single-Family Residence
N+N	Nitrate+nitrite	SHPO	State Historic Preservation Officer
NAAQS	National Ambient Air Quality Standards	SIP	State Implementation Plan
NACEC	North American Crane and Equipment Company	SMA	Shoreline Management Act
NAC	Noise Abatement Criteria	SPCC	Spill Prevention, Control, and Countermeasures
NAICS	North American Industry Classification System	SSP	Stormwater Site Plan
NB	Northbound	ST	Sound Transit
NC	Neighborhood Commercial	STAA	Surface Transportation Assistance Act
NEBA	Net Environmental Benefits Analysis	T&E	Threatened and Endangered
NEPA	National Environmental Policy Act of 1969	TAZ	Traffic Analysis Zones
NHS	National Highway System	TCP	Traditional Cultural Property
NOAA Fisheries	National Oceanic and Atmospheric Administration – National Marine Fisheries Service	TDM	Transportation Demand Management
NPDES	National Pollutant Discharge Elimination System	TESC	Temporary erosion and sedimentation control
NR	Neighborhood Residential	TIP	Transportation Improvement Plan
NRCS	Natural Resources Conservation Service	TMDL	Total Maximum Daily Load
NRHP	National Register of Historic Places	TN	Total nitrogen
NWI	National Wetland Inventory	TNM	Traffic Noise Model
O ₃	Ozone	TP	Total phosphorus
OHWM	Ordinary High Water Mark or line	TSM	Transportation Systems Management
Pb	Lead	TSS	Total Suspended Solids
PEM	Palustrine emergent	UPRR	Union Pacific Railroad
PFO	Palustrine forested	USFWS	U.S. Fish and Wildlife Service
PHS	Priority Habitat and Species	USG	United States Gypsum Co.
PM ₁₀	Respirable or fine particulate matter, smaller than 10 micrometers in diameter	USGS	United States Geological Survey
PM _{2.5}	Respirable or fine particulate matter, smaller than 2.5 micrometers in diameter	UST	Underground Storage Tank
PSE	Puget Sound Energy	VE	Value Engineering
PSCAA	Puget Sound Clean Air Agency	vpd	Vehicles per day
PSRC	Puget Sound Regional Council	WAC	Washington Administrative Code
PSS	Palustrine scrub-shrub	WDFW	Washington Department of Fish and Wildlife
RC	Regional Commercial	WDNR	Washington State Department of Natural Resources
ROD	Record of Decision (NEPA)	WRIA	Water Resource Inventory Area
ROW	Right-of-way	WSDOT	Washington State Department of Transportation
RRP	Riparian Restoration Proposal	WSP	Washington State Patrol
		WSU	Washington State University
		Zn	Zinc

Summary

Tier II Final EIS

SR 167

Puyallup to SR 509



SR 167 Puyallup to SR 509



Summary

Background

Washington State Department of Transportation (WSDOT) and the Federal Highway Administration (FHWA) are proposing the SR 167 Extension Project. They are the lead agencies for compliance with NEPA and SEPA. The SR 167 Extension Project is in Pierce County, Washington, within the cities of Fife, Puyallup, Edgewood, Milton, and Tacoma. It is also within the external boundary of the Puyallup Tribal Reservation.

The planning and environmental analysis for the SR 167 Extension is being conducted in two stages or tiers. This tiered approach is part of an agreement among agencies with key roles in environmental review and approval of major transportation projects like this one.

The Tier I Environmental Impact Statement (EIS) analyzed the location and environmental aspects of different corridor options. It also considered ways other than building a new freeway to address the purpose and need for transportation improvements in the project area. The Tier I EIS evaluated in detail three new corridors and a no build alternative. In June 1999, the Tier I Final EIS concluded that the Alternative 2 corridor and interchange locations were environmentally preferred.

The Tier II Draft EIS, distributed in February 2003, provided details on optional configurations of the interchanges. Tier II uses many design and environmental criteria to develop a reasonable range of interchange options for environmental

NEPA, SEPA, and EIS

The National Environmental Policy Act (NEPA) requires that environmental impacts be considered in federal decisions, including the use of federal funds.

NEPA requires an EIS be prepared for major projects that have the potential for adverse impacts.

A NEPA EIS also provides the documentation required by the Washington State Environmental Policy Act (SEPA).

Key Project Terms

Corridor is a strip of land between two endpoints within which a roadway is placed and conditions are evaluated.

Roadway is the portion of a highway including shoulders, for vehicle use.

Footprint is the outline of the physical limits of the area impacted by construction of the roadway and related facilities.

analysis. These details are important for better defining environmental effects and for discussing measures to avoid, minimize, and mitigate these effects with stakeholders. This Tier II Final EIS responds to public comments on the Draft EIS and provides supplemental information.

What Is the SR 167 Extension Project?

The proposed project completes the State Route (SR) 167 freeway by building four miles of new six-lane divided facility from its current terminus in Puyallup at SR 161 through the Puyallup River valley connecting to Interstate 5 near the 70th Avenue undercrossing. The project will also include a two-mile four-lane divided highway section from SR 509 near the Port of Tacoma to I-5 and SR 167 at the interchange near 70th Avenue.

The roadway runs east and northeast from Port of Tacoma Road to 54th Avenue East. It then proceeds southeast over SR 99 and I-5 before turning south and crossing Valley Avenue just west of Freeman Road. The rest of the roadway runs mostly southeast before connecting with the existing SR 167 freeway near North Meridian in Puyallup.



Current traffic congestion on 54th Avenue East

Who Is Leading the Project?

The Washington State Division of FHWA is the lead federal agency for the project, and they provide guidance and oversight to WSDOT. The Olympic Region of WSDOT continues to lead this planning and environmental analysis phase, as they have since Tier I began.

Why Is the Project Needed?

The existing non-freeway segment of SR 167 has high levels of congestion at surface street intersections and includes many connecting driveways. Trucks transporting freight from the Port of Tacoma add to the congestion. These conditions contribute to relatively high accident rates, and increased air pollution because stop-and-go traffic uses more fuel than freeway traffic.

In 1999 the Port of Tacoma projected that truck traffic will double to 600,000 trucks annually by the year 2014. Traffic projections for the year 2030 also indicate problems will continue to worsen.

Some of the benefits identified for the proposed project are that it:

- Increases mobility and accessibility;
- Improves safety for traffic, pedestrians, and bicyclists;
- Improves regional mobility of the transportation system;
- Serves multi-modal freight and passenger movement;
- Improves continuity between SR 167 and I-5;
- Reduces flooded area along local creeks;
- Maintains or improves air quality in the corridor;
- Improves fish habitat in nearby streams.

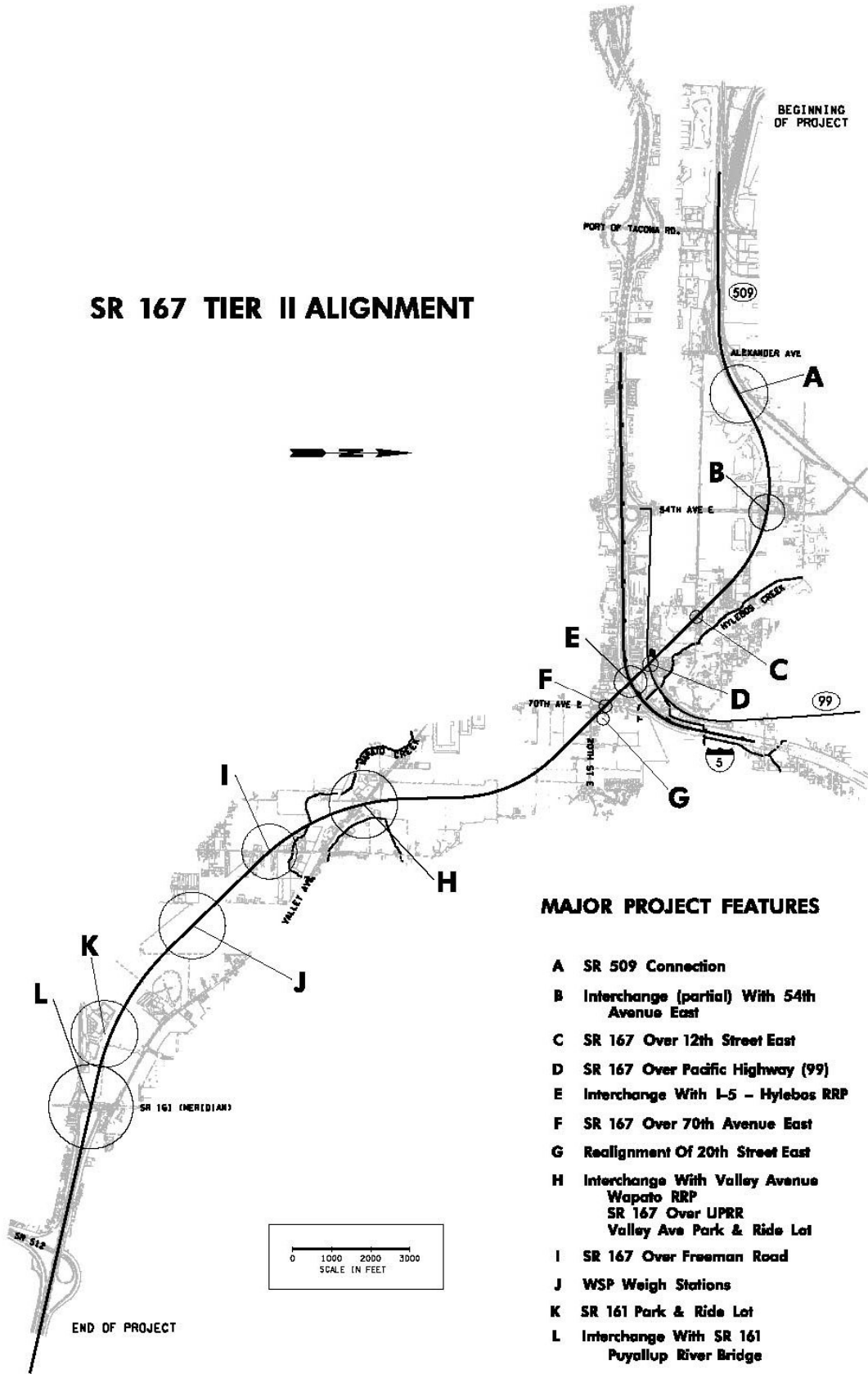


Stop-and-go traffic emits more air pollution than highway traffic



Flooding in February 1996 at Hylebos Creek and I-5

SR 167 TIER II ALIGNMENT



MAJOR PROJECT FEATURES

- A SR 509 Connection
- B Interchange (partial) With 54th Avenue East
- C SR 167 Over 12th Street East
- D SR 167 Over Pacific Highway (99)
- E Interchange With I-5 - Hylebos RRP
- F SR 167 Over 70th Avenue East
- G Realignment Of 20th Street East
- H Interchange With Valley Avenue Wapato RRP
SR 167 Over UPRR
Valley Ave Park & Ride Lot
- I SR 167 Over Freeman Road
- J WSP Weigh Stations
- K SR 161 Park & Ride Lot
- L Interchange With SR 161 Puyallup River Bridge

What Are the Major Features of the SR 167 Project?

The new freeway section will be approximately six miles long. It has one direct highway connection, four interchanges, two weigh stations, and two park and ride lots. The project also includes an innovative stormwater management approach known as the Riparian Restoration Proposal (RRP) that reduces potential flooded areas while improving local streams. In addition to important traffic benefits like increased mobility, improved safety, and accessibility, the SR 167 Extension Project will include mitigation measures that avoid and minimize impacts, enhance wetlands, improve floodplain values, and has other measures to protect the environment.

Limited Access Divided Highway

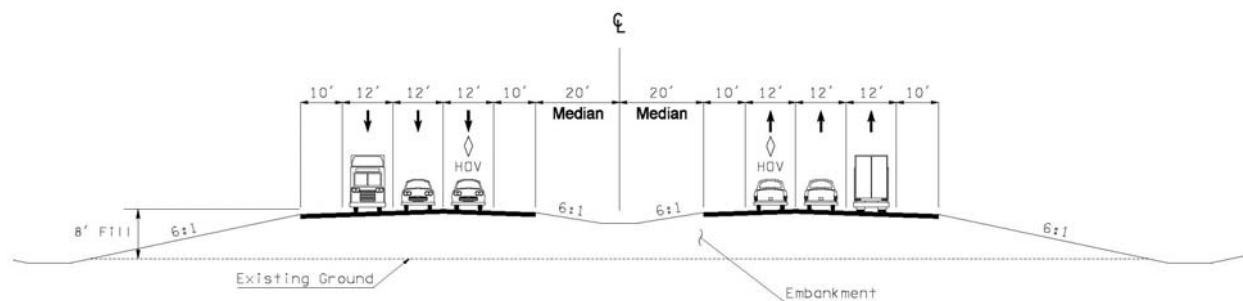
The SR 167 Extension begins as a four-lane limited access highway where it connects to SR 509. The four-lane freeway continues easterly on embankment until 12th Street. The mainline is elevated on structures over 12th Street, SR 99, I-5, 20th Street, and 70th Avenue. Between 70th Avenue and Valley Avenue, the freeway consists of three general purpose lanes and one future HOV lane in each direction. South of Valley Avenue, the freeway includes two general purpose lanes and one HOV lane in each direction (six total) to the SR 161 Interchange.

Key Project Terms

Limited access highways restrict the locations where traffic may enter the roadway. Driveways and sidestreets do not connect directly to the highway.

Divided highways separate traffic traveling in different directions with medians, physical barriers, or differing elevations.

Embankment is a structure of earth or gravel that is raised to form the foundation for a road.



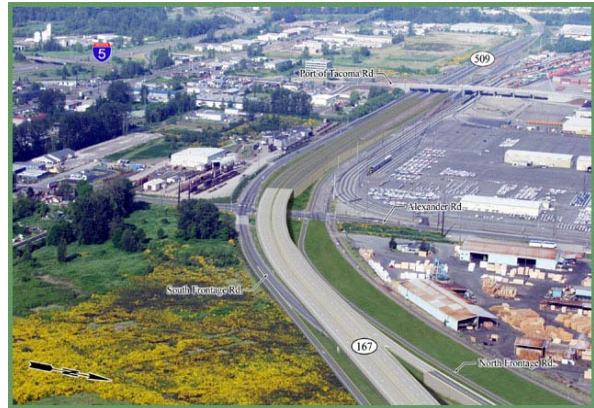
Typical Cross Section
SR 167 Valley Avenue Interchange to SR 161 Interchange

Freeway-to-Freeway Connections

The SR 167 Extension connects with the SR 509 freeway in Tacoma. A new interchange in Fife connects I-5 and the new SR 167 freeway. In Puyallup the SR 167 Extension connects to the existing SR 167 freeway that proceeds east and north to I-405 in Renton.



Current view along SR 509



Visualization of the new SR 509 and SR 167 connection

The new I-5 interchange is very complex with limited solutions for connecting the freeways. The I-5 interchange design in the Final EIS incorporates six recommendations of a special value engineering study that examined 67 optional ramp connections and alignments. After thorough analysis of all the options, it was determined that only one design option is reasonable, with the least adverse environmental impacts, to meet the needs at this location.



Current view of I-5 at the Fife Curve



Visualization of the interchange connecting SR 167 and I-5 at Fife Curve

Local Access Interchanges

A new interchange provides local access at 54th Avenue East. The Loop Option is the environmentally preferred design because it has the least effects on wetlands and their buffers, floodplains, and wildlife habitat. The City of Fife, Port of Tacoma, FHWA, and WSDOT also prefer this interchange option because truck traffic leaving the Port can access northbound SR 167 with a right turn from 54th Avenue East.



Current view of 54th Avenue East



Visualization of the preferred Loop Ramp interchange option at 54th Avenue East

The Valley Avenue Option is the preferred interchange design for local access at Valley Avenue. This option has least effects on wetland buffers, fewest residential and business displacements, least new impervious area, and most opportunity for connecting wildlife habitats.



Current view of Valley Avenue East

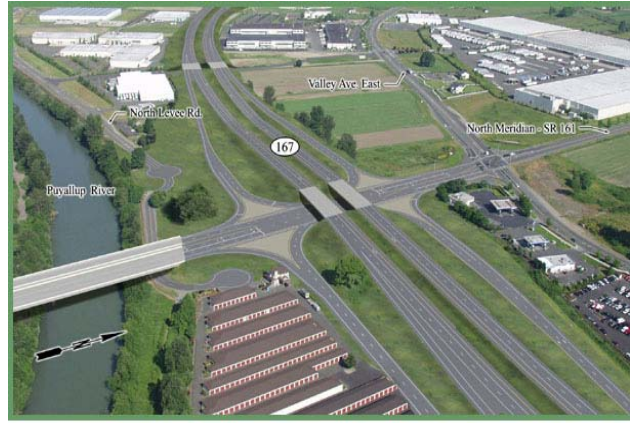


Visualization of the preferred Valley Avenue interchange at Valley Avenue East

The Urban Interchange Option is preferred at the SR 167 / SR 161 interchange in Puyallup. This option improves traffic operation and has the least environmental impact.



Current view of North Meridian (SR 161)



Visualization of the proposed SR 161 / SR 167 interchange

Other Transportation Facilities

One park and ride lot is located at the Valley Avenue interchange. The other is near the SR 161 / SR 167 interchange in Puyallup. Land acquisition of these sites is included in the SR 167 Project, but construction of the lots is not.

Washington State Patrol truck weigh stations, one for each direction of travel, are located along the new freeway east of the Valley Avenue Interchange.

Bicycles are allowed on the SR 167 mainline shoulders except for the I-5 interchange and the section from 54th Avenue East to 20th Street East. The SR 167 project includes a separate multi-use path for bikes and pedestrians between SR 99 and 54th Avenue East. Beyond 54th Avenue East, bikes and pedestrians would remain on local streets and sidewalks. The Riparian Restoration Proposal (RRP) is an integral component of the project to control highway runoff.

Riparian Restoration Proposal

The flat topography, high water table, and history of floods in the project area make the sole use of conventional stormwater ponds an ineffective way to store all of the highway runoff from the new freeway. Riparian Restoration Proposal (RRP) is an innovative approach to stormwater management for this project.



Conventional stormwater ponds sometimes encroach into riparian buffers of the streams they are intended to protect.

The RRP relocates sections of Hylebos Creek and Surprise Lake Drain away from existing roads, and provides new meandering channels with riparian buffers. It also includes riparian plantings, removal of some existing fill and impervious areas from the floodplains, and replaces most undersized crossing structures in the project area at Hylebos Creek, Surprise Lake Drain, and Wapato Creek.

At Hylebos Creek the RRP includes 4,010 feet of new stream channel and 87 acres of riparian improvements. Approximately 5,340 feet of new channel is included for Surprise Lake Drain, with 29 acres of adjacent riparian protected.

Key Project Terms

Riparian is the term used to describe streambanks and adjacent areas along rivers and streams.

Impervious surfaces are hard surfaces that prevent or retard water from soaking into soil, thereby increasing the rate or volume of stormwater runoff.

Innovative Stormwater Approaches

The *Stormwater Management Manual for Western Washington* allows alternative stormwater controls if they are supported by a watershed analysis approved by Washington Department of Ecology. WSDOT conducted extensive studies including sophisticated computer modeling to demonstrate that the SR 167 RRP not only decreases the potential for stream erosion, but it also reduces the potential for future flooded areas.

RRP Benefits

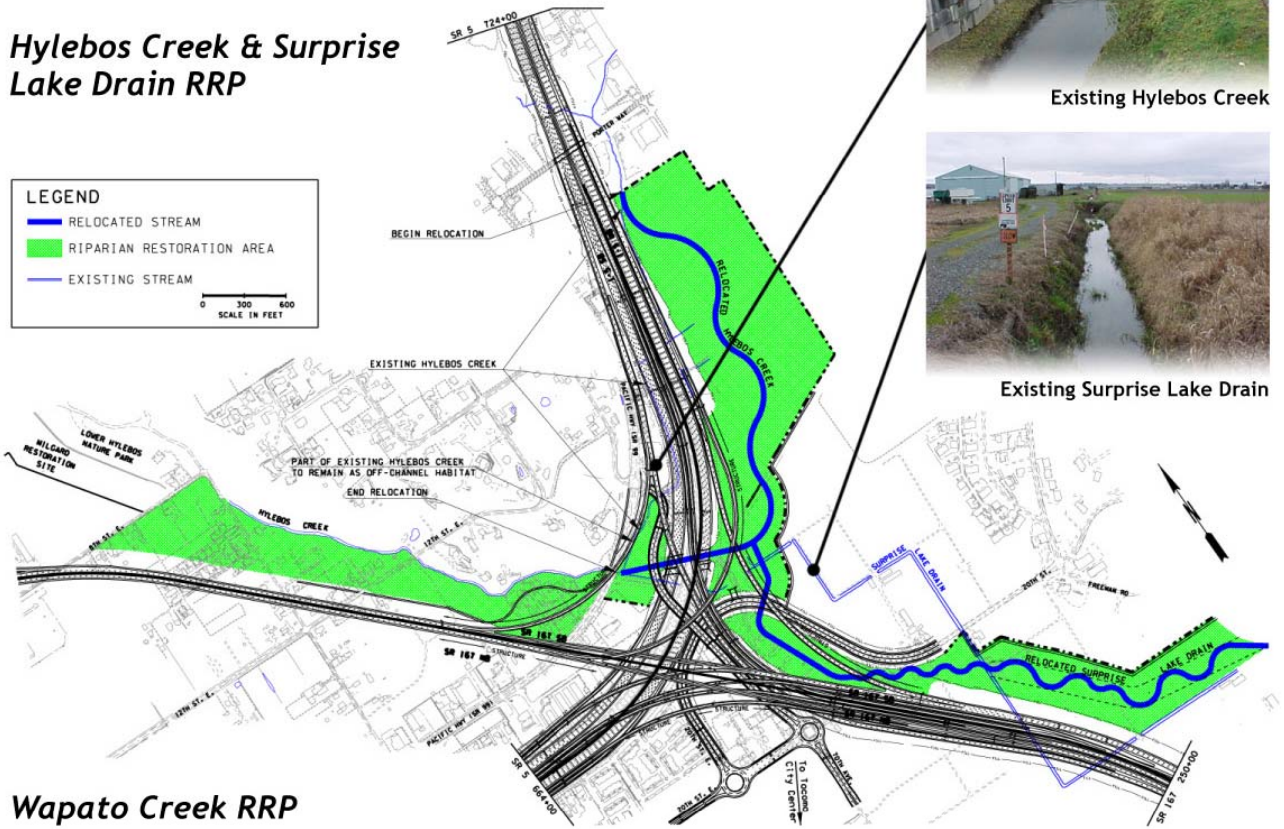
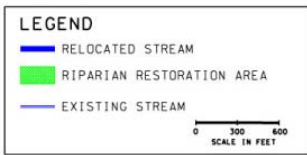
- Reduces area flooding
 - Prevents streambank erosion
 - Improves fish habitat
 - Promotes natural stream processes
 - Treats highway runoff
 - Reduces new impervious surfaces
 - Supports salmon recovery
 - Connects wildlife habitats
 - Protects water quality
-



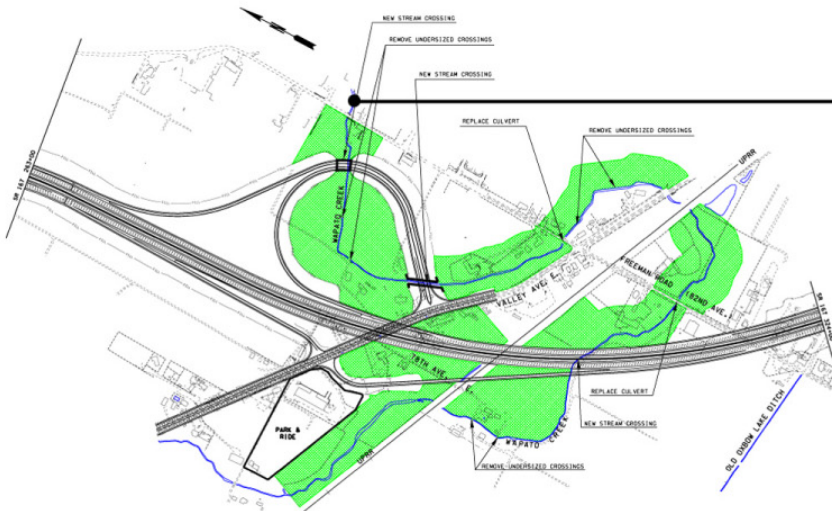
RIPARIAN RESTORATION PROPOSAL



Hylebos Creek & Surprise Lake Drain RRP



Wapato Creek RRP



The Wapato Creek RRP converts 73 acres of developed land along 9,000 feet of the existing stream to riparian buffer. Restoration includes removal of buildings, roads, and most culverts in the area being protected, as well as planting native vegetation.

The primary purpose of RRP is to control and manage stormwater flow, which is the quantity of runoff from the roadway. The RRP will do this by removing existing fill and structures from the floodplain, which would improve flow of surface water and return portions of the project area to a near natural condition. It also offers many environmental benefits in terms of wetland enhancement and habitat improvements for fish and wildlife. Some conventional stormwater management facilities are needed, even with RRP.

Who Participated In Developing the Final EIS?

As lead agencies for the project, FHWA and WSDOT encourage the active participation of numerous resource and regulatory agencies, local jurisdictions, local landowners, the Puyallup Tribe of Indians, organizations, interest groups, and citizens. Collectively these are known as project stakeholders. Newsletters, project presentations, open houses, technical meetings, and WSDOT's SR 167 website are some tools recently used to engage others in the project. The project benefits from the diverse insights, perspectives, comments, and suggestions of agencies and the public.

Partners Committee – FHWA, WSDOT, Pierce County, Port of Tacoma, Puyallup Tribe of Indians, Puget Sound Regional Council, Pierce Transit, and the cities of Puyallup, Tacoma, Edgewood, Fife, and Milton hold quarterly meetings to provide suggestions and recommendations related to the project.

Citizen's Advisory Committee – Property owners, business owners, local jurisdictions, and farmers advise project staff on local issues and concerns within the project area and assist with improving outreach and communication efforts. This committee meets at key milestones in the project.

Goals of Stormwater Flow Control

- Prevent increases in streambank erosion
 - Prevent increases in flooding
 - Prevent decreases in biological integrity of streams
-

Project Stakeholders

Stakeholders include anyone that lives in, uses, or has jurisdiction in the project area.

For this project they include:

- Citizens and landowners
 - Businesses and corporations
 - Local cities and Pierce County
 - State and federal regulatory and resource agencies
 - Puyallup Tribe of Indians
 - Organizations and interest groups like Friends of the Hylebos Wetlands, Tahoma Audubon Society, and Tacoma Wheelman's Bicycle Club
-

RRP Technical Advisory Group – The US Fish and Wildlife Service, NOAA National Marine Fisheries Service (NOAA Fisheries), US Army Corps of Engineers, Washington State Department of Fish and Wildlife, Washington Department of Ecology, the Puyallup Tribe of Indians, and Friends of the Hylebos Wetlands – a local environmental group – assist FHWA and WSDOT in developing the innovative Riparian Restoration Proposal.

Signatory Agency Committee – The state and federal agencies meet quarterly to discuss projects like the SR 167 Extension as part of the Signatory Agency Committee. Aquatic resources are the primary focus of this committee.

Concurrence is obtained from the signatory agencies at three key points in the NEPA process:

1. Project purpose and need
2. Range of alternatives in the Draft EIS
3. Preferred alternative / least environmentally damaging practicable alternative in the Final EIS, and any detailed mitigation plans

The SR 167 project has received concurrence on all three points. Suggestions by the agencies on Concurrence Point 3 identified measures to further minimize effects at the Valley Avenue Interchange Option.

Puyallup Tribe of Indians – Most of the SR 167 Extension route is within the external boundaries of the Puyallup Tribal Reservation. Therefore, FHWA and WSDOT consult with the Tribe frequently on topics such as tribal trust lands affected by the project, cultural and archaeological studies, sharing of fishery data, studies of Hylebos and Wapato creeks, and developing the project design. FHWA and WSDOT are committed to maintaining an open line of communication with the Puyallup Tribe during all remaining phases of the SR 167 Extension project.

Signatory Agency Committee

- Federal Highway Administration
 - WSDOT
 - U.S. Army Corps of Engineers
 - Environmental Protection Agency
 - U.S. Fish and Wildlife Service
 - NOAA Fisheries
 - Washington Dept of Ecology
 - Washington Dept of Fish and Wildlife
 - City of Fife (project specific)
-

Puyallup Tribe of Indians

The Puyallup Tribe is part of the Puget Sound Salish Indian culture. Tribal relations with the U.S. Government began in 1854. Soon thereafter the Treaty of Medicine Creek established the Puyallup Reservation. A council of elected tribal members now governs the Puyallup Tribe under the constitution and bylaws established in 1934.

Organizations and Interest Groups – As noted above, Friends of Hylebos Wetlands participates on the RRP Technical Advisory Committee. The project team frequently makes presentations to Chambers of Commerce, business associations, and civic organizations like the Kiwanis.

How Was the Preferred Alternative Developed?

Several steps during Tier II that were key to developing the Preferred Build Alternative are described in subsequent paragraphs. Some steps occurred before the Draft EIS was distributed. Others have occurred since then. Additional refinements and improvements will occur during final design if the Preferred Build Alternative is approved.

Engineering Design Criteria

These criteria were used to develop design options at the interchanges within the Alternative 2 corridor selected in the Tier I Record of Decision. They also were used to refine the Tier II roadway to minimize adverse environmental effects.

Value Engineering Study for I-5 Interchange

The complexity of the I-5 interchange and limited solutions for the freeway connections led to the development of one design option at this location. A value engineering study was conducted by representatives of FHWA, WSDOT, and the City of Fife that have the mix of expertise needed to develop the best design. The study examined 67 options that included multiple I-5 and SR 167 ramp connections and roadways to produce the interchange design included in the Preferred Alternative.

Design Options at Local Access Interchanges

The engineering design and environmental screening criteria were used to develop different interchange design options. Two options were developed for the 54th Avenue interchange, three options for the Valley Avenue interchange, and three options for the SR 161 interchange in Puyallup.

Value Engineering

Value Engineering is the systematic application of recognized techniques by a multi-disciplined team to:

- Identify the function of a product or service.
 - Establish a worth for that function.
 - Generate alternatives through creative thinking.
 - Provide the function(s) needed to accomplish the original purpose.
 - Assure lowest overall cost without sacrificing safety, necessary quality, or environmental attributes.
-

Environmental Screening Criteria and Ranking

The previous steps as listed above were completed before distribution of the Tier II Draft EIS, which presented the environmental effects of the mainline and interchanges options. That analysis is continued and expanded in this Final EIS by using the 22 environmental screening criteria to rank and score the options at each interchange. These scores, plus non-environmental considerations, are the basis of the Preferred Build Alternative that was presented to the Signatory Agency Committee for their concurrence.

Agency Feedback and Concurrence

The Signatory Agency Committee and the City of Fife provided feedback on the mainline and preferred interchange options identified by FHWA and WSDOT. Their recommendation to bridge wetlands in the Valley Avenue Option further minimized effects on wetlands and aquatic resources and was incorporated into the project. They concurred that the Preferred Build Alternative is the environmentally preferred option.

What Has Changed In the Final EIS?

A copy of the complete Final EIS is provided in electronic format on the CD provided on the inside cover of this document. Many changes respond to comments on the Draft EIS that was distributed in February 2003. Additional information from supplemental studies since the Draft EIS is also provided. Some changes make the document easier to read and handle.

Environmental Screening Criteria

1. Meets Purpose and Need
 2. Category 1 & 2 Wetlands
 3. All Wetlands
 4. All Wetland Buffers
 5. ESA-listed Species
 6. Aquatic Priority Habitats
 7. Wildlife Habitat
 8. Prime & Unique Farmlands
 9. All Farmlands
 10. Floodplain
 11. Noise
 12. Air Quality
 13. NRHP-eligible Cultural Sites
 14. All Cultural Resource Properties
 15. Environmental Justice Populations
 16. Displacements
 17. Tribal Trust Lands
 18. Visual Quality
 19. Stormwater Treatment Capability
 20. High Cost Hazardous Waste Sites
 21. All Hazardous Waste Sites
 22. Pedestrian and Bicycle Access
-

Changes in the Final EIS include:

- This Summary is completely revised to make it more reader friendly. It also provides graphics to show existing and future conditions.
- Tier II environmental commitments are provided in a separate table in Appendix F.
- The Preferred Alternative is identified in Chapter 2.
- The environmental effects matrix table at the beginning of Chapter 3 is simplified to compare the No Build and Preferred Build Alternatives.
- Many Chapter 3 sections are reorganized and expanded. This is especially true of the sections on water resources, wetlands, and fish and wildlife, which now more consistently present discussions organized by the Hylebos, Wapato, and Lower Puyallup basins. Also discussions on indirect and cumulative effects are now presented within the respective resource sections. Cumulative impacts are summarized in section 3.17 near the end of Chapter 3.
- Figures are reduced in size and placed within the discussions instead of at end of chapters and sections.
- Net Environmental Benefits Analysis is added to section 3.17. This analysis uses multiple characteristics of stream, wetland, and riparian habitats to assess cumulative effects over time. For the SR 167 Extension Project, the analysis compares cumulative benefits of the RRP to those of existing conditions and conventional stormwater treatment. The results are presented later in the Summary.
- Chapters 4 and 5 are added. Chapter 4 presents the analysis demonstrating measures to avoid and minimize effects on aquatic resources and wetlands, and that the Preferred Build Alternative is the least environmentally damaging and practical alternative. Chapter 5 is the Section 4(f) Evaluation conducted for park and recreation properties, waterfowl and wildlife refuges, and historic properties.

Reader Friendly Documents

WSDOT is working hard to make all of its documents easier for the public to read and understand. The four key principles of reader friendly documents are:

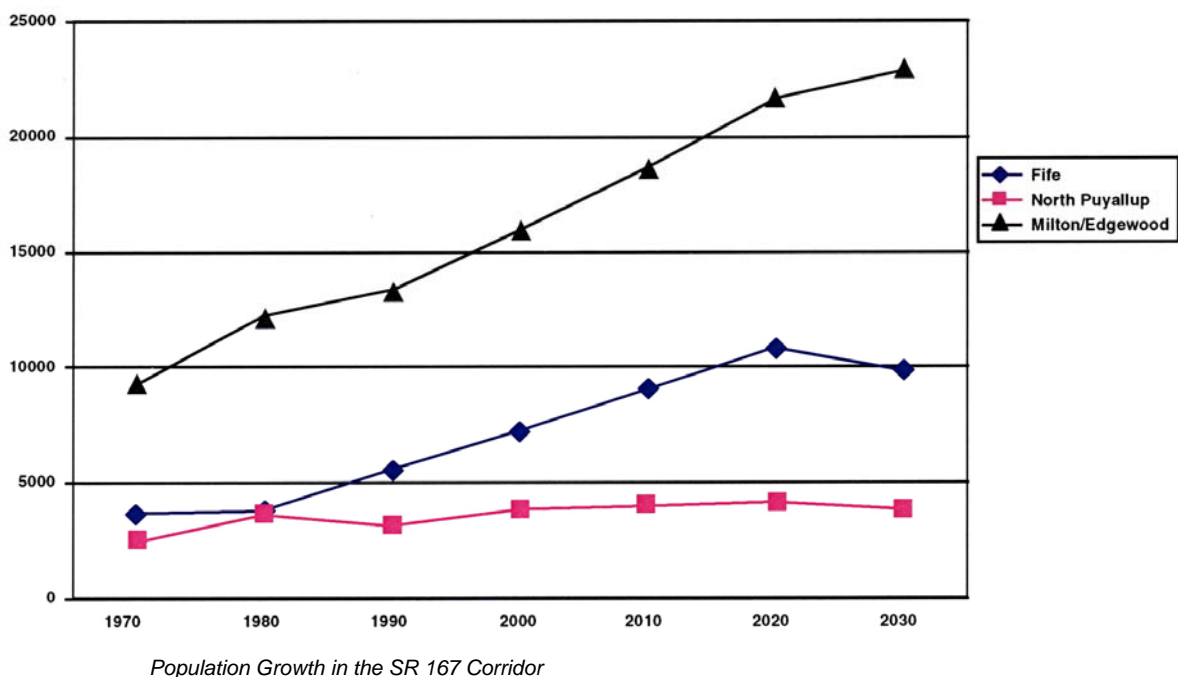
- Tell a story
 - Engage the reader
 - Make it visual
 - Make it brief
-

- Appendices are added. Appendix A now contains figures of the Preferred Alternative. Tier II commitments are presented in Appendix F. Appendix G provides responses to all comments received on the Tier II Draft EIS. Section 4(f) coordination and correspondence documents are contained in Appendix H.

What If the SR 167 Extension Is Not Built?

Congestion will worsen on the surface streets that currently comprise the non-freeway portion of SR 167 as traffic continues to increase due to development of the project area and growth of the Port of Tacoma. Accidents will increase, and stop-and-go traffic will continue to emit air pollution.

The undesirable effects of constructing a new freeway will be avoided, but none of the potential environmental benefits of the RRP will occur. Residential, commercial, and industrial development will continue in response to the population growth shown in the chart below, resulting in more traffic congestion. Agricultural uses will continue to decline because the area is zoned for other uses.



What Environmental Effects Are Expected?

Building a new freeway is a major construction project with substantial ground disturbance. It requires land acquisition in an area that is rapidly developing to commercial and industrial uses. The new freeway increases impervious surface that contributes highway runoff to surrounding areas. Substantial passenger and freight traffic is expected on the new freeway. Effects of changes associated with the Preferred Build Alternative follow, with tables comparing the No Build Alternative.

Water Resources and Wetlands

Summary Table 1 highlights effects related to water resources and wetlands. No decline in water quality is expected as a result of the project. A nearly 50 percent reduction in flooded acres along Hylebos Creek is predicted in the future with the RRP.

Most wetlands affected by the project are currently farmed or have impaired values and functions. There are many opportunities to enhance degraded wetlands in the project area.

Enhancement of wetlands that are currently degraded or poorly functioning is expected to mitigate unavoidable effects to other wetlands.

Summary Table 1.
Effects on Water Resources and Wetlands

	No Build Alternative	Preferred Build Alternative
Water Resources		
Ground disturbance (roadway)	None	710 - 719 acres
Impervious area	43.43%	43.79%
Hylebos flooding (predicted)	246 acres	187 acres
Wetlands		
Wetlands affected	None	32.9 acres, mostly Category 3
Buffers affected	None	56.5 acres
New riparian habitat	None	28.9 acres
Improved functions	None	74.2 acres

Wetland Categories

Ecology rates wetlands in four categories based on their sensitivity to disturbance, rarity, functions they provide, and whether or not they can be replaced.

Category 1. Highest quality wetlands with functions and values too difficult to be replaced.

Category 2. Wetlands that provide high levels of some functions, and which are difficult but not impossible to replace.

Category 3. Wetlands with a moderate level of functions and that generally have been disturbed in some ways.

Category 4. Wetlands with the lowest levels of functions and which are often heavily disturbed. These are good candidates for replacement or improvement.

Fish and Wildlife

The new freeway may fragment the diminishing wildlife habitat in the project area, but the RRP offers opportunities to create habitat and connect it to existing habitat areas (see Summary Table 2). The primary purpose of the RRP is stormwater management, but it provides many other benefits to the fish and wildlife ecosystem.

Summary Table 2.
Effects on Fish and Wildlife

	No Build Alternative	Preferred Build Alternative
Fisheries		
New / restored channel	None	1.8 miles
Riparian buffers	None	189 acres
New stream crossings	None	13
Crossings improved / removed	None	19
Wildlife Habitat		
Agricultural and Developed	Development increases	327 acres
Grass / Shrub and Forest	Decreases	86 acres
Connected habitats	Decreases	>1,000 acres

Land Use and Property Owners

The major effects of the Preferred Build Alternative in these categories, as summarized in Summary Table 3, are right-of-way acquisition and the associated displacement of residences and businesses. Agricultural land uses are expected to convert to commercial and industrial uses allowed by local zoning, whether or not the SR 167 Extension is built. No substantial effects occur to community cohesion and no disproportionate effects occur to minority, low income or disadvantaged populations.

Summary Table 3.
Effects on Land Use and Property Owners

	No Build Alternative	Preferred Build Alternative
Right-of-Way Acquisition		
Roadway	None	303 acres
Riparian Restoration Proposal	None	214 acres
Residential Displacements		
Roadway	None	78 (includes 12 apartment units & 9 manufactured homes)
Riparian Restoration Proposal	None	34 (includes 8 manufactured homes)
Business Displacements		
Roadway	None	17
Riparian Restoration Proposal	None	3
Farmland	Increasingly scarce	6 farmers affected

Transportation and Public Services

The long-term improvements in traffic after the Preferred Build Alternative is constructed outweigh the temporary effects of detours and traffic delays while it is being built (see Summary Table 4). Accidents resulting from the currently overcrowded streets are avoided. A separate multi-use path between 54th Avenue East and SR 99 improves safety for bicyclists and pedestrians. Emergency response is quicker almost everywhere in the project area.

Summary Table 4.
Effects on Transportation and Public Services

	No Build Alternative	Preferred Build Alternative
Transportation and Traffic		
Construction effects	Minor (other projects)	Detours and delays
Operational effects	Congestion worsens	Major improvements in traffic flow and circulation
Pedestrian and Bike Facilities		
Construction effects	Minor (other projects)	Detours, delays, rough pavement
Operational effects	Safety decreases	Separate bike / pedestrian path from 54th Ave to SR 99
Public Services		
Response time	Delays increase	Quicker response for most routes

Other Effects

Summary Table 5 summarizes other effects of the SR 167 Extension project. After temporary effects of dust and equipment emissions during construction, air quality is maintained or improves because stop-and-go traffic is reduced. Traffic noise increases in the immediate area of the new freeway, but should decrease along the current surface streets that SR 167 follows. Effects related to energy, hazardous materials, and visual are similar to those experienced on other freeway projects in the region. One archaeological site and three historic structures considered eligible for the National Register of Historic Places are affected by the project.

Summary Table 5.
Other Direct Effects

	No Build Alternative	Preferred Build Alternative
Air Quality	Declines with congestion	Improves or no change
Noise	32 sites at or above criteria	46 sites at or above criteria Noise wall provided
Hazardous Material Concerns	None known	Removal of lead based paint on Puyallup River Bridge
Visual Quality	Declining open space	Conspicuous I-5 interchange Nighttime light and glare increase
Cultural Resource Effects	None	1 archaeological site 3 historic structures

Are There Cumulative Effects of the SR 167 Extension?

Land use (including farmland), water resources, wetlands, fish and wildlife, and cultural resources are considered most susceptible to the cumulative effects of past, present, and future actions for this project. This is primarily because they have been so impacted by past and ongoing actions.

Cumulative effects of land use and farmland are mostly driven by zoning and growth management decisions at the local level. Changes from agricultural land use are expected to occur eventually whether or not the SR 167 Extension is built, because local zoning accommodates more residential, commercial, and industrial development.

The project is expected to provide long-term, local environmental improvements in water resources, wetlands, and fish and wildlife habitat. *Net Environmental Benefits Analysis* found a cumulative 70 percent increase in ecological services in the area of the Riparian Restoration Proposal, when compared to the No Build Alternative.

Unfortunately, no single project can offset decades of cumulative degradation. The improvements provided by the Preferred Build Alternative may only represent temporary relief from ongoing cumulative effects unless other measures are taken in the watershed.

Cumulative Effects

Cumulative effects result from the incremental effect of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes the other actions.

Net Environmental Benefits Analysis

This method compares the benefits and costs associated with alternative actions that affect the environment. For the SR 167 Project, ecological services were estimated for stream channel, riparian wetland, and riparian upland habitats within the area of the Riparian Restoration Proposal.

What Are the Environmental Benefits of the Project?

The *Net Environmental Benefits Analysis* identifies many benefits of the Riparian Restoration Proposal in the Preferred Build Alternative.

Reduces flooded areas – The RRP addresses flooding issues with a variety of measures, primarily by removing buildings, roads, and infrastructure from the floodplain and restoring natural floodplain connectivity to stream channels. The reduction in flooded areas extends beyond the RRP boundaries.

Improves stream conditions that are limiting to fish – Engineered large woody debris is part of the channel designs. As the streambank vegetation matures, the channels would develop more complexity, providing in-stream protected areas, more variety of aquatic habitats, and much-needed off-channel rearing habitat for juvenile salmon.

Enhances connectivity of wildlife habitat – The RRP links multiple fragmented habitats together resulting in over 1,000 acres of contiguous habitat.

Supports salmon recovery efforts – The RRP complements other restoration efforts by the Puyallup Tribe of Indians, Pierce County, Pierce County Conservation District, and Friends of the Hylebos Wetlands that improve spawning habitat in the upper watersheds, as well as estuarine habitat improvements in Hylebos Creek.

Enhances existing wetlands within the RRP area – Several existing wetlands within the proposed RRP boundary have been disturbed by development, conversion to agricultural lands, or are overrun with invasive plant species. The RRP enhances the condition of these existing wetlands by planting native species.

Improves water quality – Hylebos Creek, Surprise Lake Drain, and Wapato Creek each have water quality impairments that the RRP would help improve, including:

- High in-stream temperatures

- Nutrients, phosphorus, and fecal coliform bacteria
- Low dissolved oxygen
- Total suspended solids (TSS)
- Chemical contamination

Protects habitat – Preserving priority habitats is necessary before the remainder of the Puyallup River Valley becomes developed. In addition to improving the overall habitat condition, the RRP also protects the stream, wetland, and riparian habitats.

Encourages public partnerships – The RRP is compatible with local recreational improvements such as:

- Pacific National Soccer Complex
- Interurban Trail
- Wapato Creek Trail (potentially)
- Lower Hylebos Nature Park

Offers an alternative to conventional flow control

measures – The RRP is proposed instead of conventional stormwater flow control in reaches of Hylebos Creek, Surprise Lake Drain, and Wapato Creek. The flat topography and high water table in the project area greatly reduces the effectiveness of traditional stormwater detention ponds. The RRP offers an alternative to constructing very large stormwater ponds while still meeting the goals of:

- Preventing an increase in streambank erosion
- Preventing an increase in flood impacts
- Enhancing the biological integrity of local streams

What Mitigation Is Proposed?

Many measures to protect the environment are included in the design of the new freeway and related facilities, or are implemented as Best Management Practices during construction, maintenance, and operation. Examples of specific mitigation are summarized in the text below.

Wetlands – The new SR 167 affects nearly 33 acres of wetlands, many of which are currently being farmed or have impaired functions and values. A preliminary conceptual mitigation plan developed for the project identifies many opportunities to enhance wetlands as mitigation for unavoidable effects. The final mitigation plan is developed with resource and regulatory agencies during final design and permitting of the SR 167 Extension.

Water resources – Effects of adding structures and fill in floodplains are mitigated by removing existing structures, building detention ponds, and otherwise improving capacity to convey floodwaters. The relocations of Hylebos Creek and Surprise Lake Drain are other examples of mitigation related to water resources.

Cultural and historic resources – A Memorandum of Agreement negotiated with the State Historic Preservation Officer mitigates adverse effects on those resources listed or eligible for listing on the National Register of Historic Places. These are also considered Section 4(f) resources, as described in the next paragraph.

Section 4(f) resources – The Section 4(f) Evaluation included as Chapter 5 in the Final EIS describes measures to avoid and minimize harm to recreational and historic resources. The recreational resources that are potentially affected by the project are the planned Lower Hylebos Nature Park, the planned Pacific National Soccer Park, and regional Interurban Trail. The historic resources include one archaeological site and three historic structures.

What Happens Next?

Record of Decision

FHWA and WSDOT carefully consider all comments received on this Tier II Final EIS. They then decide which alternative to select. A Record of Decision documents this decision, as well as mitigation and environmental commitments once a build

Mitigation Sequencing

Mitigation is a stepwise process for eliminating or reducing adverse effects, and compensating for those that cannot be avoided.

The required order for mitigating potential wetland effects is

1. Avoid impacts.
 2. Minimize impacts.
 3. Enhance existing degraded wetlands.
 4. Create new wetlands.
 5. Preserve nearby high quality or unique wetlands.
-

Section 106

The Section 106 process of the National Historic Preservation Act is designed to identify and resolve potential conflicts between historic preservation concerns and federal actions. Implementing regulations focus on preservation options, including avoidance, rehabilitation, modified use, marking, and relocation. Data recovery is often performed for unavoidable effects.

Section 4(f)

Section 4(f) originated in the U.S. Department of Transportation Act of 1996, which declared that special effort should be made to preserve the natural beauty of the countryside and public parks and recreation lands, wildlife and waterfowl resources, and historic sites.

alternative is selected. Issuance of this document by FHWA and WSDOT completes the NEPA and SEPA process.

Engineering Design

Once the Build Alternative is selected for implementation, final design of the SR 167 Extension proceeds. This design phase includes the roadway, interchange options, and related facilities like the RRP. It also includes the final wetland mitigation plan that is needed to obtain related permits. Results of final design are plans, specifications, and estimates used to advertise for bids and negotiate the construction contract(s).

Property Acquisition

Early in the design phase WSDOT real estate specialists contact most landowners whose property is needed for the SR 167 Extension. More detailed design of the project footprint is needed to identify other properties that need to be acquired as right-of-way. WSDOT real estate specialists explain acquisition procedures and all applicable laws and landowner rights. Then property values are determined, and acquisition offers and negotiations begin.

Phased Construction

Transportation projects as large as the SR 167 Extension are usually constructed in phases. This often occurs because the required funds for the entire project are not available in a single appropriation. Phased construction also helps to confine construction effects to a smaller area for a shorter period of time.

Post-Construction Monitoring and Maintenance

Monitoring is usually required to evaluate the effectiveness of the wetlands that are created or enhanced as compensatory mitigation for unavoidable wetland effects. Post-construction monitoring of the RRP is expected because it is an innovative approach. Maintenance of the freeway and related facilities is necessary to keep them operating efficiently and to protect the public investment in the infrastructure.

How Can I Learn More?

The Final EIS Summary will be available on the project website (<http://www.wsdot.wa.gov/Projects/SR167/TacomaToEdgewood>).

Copies of the Final EIS are available on a CD from WSDOT at no cost. To obtain a copy of the Final EIS on a CD please contact Steve Fuchs at fuchss@wsdot.wa.gov or 360-709-8100.

The Table of Contents from the Final EIS can help the reader decide which chapters or sections are of greatest interest.

WSDOT's SR 167 Extension website on the Internet is updated monthly. It is an excellent source of current information on the project, and is located online at:

<http://www.wsdot.wa.gov/Projects/SR167/TacomaToEdgewood/>

If you have further questions about the project, you can contact the project engineer at WSDOT Olympic Region:

Steve Fuchs, Project Engineer

724 Quince Street SE, Olympia, WA 98504

Mailing Address: P.O. Box 47375, Olympia, WA 98504-7375

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Chapter 1

Introduction

Tier II Final EIS

SR 167

Puyallup to SR 509

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Chapter 1 Introduction

This Tier II Final Environmental Impact Statement (FEIS) continues the environmental review process started in Tier I under both the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA). The NEPA process resulted in the selection of a preferred corridor and the locations of the connections to the corridor in which to build the extension of State Route (SR) 167 from Puyallup to SR 509. The NEPA process has now resulted in selection of a preferred design within the selected corridor.

Many of the studies in the Tier I FEIS are referenced in this Tier II FEIS. The Tier I FEIS was completed in April 1999 and the Record of Decision (ROD) was signed in June 1999. Copies of the Tier I FEIS are available for review at local libraries or by request from the Washington State Department of Transportation (WSDOT).

This chapter introduces the project and describes previous planning efforts. Public involvement and agency coordination for the project is discussed, as is consultation with the Puyallup Tribe of Indians.

1.1 Purpose and Need

The purpose and need of the proposed project remain unchanged from the Tier I FEIS. They are reiterated in the next two sections.

1.1.1 Purpose

“The purpose of the proposed project is to improve regional mobility of the transportation system to serve multimodal local and port freight movement and passenger movement between (1) the Puyallup termini of SR 167, SR 410, and SR 512 and (2) the I-5 corridor, the new SR 509 freeway, and the Port of Tacoma. Furthermore, the project is intended to reduce congestion and improve safety on the arterials and intersections in the study area, provide improved system continuity between the SR 167 corridor and I-5, and maintain or improve air quality in the corridor to ensure compliance with the current State Implementation Plan (SIP) and all requirements of the Clean Air Act (CAA).”

1.1.2 Need

“There are a number of problems associated with the non-freeway segment of SR 167 between the terminus of the freeway segment in the Puyallup area to the I-5 corridor, Port of Tacoma, and Fife. The non-freeway segment, which is an incomplete part of the planned north Pierce County freeway system, is on surface streets and includes a circuitous route through Puyallup via North Meridian and River Road and a major truck route through Fife via Valley Avenue and 54th Avenue East. Several intersections along these routes operate at over-capacity conditions during peak periods resulting in traffic backups and delays. Two intersections (54th Avenue East with 20th Street East and 54th Avenue East with

Pacific Highway [SR 99]) have been improved by better synchronization of signals and adding lane channelization but still operate at near to over-capacity conditions. Portions of the corridor study area are in maintenance for ozone (O₃) and carbon monoxide (CO) and nonattainment for inhalable particulate matter (PM₁₀).”

“Accident ratios on the nonfreeway segment of SR 167 are 20 to 70 percent higher than statewide averages for similar highways. The high levels of congestion at intersections and the frequency driveway connections contribute to these higher ratios. Truck use in residential areas and poor intersection layout exacerbate the safety problem. Traffic projections for the year 2020 indicate the capacity problems at intersections will increase with the No Build Alternative.”

“There are additional problems where local streets and arterials are used to transport freight to and from the Port of Tacoma, the Green River Valley, and I-90. In 1999, the Port of Tacoma projected truck traffic to and from the port to double from 300,000 trucks per year to 600,000 trucks per year in 15 years. Anticipated problems include more congestion-related delays in freight transport, incompatibility of heavy truck use on residential surface streets creating unsafe conditions, and steep grades on the I-5/SR 18 route to the Green River Valley and I-90.”

1.1.3 Clarification of the Purpose and Need for Tier II

The proposed project will improve local and port freight movement and passenger movement. A corridor and freeway were selected as a result of completing a Major Investment Study (MIS) and a Tier I FEIS. These two documents demonstrated that the project’s purpose would be achieved by constructing a freeway between the termini noted in section 1.1.1. Other alternatives were eliminated from further study. The intent of this Tier II FEIS is to advance the highway design and environmental analysis such that environmentally preferable roadway alignment and interchange configurations can be selected within the corridor and to develop specific mitigation measures for unavoidable impacts.

The purpose and need discussion was prepared early in the NEPA process. Section 1.1.2 of the Tier I FEIS and Tier II DEIS describes traffic projections for the year 2020. Since establishment of the purpose and need, the design year has been changed from 2020 to 2030. The 15-year time period noted in the last paragraph of the purpose and need statement is from 1999 (Tier I FEIS) to 2014. The following discussion expands and clarifies each of the major issues that support the purpose and need.

1. Regional Mobility

Freight Mobility

The existing freight mobility situation does not meet the needs for current and future goods movement through the cities of Tacoma, Fife, Milton and Puyallup. Traffic congestion and access problems on existing SR 167 due to Port truck traffic are already substantial. Local streets and arterials are used to transport freight to and from the Port of Tacoma and the connections to SR 161, SR 512 in

Puyallup and the freeway segment of SR 167 continuing north to I-405 in Renton. Trucks currently travel through the City of Fife via Valley Avenue East and 54th Avenue East and through Puyallup via River Road. Several intersections along these roadways operate at over-capacity conditions during peak traffic periods resulting in delays and congestion.

Large and Over-size Trucks

The federal Surface Transportation Assistance Act (STAA) guidelines require states to allow larger single- and double-trailer trucks on a National Network of Interstates and the non-Interstate Federal-aid Primary System. State highways with geometric standards that could accommodate STAA trucks were classified as *Terminal Access*. State highways that were determined to have insufficient geometric designs and were not safe for trucks of specific lengths to travel were classified as *Advisory*. The segment of SR 167 from SR 161 in Puyallup to SR 509 near the Port of Tacoma to Puyallup is classified as *Advisory* where the existing geometrics cannot accommodate all STAA vehicles. STAA trucks are advised that they can use River Road in this area. Large and over-size trucks on local roads are reducing safety and degrading the pavement structure of local roads. The proposed SR 167 project would eliminate future problems associated with large and over-sized trucks.

2. Reducing Congestion

Traffic Demand

Existing and projected peak-period traffic demand along SR 167 between I-5 and I-405 are substantially greater than system capacity. Currently, during peak periods, SR 167 operates beyond acceptable vehicle-carrying capacity with consistent low levels of service on the mainline roadway and at intersections. Projected growth (residential, retail, and commercial development) and the expansion of regional attractions, such as the Port of Tacoma in the lower Puyallup River Valley through the planning year 2030 will only exacerbate the congestion problem. Additional congestion-related delays occur when freight transport and large trucks divert onto local arterials and surface streets. Since establishment of the Tier I purpose and need, the design year has been changed from 2020 to 2030 and traffic projections have increased, making the proposed project improvements all the more necessary.

Access

The Level of Service (LOS) in the SR 167 freeway between SR 509 and SR 161 will be substantially improved by the proposed controlled access facility. There are numerous access points along the existing non-freeway segment of SR 167 facility, on River Road and North Meridian. These include driveway access, T-intersections, and four-way intersections. In addition, the many businesses, residences, and other facilities along the existing roadway attract local trips. Consequently, the mixing of local and regional through traffic along this facility has resulted in a situation where segments of existing SR 167 are not able to provide effective movement of vehicles.

Large trucks currently divert to existing SR 167 to avoid using I-5 because of substantial congestion during peak traffic periods. Large trucks also travel from

Valley Avenue to SR 167 to avoid traveling over the existing steep grades on SR 18 from I-5 to I-90.

By constructing a new freeway alignment distribution would be improved for the Port of Tacoma and trucks bypassing I-5 and SR 18. In particular heavy truck use on residential surface streets would be substantially reduced.

Transit and Non-Motorized Service

The need for transit improvements and non-motorized transportation has been described in plans adopted by WSDOT, PSRC and Pierce County. These plans include the State Highway System Plan adopted by WSDOT, the Vision 2020 Update and Metropolitan Transportation Plan adopted by the PSRC and subsequent updates and the Pierce County Comprehensive Plan.

Pierce Transit and Sound Transit currently provide bus service in the project area. Local service is provided by Pierce Transit within the communities of the Port of Tacoma, Fife, Milton and Puyallup. Regional service is provided by Sound Transit, along with connecting routes to nearby communities such as downtown Tacoma, Renton and Seattle.

Passenger rail service (both Sounder Commuter Rail and AMTRAK) exists at the Tacoma Dome Station near the southwest end of the proposed corridor. The Sounder Commuter Rail provides connections to Puyallup and Seattle. Amtrak operates passenger service from Seattle and points north to Canada, as well as from Tacoma, Olympia and points south of Washington on a line that roughly parallels I-5 through the project area. The proposed improvements to SR 167 would provide commuters easier and quicker access to rail passenger service at the Tacoma Dome Station.

The proposed trail improvements in the SR 167 Corridor will improve bicycle and pedestrian mobility and safety in the region. The proposed trail improvements are consistent with the Washington State System Plan and local non-motorized transportation plans.

3. Improving Safety

Accident rates on the non-freeway segments of SR 167 (River Road) have been steadily increasing since the Tier 1 FEIS was approved in 1999. Although they have fluctuated up and down in intervening years, the average rate per year has increased and in 2005 the accident rate was higher than statewide averages for similar highways. The accident rate in 2005 for existing SR 167 was 2.75 and the statewide accident rate was 2.56 statewide for similar highways. For more detailed accident data, see Section 3.14.2 Transportation Safety. The high levels of congestion at intersections and the frequency of intersecting driveways contribute to these higher ratios. Accident rates on a number of parallel local roads and major intersections that currently receive diverted north-south through-traffic are also higher than the statewide averages for accidents.

4. Improving System Continuity

Route Continuity

SR 167 is not a continuous freeway route from I-5 to I-405 in Renton. A break in service occurs on SR 167 at SR 161. At this location, the north-south corridors of SR 161 (North Meridian) and SR 167 (River Road) co-exist on local roadways and SR 167 connects to I-5 at Bay Street Interchange. The new SR 167 corridor will improve the connectivity and continuity of the regional highway system and give motorists better access to I-5 and the Port of Tacoma on the south and west as well as to I-405 (Renton) to the north and Puyallup to the east.

The National Highway System (NHS) designation identifies SR 167 as part of the network of highways that provides defense access, continuity, and emergency capabilities for the movement of personnel, materials, and equipment during times of national emergency. The duration and frequency of congestion on existing SR 167 substantially diminish the capability of SR 167 to operate consistent with the NHS functional designation.

Regional Transportation Plan

The Puget Sound Regional Council (PSRC) issued and adopted the *VISION 2020 Growth Strategy and Transportation Plan for the Central Puget Sound Region* in 1990 (updated in 1995). *Destination 2030* was developed by PSRC in 2001 as the more detailed regional transportation plan to support and expand upon the vision. It builds on *VISION 2020*'s transportation policies with a program for addressing transportation improvements. Together, *VISION 2020*, *Destination 2030*, and the Regional Economic Strategy envision a future the Central Puget Sound Region and identify actions needed to get there (*VISION 2020 + 20*).

The region's long-range transportation strategy is to establish a coordinated multimodal transportation system that is integrated with and supported by regionwide growth management objectives (*Vision 2020*). PSRC's 1995 update of *VISION 2020* recommends the extension of SR 167 as an improvement and also identifies it as a major regionally significant project for the Puget Sound in its Six-Year Action Strategy (1999). In PSRC's *Destination 2030* (2001) the proposed SR 167 corridor is identified and given support as a regional project.

Existing Transportation Improvement Opportunities

Some transportation improvement opportunities currently exist in the SR 167 project including constructing park and ride lots near the proposed SR 161 interchange to accommodate local and regional commuters and improved express bus service between Tacoma, Puyallup and Renton. Further development of potential park and ride lots will be subject to further study in the comprehensive transportation planning processes. Proposed project improvements could also support and complement other transportation modes including non-motorized service.

Compatibility with Future Multimodal Transportation System

The SR 167 Extension project includes future park and ride lots and HOV lanes, and coordination with Sound Transit for the Sounder Commuter rail and new Light Rail transit (LRT) systems is ongoing. Other future multi-modal needs for

the SR 167 corridor are not known at this time. WSDOT will coordinate with Pierce Transit and Sound Transit to ensure that all transportation improvement opportunities are considered, where feasible, for the project corridor.

5. Improving Air Quality

Currently, all portions of the study area are in maintenance for O₃, CO, and PM₁₀, and no exceedances of the National Ambient Air Quality Standards are predicted during operation of the preferred alternative. The project will reduce congestion, improve truck mobility, and smooth traffic flow levels reducing Mobile Source Air Toxics (MSATs). Within Washington State, compliance with EPA's nationwide control program would also help minimize MSATs in the overall Puget Sound Region.

1.2 Vicinity Description

The SR 167 project vicinity is situated within the broad, flat floodplain of the Puyallup River (Figure 1-1). The river flows to the northwest and discharges to Commencement Bay. Within the floodplain, small streams flow to the northwest along gradients of less than two percent before discharging into Commencement Bay. Bluffs rise approximately 400 feet above the valley floor, forming upland terraces to the north of the project location. Streams flowing from upland lakes dissect the terraces prior to converging with the valley streams.

Much of the project area was drained early this century when the Puyallup River was diked and the Port industrial area was developed. Port development has generally proceeded from west to east, beginning with the development of the City Waterway (Thea Foss Waterway). Port properties are located in both the City of Tacoma and unincorporated Pierce County. About one-half of the six-square-mile Port is developed with manufacturing, light industrial, and distribution/wholesale uses; about one-quarter is in public rights-of-way and waterways; and about one-tenth is presently vacant. Major manufacturing and industrial uses include paper manufacturing, container and bulk (shipping) terminals, boat building, chemical processing, oil refining, lumberyards, and wood-product mills.



Major Port of Tacoma land uses within the immediate SR 167 study area near the North-South Frontage Road and Taylor Way include vacant land, log storage, auto storage, and warehousing/packaging. The Port of Tacoma Road near Pacific Highway is developed with primarily commercial, retail, and office uses.

Pierce County and the cities of Fife, Puyallup, Tacoma, Milton, and Edgewood share jurisdiction over land uses in the project vicinity. Within the flat floodplain, the historical land use has been agriculture. The deep, rich soils provided excellent growing conditions for a variety of vegetable crops. These areas are now developing into industrial and manufacturing areas. Residential development is also increasing.

Several streams flow through the project vicinity. The largest is Hylebos Creek and it originates north and east of the project vicinity in King County and the city of Federal Way. Surprise Lake Drain is a small creek flowing out of Surprise Lake in Milton. Wapato Creek drains the uplands of Edgewood and flows through the city of Fife. The Puyallup River flows south of the project area.

1.3 History of the Project

1.3.1 Previous Planning

Planning for the lower Puyallup Valley section of State Route 167 began more than 40 years ago when freeway corridors for I-5, SR 167, SR 410, and SR 512 were proposed. The general freeway and interchange locations for SR 167 between North Puyallup and I-5 at the Port of Tacoma Road interchange were determined in the 1950s. In the early 1960s, the I-5/Port of Tacoma Road interchange was constructed to provide a future connection to SR 167. Soon after, planning and design studies for the SR 167 corridor were begun. A route hearing was held in June 1966, and a design report was issued in 1968.

A location study prepared for the 1968 design report considered three alignments within the area, bounded on the south by the Puyallup River and North Levee Road and on the north by the Union Pacific Railroad (UPRR) (formerly Chicago, Milwaukee, St. Paul, and Pacific Railroad). One alignment was carried forward and was the subject of a design hearing in December 1969 and an access report release in October 1970. While studies were underway for the Puyallup to I-5 section of the SR 167 freeway, other sections of this freeway system were also being studied. These sections were eventually constructed and by the late 1980s the SR 167 freeway was complete as a four-lane facility from I-405 in Renton south to Puyallup (Figure 1-2). The non-freeway portion of SR 167 continued from the city of Puyallup on existing urban arterials to I-5 (North Meridian and River Road).

Further study of the section between the city of Puyallup and I-5 was halted in the early 1970s. A primary reason for the delay was uncertainty over ownership of portion of the proposed right-of-way within the Puyallup Indian Reservation. The Tribe had claims to the former riverbed of the Puyallup River, as surveyed in the 1870s prior to the river's channelization early in this century. The 1968-70 SR 167 alignment crossed the old riverbed at several locations, as did existing River Road (SR 167), I-5, and SR 509 (11th Street East).

In 1976, WSDOT prepared a study to address traffic congestion and safety problems related to the termination of SR 167 at North Meridian (SR 161) in the city of Puyallup, leaving River Road and Valley Avenue as the primary routes for truck access to the I-5 corridor and the Port of Tacoma. The study evaluated two alternatives using existing sections of River Road, and one completely new alignment similar to the recommended alignment of the 1968 design report. The 1976 study recommended that the new alignment be added to the Puget Sound Council of Governments Transportation Improvement Plan “subject to a more refined study as to a precise location and design for the route.”

In September 1988, the Cascade Corridor Task Force (of the Economic Development Board for Tacoma-Pierce County) issued a report outlining the potential development of a 15,000-acre area that included the north side of the Puyallup River from the Port of Tacoma to the White River. Among the report’s recommendations for land use and transportation planning was the completion of SR 167 to I-5 in the vicinity of the city of Fife.

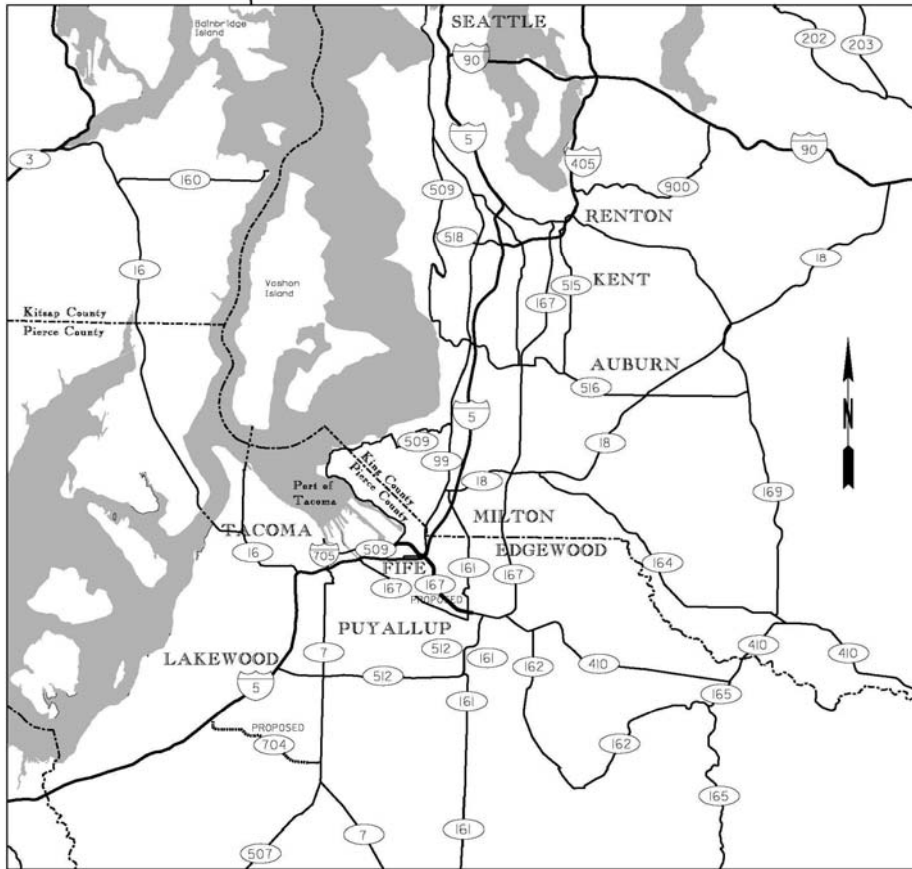
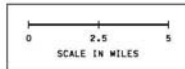
In response to the Cascade Corridor Task Force recommendations, the Secretary of Transportation committed WSDOT to begin work on a SR 167 corridor analysis. Subsequently, funds were made available by the legislature in March 1990, and the department initiated the analysis in April 1990.

In 1989, the Puyallup Tribe of Indians agreed to relinquish major land claims, which had included areas within Pierce County and the Port of Tacoma. This agreement, which included tidelands and riverbeds, enabled the SR 167 project to go forward by removing the uncertainty of ownership that had existed over much of the study area. The Puyallup Tribe of Indians retained title to some land parcels, which are shown on Figure 3.11-3 and described in Section 3.11.

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 1-2

Regional Highway System



1.3.2 Tier I EIS Process

Summary of Tier I EIS Process

The NEPA process spanned almost ten years, beginning in 1990. The Federal Highway Administration (FHWA) and WSDOT decided to divide the NEPA process into two steps (tiers) as permitted in the federal guidelines. The first tier evaluates different corridor options and selects a preferred corridor. The second tier evaluates and selects a preferred design alternative within the selected corridor. In both cases, the selection process involves evaluating the environmental consequences of different alternatives and identifying ways to avoid, minimize, or mitigate the environmental impacts.

Development of the Tier I Draft EIS (DEIS) began in 1990 with a public scoping process. The scoping process identifies the environmental areas or issues to be evaluated in the Tier I DEIS. At the public scoping meetings, many attendees were in favor of the project. Public support expressed at the meetings centered on the need to relieve the high volumes of commuter and truck traffic traveling through the city of Fife between I-5 and the city of Puyallup on Valley Avenue East. Some of those opposed to the project were concerned that it would accelerate the conversion of the lower Puyallup Valley from farmland to commercial and industrial uses. Other concerns were the potential disruption of drainage patterns with consequent flooding and the loss of wetlands.

The Tier I DEIS was published in June of 1993 and a public hearing was held on July 15, 1993. Most of the issues raised by the general public and interested agencies centered on wetland and floodplain degradation and housing/business displacements. FHWA and WSDOT realized that these concerns would be a difficulty in the process and had already made them criteria for the selection of alternatives. The citizens that offered oral or written testimony were moderately to strongly opposed to the project. They were fearful of losing their homes and businesses as well as losing farmland in the Puyallup River Valley to commercial development.

The public agencies that provided written testimony also expressed concerns over the lack of adequate information regarding wetlands, floodplains, wildlife and their habitat, and mitigation for these impacts. FHWA and WSDOT incorporated these concerns into the process of selecting a preferred corridor.

Following the public hearing and DEIS review period in July 1993, FHWA required WSDOT to prepare a Major Investment Study (MIS). It began in November 1994 and was completed in October 1995. The MIS evaluated the effectiveness of four alternatives: Transportation Demand Management/ Transportation System Management (TDM/TSM) (see Appendix "D" Glossary for definition of TDM/TSM), Strategic Arterial, Suite/No Action, and a build alternative. Three alternatives were rejected. The MIS is found in Appendix H in the Tier I FEIS.

The TDM/TSM alternative involved using transportation demand management and transportation system management to reduce traffic. It did not meet the

purpose and need of the project because it could only offer maximum a of 10 percent reduction in traffic to offset the forecast growth.

The Strategic Arterial alternative would widen existing arterials to provide additional capacity. This alternative was especially poor in addressing safety and had the highest number of business and residential displacements.

The Suite alternative was comprised of a suite of no-build elements from the MIS. It was found that even utilizing all of these no-build elements, future transportation needs could not be met nor could the purpose of the project be met.

Table 1-1 shows the relationship between the four alternatives in terms of delay due to congestion and traffic control devices. The build alternative was the only alternative from the MIS that met the needs of reducing traffic congestion and improving safety.

Table 1-1: Congestion Delays for MIS Alternatives

Alternative	Annual Hours of Delay Due to Congestion and/or Traffic Control Devices
Suite/No Action	900,000
TDM/TSM	810,000
Build	60,000
Strategic Arterial	800,000

Note: The Higher the Number the Lower the Performance of the Alternative
Source: Major Metropolitan Transportation Investment Study for SR 167

After completion of the MIS, FHWA and WSDOT worked on obtaining the Puyallup Tribe of Indians support for the project. This was critical to moving forward because all of the corridor alternatives directly or indirectly affected tribal trust lands. The Puyallup Tribe of Indians was interested in developing some of its holdings around the Port of Tacoma and had been discussing options with them. FHWA and WSDOT worked closely with both the Puyallup Tribe and the Port on how the project would support their plans. In February 1999, the Puyallup Tribe of Indians expressed support for extending SR 167 to allow development of their holdings in and around the Port.

FHWA and WSDOT also worked closely with the resource agencies during this period to resolve outstanding issues. Most issues concerned the level of detail to be provided in the Tier I FEIS. Ultimately, the Tier I FEIS was published in April 1999.

The NEPA process selected three corridors and a no build alternative for detailed evaluation after initially considering seven preliminary alternative corridor locations. The concerns expressed by the public during the NEPA process mirrored those of FHWA and WSDOT. The need for an alternative route from the cities of Fife and Federal Way to the city of Puyallup was a critical driver behind the project. All alternatives considered addressed this need. The citizens expressed the desire to select an alternative with the least amount of impacts. Alternative 2 had the best mix of features for avoiding, minimizing, and mitigating environmental impacts. These impacts included conversion of

farmland, housing/business displacements, disruption of drainage patterns, loss of wetlands, and impact to tribal trust lands. Therefore, Alternative 2 was selected as the preferred corridor in the Tier I FEIS.

Tier I Record of Decision

After the Tier I FEIS was published, the next step in the NEPA process was to prepare a ROD from the federal lead agency, FHWA. On June 9, 1999, FHWA published its ROD and concluded that the selected alternative was the least environmentally damaging practicable alternative. According to the ROD, implementation of the preferred alternative will include all mitigation measures described in the Tier I FEIS. The ROD also listed specific mitigation measures that were to be included in the project.

Commitments List

The Tier I NEPA process and the ROD contained a list of commitments for action, mostly on the part of FHWA and WSDOT. The commitments varied from studying certain impacts in further detail during the Tier II NEPA process to implementing specific mitigation measures identified in the Tier I NEPA process. Table 1-2 lists the Tier I and ROD commitments and identifies the specific action taken or to be taken to fulfill the commitment.

Table 1-2: Tier I Commitments and Mitigations

Tier I Commitments	Action Taken or To Be Taken
Project Coordination	
Tier II FEIS will include a construction staging plan showing operational impacts on I-5 (Summary, pg. S-1).	This commitment will be fulfilled after the Tier II FEIS because project construction funding has not yet been secured. A construction staging plan will be developed during final design.
Design efforts will attempt to avoid a specific impact, as a first priority. If this is not possible, the required sequencing for minimizing and mitigating will follow. (Tier I ROD)	All design efforts have followed the mitigation sequencing of avoidance first, minimization next, and finally mitigation for unavoidable impacts.
FHWA and WSDOT will work closely with the Puyallup Tribe of Indians during the entire Tier II process regarding fisheries and other issues which concern them. This will continue through design and construction. (Tier I ROD)	Puyallup Tribe of Indians coordination during the Tier II NEPA process is documented in Section 1.4.3. FHWA and WSDOT are committed to maintaining an open line of communication with the Puyallup Tribe of Indians and will keep those lines of communication open throughout the design and construction phases of this project.
FHWA and WSDOT will continue coordination with the Merger agencies and other permit agencies, local agencies and the public during the Tier II NEPA process (Section 1.4.7, pg. 1-12).	Coordination with the Merger (SAC) agencies and permit agencies is documented in Section 1.4.2.
Construction activities will be coordinated with UPRR officials to minimize disruption of train operations through SR 167 construction areas (Section 4.2.4.3, pg. 4-43).	WSDOT contract specifications require the contractor to coordinate during construction with UPRR officials.
FHWA and WSDOT will continue coordination with the COE and the EPA through Tier II (Section 4.4.3.5, pg. 4-91).	Coordination with the SAC agencies and permit agencies (including the COE and EPA) is documented in Section 1.4.3.
FHWA and WSDOT will continue coordination with the USFWS, the NOAA National Marine Fisheries Service, the WDFW, the Washington Department of Natural Resources and the Puyallup Tribe of Indians to ensure all feasible steps are taken to protect endangered and threatened species (Section 4.5.1, pg. 4-96).	Coordination with the SAC agencies and permit agencies (including the USFWS, NOAA National Marine Fisheries Service, the Washington Department of Fisheries) is documented in Section 1.4.3. Coordination with the Puyallup Tribe of Indians is documented in Section 1.4.4. Coordination with the Washington Department of Natural Resources will occur during the review of the Tier II FEIS and during permitting.
During Tier II, FHWA and WSDOT will take a watershed approach to impacts upon and mitigation of natural resources. FHWA and WSDOT will make efforts to find partners for watershed mitigation. The recommendations in the Commencement Bay Restoration Plan will be incorporated to the extent practicable (Section 4.5.5, pg. 4-143).	FHWA and WSDOT are examining opportunities to support watershed restoration activities for impacts as well as alternative mitigation. The relocation of Hylebos Creek is a watershed project that is specifically identified in the Commencement Bay Restoration Plan. FHWA and WSDOT will pursue partnerships with other agencies, the Puyallup Tribe of Indians, and non-profit groups interested in the Hylebos and Wapato Creek watersheds.

Tier I Commitments	Action Taken or To Be Taken
FHWA and WSDOT will aggressively pursue new opportunity in Transportation Equity Act for the 21st Century for enhancing mitigation. (Tier I ROD)	Since the DEIS, partial state funding through gas tax increases have been realized for the project which includes enhancing mitigation. FHWA and WSDOT will continue to pursue funding opportunities for construction of this project.
Public Involvement	
A CAC will be formed to allow representatives of the public to evaluate alternatives that will encourage a balance of the issues that are important to the community, but still allow the purpose and need of the project to be met. (Tier I ROD)	FHWA and WSDOT formed a CAC to involve local landowners in the Tier II process. The volunteers on the committee represented local farmers, businesses, and landowners potentially affected by the project. Public involvement including the CAC is discussed in Section 1.4.1.
FHWA and WSDOT will redouble its efforts in Tier II to ensure that the agricultural community and those not conversant in English are heard (Summary, pg. S-10).	In all written communication, the Civil Rights Act, Title VI, Statement to the Public and the Americans with Disabilities Act Information was published encouraging persons with limited language proficiency and disabilities to contact us for accommodations. In addition, the need for interpreters for non-English speaking persons at the open houses was evaluated. It was determined interpreters were not needed. Additionally, two farmers were included in the Citizens Advisory Committee discussed in Section 1.4.1.
Geology, Soils, and Topography	
Erosion and sediment control plans and actions will be taken to prevent and control sedimentation during construction (Section 4.3.3, pg. 4-49).	The NPDES Construction permit for the project and WSDOT <i>Highway Runoff Manual</i> (WSDOT 2004) requires preparation of a Temporary Erosion and Sedimentation Control Plan. WSDOT contract specifications require the contractor to follow the plan. Section 3.2.4 discusses the plan in more detail.
Existing bands of native growth vegetation will be preserved as buffer adjacent to wetlands, streams, and rivers to mitigate the erosion potential (Section 4.3.5.1, pg. 4-51)	Section 3.2.3 discusses the RRP. Section 3.4.8 discusses protection of existing vegetation.
Unsuitable soils will be removed and disposed of appropriately. The contractor will prepare a waste site plan to be approved by WSDOT (Section 4.3.5.1, pg. 4-51).	WSDOT <i>Design Manual</i> requires pre-testing of all soils within the corridor to evaluate their suitability for the proposed facilities. However, actual soil conditions found during construction will govern the use of a waste site plan. If needed, this commitment will be fulfilled during the construction phase of the project.
Water Resources (Waterways, Hydrology, Water Quality, Hydrogeology, and Floodplains)	
During the design phase and Tier II process, WSDOT will develop a design to minimize impacts to floodplains (Section 1.4.4, pg. 1-8).	Section 3.2.9 states that when staging areas cannot be located outside of frequently flooded areas, fuels, oils, and other potential contaminants would be confined within a berm or barrier. Other sections of 3.2 describe features for minimizing floodplain impacts and references Hydraulic Report. Features include the RRP, constructed wetlands, infiltration into fill, regional detention facilities higher in the watershed, revegetated root systems, detention ponds, and alternative mitigation.
Impacts to surface drainage, infiltration, and groundwater caused by the additional impervious surfaces will be mitigated in accordance with the WSDOT <i>Highway Runoff Manual</i> (WSDOT 2004) (Section 4.3.5.1, pg. 4-51).	Section 3.2 discusses impacts caused by impervious surfaces. Section 3.2.8 describes the required hydrology and water quality permits.
As the Tier II analysis/mitigation opportunities are developed, appropriate mitigation for the impacts to the Surprise Lake drain caused by human land uses will be implemented (Section 4.4.2.1, pg. 4-61).	The refined Tier II design results in a reduction of impacts to Surprise Lake Drain, which is discussed in Section 3.2. Discussions of mitigation are also included in Section 3.2.
Changes in the Hylebos Creek basin after Tier I will be explored during Tier II. Concepts for further improvement to Hylebos should be explored during Tier II (Section 4.4.2.2, pg. 4-62).	FHWA and WSDOT propose to relocate Hylebos Creek as part of the project to improve its functions and values. See Sections 3.2.3 and 3.2.4 for description of proposed relocation and the associated riparian areas.
Local floodplain ordinance requirements will be addressed (Section 4.4.5.1, pg. 4-91).	Section 3.2.1 indicates that City of Fife and Pierce County flood insurance studies were used in conjunction with FEMA maps to identify flood hazard areas.
During the Tier II NEPA process, FHWA and WSDOT will identify and catalog the wetlands, the aquatic environment of Wapato and Hylebos Creeks, and investigate methods of impact avoidance and minimization (Section 4.4.5.3, pg. 4-91).	Section 3.3.1 discusses wetland determination and delineation methods. Section 3.2.2 describes the existing conditions of Wapato and Hylebos Creeks. Section 3.2.4 identifies water resources impact avoidance and minimization methods, and Section 3.3.7 covers wetlands avoidance and minimization methods.
Local erosion and sediment control requirements will be addressed (Section 4.4.5.2, pg. 4-91).	Section 3.2.8 indicates that City of Fife and Pierce County flood insurance studies be used in conjunction with FEMA maps to identify flood hazard areas, and that if clearing and grading activities are regulated locally, regulations will be considered.
Local wetland permit requirements will be adhered to (Section 4.4.5.4, pg. 4-91).	Section 3.3 lists regulations and regulating agencies that will be considered. All requirements will be included in the Special Provisions for the Construction Contract.

Tier I Commitments	Action Taken or To Be Taken
The <i>Highway Runoff Manual</i> (WSDOT 2004) will be used for technical guidance in stormwater mitigation for both construction and post-construction water quality Best Management Practices (BMPs) (Section 4.4.6, pg. 4-92).	See Section 3.2 for information about the RRP, which is designed to address stormwater flow control. WSDOT will prepare a stormwater plan that also includes water quality BMPs.
Embankments and structures will be designed, to the extent practical, to pass maximum flood flows without change to that experienced today. If necessary, additional flood storage will be provided. (Tier I ROD)	Section 3.2.5 describes how floodplain impacts will be minimized because most of the I-5 Interchange will be constructed on elevated structure. Floodplain loss will occur, but will be mitigated. Section 3.2.9 describes floodplain mitigation alternatives, including detention ponds and re-establishing floodplains. A final mitigation plan addressing floodplain mitigation measures will be developed prior to construction.
Drainage design will emphasize reduction in erosion and transport of silt from the project. BMPs will be specified for use during construction when the potential for this problem is greatest. (Tier I ROD)	Sections 3.2.4 and 3.2.5 discuss BMPs to be used during construction.
Areas subject to settlement under new embankment will be preloaded. The possibility of this affecting subdrainage from adjacent properties will be investigated and designs will be proposed to minimize this possibility. (Tier I ROD)	WSDOT prepared a Geotechnical Expertise Report that contains recommendations on settlement and pre-loading. These recommendations will be included in the design and contract specifications.
Wetlands	
Jurisdictional wetland determinations will be conducted as part of Tier II documentation (Section 4.5.1, pg. 4-96).	This commitment is fulfilled in Section 3.3.1 which discusses wetland determination and delineation methods.
Exact acreage-of-impact figures will be determined in Tier II, after wetlands have been delineated (Section 4.5.3.3, p 4-138).	Section 3.3.3 and Tables 3.3-4 and 3.3-5 identify acreage of impacts to wetlands.
FHWA and WSDOT will use all practicable means to minimize impacts to wetlands and will document these efforts in the Tier II FEIS (Section 4.5.5, pg. 4-143).	Section 4.2 describes avoidance and minimization efforts for the project.
Any unavoidable loss to wetlands attributable to project will be compensated for by implementing a wetland mitigation plan. There will be no net loss of wetland function or area. (Tier I ROD)	Potential mitigation sites are described in Section 3.3.7 and shown in Figure 3.3-10. A final mitigation plan will be developed for this project. The final mitigation plan will compensate for any unavoidable impact on wetlands, including buffer impacts.
Fish and Wildlife	
A Biological Assessment for threatened and endangered species will be completed as part of the Tier II documentation (Section 4.5.2.3, pg. 4-134).	A Biological Assessment was completed.
FHWA and WSDOT will develop avoidance, minimization, and mitigation measures in conformance with the Statewide Salmon Recovery Strategy and describe these in the Tier II FEIS (Section 4.5.2.3, pg. 4-134).	Mitigation measures (Section 3.4.8) conform to the Statewide Salmon Recovery Strategy, although the document itself does not outline specific measures to be taken.
All riparian corridors will be either unaffected or enhanced by the project (Section 4.5.2.3, p 4-134).	This commitment was achieved in the Tier II FEIS for most (90%), but not all riparian corridors. Riparian corridors where the commitment was not achieved were in more urbanized areas with limited available right-of-way. The riparian corridors that are affected by the project are identified in Sections 3.3 and 3.4. Mitigation for impacts to riparian corridors is described in Section 3.3.7.
The State Salmonid Recovery Plan, being finalized jointly by several state agencies, must be complied with by WSDOT and other state agencies. (Tier I ROD)	WSDOT will work closely with these agencies during mitigation planning. Mitigation Measures (Section 3.4.8) conform to the Statewide Salmon Recovery Strategy, although the document itself does not outline specific measures to be taken.
FHWA and WSDOT will prepare a mitigation plan during the Tier II and/or permit phase detailing efforts and techniques to minimize unavoidable major impacts on wildlife (Section 4.5.3.3, pg. 4-137).	Wildlife impact avoidance and minimization efforts are documented in Section 3.4.
Specific impacts to wildlife habitat will be addressed during Tier II studies, and attempt will be made to mitigate losses. Often the relatively undisturbed areas within the right-of-way fences provide replacement habitat, despite traffic noise. (Tier I ROD)	Section 3.4.3 and Table 3.4-3 give quantitative measurements of potential impacts. Section 3.4.8, Mitigating Measures, describes the steps that will be taken to mitigate impacts.
FHWA and WSDOT will take a watershed approach to impacts and mitigation. Efforts will be made to find partners and make any mitigation have a genuine positive impact on the watershed (Section 4.5.5, pg. 4-143).	FHWA and WSDOT are examining opportunities to support watershed restoration activities as alternative mitigation. FHWA and WSDOT will pursue partnerships with other agencies, the Puyallup Tribe of Indians, and non-profit groups interested in the Hylebos and Wapato Creek watersheds.
Recommendations included in <i>Commencement Bay Restoration Plan and Programmatic EIS -Volume 2 Restoration Plan</i> will be incorporated to the extent practicable. (Tier I ROD)	The relocation of Hylebos Creek is a watershed project that is specifically identified in the Commencement Bay Restoration Plan.
Existing native plants and trees will be preserved wherever possible. Landscaping with native species will mitigate habitat losses (Section 4.5.5, pg. 4-144).	Section 3.4 discusses preservation of existing vegetation and use of native species in landscaping.

Tier I Commitments	Action Taken or To Be Taken
Riparian areas will be protected by BMPs and buffer requirements of local jurisdictions (Section 4.5.5, pg. 4-144).	Section 3.3.7 discusses compliance with local jurisdictions and riparian area protection and mitigation.
Streams will be protected by constructing bridges over them and adjacent wetlands wherever practicable (Section 4.5.5, pg. 4-144).	This commitment is contained in the Section 3.4.8 discussion covering the use of bridges over streams.
Air Quality	
A project level conformity analysis of air quality will be done. (Tier I ROD)	Section 3.5.4 contains the conformity analysis and demonstrates that the project will meet the air quality standards at the design year of 2030.
The Tier II studies will provide more accurate data in this area for "hot spots" and will be used to show conformity with the State Implementation Plan (Section 4.6.4, pg. 4-149).	Section 3.5.4 analyzes air quality "hot spots" in the study area. The analysis shows that no air quality standards will be exceeded at project intersections under the Build Alternative in the design year 2030.
Noise (Sound Analysis)	
Design-specific noise analyses will be performed. These will assist in attempts to avoid or minimize noise impacts or, if necessary, provide appropriate mitigation. (Tier I ROD)	Section 3.6 discusses the project level noise analysis. Specific mitigation measures are discussed in section 3.6.5.
A two-way channel of communication will be established between the community and the contractor. The contractor will inform residents of scheduled construction activities that will cause noise impacts. Public reactions will be communicated to the equipment operators so that unnecessary annoyances can be avoided. WSDOT and the contractor will review construction methods and specify alternative equipment or techniques (Section 4.7.3, pg. 4-160).	WSDOT contract specifications require the contractor to notify the community about construction activities that will cause noise.
WSDOT contractors will adhere to local noise regulations regarding construction noise hours (Section 4.7.3, pg. 4-160).	WSDOT contractors will adhere to local noise ordinances. If nighttime work is necessary, WSDOT and the contractor will apply for the appropriate approvals from local agencies.
Tier II process will estimate future traffic volumes and analyze noise impacts. All residential and commercial properties that experience substantial noise impacts will be fully analyzed for feasible noise mitigation measures (Section 4.7.5, pg. 4-163).	Section 3.6.4 reports the results of the noise analysis that measured existing noise levels and modeled future noise impacts at 35 sites along the corridor.
WSDOT agreed to retrofit the impacted houses with storm windows on the tribal trust land parcel near the Valley Avenue interchange (pg. K-7 of Tier I FEIS, letter dated 6/25/1998).	WSDOT will work with each property owner of the houses on tribal trust land near Valley Avenue to mitigate for noise impacts.
The WSDOT has committed to the Puyallup Tribe of Indians to provide landscaped noise abatement structures along 48th street East to mitigate noise impact to tribal trust land. WSDOT will assist the Puyallup Tribe of Indians in locating new businesses to minimize noise and visual impacts attributable to SR 167, by sharing noise study data and advising the Tribe to quiet locations, landscaping and mitigation measures. (Tier I ROD)	WSDOT remains committed to providing a noise barrier between the tribal trust land with residences along 48th Avenue East and the proposed SR 167 when warranted. Because the project is on an elevated structure through this area, landscaping may not be possible, so technical guidance to the Puyallup Tribe of Indians on the placement of businesses in order to effectively use the noise barrier will be provided at the time of development of the tribal parcels.
Energy	
More detail analysis of construction energy requirements can be undertaken in the design phase of the project when more detailed information is available on construction materials and quantities (Section 4.8.4, pg.4-164).	Section 3.7.4 provides an analysis of the operational impacts to energy sources from the project.
Hazardous Materials	
A hazardous materials inventory will be conducted before any structure is demolished (Section 4.9.1, pg.4-166).	WSDOT has completed environmental assessments of all early acquisitions properties, which included a hazardous materials evaluation. WSDOT will conduct preliminary site assessments prior to additional property acquisition. Section 3.8.5 identifies mitigation measures for potential hazardous materials.
A further assessment of potential hazardous waste sites will be performed during Tier II studies. General recommendations for mitigation will be provided then, as well as recommendations for further investigation or remedial actions during the design or construction stages. (Tier I ROD)	Section 3.8.1 describes the additional hazardous materials study for Tier II. Additional site analyses will be conducted prior to property acquisition under WSDOT rules.
Visual	
Roadways and bridge structures would be designed to aesthetically pleasing and compatible with the setting. The WSDOT Roadside Classification Plan will be followed (Section 4.10.5.1, pg. 4-180).	Section 3.9.4 identifies potential mitigation measures including the use of landscaping and architectural features to soften the facility's visual impact. WSDOT follows the Roadside Classification Plan to determine the type of landscaping for facilities based on the categories of rural and urban.
Aesthetically pleasing design and landscaping would be used to minimize visual impacts (Section 4.10.5.2, pg. 4-180).	Section 3.9.4 identifies potential mitigation measures including the use of landscaping and architectural features to soften the visual impact.

Tier I Commitments	Action Taken or To Be Taken
Public Services and Utilities	
FHWA and WSDOT will take wells into account during the Tier II NEPA process (Section 1.4.4, pg. 1-8).	The impacts of the project on Group A and B public water systems are discussed in Section 3.2.4. Well locations are shown in Figure 3.2-5.
Traffic-related impacts to public services will be mitigated through standard measures including detours, construction flagging and signing, and advance notice to businesses, utilities, and public agencies (Section 4.11.5.1, pg. 4-206).	Section 3.10.5 identifies mitigations measures for impacts to public services. Generally, WSDOT requires the contractors to coordinate the construction activities with the local service providers to minimize delays. The general standard provisions in the contract typically cover these issues.
Construction impacts on utilities will be partially mitigated during design. If relocation is unavoidable, utilities will be asked to participate in design and coordination. Utility customers will be notified in advance of service interruptions (Section 4.11.5.1, pg. 4-207).	Impacts to utilities are discussed in Section 3.10.3 while mitigation measures are identified in Section 3.10.5. WSDOT requires that contractors locate all utilities in the construction zone before they begin construction. The general standard provisions in the contract typically cover these issues.
Land Use and Social-Economic Impacts	
Mitigation measures that will be implemented to minimize construction impacts include maintaining access to existing uses wherever possible and the development of farm and business access plans prior to construction (Section 4.12.5.1, pg. 4-242).	Section 3.11.1 discusses mitigation measures for temporary impacts to residences and businesses due to loss of access. The transportation section 3.14 also identifies mitigation for these potential impacts. Staging, detours and temporary traffic control measures are developed during the final design phase of the project. All plans will meet Federal standards contained in the <i>Manual for Uniform Traffic Control Devices (MUTCD)</i> .
FHWA and WSDOT will use a variety of mitigation measures to minimize impacts including providing advance notice of street closures and detours, staging construction, advising emergency service providers, developing emergency access plans, and maintaining at least one lane at all SR 167 crossings (Section 4.12.5.1, pg. 4-242).	Section 3.11.4 and 3.14.4 identify the traffic control measures that will be implemented to minimize impacts to residences and businesses from street closures and detours. Staging, detours and temporary traffic control measures are developed during the final design phase of the project. All plans will meet Federal standards contained in the MUTCD.
Options for avoiding or minimizing impacts to residences on 67th Avenue East will be evaluated during the Tier II process (Section 4.15.4.2, pg. 4-258).	Due to current design of RRP in the vicinity of 67th Avenue, it is not feasible to avoid impacts to residences on 67th Avenue East. The existing properties will be acquired through right-of-way acquisition in accordance with the Uniform Relocation and Assistance Act of 1970.
Parks and Recreation	
A pedestrian overpass will be considered at the Puyallup Recreation Center. Further coordination with the Puyallup Tribe of Indians will be required. (Tier I ROD)	A pedestrian and bicycle overcrossing at the Puyallup Recreation Center was considered during the initial design (see Section 2.3.1) and rejected due to lack of demand. An overcrossing is included in the Urban Option at the SR 161/SR 167 interchange. Alternatively, the proposed Developer Connection is an overcrossing near the Recreation Center and may also provide an alternative overpass to pedestrians and bicyclists using the Recreation Center.
FHWA and WSDOT will coordinate with affected jurisdictions during Tier II to enhance the visual appeal of the facility in park and recreation areas with high visibility of the project (Section 4.13.5.2, pg. 4-250).	Section 3.9 discusses the visual impacts of the project on surrounding properties. The only parks and recreation land with substantial impacts is the Puyallup Recreation Center. FHWA and WSDOT will coordinate with the Puyallup Recreation Center on the screening of the project.
The Tier I NEPA process did not find any instance where land would be required that is or will be a public park and subject to additional study under Section 4(f) of the Department of Transportation Act. This will be reaffirmed during Tier II. (Tier I ROD)	The Tier II Section 4(f) Evaluation includes the analysis of six recreational resources (see Chapter 5).
Farmland	
Every feasible option for mitigating impacts to existing farm will be investigated. This may include land trades, additional equipment or storage sheds, or payment of damages. (Tier I ROD)	Section 3.12.6 identifies mitigation for impacts to farmland. WSDOT will work individually with each farmer to develop circulation options for movement of farm equipment and to provide access to fragmented acreage. This commitment will continue through design.
The options of providing equipment sheds on bisected parcels or swapping land will be explored in the Tier II NEPA process (Section 4.15.5.2, pg. 4-260).	This commitment is contained in the Section 3.12.6 discussion covering the option of providing farm sheds to fragmented parcels.
Farmland coordination with the National Resource Conservation Service (NRCS) and COE will be done during the Tier II development and analysis process (Section 4.16, pg. 4-261).	This commitment is contained in the Section 3.12.1 discussion covering the coordination efforts between FHWA, WSDOT, and NRCS.
Coordination with the NRCS regarding issues such as prime and unique farmland will be continued in Tier II. A form AD-1006 will be requested from NRCS. (Tier I ROD)	Section 3.12.1 summarizes the results from the evaluation done using Form NRCS-CPA-106 (equivalent to Form AD-1006) is included as Table 3.12-1.

Tier I Commitments	Action Taken or To Be Taken
Design options which permit efficient transportation of live stock and equipment will be evaluated. The issue of bisected farmlands and uneconomic remnants will be addressed in project design and right-of-way plans. Options include alignment adjustments, purchase of parcel remnants, and local circulation of farm machinery (Section 4.16.5, pg.4-262).	Section 3.12.6 identifies mitigation for impacts to farmland. WSDOT will work individually with each farmer to develop circulation options for movement of farm equipment and to provide access to fragmented acreage. This commitment will continue through design.
Displacements	
FHWA and WSDOT will make further efforts during Tier II to eliminate or minimize the number of displacements and relocations (Section 1.4.1, pg. 1-5).	Section 3.13.4 identifies potential mitigation to further minimize the number of displacements and disruptions.
Owners and renters of homes and businesses displaced by the project will receive relocation assistance in accordance with the Uniform Relocation and Assistance Act of 1970, as amended. (Tier I ROD)	Section 3.13.4 states that the provisions of the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 must be followed where WSDOT acquires right-of-way. In addition, Chapters 8.08, 8.25, and 8.26 of the Revised Code of Washington govern the process of acquiring property for right-of-way.
Transportation	
TDM/TSM features will be utilized in the final design to the extent feasible. (Tier I ROD)	Section 3.14.4 identifies a variety of measures that may be applied.
Planning for staging, detours, and temporary traffic control will be designed to maximize safety and the free flow of traffic during construction. (Tier I ROD)	Staging, detours and temporary traffic control measures are developed during the final design phase of the project. All plans will meet Federal standards contained in the MUTCD. This commitment will continue through construction.
I-5 closures will be limited to nighttime periods of low volumes (Section 4.2.4.3, pg. 4-42).	Section 3.14.4 addresses mitigations for construction impacts. Specific traffic control measures are developed during the final design phase for the project.
WSDOT will provide land for future development of a park and ride lot. (Partner's Meeting)	The parcels for two park and ride facilities, one at the Valley Avenue Interchange and one at the 161 Interchange, will be purchased and are included in Section 3.13. This commitment will be fulfilled in the right-of-way phase of the project.
Pedestrian and Bike Facilities	
A pedestrian overpass will be considered at the Puyallup Recreation Center. Further coordination with the Puyallup Tribe of Indians will be required. (Tier I ROD)	A pedestrian and bicycle overcrossing at the Puyallup Recreation Center was considered during the initial design (see Section 2.3.1) and rejected due to lack of demand. An overcrossing is included in the Urban Option at the SR 161/SR 167 interchange. Alternatively, the proposed Developer Connection is an overcrossing near the Recreation Center and may also provide an alternative overpass to pedestrians and bicyclists using the Recreation Center.
Cultural Resources	
Detailed design efforts will attempt to save the historic Carson chestnut tree within the SR 167/SR 161 interchange. (Tier I ROD)	Section 3.16 discusses preservation of the Carson Chestnut tree. All design options at the SR 161/167 interchange preserve the tree.
An archaeological survey will be done as part of the Tier II studies and if any resource is found appropriate measures will be taken. If any archaeological resources are found during construction, work will be halted for site analysis and appropriate action will be taken, including coordination with the Puyallup Tribe of Indians and the SHPO. (Tier I ROD)	Section 3.16 discusses the results of the archaeological survey. WSDOT's contract specifications require construction to stop if archaeological resources are found.
The area will be canvassed for possible historic buildings and appropriate action will be taken for compliance with Section 106 of the National Historic Preservation Act if any are found. (Tier I ROD)	Section 3.16 documents the additional studies done to identify any possible historic resources in the study area.

1.3.3 Tier II Environmental Issues

The selection of environmental issues to be reviewed in the Tier II NEPA process followed the same general procedure as that of the Tier I NEPA process. It began on July 13, 1999, with an Agency Scoping Meeting and a public Open House/Scoping Meeting. Scoping is the process of identifying the environmental issues to be studied in the Tier II FEIS. FHWA and WSDOT prepared a Study Plan and formed an Interdisciplinary Team to guide the development of the SR 167 Tier II FEIS. The Study Plan was completed in June 2000 and identified the environmental areas to be studied in the Tier II FEIS.

Both NEPA and SEPA require the Lead Agency to determine the issues to be evaluated in an FEIS. This is accomplished through a process including the scoping period where agencies, tribes, and the public are invited to comment on the ranges of alternatives, areas of impact, and possible mitigation measures that should be evaluated. Scoping determines the issues to be analyzed in depth as well as identifies and eliminates from detailed study the issues that are not considered relevant to the project. At a minimum, NEPA requires the FEIS to provide full and fair discussion of all environmental impacts and to inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. SEPA likewise requires identifying and evaluating probable impacts, alternatives and mitigation measures, emphasizing major environmental impacts and alternatives.

There are two Lead Agencies for the Tier II FEIS. FHWA is the Lead Agency under NEPA and WSDOT is the Lead Agency under SEPA. After reviewing the Tier I FEIS and a “scoping process” that involved the public, the lead agencies concluded in the Study Plan that the following subject areas would be studied in detail in the Tier II FEIS.

- Water Resources (Waterways, Hydrology, Water Quality, Hydrogeology, and Floodplains)
- Wetlands
- Wildlife, Fish, and Threatened and Endangered Species
- Air Quality
- Noise
- Energy
- Hazardous Waste
- Visual Quality
- Public Services
- Land Use, Socioeconomic, and Environmental Justice
- Farmland
- Displacement, Disruption, and Relocation
- Transportation
- Pedestrian and Bike Facilities
- Cultural Resources

- Indirect Impacts
- Cumulative Impacts

WSDOT prepared a Discipline Report (DR) for each subject area by conducting field studies, reviewing published data, analyzing project impacts, recommending mitigation, and publishing the results in a technical report. The DRs are the basis for the sections in this EIS and include information in much greater detail.

FHWA and WSDOT determined that the geology, soils, and topography subject studied in the Tier I FEIS would not likely have substantial adverse environmental impacts and therefore would not be studied in detail for this document. The impacts from erosion/sedimentation and groundwater disruption are discussed in the water resources section (Section 3.2).

Issuance of the DEIS for Comments

In February 2003, FHWA and WSDOT issued the Tier II DEIS for public comment. FHWA and WSDOT received comments from the public, environmental organizations, local, federal, and state governments, and the Puyallup Tribe of Indians. These comments led to additional studies such as

- Analysis of the hydrology and geomorphology of the Hylebos Creek Basin (Section 3.2);
- Analysis of the arsenic contaminated groundwater plume associated with the B&L Woodwaste site (Section 3.8);
- Analysis of the Net Environmental Benefits associated with the Riparian Restoration Proposal (RRP) (Section 3.17).

The organization of this Tier II FEIS was changed in response to comments on the Tier II DEIS requesting

- Water resource, wetlands, fish and wildlife discuss results in terms of the Hylebos Creek, Wapato Creek, and Lower Puyallup basins;
- Indirect and cumulative impacts be discussed in the respective resource sections of Chapter 3, instead of in a separate Section 3.17.

Other Changes in the Tier II FEIS

Many changes respond to comments on the Tier II DEIS that was distributed in February 2003. Additional information from supplemental studies since the Tier II DEIS is also provided. Some changes make the document easier to read and handle.

Changes in the Tier II FEIS include:

- The Summary is completely revised to make it more reader-friendly. It also provides graphics to show existing and future conditions.

- Tier II environmental commitments are provided in a separate table in Appendix F.
- The Preferred Alternative is identified in Chapter 2.
- The environmental effects matrix table at the beginning of Chapter 3 is simplified to compare the No Build and Preferred Alternatives.
- Figures are reduced in size and placed within the discussions instead of at the end of chapters and sections.
- Chapters 4 and 5 are added. Chapter 4 presents the analysis demonstrating measures to avoid and minimize effects on aquatic resources and wetlands, and that the Preferred Alternative is the least environmentally damaging practical alternative. Chapter 5 is the Section 4(f) Evaluation conducted for park and recreation properties, waterfowl and wildlife refuges, and historic properties.
- Appendices are added. Appendix A now contains figures of the Preferred Alternative. Tier II commitments are presented in Appendix F. Appendix G provides responses to all comments received on the Tier II DEIS. Section 4(f) coordination and correspondence documents are contained in Appendix H.

1.4 FHWA, WSDOT, Interagency, and Community Coordination

1.4.1 FHWA and WSDOT Interdisciplinary Coordination

Development of an EIS is an interdisciplinary process. FHWA and WSDOT used three levels of interdisciplinary coordination: the Interdisciplinary Team (IDT), the technical experts, and the EIS writers.

The IDT acts as an advisory group composed of persons with skills or training in the fields most vital to the project. The IDT meets eight to ten times over the course of the NEPA process. The IDT functions in an advisory capacity to the Regional Administrator, Design Team, and Environmental Team. The IDT provides guidance and technically defensible recommendations throughout the NEPA process at project milestones. The project IDT was made up of FHWA and WSDOT environmental, design, traffic operations, construction and right-of-way experts.

The technical experts include the Design Team and the Environmental Team. The Design Team is comprised of engineers and technicians with expertise in roadway and bridge design. The Environmental Team works closely with the Design Team to represent different environmental perspectives. The selected environmental disciplines are those areas the lead agencies determined may be impacted by the project. The Environmental Team prepared DRs detailing the likely environmental impacts of the project. A list of the DR writers appears in Appendix B.

Finally, technical writers assist with preparing the EIS. In some cases, the members of the design and environmental teams act as technical writers and prepare their respective chapters. They review the entire document for consistency and readability.

The interdisciplinary process allows for the exchange of ideas and information during the development of the project. Options and alternatives are brought forward and evaluated. They may be rejected or kept for more detailed examination during the NEPA process.

Public Involvement and Coordination

Public input during the preliminary design phase is important to help ensure that the design process results in a decision that is in the best interest of the community and the environment. Many methods were used to gather information on what issues the community felt were important. There was involvement not only with community members, but also with interested businesses, community organizations and municipalities. The issues and points brought forth by comments, suggestions, and questions gathered from the variety of public involvements were utilized as a guide and incorporated in the development of the Tier II FEIS.

Partners Committee

The Partners Committee was formed during the Tier I NEPA process under the title of “Steering Committee.” This committee is comprised of representatives from the cities of Puyallup, Tacoma, Fife, Milton, and Edgewood along with the Port of Tacoma, FHWA, Pierce County, Pierce Transit, Puyallup Tribe of Indians, Puget Sound Regional Council, and WSDOT. The committee members represent the local agencies that have been involved in the process from the beginning. They have given direction and guidance on a variety of issues to help maintain the progress of the project. The committee has met monthly since January 1998 and has continued to meet throughout the Tier II FEIS development. They kept track of project development and provided schedule management. They also assisted with funding efforts and attended open houses to answer questions from the public.

The committee helped create the Study Plan that defines the purpose and need of the project, its environmental effects, scope of work, needed studies, and schedule. The Study Plan contains a draft of the environmental screening criteria for the Tier II options. This draft describes the criteria and how they are to be measured. The Study Plan also contains information on the NEPA/SEPA/404 Merger Agreement and identifies areas of controversy and primary importance.

Citizen’s Advisory Committee

The Citizen’s Advisory Committee (CAC) was formed to ensure representation of citizens who may be affected by the project. The members were chosen from volunteers who submitted forms at the open houses, called the project phone number, or e-mailed WSDOT expressing interest. The committee members consist of property owners, business owners, members of local jurisdictions and farmers from the cities of Milton, Edgewood, Fife, and Puyallup, along with Pierce County. A list of the committee members is located in Appendix E. The

CAC helped advise project staff on local issues and concerns and assisted with improving outreach and communication efforts. The CAC was kept informed of the project at scheduled meetings and with newsletters between these meetings.

The CAC held an initial kick-off meeting in June 2000, at which they agreed upon expectations for the members and WSDOT. They agreed that the CAC would be kept informed during the progression of the project and act as a sounding board for their neighbors and community. The members were given a binder that contained information about the project and a roster with names and numbers of WSDOT and the CAC. The Study Plan, project schedule, and the preliminary footprint of the proposed project were also included in the information binders. The CAC members were encouraged to attend open houses and be available to answer questions.

The second CAC meeting was in December 2000. The members were updated on the progress of the project and were asked for feedback on the July 2000 open houses. In the review of the proposed project, the members were given updates on the design, schedule, and budget.

A newsletter was sent to the CAC in December 2001 to update committee members on the progress of the project, design and environmental issues, and schedule. This newsletter stated that the preliminary design for the Tier II FEIS was complete.

The CAC met in January 2003, prior to distribution of the Tier II DEIS. The members in attendance were given an update on the project, discussed the upcoming environmental hearings, and discussed the next tasks in the EIS process. Several members attended the March 18 and 20, 2003, environmental hearings in the cities of Fife and Puyallup. Since then, CAC meetings have focused primarily on design and construction issues related to the Build Alternative.

Stakeholder Interviews

In July 2000, WSDOT identified stakeholders who were interviewed for their opinions on the project. The project team devised several open-ended questions that covered a range of issues about the proposed project. The stakeholders represented the cities of Fife, Puyallup, Milton, Edgewood, and Tacoma, the Puyallup Tribe of Indians, Pierce County, the Port of Tacoma, Pierce Transit, Puget Sound Regional Council, members of the CAC, specialty groups, businesses, and private citizens. The interview was a one-time effort to gain a snapshot of opinions. The answers to the questions were compiled into the *SR 167 Tier II Stakeholder Interview Report*.

The responses to the questions varied widely, depending on the interviewee's areas of concern. At the same time, several issues emerged as themes. Overall, the Stakeholders felt that the project would improve the transportation system regionally as well as locally and improve safety on local roadways. Generally the main impacts were felt to be positive, however, the loss of farmland, visual impacts to Fife Heights, and property values were considered a negative consequence of the project. Increased noise from the project was also a concern.

Design Workshops

WSDOT conducted a series of workshops with outside agencies to solicit their ideas about the project. For each interchange, with exception to the I-5 interchange, two workshops were held. In the first workshop, WSDOT presented the participants with a “blank slate” and asked for their input. The participants developed several different scenarios or options for each interchange.

At the end of each workshop, the project office took the participants’ ideas, developed them further and applied FHWA and WSDOT standards to create plausible designs. The project staff then went through each option looking for fatal environmental or design flaws and evaluated the overall impacts. After this information was gathered, WSDOT reconvened the workshops with a summary of the results from the previous workshop. They discussed why some ideas had fatal flaws and explained the impacts of the remaining proposals. With this information, the participants gave additional input and further developed the options. Each separate workshop is discussed in more detail below.

SR 509 and 54th Avenue East Partial Interchange Workshops

The first workshop for the SR 509 interchange area was held at the Royal Coachman Motel in Fife on April 26, 2000. Representatives from the cities of Fife and Tacoma, the Port of Tacoma, Puyallup Tribe of Indians, and Puyallup International were present. WSDOT facilitated the meeting. Representatives from WSDOT Design, Traffic, and Planning were present. Following an explanation of the design constraints, WSDOT asked the workshop participants to identify criteria that they would like to see applied to the options created during the workshop. The remainder of the workshop was spent developing a number of design options.

The following ideas were carried forward for further design:

- Shift the existing frontage roads of SR 509 south to allow for future rail expansion by the Port of Tacoma.
- Design a half diamond interchange at 54th Avenue East.
- Design a loop ramp at 54th Avenue East.
- Provide direct access into the Port of Tacoma.

The follow-up workshop was held on November 30, 2000, at the city of Fife City Hall. Representatives from the cities of Fife and Tacoma, the Port of Tacoma and WSDOT were in attendance. WSDOT presented the options from the first workshop as a preliminary design. The participants were then asked for additional input. Suggested revisions included the revision of the loop ramp and half diamond interchange designs to be aligned with 8th Street East instead of 54th Avenue East and to bring the frontage roads closer to the proposed SR 167.

On December 2003, WSDOT conducted a workshop with the Port of Tacoma, Tacoma Rail, and Coast Engineering and Equipment Company (CEECO) to discuss the constraints of the rail line currently serving the CEECO business site.

The team developed a preliminary plan to relocate the existing SR 509 rail crossing. Additional design coordination will occur in the design phase of the project.

Valley Avenue Interchange Workshops

The first workshop for the proposed Valley Avenue interchange was held at the Fife City Hall on May 11, 2000. Representatives from the cities of Fife and Edgewood, Pierce County and the WSDOT were in attendance. Participant input had to remain within the Tier I constraints while avoiding impacts to the Union Pacific Railroad and Puyallup Tribe of Indians tribal trust lands. After these constraints were clarified, WSDOT asked the group to develop criteria which would be applied to the design options created at the workshop.

The design options that were developed at this workshop are as follows:

- Design standard diamond-type on-off connections on the west side of Valley Avenue and a loop ramp for the off movement on the east side. The on movement would tie into the north side of Valley Avenue, paralleling the off-ramp until it diverged.
- Design standard diamond type on-off connections on the west side of Valley Avenue with the on-off connections on the east side to connect with Freeman Road.
- Realign Valley Avenue in order to move away from the railroad tracks and provide a standard diamond interchange.
- Provide split ramps to Valley Avenue and Freeman Road.
- Develop a Freeman Road diamond interchange.
- Design a split diamond interchange.
- Design a Freeman Road urban interchange.

These design options were then taken back to the project office and further developed. Due to design criteria, environmental impacts, traffic analysis and cost, some of the options were eliminated. The remaining options were brought before the workshop members again on October 17, 2000, at the Fife City Hall. WSDOT briefed the members on the options that were carried through the process and asked for more input.

SR 161/SR 167 Interchange Workshops

The first workshop for the SR 161 interchange area was held on July 11, 2000, at the WSDOT Puyallup Maintenance Facility. Representatives from the cities of Puyallup and Edgewood were present at this workshop. This group identified criteria that they would like to see applied to the design options created after the design constraints were described to them. The workshop members continued to develop the design options.

The design options that were developed are as follows:

- Design a single point urban interchange.
- Design a traditional diamond interchange.
- Design a diamond interchange with the northbound off ramp tying into the North Levee Road.
- Provide an access road in-between the North Levee Road and Valley Avenue.

WSDOT took these design options back to the project office for further design and environmental evaluation. On December 12, 2000, the workshop members met again at the same location and WSDOT presented the findings of the project office's efforts. There were no fatal flaws found in any of the options.

I-5 Interchange Value Engineering Study

Rather than convene a workshop for the proposed SR 167 and I-5 interchange, WSDOT conducted a value engineering (VE) study (WSDOT, 2000). The VE study was selected over a workshop because of the complexity of this interchange. This VE team included individuals with expertise in certain arenas to develop a best design option for this location. The team included representatives of FHWA, the City of Fife, and WSDOT.

The VE study recommended one design option after examining 67 options that included multiple I-5 and SR 167 ramp connections and alignments. The team listed benefits and drawbacks of each option that warranted further development and abandoned those that did not. The team developed six recommendations. Table 1-3 lists the recommendations and the response of FHWA and WSDOT in accepting, modifying, or rejecting them.

Newsletters

WSDOT has published four newsletters throughout the region with information regarding the project. These newsletters were sent in mass to the zip codes that would be affected by the project. The first newsletter was a general information letter that explained the project and where the project was heading. This was sent out in July 1999. The next two newsletters were sent in June 2000 and January 2001. These two letters updated the public on the progress of the project and also invited them to open houses that were scheduled in the area. Another newsletter was distributed in 2003 with the issuance of the Tier II DEIS. Additional newsletters provided project updates on the Tier II FEIS.

Table 1-3: VE Study Recommendations and Responses

VE Study Recommendations	WSDOT Responses
Use one lane through direction ramps for northbound and southbound general purpose traffic for the SR 167 crossing of I-5 between ramps connecting SR 167 to I-5.	Accepted
Stage construct the HOV direct connection ramps, deferring them until there is a definable need.	Accepted
Provide for local connectivity by realigning 20th Street East to curve under the ramp structures immediately south of I-5. Provide connection of 20th Street East and 70th Avenue East via a roundabout just west of the current 20th/70th intersection, and locate the 70th Avenue East I-5 overcrossing to the west of its current location.	Accepted
Overcross Pacific Highway, 12th Street East, and sever 8th Street East and 62nd Avenue East. Use the resulting landlocked portion of 8th and 62nd as environmental mitigation, using FEMA and other available funding.	Accepted
Interchange configuration. Recommendation No. 1 is an essential element of this concept. Any policy issues that relate to No. 1 should be resolved before design effort is expended on VE concept No. 1. Raising the northbound mainline of SR 167 to Level III, and keeping SR 167 southbound mainline at Level II allows the Northbound 167 to North I-5 (N7N5) ramp to remain at the same level as mainline SR 167 northbound and Southbound 167 to South I-5 (S7S5) ramp to remain at the same level as SR 167 southbound mainline. This also allows N7N5 and S7S5 to function as left drop/add lanes, enabling I-5 connections from the left of SR 167. N5N7/S7S5 combined HOV direct connect ramps are Level II structures vs. Level III structures on 15Alt4B.	Accepted
Widen asymmetrically to the north and west of I-5 in the interchange area.	Accepted
Bridge and wall structures. The design and construction of this interchange can be accomplished using conventional construction materials and construction techniques. The major challenges contributing to the high cost of the project are how to design for the liquefiable soil foundation conditions, the floodplain bridge construction restrictions, and the numerous highway and local roadway crossing geometrics conditions.	Noted

Public Outreach

FHWA and WSDOT used several different public outreach techniques over the course of the project. The techniques included open houses, environmental hearings, presentations to local groups, and a website. These are discussed in more detail below.

FHWA and WSDOT investigated the need to provide additional public outreach for the non-English speaking population. Before the scoping meeting in 1999, and the open houses in 2000 and 2001, WSDOT researched the cultural backgrounds of the project area and determined that there was not a community of non-English speaking citizens that would be adversely affected by the project. FHWA and WSDOT were prepared to provide interpreters and other bilingual forms of communication at these events, if necessary, to ease the language barriers with the public.

July 2000 Open Houses

FHWA and WSDOT conducted a total of four open houses in sets of two. Two were held in July 2000, and two were held in January 2001. Each set of open houses covered the same material but one was located in the city of Fife area while the second was located in the city of Puyallup area. Approximately 250 people attended these open houses.

There were a variety of questions and comments from the July 2000 open houses. They ranged from impacts to property owners to drainage and flooding issues. Non-specific location questions included how the project will affect the plants and animals in the area, how much of this project goes through tribal land, how will WSDOT address the pipeline that runs along I-5, and will WSDOT check the water wells in the area for contamination. Other questions addressed the issues of drainage and flooding in the area. These general issues are addressed within the appropriate section in Chapter 3 of the Tier II FEIS.

Questions arose regarding how this project could improve flooding problems in the area. Attendees wanted information on the impacts to both Wapato and Hylebos Creeks and what sort of mitigation measures FHWA and WSDOT would use to minimize those impacts. A question was asked if the Surprise Lake drain would be relocated as part of this project. Other questions regarded noise impacts and the use of noise walls. The public wanted to know how FHWA and WSDOT would handle cultural resources, what criteria were used to determine which parcels were to be selected for study, and what would happen to any artifacts that potentially would be discovered during the study. More specific questions about each segment are described below.

SR 509

There were some concerns about the terminus of the project. Some people felt that the project should end at the Port of Tacoma instead of SR 509 to accommodate people living in northeast Tacoma by making it easier to travel to the downtown area. Others suggested that the alignment be adjusted to avoid the OPUS/Fife Landing development as well as the Milgard window factory. There were several comments about the 54th Avenue East interchange stating that it was confusing since it was not a fully directional interchange but rather a half-diamond interchange.

I-5 Interchange

There were stated concerns about the continuity of the local system in this area and that the new interchange would disrupt the current system, specifically 12th Street East. Others stated that there should be local access to both the proposed SR 167 and I-5 instead of just a freeway-to-freeway access. Citizens living in Milton felt that their needs were overlooked by not providing direct access from 20th Avenue East or 70th Avenue East. Many people from the Milton community made comments on the need for some sort of access to I-5.

Valley Avenue

Most comments about this location were positive stating that this interchange would help the local roadway network as well as relieve congestion from South

Hill and Canyon. One comment suggested that construction begin soon because of the deteriorating condition of Valley Avenue. There was some concern about how the truck movements would be affected with this new interchange.

SR 161

There were questions about what would happen to some historical features located in this general vicinity—specifically the Fort Malone Marker and the Carson Chestnut tree. Drainage was another concern for this general area. Questions were asked about the project impact on privately owned existing drainage systems and WSDOT responsibility.

Non-motorized/HOV

There were several comments and questions regarding the accommodation of bicycles on the shoulders of the proposed SR 167 and the proposed I-5 interchange. There is an existing bicycle/pedestrian trail (the Interurban Trail) in the vicinity of 70th Avenue East. Many people wanted a connection to this trail and to have it extended into the valley. It was suggested that the HOV lanes be located on the right side of the traveled way rather than the left side. It was also suggested that the proposed HOV lanes were not needed and that speed regulated lanes could be built instead.

Property/Right-of-Way

There were several comments about right-of-way acquisition, when it would happen, the process, and how property values would be determined. There were several property owners that voiced their concern about the difficulty they were having in selling their property because of the proposed project. They asked if advance acquisition funds were available. People were also concerned about access to impacted properties.

No Build Alternative

There were comments regarding the No Build Alternative. Some were in favor of this alternative and felt that the SR 167 extension project is a waste of taxpayers' dollars. Some comments disagreed with the chosen corridor adopted in the SR 167 Tier I documents, and those people voiced their opinion about which corridor should have been chosen.

January 2001 Open Houses

The second round of open houses was held January 22 and 24, 2001, in the cities of Fife and Puyallup. WSDOT gave an update of the progress of the project and solicited comments from the public. Approximately 150 people attended these open houses and they had many of the same concerns as those voiced in the previous open house.

The public wanted to know what the plan was to contain the stormwater runoff from the new impervious area that this project would generate. It was also mentioned that any undersized culverts should be replaced with larger ones and that Hylebos and Wapato Creeks should be cleaned.

Currently, Hylebos Creek is channeled between concrete blocks at the I-5 interchange. It was questioned whether the project could improve the creek channel by moving the on-ramp near 70th Avenue or by realigning the creek itself.

One citizen expressed concern over the non-motorized plan. Many people also commented on the need for bicycle access and wanted to know what impacts there would be to bicycle travelers. They specifically wanted more information on the layout of the roadway and whether the shoulders would be wide enough to support bicycles and provide a crossing over I-5 or access to I-5.

Noise walls or mitigation for the increase in traffic noise was a concern for many people. The main area of concern appears to be around tribal lands near Freeman Road. It was also expressed that noise walls throughout the length of the project would be favorable to the public.

The Milton community expressed their concerns about the lack of convenient access to I-5 from their city. They voiced a need for a new interchange at Porter Way and better access from Fife to Milton in general.

A specific comment was received about the interchange at 54th Avenue East near the beginning of the project. It was presented as a half interchange and this was thought to be confusing and not understandable. It was felt that a more traditional interchange would be better suited for this location.

More general comments suggested that FHWA and WSDOT actively seek partners such as the Hylebos Wetland Action Committee, Friends of the Hylebos Wetlands, and the Stream Team.

Between the two rounds of open houses during the preliminary design phase of the project, FHWA and WSDOT received many good comments. These forums gave the general public a chance to voice their ideas, frustrations and concerns.

March 2003 Environmental Hearings

On March 18 and 20, 2003, FHWA and WSDOT held environmental hearings in the cities of Fife and Puyallup, respectively, on this project to present the public with the findings of the individual discipline reports and the draft environmental impact statement. Both oral and written comments on the Tier II DEIS were solicited at these hearings. The comments received as well as responses are contained in Appendix G.

October 2006 Open Houses

FHWA and WSDOT plan to hold a third round of open houses in October 2006 in the cities of Fife and Puyallup. The purpose was to update the public and answer questions about the Tier II FEIS.

Other Public Involvement

On many occasions during the Tier II process, local community groups, developers, local businesses, city councils, and local homeowners invited

WSDOT to give updates on the progress of the project. WSDOT staff delivered presentations to the following organizations and groups:

- Tacoma Chamber of Commerce
- Edgewood Business Association
- Puyallup River Watershed Council
- Northwest Fruit and Produce
- Jesse Engineering Company
- Puyallup Mini-Storage
- Cities of Milton, Tacoma, and Fife
- Puyallup Tribal Council
- Cooperative Extension of WSU
- Friends of the Hylebos Wetlands
- Milgard Manufacturing
- Pierce Transit
- Opus Site Job Shack
- Great American RV in Fife
- Washington State Patrol
- Pierce County Economic Development Board

Following distribution of the Tier II DEIS, WSDOT presented the project to the following organizations and groups:

- Port of Tacoma Commissioners
- Edgewood City Council
- Puyallup Tribe of Indians
- Milton Chamber of Commerce
- Fife Chamber of Commerce
- Fife Commerce Center
- Reichter Farms

- 67th Avenue property owners
- Puyallup Valley Kiwanis
- The Regional Access Mobility Project committee

WSDOT maintains a mailing list to inform people of changes in the project and to give them updates as necessary. People can add their names to the mailing list by signing up at the open houses, phoning the project office, or sending an e-mail.

Coordination that began during Tier I with local agencies, resources agencies, stakeholders, and the Puyallup Tribe of Indians continued as part of the Tier II NEPA process. This coordination included opportunities to comment on revisions to the water resources; wetlands; and wildlife, fish, and T&E species discipline studies between the DEIS and FEIS.

Web Site

WSDOT created a web site in March 2000, for the SR 167 Tier II EIS project (<http://www.wsdot.wa.gov/Projects/SR167/TacomaToEdgewood>). It is updated monthly. The web site contains the history of the project, what is currently done, specific design options, and WSDOT contacts. This site saw between 100 to 150 “hits” following each of the open houses and environmental hearings. The web site will remain active for the duration of the project.

1.4.2 Interagency Coordination and NEPA/SEPA/404 Merger Agreement

NEPA Cooperating Agencies

At the beginning of the NEPA process, Lead Agencies are required to invite other jurisdictions to be cooperating agencies. Under NEPA, a cooperating agency has a vested interest in the proposed project for which an environmental document is prepared. The agency may own needed property, issue a required permit, or have special expertise in an affected area of the environment. The level of involvement varies with the agency. Cooperating agencies may include other federal agencies, state agencies, local jurisdictions, tribal governments, and special districts.

The cooperating agencies for the SR 167 Tier II EIS are the U.S. Army Corps of Engineers (COE) and the City of Fife. COE has permit authority for the project under Section 404 of the Clean Water Act. The City of Fife has jurisdiction over land use for the majority of the study area. COE is involved with the 404 Merger process as well, while Fife is a member of the Partners Committee. FHWA and WSDOT will continue to consult with both agencies through the permitting and construction phase of this project.

404 Merger Agreement (Signatory Agency Committee Agreement)

The Interagency Working Agreement to Integrate Special Aquatic Resources (404) Permit Requirements into the National Environmental Policy Act and the State Environmental Policy Act Processes in the State of Washington was the

result of a May 1, 1992, agreement between the U.S. Department of Transportation, the U.S. Department of Army–Civil Works, and the U.S. Environmental Protection Agency. The federal agencies adopted a policy of improved interagency coordination and integration of the NEPA procedures and the Clean Water Act Section 404 requirements. However, the details of implementation were left to state and regional entities to work out. In September 1993, a NEPA/SEPA/404 Merger Task Force was formed to write an agreement in the State of Washington to implement this national policy.

The Merger Task Force consisted of regional representatives from the following agencies, which are now commonly known as the Signatory Agency Committee:

- FHWA
- NOAA National Marine Fisheries Service (NOAA Fisheries)
- COE
- U.S. Environmental Protection Agency (USEPA)
- U.S. Fish and Wildlife Service (USFWS)
- Washington Department of Ecology (Ecology)
- WSDOT
- Washington Department of Fish and Wildlife (WDFW)

These state and federal agencies signed the current revised agreement in August 1996. The signatory agencies meet quarterly to discuss projects triggering the process. It should be noted the 1996 Merger Agreement was revised and updated in September 2002, renamed the Signatory Agency Committee (SAC) Agreement, and is now referred to as the SAC Agreement.

The SAC Agreement procedures apply to all FHWA projects in Washington needing a NEPA Environmental Impact Statement and COE Individual Permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act. The SR 167 project meets these criteria.

The SAC Agreement establishes three points in the NEPA process at which concurrence is obtained from the signatory agencies. To fulfill their concurrence role, each agency provides written comments within 45 days of receiving the concurrence point information. The agency states its concurrence, concurrence with advisory comments, waiver of concurrence, or non-concurrence.

- Concurrence Point 1 covers the project purpose and need; the criteria for alternative selection.
- Concurrence Point 2 consists of the range of project alternatives to be evaluated in the Tier II DEIS.

- Concurrence Point 3 includes the preferred alternative/least environmentally damaging preferred alternative and the conceptual or detailed aquatic compensatory mitigation plans.

Concurrence Point 1

The agencies initiated the SAC (then called “Merger”) process at a January 10, 2000, meeting. FHWA and WSDOT presented background information on the SR 167 Tier II EIS in preparation for Concurrence Point 1. At an April 4, 2000, meeting, FHWA and WSDOT presented the Concurrence Point 1 materials (purpose and need, role of all agencies and screening criteria for the options selection) and requested concurrence on Point 1. Some of the agencies responded with their comments. After incorporating the comments, FHWA and WSDOT received the concurrences from all agencies. WSDOT sent a letter of confirmation to all agencies on June 22, 2000.

Concurrence Point 2

The SAC (then called “Merger”) agencies met again on February 28, 2001, and FHWA and WSDOT presented information on the second concurrence point. Concurrence Point 2 as noted earlier on page 1-33 consists of the range of project alternatives to be evaluated in the Tier II DEIS.” The range of alternatives has been further defined as the Preferred Alternative and options described in this Tier II FEIS.

The COE and Ecology concurred with Concurrence Point 2 (range of alternatives to be evaluated) as presented. NOAA Fisheries waived their response to Concurrence Point 2. USFWS, USEPA, and WDFW concurred with comments. FHWA and WSDOT considered these comments and performed further studies to complete the FEIS as outlined below.

USFWS, USEPA, and WDFW expressed concerns about the Valley Avenue interchange’s impacts on water quality and fish in Wapato Creek, and on farmlands in the area. One of the comments was to include a second build alternative in the Tier II EIS that omits the Valley Avenue interchange. The three agencies felt that another build option without the Valley Avenue interchange was reasonable and would meet the NEPA requirements.

After reviewing the comments, FHWA and WSDOT performed additional studies to address the specific comments and concluded that a build alternative without the Valley Avenue interchange did not meet the purpose and need for this project. Under NEPA, only alternatives that meet the purpose and need for the project need to be evaluated. FHWA and WSDOT disagreed with the proposal to develop an additional build alternative for the DEIS and consequently initiated the conflict resolution process in July 2001 in accordance with the NEPA/SEPA/404 Merger Agreement.

WSDOT, USFWS, USEPA, and WDFW exchanged issue papers and met in September 2001. This meeting was unsuccessful in resolving issues. WSDOT further noted a need to focus in on the root issues and offered the following steps:

- WSDOT would revise their Issue Paper to address comments and questions raised during the September 2001 meeting.
- USEPA, USFWS and WDFW would provide a bulleted list of their top three unresolved issues. The information would help focus the revised issue paper.
- When the revised information is completed, WSDOT would set up a second conflict resolution meeting.

In October 2001, the agencies sent FHWA and WSDOT their top three unresolved issues. WSDOT used this information to revise the issue paper and sent the agencies a revised issue paper in December 2001.

After reviewing the revised issue paper, WDFW dropped their request in January 2002 for another alternative at Valley Avenue and agreed to work with WSDOT on mitigating any substantial impacts to Wapato Creek. In April 2002, USFWS and USEPA decided not to pursue the conflict resolution any further, but a meeting was held with executives at FHWA, WSDOT, and USEPA and in that meeting it was determined that more work needed to be done on indirect and cumulative effects analysis. Interagency meetings were held with project staff, EPA, USFWS, COE, and FHWA in August and October of 2002 to discuss methodology for the indirect and cumulative effects analysis and that section was revised.

Concurrence Point 3

The City of Fife is one of the agencies from which WSDOT will be required to receive an environmental permit or approval for the SR 167 Build Alternative (see Table 1-4 at the end of this chapter). Based on this and the expressed interest by the City of Fife, the city was invited to participate in Concurrence Point 3.

FHWA and WSDOT presented information on the third concurrence point (the Alternatives/Options Analysis, the 404(b)(1) Alternatives Analysis, and the Conceptual Mitigation Plan) on July 14, 2004. WDFW concurred with Concurrence Point 3 as presented. All other member agencies, including the City of Fife, did not concur. Federal agencies indicated that the preferred alternative, specifically the Valley Avenue Interchange Option, was not the Least Environmentally Damaging Practicable Alternative. Ecology requested review of two studies, the *Analysis of the SR-167 Extension and Riparian Restoration Proposal in the Hylebos Watershed, Hydrology, Hydraulics and Geomorphology* (MGS, 2004) and the *SR 167 Extension Preliminary Hydrologic Analysis Riparian Restoration for Wapato Creek at Valley Avenue Interchange* (WSDOT, 2004). The City of Fife did not concur with the preferred mitigation site identified in the Conceptual Mitigation Plan.

After reviewing the issues raised as part of non-concurrence on Concurrence Point 3, FHWA and WSDOT met with NOAA Fisheries on October 14, 2004, to discuss resolution of their specific issues. FHWA and WSDOT met with EPA on October 15, 2004, to discuss resolution of their specific issues. Issue resolution meetings were held with all SAC members on October 28 and November 9,

2004. Based on these meetings and one additional meeting with NOAA Fisheries on November 23, 2004, WSDOT revised the concurrence package and resubmitted Concurrence Point 3 in February 2005.

Two agencies, USFWS and NOAA Fisheries, did not initially concur with the revised concurrence package. WSDOT, FHWA, USFWS, and NOAA Fisheries resolved the outstanding issues, which focused on future coordination through the RRP Technical Advisory Group, on May 9, 2005, resulting in concurrence.

Riparian Restoration Proposal Technical Advisory Group

In May 2005 WSDOT identified several stakeholders to participate in a Technical Advisory Group that would identify recommendations for the ultimate design of the RRP.

Riparian restoration has been proposed at three sites within the proposed SR167 corridor. The sites were selected because improvements in these areas are expected to meet regulatory requirements and offer additional environmental benefits. This RRP has been proposed as an innovative alternative stormwater control specifically for stormwater management. For details on the conceptual plan for RRP, refer to Section 3.2.3.

Agencies such as United States Fish and Wildlife Service, the NOAA National Marine Fisheries Service, the United States Army Corps of Engineers, and Washington State Departments of Fish and Wildlife and Ecology were invited to participate. In addition, Pierce County, the Puyallup Tribe of Indians, and the Friends of the Hylebos Wetlands, a local environmental group, were also invited as a stakeholder in the RRP design process.

The advisory process was a multi-phased approach. During the first phase, broad-based goals and objectives were developed. These broad-based goals and objectives led to the development of performance measures as part of the Endangered Species Act (ESA) – Section 7 consultation process.

The following represents the current advisory goal and objectives of the Riparian Restoration Proposal, as authored by the RRP Technical Advisory Group on June 20, 2005.

- The Goal of the RRP is to provide stormwater flow control management, and compensatory mitigation for stream channel impacts, through the creation, restoration, and enhancement of self-sustainable native riparian and in-stream habitat in the Hylebos and Surprise Lake Tributary sub-basin, and Wapato Creek sub-basin. The following objectives meet this goal:
 - Avoid and minimize construction related impacts
 - Allow connectivity of riparian habitat
 - Provide for fluvial processes including natural sediment transport, channel migration, debris passage, and LWD placement and recruitment
 - Prevent streambank erosion from damaging infrastructure

- Prevent increases in flood related property damage
- Allow ecological interaction with terrestrial habitat
- Enhance native plant diversity and control invasive plant species
- Restore natural hydrologic processes
- Minimize surface water contamination
- Enhance fish and wildlife habitat function
- Enhance macro-invertebrate diversity
- Encourage community-based stewardship of the RRP

When the ESA Biological Opinion is issued, the Technical Advisory Group will be invited to participate in the refinement of the goals and objectives to include more detail for items such as future design, maintenance, and monitoring.

1.4.3 Tribal Coordination

The ROD issued for the Tier I FEIS required specific commitments to coordinate with the Puyallup Tribe of Indians (Puyallup Tribe) during the development of the Tier II document (see Table 1-2). These commitments were made to ensure that the Tribe's concerns were considered and incorporated where plausible. They included conducting an archaeological survey (see Section 3.16). If any resources were discovered during this survey or during construction, appropriate action will be taken including notifying and coordinating with the Tribe.

FHWA and WSDOT made the commitment to work closely with the Puyallup Tribe regarding fisheries and any other issues that may concern them (Table 1-2). WSDOT may also mitigate noise impacts by providing noise abatement structures and by locating new businesses to minimize noise and visual impacts.

FHWA and WSDOT have kept in contact with the Puyallup Tribe through meetings, letters and phone conversations. FHWA and WSDOT have worked with the Tribe through their representatives. A summary of this coordination is described below:

Meetings: On September 24, 2001, WSDOT and Eastern Washington University met with the Puyallup Tribe Cultural Resource Director to discuss cultural resources and conduct a site visit of possible sensitive areas. Three other meetings were held on February 7, 22, and March 18, 2002, regarding sensitive cultural resource sites. The Puyallup Tribe is also represented at the Partners Committee Meetings held monthly.

After the distribution of the DEIS, the Puyallup Tribe agreed to meet quarterly with project staff to discuss the SR 167 Project. A variety of subjects have been discussed: tribal lands affected by the project, cultural resource studies, the sharing of fishery data, Hylebos Creek and Wapato Creek studies, sites of tribal significance, and project design and construction issues.

On October 20, 2005, WSDOT presented a SR 167 project overview to the Puyallup Tribal Council. WSDOT reviewed cultural issues including the Section 106 Memorandum of Agreement (MOA), Tribal Trust land impacts, and future Tribal Employment Rights Ordinance (TERO) opportunities.

Letters: WSDOT has sent several letters to the Puyallup Tribe regarding the project. The letters included invitations to the Tribe to participate in each of the design workshops and to be at the presentation for the findings from the VE study. WSDOT sent the summaries of each of the workshops to keep the Tribe apprised of the progress of the project. WSDOT also shared computer files with the Tribe that had the proposed centerline, footprint, and existing topography. The Tribe requested informational plots of the project that WSDOT sent for their use. The Tribe was sent a Notice of Discovery per the Tier I ROD requirements when artifacts were discovered within the project boundaries.

Review Opportunities: WSDOT provided the Puyallup Tribe review copies of several DRs, the conceptual mitigation plan, cultural resources, reports, and a Memorandum of Agreement on cultural resources. The Tribe participated in meetings to discuss revisions of the Water Resources; Wetlands; and Wildlife, Fisheries and Threatened and Endangered Species DRs for the Tier II FEIS.

Continued Coordination: Coordination with the Puyallup Tribe will not end with the conclusion of the Tier II FEIS. FHWA and WSDOT are committed to maintaining an open line of communication with the Tribe throughout the design and construction phases of this project.

FHWA and WSDOT also consulted with the Muckleshoot Indian Tribe and the Confederated Tribes and Bands of the Yakama Nation. Neither tribe provided comments on the SR 167 Extension project before the FEIS was published.

Table 1-4: Environmental Permits and Approvals That Will Be Obtained for the SR 167 Build Alternative

Permit or Approval	Responsible Agency	Conditions Requiring	Statutory Authority
NEPA	FHWA and WSDOT	Activities that require federal permits, approvals, or funding trigger NEPA procedural and documentation requirements.	42 USC 4321 23CFR 771 40 CFR 1500-1508
SEPA	Ecology	Any activity not categorically exempt triggers SEPA procedural and documentation requirements.	RCW 43.21C WAC 197-11 WAC 468-12
Section 106	DAHP/SHPO	Potential impacts to historic or archaeological properties trigger Section 106 procedural and documentation requirements.	16 USC 470 Sec.106 36 CFR 800 RCW 43.51.750
Critical Areas Ordinances	Pierce County, Fife, Puyallup, and Edgewood	Local approval or permits may be required for projects impacting areas defined as "critical" by counties and cities under the GMA, including wetlands, aquifer recharge areas, wellhead protection areas, frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas.	RCW 90.58 RCW 36.70A
Clearing, Grading and Building Permits.	Pierce County, Fife, Puyallup, and Edgewood	Clearing and grading of land for development with impacts outside WSDOT right-of-way (includes connecting streets, frontage roads, etc.). Construction of any building for human habitation.	RCW 36.21.080
Temporary Air Pollution	Ecology, PSCAA, and local fire protection agencies	Pollutants above allowed levels for temporary periods; includes building demolition and brush burning. Regulations may limit the type, size, or timing of brush burning.	RCW 70.94
Section 9 (Bridge) Permit	US Coast Guard	Bridges in navigable waters, including all tidally influenced streams used by boats over 21 feet in length.	33 USC Sec. 9 33 USC 11 33 CFR 114 & 115 FHWA Sec 123(b)
Section 10 Permit	COE	Obstruction, alteration, or improvement of any navigable water including bridges.	Rivers & Harbors Act, Section 10 33 CFR 403
Hydraulic Project Approval	WDFW	Projects that will use, divert, obstruct, or change the natural flow or bed of any state waters (e.g., culvert work, realignment, bridge replacement).	RCW 77.55.100 WAC 220-110
Section 401 Water Quality Certification	Ecology Puyallup Tribe	Activity requiring a federal permit/license for discharge into navigable waters.	CWA Sec 401 RCW 90.48.260 WAC 173-225
Section 402 NPDES Municipal Stormwater Discharge Permit	Ecology	Discharge of pollutants into state waters, including wetlands and groundwater, from stormwater generated by the operation of WSDOT facilities within the South Puget Sound Water Quality Management Area.	CWA Sec 402 WAC 173 226
Section 402 NPDES Construction Permit	Ecology	Discharge of pollutants into state waters, including wetlands and groundwater, from stormwater generated on construction sites five acres or more in size.	CWA Sec 402 WAC 173 226
Section 404 Individual Permit	COE and USEPA	Discharging, dredging, or placing fill material within waters of the US or adjacent wetlands.	CWA Sec 404 33 USC 1344 33 CFR 330.5 & 330.6
Temporary Water Quality Disturbance	Ecology	Activity resulting in temporary minor increase in turbidity.	WAC 173-201A-110(3)

Permit or Approval	Responsible Agency	Conditions Requiring	Statutory Authority
Coastal Zone Management Certificate	Ecology	Applicants for federal permits/licenses are required to certify that the activity will comply with the state's Coastal Zone Management program (Shoreline Management Act).	CZMA Sec 6217 16 USC 1451 et seq. 15 CFR 923-930 RCW 90.58
Shoreline Permits	Ecology Pierce County, Fife, and Puyallup	Development or construction valued at \$2,500 or more interfering with shorelines or water use; lakes and reservoirs over 20 acres, streams over 20 cfs, lands 200 ft inland from OHWM, marshes, swamps, bogs & deltas.	RCW 90.58 WAC 173-14 through 173-28
Floodplain Development Permit	Ecology Pierce County, Fife, Puyallup, and Edgewood	Any structure or activity that may adversely affect the flood regime of streams within the flood zone.	RCW 86.16 WAC 173-158
Endangered Species Act Consultation	USFWS/NOAA Fisheries	Projects affecting species and critical habitat of species listed under the ESA require consultation with the applicable federal agency.	16 USC 1531-1543
Magnuson-Stevens Act	NOAA Fisheries	Project affecting essential fisheries habitat are required to consult with NOAA Fisheries.	
Fish Habitat Enhancement Project Application	WDFW	Streamlined process for projects designed to enhance fish habitat. Application is in addition to JARPA.	
Noise Variance	Pierce County, Fife, and Puyallup	Construction and maintenance activities during nighttime hours may require a variance from local noise ordinances. Daytime noise from construction is usually exempt.	WAC 173-60
Hazardous Waste Tracking Form	Ecology	A WAD tracking number from Ecology is required for transport, storage, transport, or disposal of dangerous waste.	WAC 173-303
Archeological Resources Protection Permit	Tribes Federal landowners, e.g. BLM, COE, NPS	Excavation or removal of archeological resources from tribal or federal land.	43 CFR 7.6 – 7.11

Chapter 2

Alternatives/Options Including the Preferred Alternative

Tier II Final EIS

SR 167

Puyallup to SR 509

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2.1 Introduction

The Tier I NEPA process selected a preferred corridor for meeting the purpose and need of the project that was adopted by the Secretary of Transportation in September 1999. The process examined both build and non-build alternatives. Build alternatives involved building a new highway while non-build alternatives involved operating the existing highways differently. Numerous corridor routes were compared as build alternatives while transportation systems management and transportation demand management were evaluated as non-build options. Ultimately, a build alternative in corridor 2 prevailed as the alternative with the least environmental impact while still meeting the purpose and need statement.

The build alternative selected in the Tier I Record of Decision (ROD) consists of a four-lane freeway with two High Occupancy Vehicle (HOV) lanes between I-5 and SR 161. It includes freeway-to-freeway connections with SR 509, SR 167, and I-5; new local access interchanges in the vicinity of 54th Avenue East and Valley Avenue; and completion of the SR 161 interchange. One bridge over the Puyallup River will be replaced and portions of Hylebos Creek and Surprise Lake Drain will be relocated. Non-structural alternatives will be included within this corridor to the extent possible.

The Tier II environmental analysis focuses on a refined corridor and interchange designs for SR 167. The result of the Tier II detailed studies and analysis is the designed interchange options for each of the preferred interchange locations along with supporting facilities.

The Alternatives/Options Analysis documents the selection of the alternatives within the preferred corridor that were evaluated in the Tier II NEPA process. This analysis covers the steps taken, including:

- Process followed to form the alternatives;
- Design and environmental criteria used to make the selections;
- Alternatives considered but rejected for various reasons;
- Alternatives selected for evaluation in the EIS;
- Interchange options selected for the Build Alternative.

2.2 Process to Form the Alternatives and Options

The purpose of an Environmental Impact Statement (EIS) is to evaluate a reasonable range of alternatives.

The Federal Highway Administration (FHWA), Washington State Department of Transportation (WSDOT), project partners, and the public engaged in a multi-year effort to evaluate and select the design alternatives to be included in the Tier II EIS. Because the Tier I EIS evaluated multiple corridors, the alternatives to be evaluated in the Tier II EIS were only those within the preferred corridor. A corridor width of 200 feet was selected to avoid and minimize any potential on existing surrounding land uses, specifically Tribal Trust land and wetlands. Because the Tier I preferred corridor is only 200 feet wide, only one build alternative design is proposed within the corridor. Within the 200-foot-wide “Preferred Alternative Corridor,” optional interchanges were evaluated. The benefits and impacts of the various interchange configurations are described and a comparison of each interchange option is also provided in the following discussion.

The Tier II build alternative includes interchange options at three locations. An option is defined as one of a set of design configurations within the build alternative against which screening criteria are applied. Because these options are different designs to address the same issue, they are not considered separate alternatives.

Figure 2-1 illustrates the major features of the project that emerged from this process. For design development purposes, the SR 167 mainline was divided into four segments (Table 2-1).

Table 2-1: Mainline Segments and Limits

Segment Title	Limits (Approximate)
SR 509	SR 509 to 8th Street East
I-5	8th Street East to 20th Street East
Valley Avenue	20th Street East to Freeman Road
SR 161	Freeman Road to SR 161

2.2.1 Mainline

The initial mainline alignment was developed from information contained in the Tier I EIS. After ensuring that the centerline met current design standards, mainline configuration was developed through a design/review coordination process with the Olympic Region Design office and the Olympic Region Environmental and Hydraulic Services office.

Minor adjustments of the SR 167 alignment over I-5 and in the vicinity of 54th Avenue East were made to meet geometric design standards for a freeway of this nature. These adjustments moved the mainline away from Hylebos Creek, provided additional buffer to the creek, and minimized floodplain impacts.

2.2.2 Interchange Options

At three interchanges, multiple design layouts (referred to as options in the Tier II EIS) emerged from the design process. The SR 509, Valley Avenue, and SR 161 segments of the project all went through a similar development process. For each segment, two one-day design workshops were held (see Section 1.4.1). Workshop attendees included members of the Olympic Region Design, Environmental, and Traffic offices. Also in attendance were officials from Pierce County, Port of Tacoma, the Puyallup Tribe of Indians and the cities of Fife, Tacoma, Puyallup, and Edgewood.

The initial workshops were brainstorming sessions to develop preliminary interchange options. Attendees were asked to develop design options based on local traffic and transportation needs. They were asked to defer to further review by FHWA and WSDOT the consideration of design standards, cost, and environmental impacts.

Following the workshops, the Olympic Region Design office applied design standards to the options. Any option that could not be designed to current standards was dropped from consideration. The remaining options were then forwarded to the region Traffic and Environmental offices for further review. Based on input from these offices, refinements were made to each option. A second workshop was held to review the design options with all participants. If applicable, further refinements or options were generated.

A full Value Engineering (VE) workshop was held for the I-5 interchange because of its complexity (Section 1.4.1). Participants included members of WSDOT Headquarters, Design, Bridge, and Traffic offices, Northwest Region Environmental office, Olympic Region Construction office, City of Fife, and FHWA. Final results were presented to the Olympic Region Project Development office on October 13, 2000.

Design options at the 54th Avenue East, Valley Avenue, and SR 161 interchanges that met design standards were forwarded for evaluation in the Tier II EIS. Recommendations from the VE study were incorporated in the I-5 interchange and also forwarded for evaluation in the Tier II EIS. Each design option was evaluated at the preliminary design level.

2.3 Design Evaluation and Selection Criteria

All options that were initially under consideration were required to meet the project Purpose and Need and not have impact so great as to render them unreasonable. The options that passed this initial evaluation were determined to be in the “reasonable range of alternatives.” In the Tier II NEPA process, the reasonable range of alternatives are further narrowed to those within the corridor selected during Tier I that meet design and environmental criteria. Some criteria hold more weight than others and failure to meet these may be grounds for rejection of a design option. Design options that were considered but rejected are discussed in Section 2.4.

2.3.1 Technical Design Requirement

The technical design criteria contain both general and specific criteria. Tables 2-2 and 2-3 list the design criteria that were used in evaluating and selecting the alternatives. These tables also include the response of the evaluation process.

Table 2-2: General Design Criteria

General Criteria	Response
SR 167 will be based on WSDOT design standards for a Principal Arterial highway (P-1), with 70 mile per hour design speed and full access control.	WSDOT design STDs are applied: 70 mph design speed between I-5 and SR 161, 60 mph between SR 509 and I-5.
Reconstruction of local streets and roads will meet the design standards of the controlling jurisdiction.	Yes.
There will be at least three lanes in each direction, including future HOV lanes.	SR 167 extension will have at least 2 GP lanes in each direction. HOV lanes will be provided between I-5 and SR 161. Some roadway segments may have more or less lanes due to the need to avoid impacts to adjacent land uses or improve safety.
The I-5 interchange will include HOV-to-HOV ramps to allow all feasible Transportation Demand Management and Transportation System Management measures to be included.	The design includes direct HOV-HOV ramps.
Staged construction scenarios will be investigated. The criteria will be to provide usable and economically viable segments as early as possible, within funding limitations and with minimum congestion and safety impacts.	Preliminary staging is considered for funding concerns. Detailed staging will be developed during final design.
Planning for staging, detours, and temporary traffic control will be designed to maximize safety and the free flow of traffic during construction.	This is consistent with final design.
Areas subject to settlement under new embankment will be preloaded (preloading is the process of placing overburden above areas subject to subsidence to stabilize the soils as a precursor to construction).	Areas subject to preloading will be identified in the Geotechnical report.
Embankments and structures will be designed, to the extent practicable, to pass maximum flood flows without substantial change to that experienced today. If necessary, additional flood storage will be provided.	This will be addressed in final design. The Hylebos Creek and Surprise Lake Drain relocation will also provide additional flood storage.
A pedestrian overpass will be considered at the Puyallup Recreational Center. Further coordination with the City of Puyallup will be required.	A new separate Pedestrian overpass will be provided if it is determined that the need exists, and facilities to be provided by others, including developers and the City of Puyallup, do not fulfill the need at this location.
The design year for traffic studies is 2030.	Yes.

Each of the interchanges, mainline segments, and bridges has site-specific design criteria. Table 2-3 lists these detailed requirements.

Table 2-3: Specific Design Criteria

Specific Design Criteria	Response
SR 509 Interchange	
The interchange will be between Alexander Road and Taylor Way.	The SR 509 connection will be between Alexander Rd and Taylor Way with ramp connections near Port of Tacoma Rd.
A directional interchange, at least to and from the south, will be designed.	Preliminary design completed.
The possibility of including ramps to and from the north will be considered; otherwise these movements will take place at the Taylor Way intersection.	Ramps are not included in design. The partial interchange at 54th Avenue East will have connections to and from the north.
It is assumed that the existing SR 509 roadways south of the SR 509/SR 167 interchange will become frontage roads, with SR 509 between them. It is also assumed the existing roadways can be moved outward if necessary to complement an optimum interchange design.	SR 167 will connect directly to the SR 509 mainline. The South Frontage Rd will stay in its original location. The North Frontage Rd will be relocated next to the South Frontage Rd.
54th Avenue East Interchange	
Both overcrossings and an undercrossing will be considered.	Both are currently being evaluated in the project design. The mode of crossing that best meets the need of the project will be proposed for construction.
A full interchange will not be considered; ramps to and from the west are precluded by the proximity of the SR 509 interchange. These movements will be accommodated at the Taylor Way intersection with SR 509.	Movement will be accommodated at the SR 509/SR 167 connection near Port of Tacoma Road.
Traffic signals and lighting will be considered at the ramp terminals.	These are considered as part of the preliminary design.
Mainline Segment from 54th Avenue East to SR 99	
Alignment shifts will be investigated that will minimize negative impacts to Hylebos Creek.	Mainline has been relocated away from Hylebos Creek due to bringing alignment up to design standards.
Alignment shifts will be investigated that will minimize negative impacts to adjacent homes (this criteria may not be compatible with the above).	The only alignment changes made were those necessary to accommodate design standards.
A frontage road will be considered between 8th Street East and 54th Avenue East.	The proposed Riparian Restoration Proposal removes 8th Street East and 62nd Avenue East.
12th Street East Bridge	
Both overcrossings and an undercrossing will be considered.	Both were evaluated in the project design. It was determined the crossing that best met the need of the project was that the mainline will cross over 12th Street East.
As in the case with all undercrossings, raising the grade of the local road over the freeway causes access problems to and from adjacent homes and farms. Owners must be contacted in order to work out optimum access for their particular situation.	The ongoing design process is considering the effect of raising the grade on all adjacent land uses, including homes and farms. Public and property owner input has been included in the project design.
I-5 Interchange, including SR 99 and 70th Avenue East	
The initial design will include provision for HOV-to-HOV and all movements, then investigate methods of improving design and minimizing environmental impacts. A VE study will determine if the optimum design has been selected.	A direct HOV connection will be provided south of I-5 between I-5 and SR 167. The VE study was completed and recommendations were incorporated into the design.

Specific Design Criteria	Response
Alignment of I-5 will remain the same except for median widening to accommodate HOV lanes and ramps, and the addition of collectors to effectively and safely distribute traffic.	The VE study recommended realigning I-5 southbound to the north to accommodate the SR 167 interchange and direct-connect HOV ramps.
Alignment of SR 167 and ramps will be adjusted, within the limits of prudent design and safety, to minimize detrimental impacts to habitat and adjacent homes and businesses.	The footprint of SR 167 has been minimized to minimize impacts.
Design of the I-5 interchange is likely to affect the existing interchange at 54th Avenue East, especially the above-mentioned collectors. However, the pending HOV construction as a separate WSDOT project will also affect that interchange. Design of the SR 167 project will be closely coordinated with the I-5 HOV project.	Coordination between the SR 167 extension and I-5 HOV continues.
Bridge lengths will be studied in an effort to minimize obstruction to floodwaters, improve stream and streamside habitat, and improve visual quality. Some bridges as visualized in Tier I may be combined to eliminate connecting embankments.	Impacts of fills and bridges are being studied as part of the Tier II EIS.
The above measures should eliminate increased flood levels. If not, this area will need additional flood storage.	The Hylebos Creek relocation and riparian restoration area will provide additional flood storage.
The possibility of improving overall design by rebuilding the existing 70th Avenue East crossing in a different location will be investigated.	The 70th Avenue East crossing will be relocated over I-5 to accommodate the I-5/SR 167 interchange.
Attempts will be made to upgrade existing alignments, cross sections, streambeds, and vegetation of Hylebos Creek and Surprise Lake Drain to improve habitat.	More natural alignments and riparian restoration are being proposed for Hylebos Creek, Surprise Lake Drain, and Wapato Creek.
20th Street East Bridge	
Both overcrossings and an undercrossing will be considered.	Both were evaluated in the project design. It was determined the crossing that best met the need of the project was that 20th Street East will be realigned to accommodate the I-5/SR 167 interchange.
As in the case with 12th Street East, optimum access to adjacent properties will be designed if an undercrossing is selected.	The ongoing design process is considering the effect of raising the grade to accommodate undercrossings on all adjacent land uses, including homes and farms. Access to properties not purchased during the right of way phase will be maintained.
Mainline Segment from I-5 Interchange to Valley Avenue East Interchange	
Alignments will be investigated that minimize impacts to farms and homes. Loss of farmland is a concern. As a result of recent zoning changes, farmland will gradually yield to other uses. If feasible, farms impacted by the project will be "made whole" by land trades, payment for additional equipment or sheds, or similar measures.	This is included in preliminary design and the Tier II FEIS.
A specific concern exists regarding the Tribal parcel just west of the alignment. It will be either avoided, or impacts will be mitigated to the satisfaction of the Tribe.	This parcel is not affected by the alignment and interchange options.
Valley Avenue East Interchange	
Only overcrossings will be investigated here because of the nearby railroad.	SR 167 will go over the railroad. Valley Avenue already crosses over the railroad.

Specific Design Criteria	Response
Union Pacific Railroad (UPRR) Bridges	
These will be overcrossings.	SR 167 will go over the UPRR.
Standard clearance over railroad dictates some of the highest embankments on the project. Consolidation of underlying soils and settlement of the embankments may be a problem. Geotechnical exploration will recommend how this can be done quickly and with negligible impact to adjacent structures such as the railroad. Preloading or an innovative concept such as stone columns may be needed.	A complete geotechnical investigation will be part of the final design of SR 167.
Mainline Segment from UPRR to SR 161	
With the exception of the approach embankments to the UPRR structures and to the SR 161 interchange, this portion of the mainline will be about six feet above the surrounding land.	Profiles of the embankments between the UPRR crossing and SR 161 will range from 4 to 8 feet above the existing valley floor.
There will be no physical impact to the Puyallup Recreation Center lands or to any area presently considered for expansion.	There will be no direct impact on Puyallup Recreation Center lands.
A pedestrian undercrossing will be considered at the Recreation Center, if local commitment can be obtained to provide pedestrian and bicycle access from the south end.	An undercrossing could be accommodated under the SR 161 interchange Urban Option. An overcrossing has been evaluated. Also, a developer is considering an overcrossing near the Recreation Center that could accommodate pedestrians and bicycles.
Attempts will be made to upgrade existing alignments, cross sections, streambeds, and vegetation of Wapato Creek to improve habitat. A large pipe-arch is assumed under SR 167, but bridges will be investigated.	SR 167 will be on structure over Wapato Creek near the Valley Ave interchange. Wapato Creek will be enhanced in the proposed Riparian Restoration Proposal.
A specific commitment has been made for noise abatement to protect Tribal property at 48th Street East.	Noise walls are evaluated as part of the Tier II FEIS and WSDOT is committed to providing noise abatement for Tribal properties if it is warranted from the results of the evaluations.
Freeman Road (82nd Avenue East) Bridge	
Both overcrossings and an undercrossing will be considered.	Both were considered.
As in the case with the 12th Street East, optimum access to adjacent properties will be designed if an undercrossing is selected.	SR 167 will go over, and Freeman Rd access will be maintained.
SR 161 Interchange	
Overcrossings will be used here because of the gradeline of existing SR 167 to the east.	The gradeline was evaluated and it was determined that an overcrossing was the best mode at this location.
It will be necessary to re-channelize the SR 161/Valley Avenue East intersection to better handle reduced future traffic.	Channelization will be modified to accommodate revisions to the SR 167/SR 161 interchange. Traffic is not reduced in 2030 vs. 2020.
The proximity of the Puyallup River Bridge and intersection with North Levee Road will pose a difficult design problem for the eastbound ramp terminals. A single point urban interchange may resolve this problem.	Three design options are under consideration, including an urban interchange. The Urban Interchange is the preferred option at SR 161.
The Carson chestnut tree, within this interchange, will be saved if possible within the limits of safe design.	All design options have been evaluated and have been designed to avoid impacts to the tree.

2.3.2 Environmental Protection Requirement

The environmental criteria to evaluate interchange options consist of mitigation measures that apply to the project from the Tier I EIS, the Tier I ROD, and the Tier II process. The Tier I FEIS and ROD mitigation measures and the actions to be taken to implement them are listed in Table 1-2 – Tier I Commitments and Mitigations. The environmental screening criteria specifically applied to select the “Preferred Interchange options” in the Tier II process are described below and listed in Table 2-4. All interchange options that were evaluated in the Tier II process also met the overall project Purpose and Need as described in Chapter 1. Meeting the project Purpose and Need was the first screening criteria selected by the SAC committee. All evaluated interchange options received equal weighting for meeting the Purpose and Need (see tables 2-7, 2-8 & 2-9).

Environmental Screening Criteria

The Tier II NEPA process assesses the impacts of the different interchange design options. To assist in the evaluation, FHWA and WSDOT developed a set of environmental screening criteria, the results of which produced a score for each option. The scores of each option at a particular interchange were compared.

Table 2-4 lists the criteria and the methods for measuring them. Section 2.6 describes how the screening criteria and other factors were used to select the preferred option. The environmental impacts of each option were thoroughly and independently evaluated as required by NEPA and SEPA.

Seven of the screening criteria are weighted. The weighting is accomplished by considering each of these seven criteria more than once. For example, Prime and Unique Farmland is included in both the “Farmland” and “Prime and Unique Farmland” criteria. The seven weighted criteria are:

- Wetland Impact to Category I and II Wetlands
- Threatened and Endangered Species
- Aquatic Priority Habitat and Life
- Prime and Unique Farmland
- Cultural Resource Properties of More Than Local Significance
- Environmental Justice Population
- High Clean-up Cost Hazardous Waste Sites

Measurement for some of the criteria incorporates relative importance factors. More importance was placed on impact for certain classifications within a criterion. For example, more importance was placed on a threatened or endangered species that is affected than on one that is not affected by the project. Some criteria do not require relative importance factors since all classifications

with the criteria have the same relative importance. For example, all displacements (business, residential, etc.) are considered to have the same impact for screening purposes.

The environmental screening criteria are evaluated under the applicable sections in Chapter 3.

Table 2-4: Environmental Screening Criteria

Criteria Description	Criteria Measurement
Meets Purpose and Need (Freight Mobility and Accident Reduction)	Options meeting <i>all</i> elements of the Purpose and Need will receive a “higher” score than those meeting <i>most</i> elements.
Wetland Impact Category I and II	Acres of impact based on the following relative importance (multiplying) factor: <ul style="list-style-type: none"> • Category I = 2.0 • Category II = 1.0
Wetland Impact All Categories	Acres of impact based on the following relative importance (multiplying) factor: <ul style="list-style-type: none"> • Category I = 5.0 • Category III = 1.5 • Category II = 2.5 • Category IV = 1.0
Wetland Buffer Impact All Categories	Acres of impact based on the following relative importance (multiplying) factor: <ul style="list-style-type: none"> • Category I = 6.0 • Category III = 2.0 • Category II = 4.0 • Category IV = 1.0
Threatened and Endangered Species	Number of federally listed species based on the following relative importance (multiplying factor) <ul style="list-style-type: none"> • may adversely effect = 10.0 • may effect, not likely to adversely effect = 3.0 • no effect = 1.0
Aquatic Priority Habitat and Life	Acres of impact based on the following relative importance(multiplying) factor: <ul style="list-style-type: none"> • impact to stream/creek plus buffer with more than 5 priority species = 5.0 • impact to stream/creek plus buffer with 3 to 5 priority species = 3.0 • impact to stream/creek plus buffer with less than 3 priority species = 2.0
Wildlife Habitat	Acres of impact based on the following relative importance (multiplying) factor: <ul style="list-style-type: none"> • unmitigated loss = 2.0 • mitigated loss = 1.0
Prime and Unique Farmland	Acres of impact
Farmland	Acres of impact
Floodplain	Acres of impact based on the following relative importance (multiplying) factor: <ul style="list-style-type: none"> • flood way impact = 5.0 • flood fringe impact = 1.0
Noise (Design Year)	No. of homes/ businesses impacted (impact defined by FHWA Noise Abatement Criteria (NAC), i.e. decibel levels vary)
Air Quality (Design Year)	Pollutant level better or worse than existing conditions (pollutant level as per standards of National Ambient Air Quality Standards (NAAQS) for all prescribed elements)
Cultural Resource Properties of More Than Local Significance	No. of properties based on the following relative importance (multiplying) factor: <ul style="list-style-type: none"> • adverse effect on properties eligible for NRHP = 5.0 • no adverse effect to properties eligible for NRHP = 2.0 • no effect to properties eligible for NRHP = 1.0
Cultural Resources	No. of properties based on the following relative importance (multiplying) factor: <ul style="list-style-type: none"> • effect to properties = 5.0 • no effect to properties = 1.0
Environmental Justice Population	Number of displacements
Displacement	Number of displacements
Tribal Trust Land	Number of parcels impacted
Visual Quality	General views in vicinity (segment) will be enhanced/ maintained vs. degraded or blocked

Criteria Description	Criteria Measurement
Water Treatment (Ability to Treat Stormwater for Quality and Quantity)	Ability to treat stormwater, with infiltration as “best” vs. treating less than required as “worst”
High Clean-Up Cost Hazardous Waste Sites	Cost (clean-up cost above \$500,000)
Hazardous Waste	Cost
Pedestrian and Bicycle Access	Route Continuity and Local Street access

2.4 Description of Interchange Options Considered But Rejected

The interchange options that were considered but rejected during the Tier II design development process are briefly described below; a reason why they were dropped from further consideration is also provided.

2.4.1 SR 509/SR 167 Interchange Options

No design options were developed for this highway-to-highway connection. SR 167 would directly connect to and terminate at SR 509; therefore, the location of the connection and the design features are dictated by the location of the existing SR 509, the North and South Frontage Roads, and the SR 167 alignment as approved in the Tier I FEIS. Spacing between existing roadways and limited area for new highway right-of-way also allowed for no opportunity to locate an adequate highway-to-highway connection in this area.

2.4.2 54th Avenue East Full Interchange Option

A full interchange option was rejected at this location because the Preferred partial interchange option for SR 167 and 54th Avenue provides a southbound off-ramp to the Port of Tacoma and a northbound on-ramp going away from the Port of Tacoma. No southbound on-ramp nor northbound off-ramp are necessary because the existing local street and state highway system would provide shorter and easier traffic connections southbound via mainline SR 509 to I-5 at Port of Tacoma Road and downtown Tacoma. Also, northbound connections coming into the Port of Tacoma area are better handled via SR 509 or exiting I-5 at the Port of Tacoma Road to the local street system. Because future traffic movements would be adequately accommodated by the existing local network, there would be a lack of traffic demand for southbound on- and northbound off-connections at a full interchange at 54th Avenue East. Implementing it as a part of the SR 167 project would not be a prudent use of funding and other transportation resources.

2.4.3 I-5 Interchange Options

Due to the complexity of the SR 167/I-5 interchange ramp design and limited space to place a freeway-to-freeway connection amongst local streets and the existing I-5/54th Avenue East interchange, only one design option could be developed to reasonably meet the needs of the project at this location (see “I-5

Interchange Option” description on page 2-17 and Figure 2-5). A Value Engineering (VE) study was conducted to assist in identifying the best design and location for the SR 167/I-5 interchange. Several constraints to locating a large freeway-to-freeway connection in the area were identified during the VE study as follows: (1) minimizing impacts to the 241-unit Mountain View Apartment Complex, (2) avoiding the B&L Woodwaste Site (super fund hazardous waste site), (3) the interchange could be no more than three levels due to poor soil conditions and seismic risk factors, (4) avoiding the Fife Heights neighborhood, and (5) maintaining one-mile spacing between adjacent interchanges. After analyzing 67 different ramp configurations, the VE Team recommended one design option that met the Purpose and Need for the project, met design standards, and minimized conflicts with the constraints listed above. Other I-5 interchange options that were evaluated could not meet all of these conditions. Additional information concerning the I-5 Interchange option can be found on page 5-35 in Section 5.7.3.

2.4.4 No Valley Avenue Interchange Option

In July 2001, during Concurrence Point 2 (see section 1.4.2), the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS), and the Washington Department of Fish and Wildlife (WDFW) objected to the range of interchange options being studied and requested that an alternative that did not include an interchange at Valley Avenue also be evaluated. An evaluation by FHWA and WSDOT determined that excluding the Valley Avenue interchange did not meet the purpose and need of the project because it failed to improve regional mobility and failed to reduce congestion and improve safety on local roads. WSDOT assured EPA, USFWS, and WDFW that impacts to Wapato Creek would be avoided and minimized to the extent practicable; subsequently the agencies withdrew their comments in April 2002.

Local traffic accessing the freeway system would be forced to use either the SR167/SR 161 interchange or the existing I-5/54th Avenue East interchange. Traffic analysis for design year 2030 showed that intersections total delay (in hours/day) would be five times more without the Valley Avenue Interchange, while the system wide total delay (in hours/day) would be three times more (see Table 2-5). Further analysis showed an increase in delay from 6 seconds/vehicle (sec/veh) with Valley Avenue I/C to 127 sec/veh without the Valley Avenue I/C, impacting 17,167 vehicles per day at the intersection of 54th Avenue East and Valley Avenue.

The preliminary study on several intersections showed that they will fail operationally in the design year 2030 without the Valley Avenue interchange. The interchange is an important component of the project because of the expected growth in truck traffic as well. The area around the interchange continues to develop as a manufacturing, warehousing, and distribution center. Valley Avenue interchange will provide freight traffic an access to and from the Puyallup valley floor, thus reducing congestion on local streets.

Considering an alternative without Valley Avenue is not reasonable, as the existing roadway system will not be able to efficiently handle the projected

volumes of traffic after SR 167 is in operation. Without the proposed Valley Avenue Interchange the purpose and need of the project will not be met.

Table 2-5: Puyallup Valley Delay Times

	Intersections Total Delay (hrs/day)	Roadway Segments Total Delay (hrs/day)	System wide Total Delay (hrs/day)
2030 pm Build Valley I/C	303	1146	1449
2030 pm w/o Valley I/C	1548	3023	4571

2.4.5 Overcrossing at Puyallup Recreation Center

Early in the development of the Tier II EIS, FHWA and WSDOT considered the feasibility of a new non-roadway overcrossing (autos and non-farm vehicles not allowed) at the Puyallup Recreation Center for pedestrians, bicycles, and farm equipment as identified in the Tier I FEIS and ROD. Demand for this type of overcrossing was analyzed and determined to be low. One of the reasons that demand was low was that other future access overcrossings in the immediate vicinity are presently being proposed. The City of Puyallup is working with a local developer-for a connection over the proposed SR 167 between Valley Avenue and North Levee Road, just west of the Recreation Center. Pedestrians, bicyclists, and farmers could use this facility to cross over SR 167. In addition, the preferred Urban Interchange Option at the SR 161/SR 167 interchange includes an overcrossing that the Recreation Center users could use. If these crossings are not built at the time of construction or do not provide adequate service, then FHWA and WSDOT will reconsider the feasibility of constructing the non-roadway overcrossing.

2.5 Detailed Description of Alternatives

2.5.1 No Build Alternative

Under the No Build Alternative, the SR 167 freeway will terminate at North Meridian (SR 161), and the non-freeway SR 167 will continue to I-5 via North Meridian and River Road where it will terminate at the Portland Avenue/Bay Street interchange in Tacoma. The corridor would remain in the present state except for minor improvements and maintenance. Hylebos Creek and Surprise Lake Drain will not be relocated. Riparian restoration will not occur on Hylebos Creek, Surprise Lake Drain, or Wapato Creek. Pierce County and the cities of Fife, Tacoma, Puyallup, Milton, and Edgewood will continue with their programmed and planned improvements to the local transportation system. Section 3.14, Transportation, identifies some of the roadway projects that are planned. The types of projects include widening roads, signaling intersections, adding bicycle and pedestrian facilities, developing park and ride facilities, and improving capacity.

WSDOT will also continue making improvements to its facilities in the study area under the No Build Alternative. These facilities include SR 509, SR 705, SR 99, SR 161, SR 512, the existing SR 167, and I-5. The types of improvements include adding HOV lanes, adding collector/distributor lanes, improving on and off ramps, adding transportation demand management systems, and upgrading drainage systems.

2.5.2 Build Alternative

The Build Alternative mainline alignment generally consists of a four-lane freeway (four general purpose lanes, two lanes in each direction) with one HOV lane in each direction between I-5 and SR 161. However, there are some variations. The number of lanes and lane configurations throughout the 6-mile length of the project are not all consistent. The number of general purpose lanes varies in different segments of the project due to the need to avoid and minimize project impacts on surrounding land uses. Also, in the early phases for construction of the project, the number of lanes in any one particular roadway segment could be less to accommodate staged or phased development (i.e. the HOV lanes won't be added until the latter phases of the project). However, the ultimate condition or number of lanes is reflected in the descriptions contained herein for all project segments. This ultimate condition was used in the environmental analyses to determine the overall impacts of constructing SR 167.

Figure 2-1 illustrates the major components of the project. The Build Alternative includes freeway-to-freeway connections with SR 509, SR 167, and I-5. Also, it includes new local access interchanges at 54th Avenue East (partial interchange) and Valley Avenue and completion of the SR 161 interchange. As part of the SR 161 interchange, the existing eastern (northbound) bridge over the Puyallup River will be replaced and the existing western bridge will be widened. The Build Alternative also results in the relocation of a part of Hylebos Creek and Surprise Lake Drain. The relocated channel designs will reduce flooding and improve fish and wildlife habitat. A riparian restoration area is proposed for existing Hylebos Creek between SR 99 and 8th Street East, for the relocated Hylebos Creek and Surprise Lake Drain east of I-5, and at Wapato Creek near Freeman Road and Valley Avenue. A complete set of project plan figures are provided in Appendix A.

The Build Alternative also includes approximately one mile of separated multiuse path between SR 99 and 54th Avenue East. Freeway truck weigh station facilities are included for each direction of travel in the vicinity of the Puyallup Recreation Center (south of Valley Avenue East). Property acquisition for the park and ride facilities located at North Meridian and at the Valley Avenue interchange are included as part of the Build Alternative. Alternative design options have been developed for evaluation at three of the interchanges. There is only one design option proposed at the SR 509 and I-5 freeway-to-freeway connections. A detailed description of the proposed mainline and each interchange design option follows below.

A conceptual stormwater treatment plan has been developed for the project. Treatment types and discharge basins are identified on figures provided with the description of mainline and options that follow.

Mainline Description

The initial mainline configuration was developed from information contained in the Tier I FEIS with slight modifications to meet roadway design standards and minimize impacts to Hylebos Creek and existing floodplains. For SR 167, traveling towards Puyallup from I-5 is considered traveling northbound on the state route even though the driver is actually traveling south in some locations.

The proposed SR 167 begins as a four-lane limited access highway where it connects to the existing SR 509 at the Port of Tacoma Road/SR 509 Interchange (Figure 2-2). The location of the connection and design features are dictated by the location of SR 509 and the SR 167 alignment as approved in the Tier I EIS. The two-lane southbound SR 167 will directly connect to the southbound lane of SR 509. The two-lane northbound SR 509 will directly connect to the two-lane northbound SR 167. There will be single-lane ramps from southbound SR 167 to SR 509 North Frontage Road and from SR 509 South Frontage Road to northbound SR 167.

As part of the SR 509 connection, one new bridge over Alexander Avenue will be built. This bridge would span Wapato Creek and the South Frontage Road. The existing railroad crossing of SR 509 will be relocated. A new railroad bridge over Wapato Creek will be constructed south of the South Frontage Road. A new structure (potentially a bridge or three-sided culvert) may replace the existing 110-foot long by 8-foot diameter open bottom arched culvert over Wapato Creek on North Frontage Road. The need for a new bridge on North Frontage Road has not been determined. This structure will only be constructed if needed to support the new railroad crossing. At this time it is not anticipated that this structure will be replaced because it is not impacted.

The four-lane mainline alignment continues easterly on embankment until it crosses 54th Avenue East in the vicinity of 8th Street East. An interchange providing access to and from the east is proposed at 54th Avenue East. Two interchange options were developed and are discussed below. The mainline continues on an embankment (Figure 2-3) from 54th Avenue East until just past 8th Street East where the mainline separates and northbound lanes ascend on an elevated structure while southbound lanes remain on embankment until after crossing 12th Street East. Local access is maintained as mainline SR 167 crosses 12th Street East on structure.

Both northbound and southbound lanes cross SR 99 on separate elevated structures continuing on to the freeway-to-freeway connection with I-5. A cross-sectional view of the structures is shown in Figure 2-4.

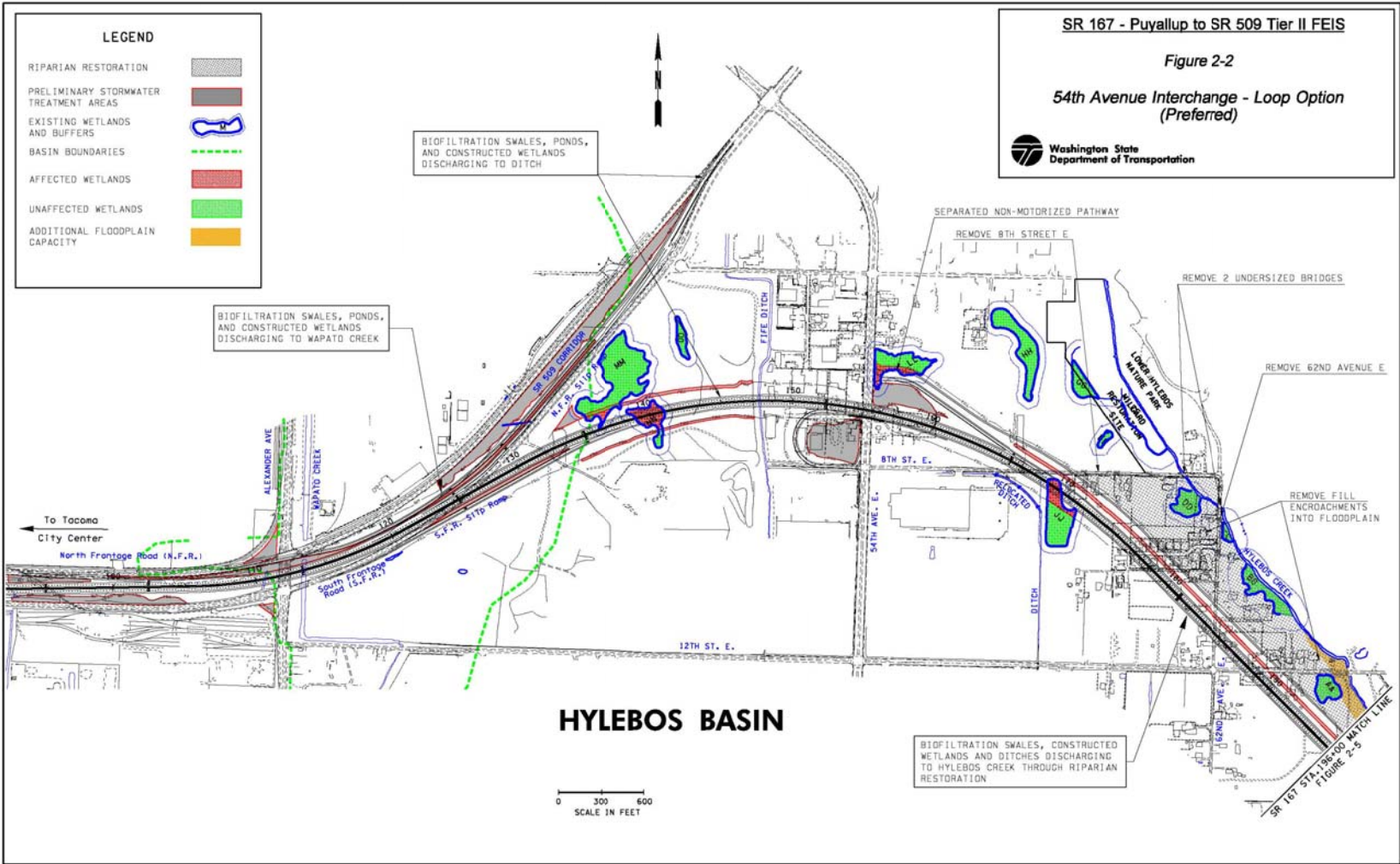


Figure 2-3: SR 167 on Fill between 54th Avenue East and 12th Street East

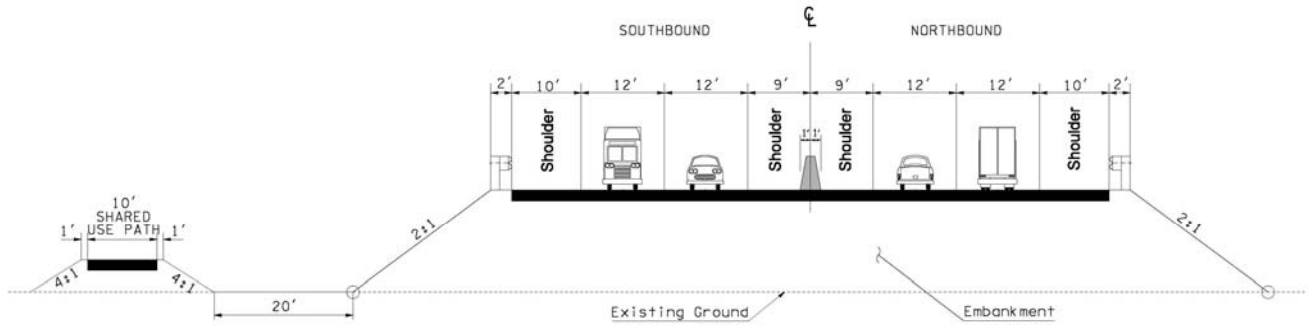
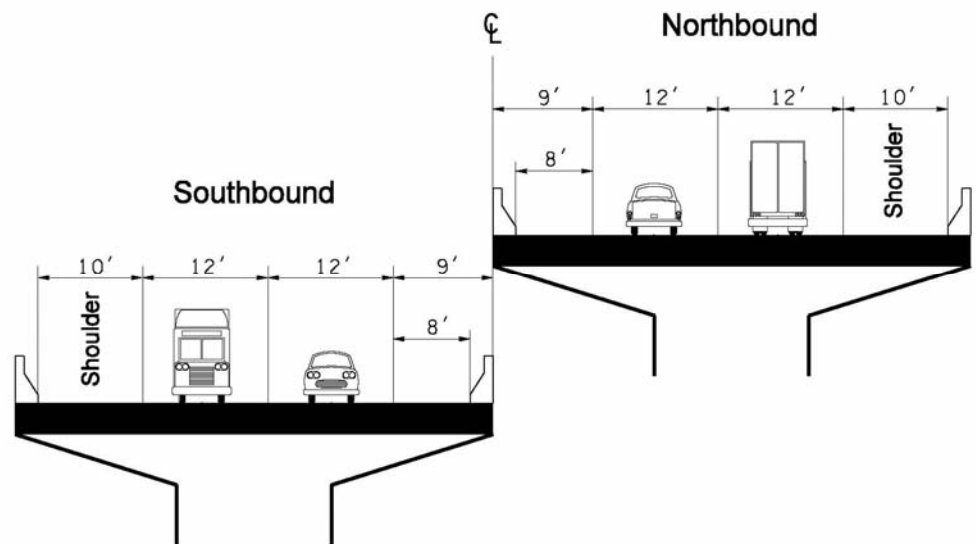


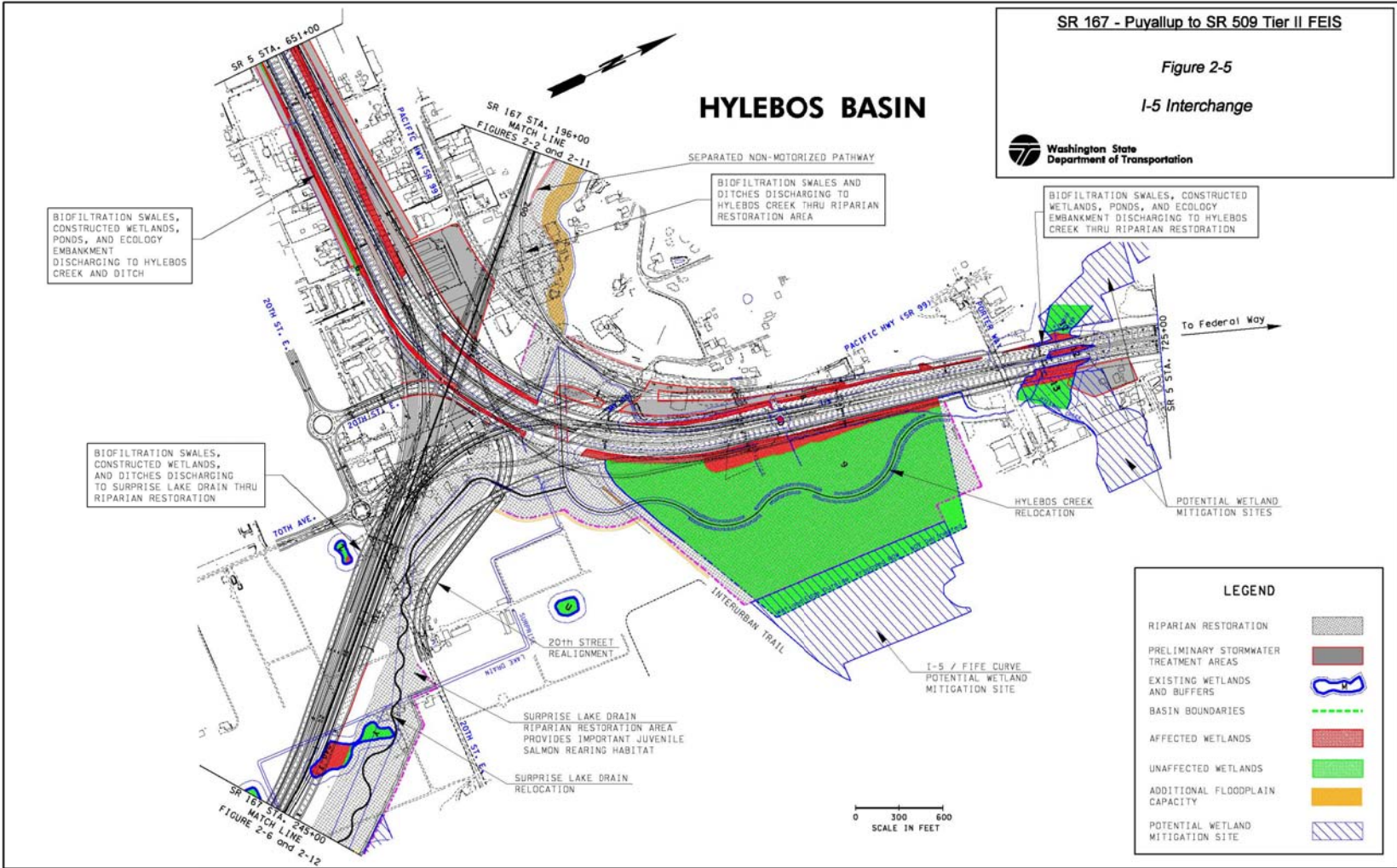
Figure 2-4: SR 167 on Structure between 12th Street East and I-5 Interchange



Bridges over 54th Avenue East and 12th Street East will be constructed. An existing culvert at the 12th Street East crossing of Hylebos Creek will be replaced with a structure. Riparian restoration along Hylebos Creek will also occur. It will include the removal of residential and commercial buildings near 8th Street East and 62nd Avenue East, the removal of 8th Street East and 62nd Avenue East, east of the new alignment, and the relocation of a drainage ditch.

I-5 Interchange Option

Due to complexity of I-5 interchange and limited solutions for these freeway-to-freeway connections, only one design option could be developed to meet the needs at this location (Figure 2-5). The interchange will consist of three elevated levels of roadway structures extending up to 80 feet above ground. The SR 167 mainline will be elevated on structure over 12th Street East, Pacific Highway (SR 99), Interstate 5, 20th Street East and 70th Avenue East. This interchange will provide all freeway connections except the connection from northbound SR 167 to southbound I-5 and the connection from northbound I-5 to southbound SR 167, which are being accommodated by existing interchanges and the local network.



The HOV direct access ramps will be provided for four movements:

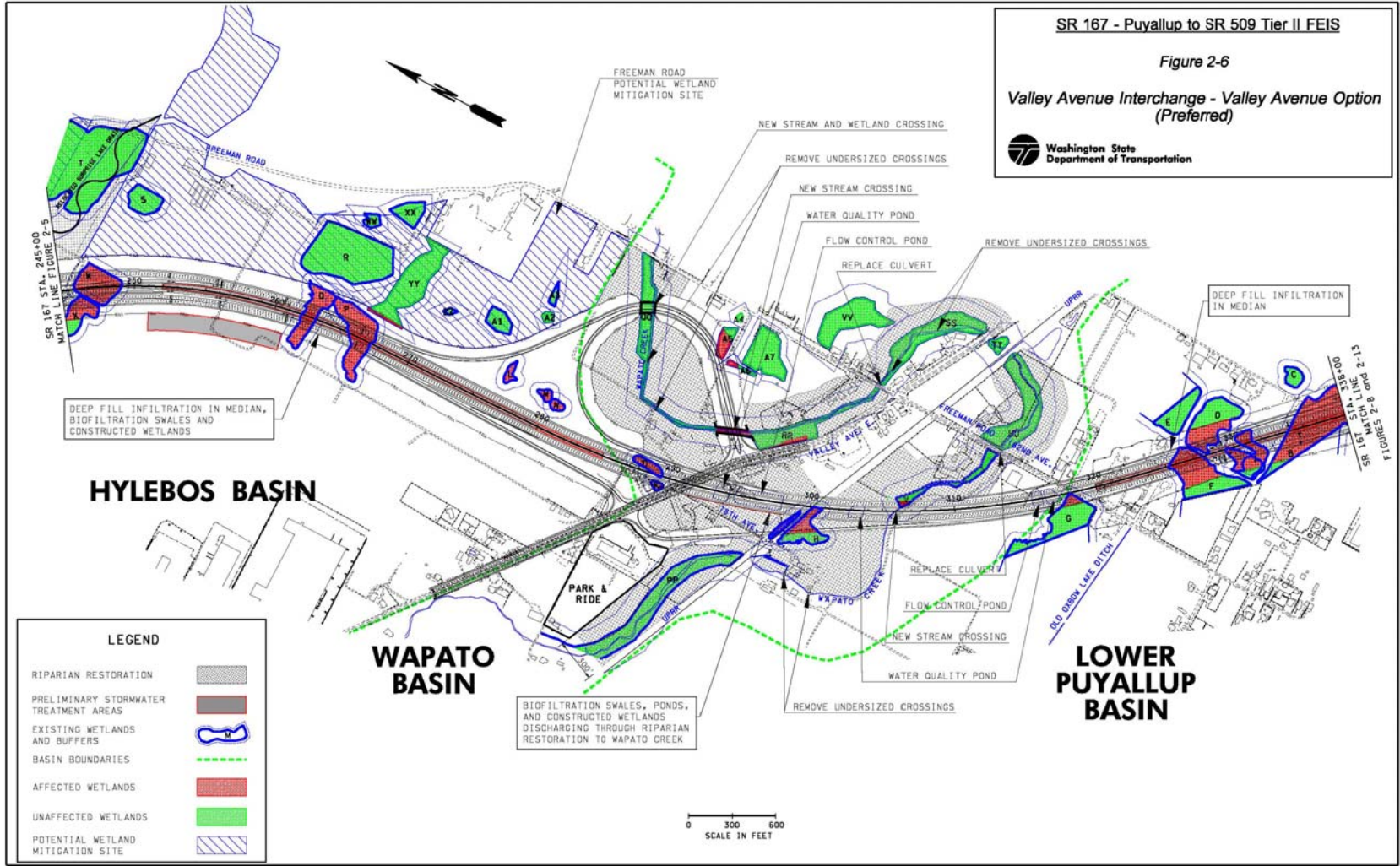
- Southbound I-5 to northbound SR 167
- Northbound I-5 to northbound SR 167
- Southbound SR 167 to northbound I-5
- Southbound SR 167 to southbound I-5

To minimize costs and other impacts, only one lane in each direction on SR 167 is proposed for the bridge across I-5. A WSDOT traffic study conducted for peak traffic volumes in design year 2030 justifies one lane in each direction on SR 167 across I-5 as it will continue to operate below its projected capacity. SR 167 between I-5 and SR 509 interchange is a spur route and will experience far less traffic volumes than the rest of the freeway. I-5 will be shifted to the west between the 54th Avenue East interchange and the Porter Way Bridge overcrossing. A collector-distributor (C-D) road will be provided for the northbound I-5 off ramp to northbound SR 167. North of the interchange, the I-5 mainline will be widened to accommodate the on and off ramps to SR 167.

Hylebos Creek will be relocated as part of the I-5 interchange improvements (Figure 2-5). The creek will be relocated to the field east of I-5 from its current location adjacent to I-5. Relocation will begin where the creek enters the current I-5 right-of-way (ROW) upstream from the proposed interchange and will extend downstream to where it passes underneath SR 99, approximately 4,010 linear feet of channel. The baseline habitat conditions will be improved by constructing meandering channels, resulting in increased channel capacities and lengths. The new stream banks will be revegetated with native saplings to provide further shading and bank stabilization.

A riparian restoration proposal has been developed as part of the project's conceptual stormwater treatment plan that will provide a riparian buffer area around the existing and relocated Hylebos Creek. The existing Hylebos Creek between SR 99 and 8th Street East will be restored with a riparian buffer under the riparian restoration proposal (Figures 2-2 and 2-5). East of I-5, the riparian restoration proposal will restore the area east, adjacent to relocated Hylebos Creek, from Porter Way to I-5 interchange with native riparian vegetation (Figure 2-5). The plan proposes to use bioswales and natural vegetation for enhanced stormwater treatment and also restores wildlife and fish habitat. It will also provide a separated non-motorized path from 54th Avenue East to SR 99 (Figure 2-3).

Surprise Lake Drain will also be relocated as part of the I-5 interchange improvements. South of I-5, Surprise Lake Drain will be relocated and restored to a more natural alignment (Figures 2-5 and 2-6). The channel will move to agricultural fields east of the new SR 167 mainline. The new Hylebos Creek and Surprise Lake Drain stream banks will revegetated and the channels will have meanders, resulting in increased capacity and length.



The I-5 interchange improvements will include the replacement of Porter Way Bridge over I-5, construction of two new bridges over the relocated Hylebos Creek, widening two bridges over West Hylebos Creek, and installation of a bridge or box culvert over Surprise Lake Drain at the 20th Street East crossing. Two temporary crossings over Hylebos Creek will likely be installed for use during the construction activities. A temporary work trestle will be needed for the bridge replacements.

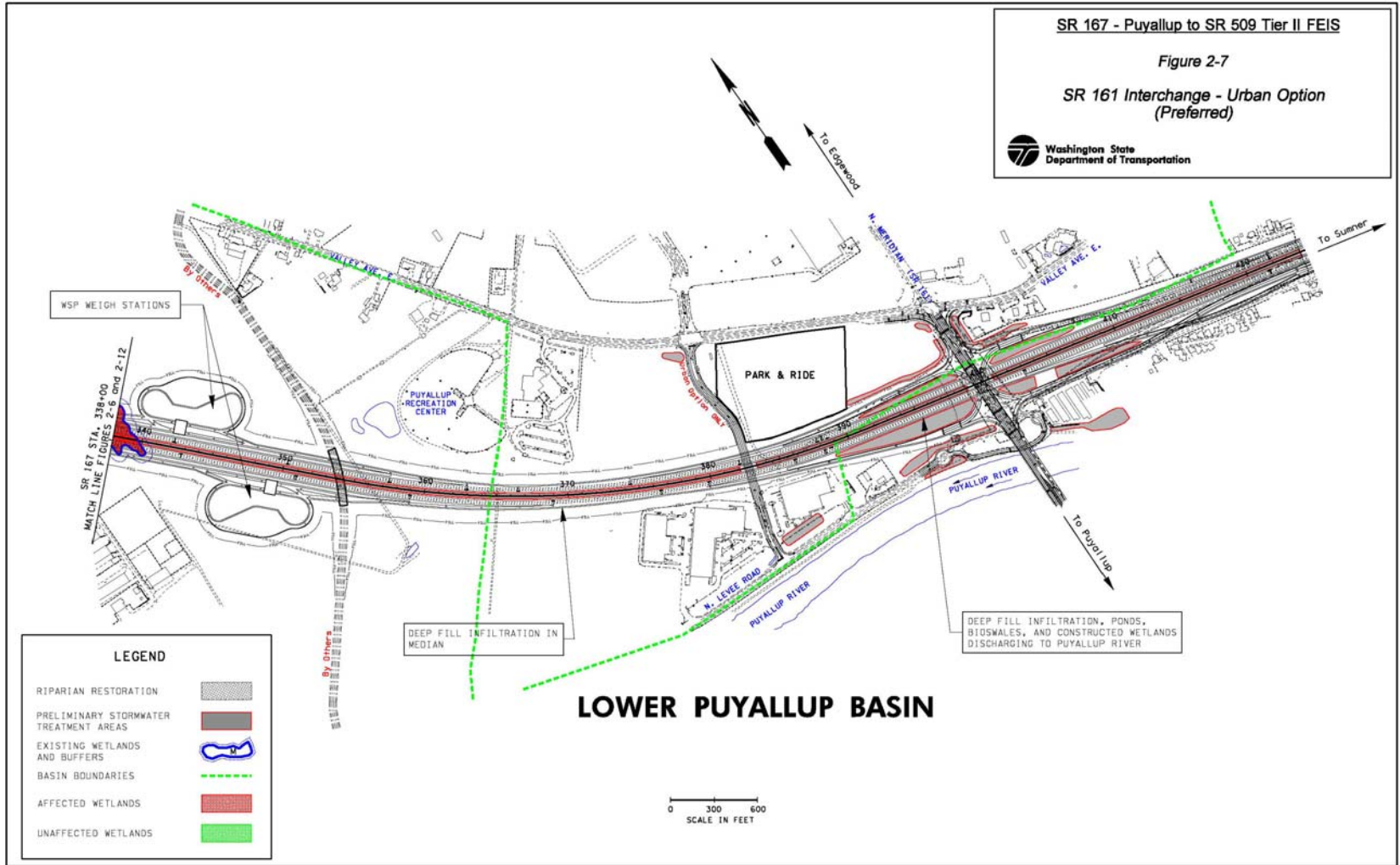
Realignment of 20th Street East and 70th Avenue East is required to allow 20th Street East to remain at grade through the interchange (Figure 2-5). Realigned 70th Avenue East remains at grade and passes underneath the northbound I-5 to northbound SR 167 ramp and then under all lanes of SR 167. It then elevates to pass over realigned 20th Street East and I-5, and then descends to pass underneath the southbound I-5 to southbound SR 167 ramp. The intersection of 70th Avenue East and SR 99 will remain at grade at its present location. The intersection of 20th Street East and 70th Avenue East is revised to include a roundabout for traffic control. The realignment of 20th Street East has been further refined since the DEIS, at the request of and in coordination with the city of Fife, moving the proposed relocated Surprise Lake Drain to the west of the realigned 20th Street East curve.

Pedestrians and bicyclists will be restricted from using SR 167 in the I-5 interchange area. Route continuity will be maintained with connections of SR 99 and 20th Street East.

The mainline continues on fill from 70th Avenue East to the proposed interchange with Valley Avenue. In this segment, the mainline consists of two general purpose lanes in each direction and one HOV lane in each direction. At the Valley Avenue interchange, three design options were developed and are presented below. With each design option, a bridge will carry the mainline over Wapato Creek, Valley Avenue, Freeman Road, and the Union Pacific Railroad (UPRR) before touching down to grade on a raised embankment. A park and ride facility will be constructed east of the SR 167 mainline. Four new structures will be constructed over Wapato Creek on the southbound 167 on and off ramps. Two temporary crossing structures may also be required over Wapato Creek during construction activities.

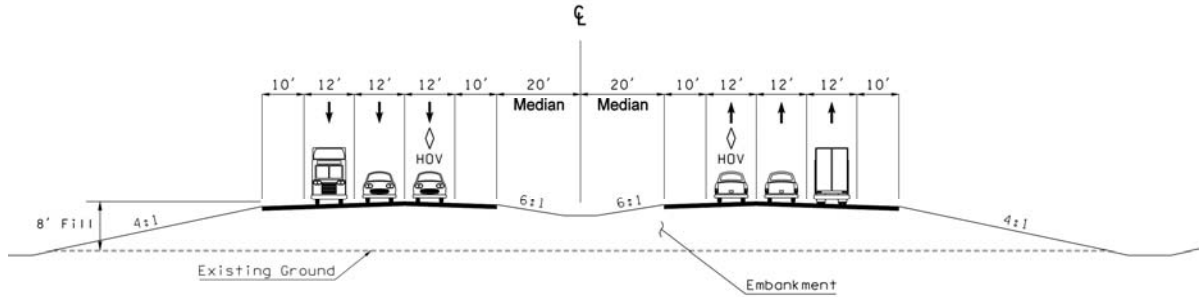
Riparian restoration, part of the project's conceptual stormwater treatment plan, is proposed along Wapato Creek at Valley Avenue Interchange (Figure 2-6). Restoration activities include riparian plantings, fill removal, impervious surface removal from the floodplain, and the potential removal of six undersized crossing structures (four to the north and two to the south of the SR 167 mainline).

The mainline continues to the southeast parallel with Valley Avenue with two general purpose lanes in each direction and one HOV lane in each direction (Figures 2-7 and 2-8). Washington State Patrol truck weigh station facilities are proposed for each direction of travel east of the Valley Avenue interchange. East of the weigh stations, a developer is proposing a connection across SR 167 via an overpass. FHWA and WSDOT are not proposing to construct this connection, but have shown it on the design plans for disclosure purposes. The developer will be responsible for all environmental review on the proposed connection.



FHWA and WSDOT are proposing another cross connection under the SR 167 mainline with the preferred Urban interchange option. A park and ride lot will be located east of this crossing (Figure 2-7). Three design options have been developed for consideration at this interchange and are presented in section 2.5.3. The mainline continues towards the terminus at the existing SR 161/SR 167 interchange.

Figure 2-8: SR 167 on Fill between Valley Avenue Interchange and SR 161



There are two existing bridges over the Puyallup River that carry SR 161 traffic. The southbound traffic travels over a concrete structure constructed in 1971. The northbound traffic travels over a steel structure constructed in 1951. The concrete bridge has a pier within the ordinary high watermark of the river while the steel bridge spans the river. The steel bridge is approximately 3 feet lower than the concrete bridge.

As part of the SR 161/SR 167 interchange improvements, the steel bridge will be removed and replaced with a bridge that may span the Puyallup River. The project currently estimates a maximum of four piers for the new bridge to be located within the ordinary high water mark of the river. The concrete bridge will be widened approximately seven feet to provide shoulders and a bike lane. Figure 2-9 illustrates a cross section view of the bridges and Figure 2-10 shows a profile of the new bridge.

Figure 2-9: Cross Section of the Puyallup River Bridge (North Meridian)

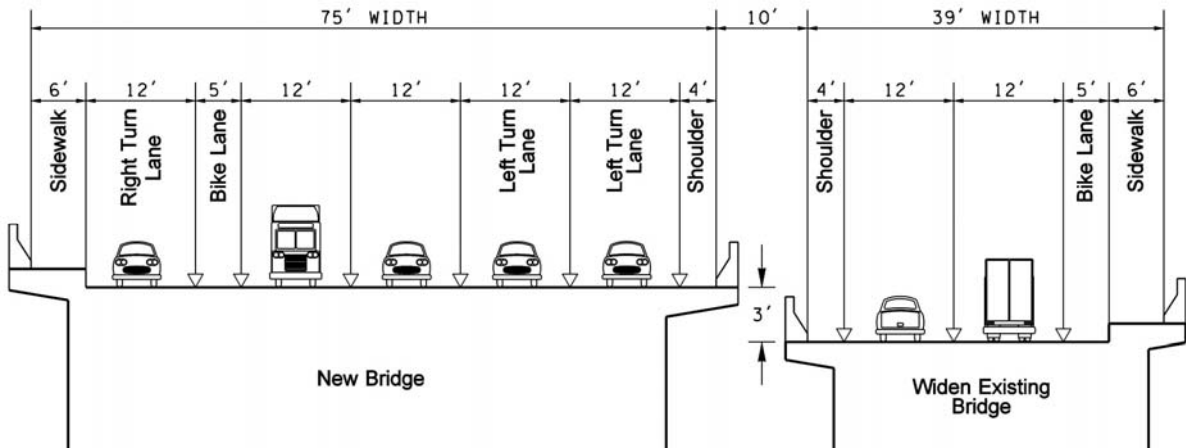
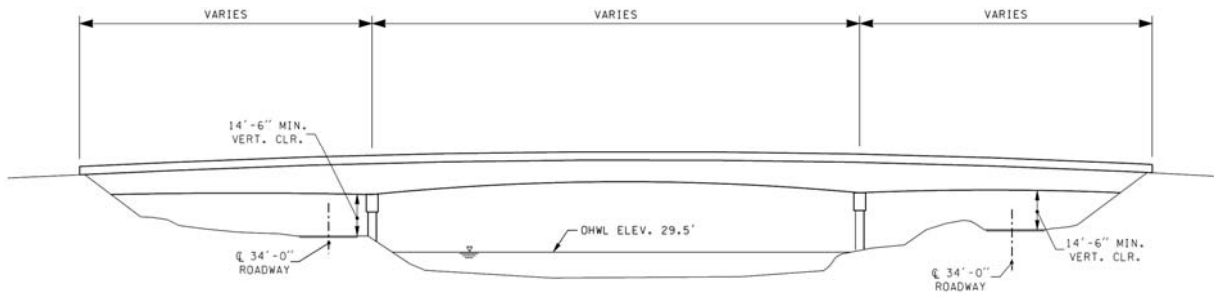


Figure 2-10: Preliminary Profile of Puyallup River Bridge (North Meridian)



2.5.3 Interchange Design Options in the Build Alternative

There are three interchanges with multiple design options under consideration. They are at 54th Avenue East, Valley Avenue, and SR 161 (North Meridian). The I-5 interchange had only one design option that was previously described on page 2-17 and is not listed below.

54th Avenue East Partial Interchange

There are two options for the partial interchange at this location. In both options, the ramps are single lane and provide only southbound off and northbound on access to SR 167. Connections will be provided for bicycle route continuity.

Loop Ramp Option - Preferred

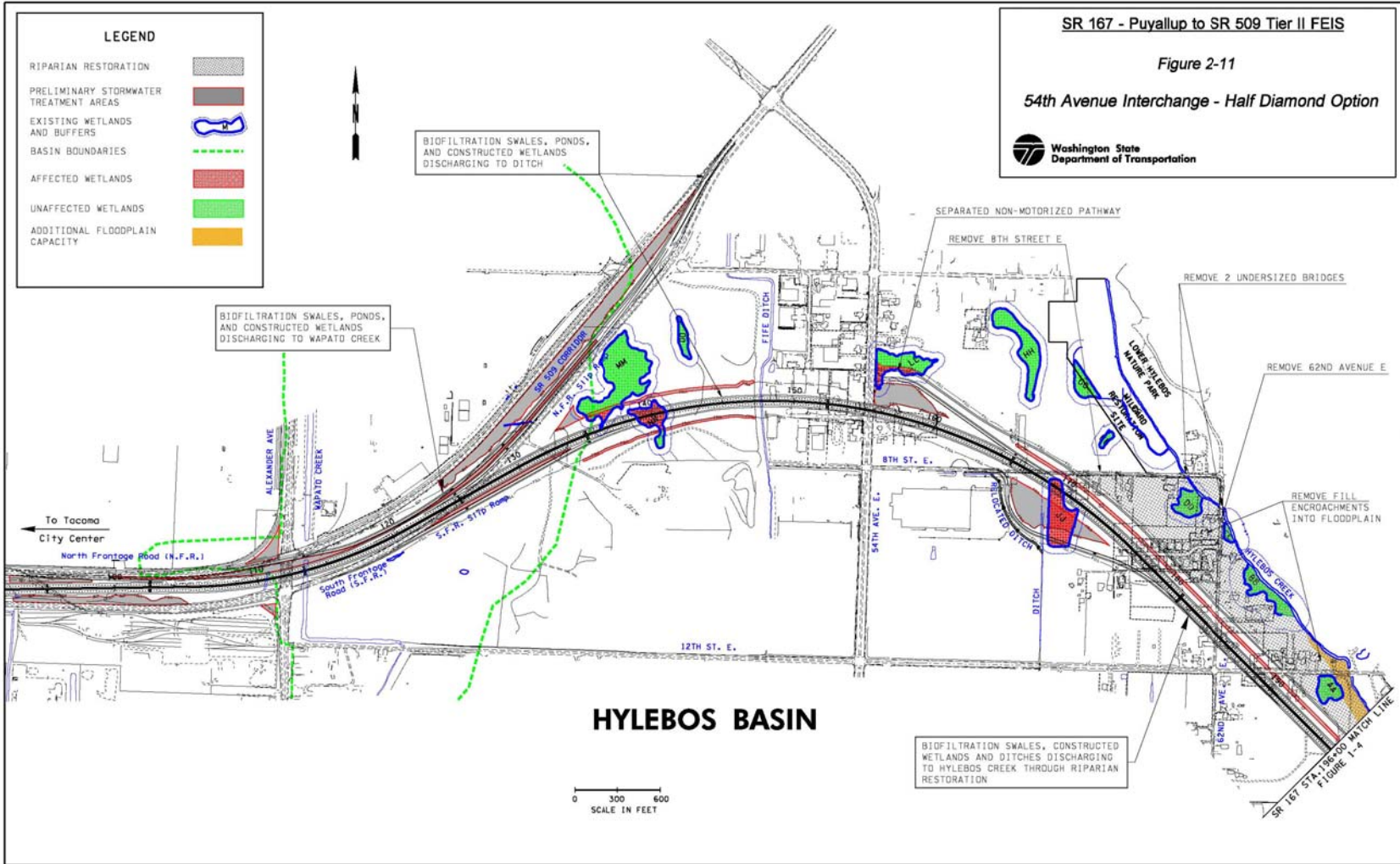
This option provides a southbound diamond off ramp and a northbound loop on ramp (Figure 2-2). The off ramp descends SR 167 on fill and connects with 54th Avenue East at grade approximately 600 feet north of 8th Street East. The loop on ramp starts from 54th Avenue East across from 8th Street East at grade, ascending to an elevated mainline.

Half Diamond Option

This option provides for a southbound diamond off ramp at the same location as the loop ramp option (Figure 2-11). The northbound on ramp would be a diamond ramp which departs from 8th Street East (approximately 1,000 feet east of 54th Avenue East) at grade then begins to ascend matching into elevated northbound SR 167.

Valley Avenue Interchange

Three design options were developed for this interchange location. For each, the SR 167 mainline is elevated over Valley Avenue, UPRR, Wapato Creek, and Freeman Road. Under all three options, WSDOT will widen Valley Avenue from two lanes to five lanes from the northbound off ramp to the intersection of Freeman Road East.



Valley Avenue Option - Preferred

In this option, the northbound off ramp leaves SR 167 at grade and stays at grade until it matches into Valley Avenue (Figure 2-6). The northbound on ramp leaves Valley Avenue at grade then elevates to go over the railroad and connects to elevated SR 167. All ramps would be single lane.

The southbound off ramp leaves SR 167 while elevated and passes over Valley Avenue. The ramp then begins to descend, enters a right hand loop back to Valley Avenue, crossing over Wapato Creek on structure, then matches the existing grade. The southbound on ramp leaves Valley Avenue, crosses over Wapato Creek, then stays at grade until it matches into SR 167. All ramps will be a single lane.

Freeman Road Option

Figure 2-12 illustrates this option. The configuration for northbound off and on ramp remains the same as the previous option. The southbound off ramp leaves SR 167 while elevated and passes over the railroad and Valley Avenue. The ramp then begins to descend and enters a right hand curve to Freeman Road. It then matches the existing grade at Freeman Road. The southbound on ramp leaves Freeman Road, matching at grade. The ramp stays at grade until it matches into SR 167. All ramps would be single lane.

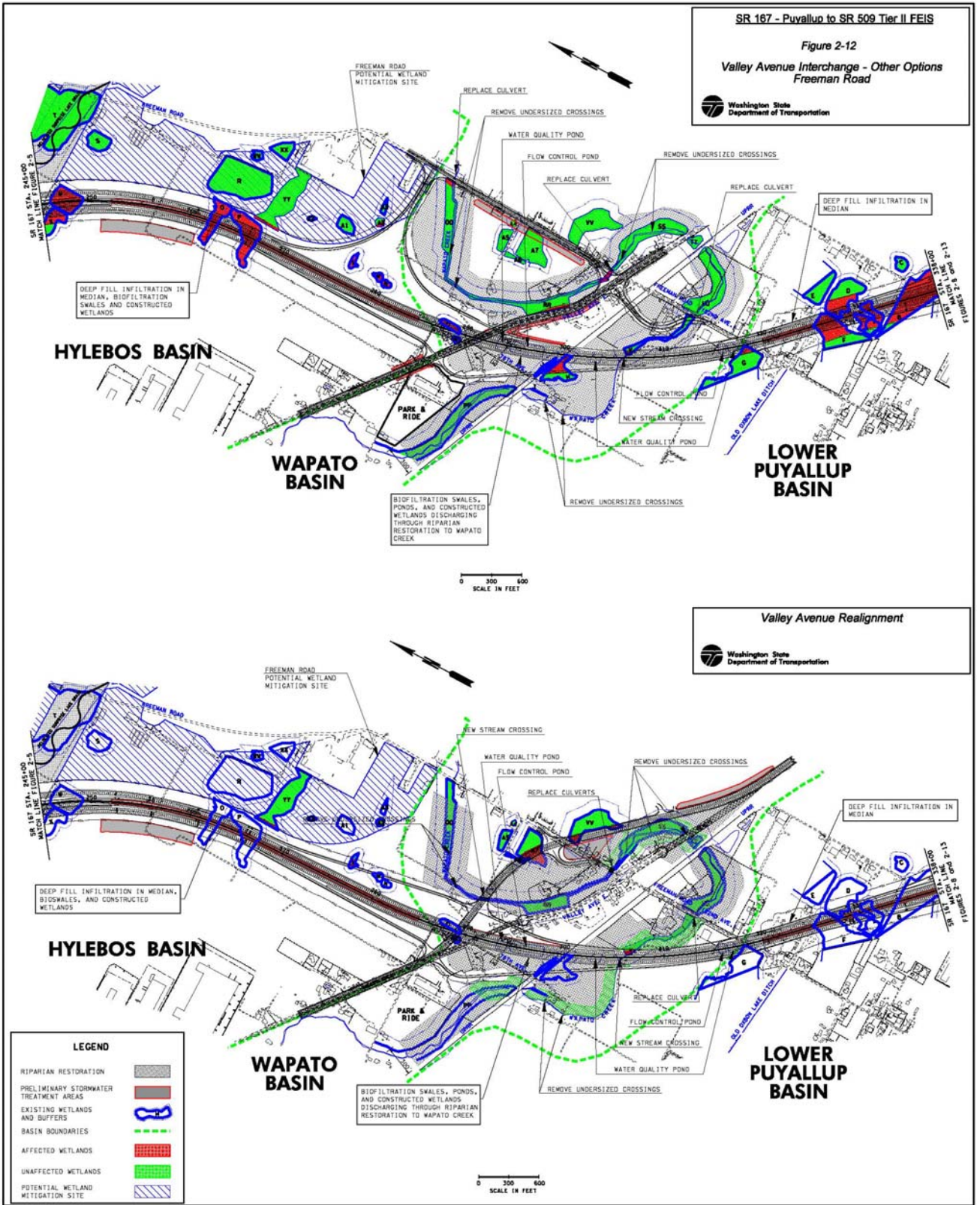
Freeman Road would be widened from the on/off ramp connections to Valley Avenue, while maintaining the existing grade. South of Valley Avenue the road would be realigned to improve the intersection angle with Valley Avenue and the at-grade railroad crossing.

Valley Avenue Realignment Option

Figure 2-12 also shows the Valley Avenue Realignment option. As in the previous two options, the configuration for northbound off and on ramp remains the same. The southbound off ramp leaves SR 167 while elevated and passes over the UPRR tracks. The ramp then begins to descend where it matches the grade on realigned Valley Avenue. The southbound on ramp rises from the realigned Valley Avenue, to the elevated mainline. The ramp stays at grade until it connects to SR 167. All ramps would be single lane.

At the west end, Valley Avenue would begin realignment to the north at the northbound on/off ramp termini. The road would stay at grade the length of the realignment. Valley Avenue would then match into the original alignment at the existing railroad over-crossing east of the project. A short section of Freeman Road must be realigned to attain the proper intersection angle with the realigned Valley Avenue. The realigned Valley Avenue would be a five-lane roadway.

Two sections of the existing Valley Avenue would be removed. One portion is under the footprint of SR 167, and the other at the crossing of Wapato Creek to the east. Cul-de-sacs would be placed at the end of the remaining section of Valley Avenue to maintain access to homes and businesses.



SR 161/SR 167 Interchange

An existing connection here provides the southern terminus for the freeway segment of SR 167 between Puyallup and Renton. With the proposed SR 167, this connection will become a full interchange. Three design options have been developed. In each design option, the SR 167 mainline will be elevated over SR 161 (North Meridian).

In all three options, the existing steel bridge over the Puyallup River (northbound SR 161) will be replaced and the existing concrete bridge (southbound SR 161) will be widened.

Urban Interchange Option - Preferred

The southbound off ramp leaves elevated SR 167 and intersects SR 161 at grade (Figure 2-8). The two-lane off ramp will widen into two left-turn lanes southbound and one right turn lane northbound at SR 161. The northbound on ramp leaves SR 161 at grade then stays on grade until matching into SR 167. This ramp will be two lanes. WSDOT will also construct a connection across SR 167 just west of the new interchange. This cross connection will facilitate traffic movements eliminated by the new interchange at the east terminus of North Levee Road. SR 167 will be on structure over the cross connection. The connection will allow access to SR 161 (North Meridian) via Valley Avenue for homes and businesses along North Levee Road.

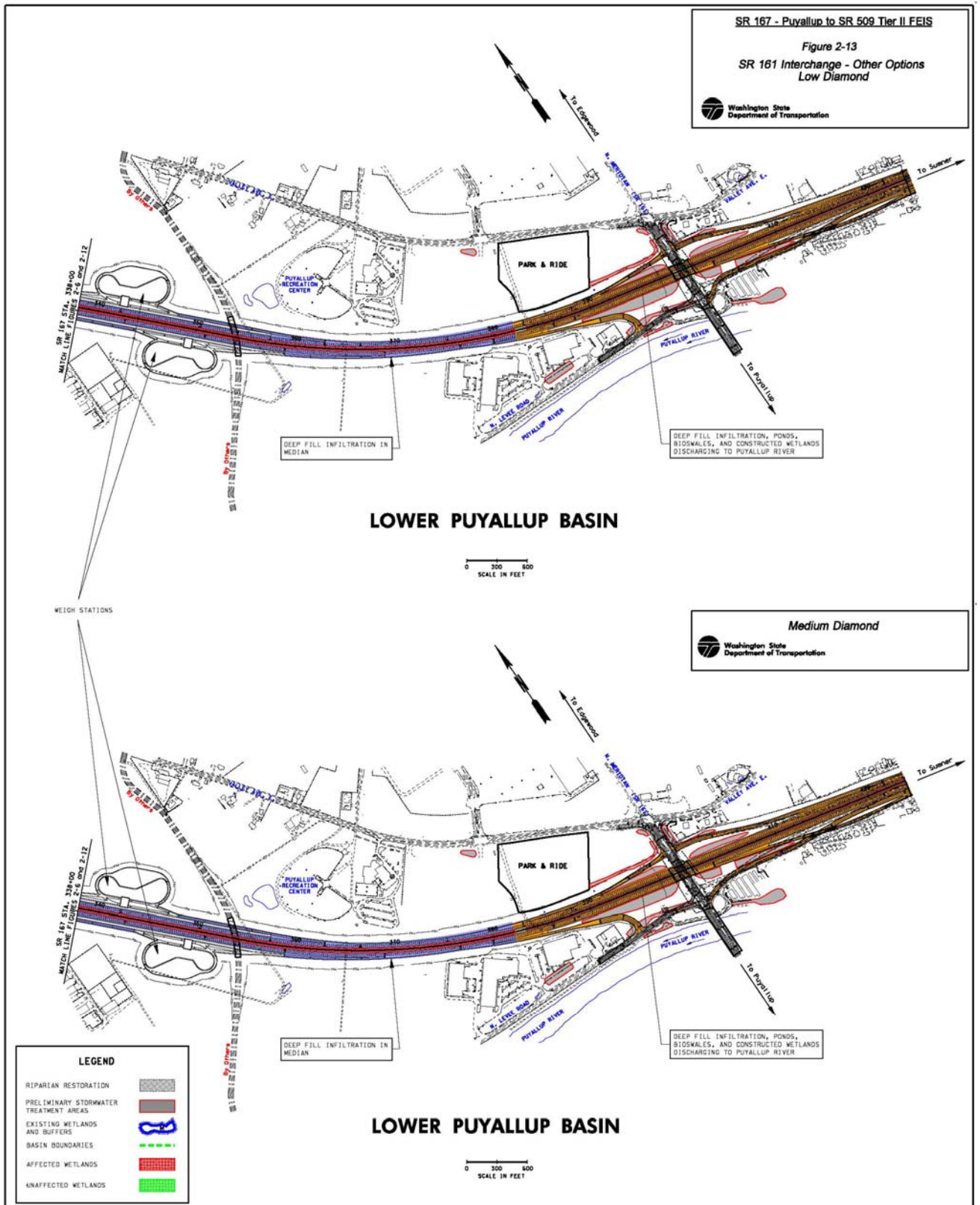
The northbound off ramp leaves SR 167 at grade and intersects SR 161. The single-lane off ramp will widen to two northbound lanes and one southbound lane at SR 161. The southbound on ramp leaves SR 161 at grade and elevates to match SR 167. Two lanes will merge to one lane on the ramp.

The SR 512 off ramp exits SR 167 east of the SR 161 over crossing. It then crosses over the SR 167 northbound on ramp before merging onto SR 512. It will be a single lane ramp.

North Levee Road will end in a cul-de-sac approximately 400 to 500 feet west of SR 161. The existing access road under the Puyallup River bridges will remain for access to the property in the southeast quadrant of the SR 161/SR 167 interchange. Existing connections from North Levee Road and the access road with SR 161 will be eliminated.

Low Diamond Option

The northbound off ramp leaves elevated SR 167 and stays at grade until it intersects with the North Levee Road. The single lane off ramp would widen to two eastbound lanes and one westbound lane at North Levee Road. The northbound on ramp leaves SR 161 at grade then stays on grade until intersecting SR 167. The ramp curves around the existing storage facility office building in the southeast quadrant of the SR 167/SR 161 interchange. This ramp would be a two-lane ramp (Figure 2-13).



The southbound off ramp leaves SR 167 at grade and matches into SR 161. The two-lane off ramp would widen to two southbound lanes and one northbound lane at SR 161. The southbound on ramp leaves SR 161, matching at grade. The ramp stays at grade until it matches into SR 167. Two lanes on the ramp would merge to one lane. The SR 512 off ramp and Puyallup River bridges would be the same as the previous Urban interchange option.

North Levee Road would be widened to the east and west of the terminus of the northbound off ramp. North Levee Road would terminate at its present location at SR 161 with a one-lane connection both northbound and southbound on SR 161. The existing access road under the Puyallup River bridges would remain for access to the storage facility in the southeast quadrant of the SR 167/SR 161 interchange. This access road would terminate in a cul-de-sac at the storage facility entrance. No access to the SR 167 on ramp would be allowed.

Medium Diamond Option

The northbound on ramp has a smoother curve and would impact the existing storage facility office building in the southeast quadrant of the SR 167/SR 161 interchange (Figure 2-13).

2.6 Preferred Alternative and Options

2.6.1 Build Alternative (Preferred)

The Build Alternative is preferred because it best meets the purpose and need for the project while incorporating reasonable measures to avoid or mitigate environmental impacts. It will improve regional mobility of the transportation system, reduce congestion and improve safety, provide improved system continuity between the SR 167 corridor and I-5, maintain or improve air quality, and serve multimodal local and port freight movement and passenger movement.

The relocations of Hylebos Creek and Surprise Lake Drain are necessary due to fill placement associated with the Build Alternative. However, the riparian restoration proposed along Hylebos Creek and Surprise Lake Drain will reestablish riparian buffers, increase channel lengths and capacity by adding meanders, reestablish channel migration zones for future channel meanders, remove roads, fill, and structures from the floodplain, and restore floodplain functions. Restoration activities will also include riparian plantings, fill removal, and undersized crossing removals on Wapato Creek. Riparian restoration will result in improved fish habitat and reestablish wildlife corridors.

Table 2-6 summarizes the structures (bridges and culverts) that will cross waterbodies in the Preferred Alternative.

Table 2-6: Structure Work (total number) Over Water Bodies in Project Area

Activity	Hylebos Creek	Puyallup River	Surprise Lake Drain	Wapato Creek
Culvert replacement w/bridge or 3-sided culvert	1	0	0	2
Bridge demolition (falsework)	0	1	0	0
Bridge widening	2	1	0	0
New bridge/culvert installation	6	0	3	4
Bridge replacement	1	1	0	0
Undersized bridge/culvert removal/abandon	3	0	2	6
Temporary crossing	6	3	1	1

Note: If multiple structures cross at the same location, only the lowest structure was counted.

As in the Tier I ROD, the No Build Alternative was not selected because it:

- Does not meet the purpose and need for the project;
- Results in intolerable congestion on existing roads and streets;
- Worsens traffic safety, because of congestion;
- Increases air pollution, because of congestion;
- Does not contribute to improved freight mobility.

2.6.2 Selection Process for Preferred Options

The environmental screening criteria and associated weighting factors approved by the Signatory Agency Committee (SAC) (Table 2-4) during SAC Concurrence Point 1 in May of 2000 were used to evaluate the interchange options described in Section 2.5.3. For each criterion the calculated impacts, both unweighted and weighted, were compared for the design options at each of the three interchanges.

A subjective rating of 1 (best), 2 (better), or 3 (good) was then assigned to each criterion for each option. Ratings for all 22 criteria were summed to produce a total score for each option. Lower total scores suggested less impact than higher scores.

In addition to total scores, careful consideration was given to criteria considered of special importance. Avoiding and minimizing wetland impacts was given highest consideration, consistent with the wetland permitting mandate for the Least Environmentally Damaging Practicable Alternative (LEDPA)¹. Effects on species protected under the Endangered Species Act were likewise given the highest consideration, but no differences were found between options at the three interchanges.

¹ See Section 4.2 for more information about the LEDPA analysis.

High consideration was given to minimizing displacements of current residences and businesses and to avoiding impacts to cultural resources, including sites of tribal importance. Special consideration was given to avoiding floodplains and the relative opportunities associated with the interchange options to improve and restore aquatic and riparian habitats. Details on differences among options for these factors are provided in the respective sections of the Tier II FEIS.

Factors other than environmental were also considered in selecting the preferred options. Preferences of Pierce County, jurisdictional cities, Port of Tacoma, the Puyallup Tribe of Indians, FHWA, and WSDOT were evaluated. Factors such as estimated construction costs, costs for ROW acquisition, and operation and maintenance requirements were also considered.

Based on the screening criteria and other important factors, the following preferred interchange options were chosen:

- Loop Ramp Option for the 54th Avenue East Partial Interchange
- Valley Avenue Option for the Valley Avenue Interchange
- Urban Interchange Option for the SR 161/SR 167 Interchange

2.6.3 Preferred 54th Avenue East Interchange Option

Table 2-7 summarizes the environmental criteria scoring of the two options at the 54th Avenue East Interchange during SAC Concurrence Point 3. The Loop Ramp Option scored better overall than the Half Diamond Option (33 versus 38). For wetland criteria, the Loop Ramp Option will impact less area of Category III wetlands (0.38 versus 0.81 acre) and associated wetland buffers (0.47 versus 0.76 acre). In terms of floodplains, less floodplain is impacted for the Loop Ramp Option (0.52 acre versus 2.03 acres).

The Loop Ramp Option will impact fewer acres of wildlife habitat (1.62 acres versus 1.88 acres for the Half Diamond Option). The Loop Ramp Option also has lower costs associated with hazardous waste site cleanup. The two options were equal in all other environmental criteria used to select the preferred option.

The Loop Ramp Option is preferred by the city of Fife, Port of Tacoma, FHWA, and WSDOT, further reinforcing the results for the environmental criteria. NOAA National Marine Fisheries Service prefers the Half Diamond Option, but the rationale provided is inconsistent with their choice.

The Loop Ramp Option was selected as the preferred option for the 54th Avenue East partial interchange, based on full consideration of environmental and other factors.

Table 2-7: Summary of Scores for Design Options at the 54th Avenue East Interchange

Screening/Selection Criteria	Impact Units	Loop Ramp			Half Diamond		
		Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating
1. Meets Purpose and Need		Yes	Yes	1	Yes	Yes	1
2. Category I & II Wetlands	acres	0	0	1	0	0	1
3. All Wetlands	acres	0.38	0.57	1	0.81	1.22	2
4. All Wetland Buffers	acres	0.47	0.94	1	0.76	1.52	2
5. Threatened and Endangered Species	number	5	9	2	5	9	2
6. Aquatic Priority Habitats and Life	acres	0	0	1	0	0	1
7. Wildlife Habitat	acres	1.62	3.24	1	1.88	3.76	2
8. Prime and Unique Farmlands	acres	0	0	1	0	0	1
9. All Farmland	acres	0	0	1	0	0	1
10. Floodplain	acres	0.52	2.60	2	2.03	10.15	3
11. Noise (Design Year)	sites	NA	NA	1	NA	NA	1
12. Air Quality (Design Year)	+ current			2			2
13. NRHP-eligible Cultural Resources	sites	0	0	1	0	0	1
14. All Cultural Resource Properties	sites	0	0	1	0	0	1
15. Environmental Justice Populations	parcels	3	3	3	3	3	3
16. Displacements	parcels	22	22	3	19-22	19-22	3
17. Tribal Trust Lands	parcels	3	3	3	3	3	3
18. Visual Quality (General Views)	+ current	blocked	blocked	2	blocked	blocked	2
19. Stormwater Treatment Capability	Table 3.2-1			1			1
20. High Cost Hazardous Waste Sites	dollars	w/i Superfund boundary		1	w/i Superfund boundary		1
21. All Hazardous Waste Sites	dollars			2			3
22. Pedestrian and Bicycle Access	Table 3.2-1	1	1	1	1	1	1
Total Score				33			38

Ratings: 1 = best, 2 = better, 3 = good

Note: These scores were used in the SAC concurrence described in Chapter 4.

2.6.4 Preferred Valley Avenue Interchange Option

Total scores for the Valley Avenue Options were very similar: 40 for the Valley Avenue Option, 44 for the Freeman Road Option, and 38 for the Valley Avenue Realignment Option. Table 2-8 summarizes the scoring of all criteria for the three options at the Valley Avenue Interchange during the SAC Concurrence Point 3.

The Valley Avenue Realignment Option received the lowest screening score due to the avoidance of aquatic priority habitat impacts, wildlife habitat impacts, and floodplain impacts. As stated above, avoidance of wetland impacts and displacements is a high priority. The Valley Avenue Realignment Option has the most wetland impacts. More importantly, this option would require 32 to 63 relocations, 18 to 49 more displacements than the Valley Avenue Option.

The Freeman Road Option will have the least wetland impact. This option fails to minimize impacts to wetland buffers, aquatic priority habitat, wildlife habitat, and floodplains. In addition, this option will impact a hazardous materials site avoided by the other two options.

Table 2-8: Summary of Scores for Design Options at the Valley Avenue Interchange

Screening / Selection Criteria	Impact Units	Valley Avenue			Freeman Road			Valley Ave Realignment		
		Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating
1. Meets Purpose and Need		Yes	Yes	1	Yes	Yes	1	Yes	Yes	1
2. Category I & II Wetlands	acres	0	0	1	0	0	1	0	0	1
3. All Wetlands	acres	1.67	2.51	2	1.56	2.34	1	1.91	2.87	3
4. All Wetland Buffers	acres	6.14	12.28	1	7.58	15.16	3	7.03	14.06	2
5. Threatened and Endangered Species	number	5	9	2	5	9	2	5	9	2
6. Aquatic Priority Habitats and Life	acres	0.57	2.85	2	0.72	3.60	3	0.34	1.70	1
7. Wildlife Habitat	acres	19.3	38.6	3	16.5	33.0	2	12.5	25.0	1
8. Prime and Unique Farmlands	acres	40.5	40.5	3	34.1	34.1	2	16.2	16.2	1
9. All Farmland	acres	40.5	40.5	3	34.1	34.1	2	16.2	16.2	1
10. Floodplain	acres	0.70	3.50	2	1.01	5.05	3	0.35	1.75	1
11. Noise (Design Year)	sites	NA	NA	1	NA	NA	1	NA	NA	1
12. Air Quality (Design Year)	+ current sites			2			2			2
13. NRHP-eligible Cultural Resources	sites	1	2	2	1	2	2	1	2	2
14. All Cultural Resource Properties	sites	5	5	1	14	18	3	7	11	3
15. Environmental Justice Populations	parcels	3	3	3	3	3	3	3	3	3
16. Displacements	parcels	14	14	1	17-20	17-20	2	32-63	32-63	3
17. Tribal Trust Lands	parcels	3	3	3	3	3	3	3	3	3
18. Visual Quality (General Views)	+ current Table 3.2-1	blocked	blocked	2	blocked	blocked	2	blocked	blocked	2
19. Stormwater Treatment Capability	dollars			1			1			1
20. High Cost Hazardous Waste Sites	dollars			1			1			1
21. All Hazardous Waste Sites	dollars			1			2			1
22. Pedestrian and Bicycle Access	Table 3.2-1	1	1	2	1	1	2	1	1	2
Total Score				40			44			38

Ratings: 1 = best, 2 = better, 3 = good

Note: These scores were used in the SAC concurrence described in Chapter 4.

The Valley Avenue Option will have the least impacts to wetland buffers. Although this option does not have the least amount of wetland impacts, the 0.11-acre variance is not statistically meaningful. Future development of the area due to the commercial/industrial zoning of agricultural lands has the potential to change the wetland impact analysis. A reevaluation of wetland impacts prior to start of construction should capture land use changes that will affect current delineated wetlands within the project area.

The environmental factors prioritized as part of determining the preferred interchange option at Valley Avenue are shown in Table 2-9.

Table 2-9: Valley Avenue Interchange Priority Factors

Interchange Options	Freeman Road	Valley Avenue	Valley Avenue Realignment
Screening Criteria			
Wetland Impacts (acres)	1.56	1.67	1.91
Wetland Buffer Impacts (acres)	7.58	6.14	7.03
Aquatic Priority Habitat Impacts (acres)	0.72	0.57	0.34
Wildlife Habitat Impacts (acres)	16.5	19.3	12.5
Floodplain Impacts (acres)	1.01	0.70	0.35
Displacements	17 - 20	14	32 - 63

As shown in the above table, amount of displacements and wildlife habitat are the most clearly distinguishing criterion in terms of evaluating interchange option impacts. In an effort to further clarify extent of impacts, additional factors based on a qualitative assessment of wildlife habitat impacts and impervious surface were evaluated.

Important qualitative factors for determining wildlife habitat impacts are as follows:

- The road widening work at Freeman Road and Valley Avenue will contribute to habitat fragmentation between the forested slope to the east and the Riparian Restoration Proposal (RRP) areas associated with the Freeman Road option. This is due to the potential impediment to wildlife passage imposed by roads that are wider than two lanes and the position of Freeman Road relative to the forested slope and the Wapato RRP.
- The majority of impacted habitat at the Valley Avenue Interchange consists of agricultural fields, which have limited habitat connectivity value for the surrounding forested and riparian habitats. The best opportunity for habitat connectivity in the area is to provide habitat linkage in the riparian corridors, wetlands, and forested habitats. Such linkage would potentially benefit salmon, amphibians, some bat species (*Myotis*, spp.), forest/riparian birds, and small mammals.
- The project has also proposed a bridge at one of the two Wapato Creek crossings associated with the Valley Avenue Option. Bridging the creek at this location is possible because the roadway is elevated on fill. The bridge

will provide wildlife connectivity between the forested slope and the Wapato RRP.

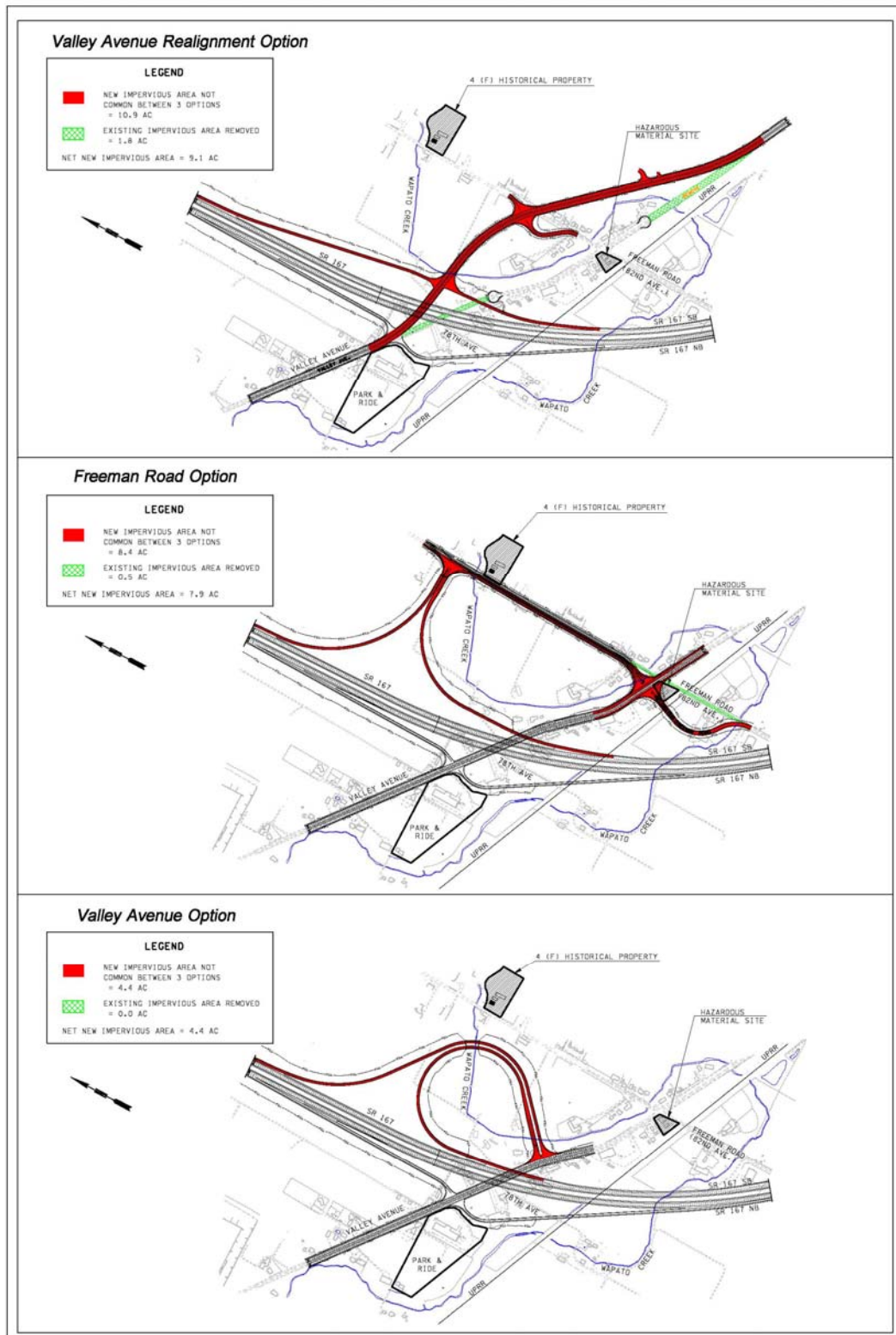
- The SR 167 Conceptual Mitigation Plan (CH2M HILL and MWG, 2005), identifies the Freeman Road Site as a potential mitigation site. The Freeman Road Mitigation Site would link the RRP area at Valley Avenue to the RRP area associated with Surprise Lake Drain. The Freeman Road Option would create a barrier between the Freeman Road Mitigation Site and the Wapato RRP due to road widening and off-ramp location.
- The indirect impacts to wildlife habitat associated with the Freeman Road Option will be potentially greater than the other two options. Indirect impacts are based on the potential for accelerated development at an interchange. Widening of Freeman Road will increase development in areas currently in agricultural use, reducing the amount of habitat available.

Based on these additional qualitative factors, Valley Avenue Option would have less impacts to wildlife habitat than the Freeman Road Option. The Valley Avenue Option will also have the least amount of new impervious surface (4.4 acres versus 7.9 and 9.1 acres) as shown in Figure 2-14.

The following other factors were also applied in determining the preferred interchange option at Valley Avenue.

- The Valley Avenue Option also has the least number of displacements. Three to six additional parcels could be affected by the Freeman Road Option increasing project cost by approximately \$2.8 million. The 18 to 49 additional parcels potentially affected by the Valley Avenue Realignment Option would increase project costs proportionally.
- The purpose of the Valley Avenue interchange is to provide a direct route to and from Valley Avenue, a major arterial route which serves residential, commercial, and industrial sites within the Fife valley. The Freeman Road Option, although a viable option, routes all traffic through a residential area within the city of Edgewood in order to access the residential, commercial, and industrial sites along Valley Avenue. Concerns about impacts to a residential neighborhood in Edgewood led to WSDOT receiving petitions from 161 residents in this area in favor of the Valley Avenue Interchange Option.
- Another factor that was considered was the issue of limited access. Access onto Freeman Road from abutting properties is restricted per WAC 468-58-030 for a distance of 300 feet either side of the ramp terminus. This may impact a historical Section 4(f) resource (Craftsman style home) on Freeman Road, a resource that is avoided by the other interchange options.
- Valley Avenue Realignment Option would directly impact a cultural resource site of significance to the Puyallup Tribe of Indians. In addition, the Puyallup Tribe of Indians indicated that it preferred the Valley Avenue Option, as it appeared to have the least amount of impact to the site.

Figure 2-14: Impervious Surface for Valley Avenue Interchange Options



After careful consideration of the environmental criteria, opportunities for riparian restoration of Wapato Creek, and non-environmental factors, Valley Avenue Option was chosen as the preferred option.

2.6.5 Preferred SR 161/SR 167 Interchange Option

Table 2-10 summarizes the scoring of the three options at the SR 167/SR 161 (North Meridian) Interchange. All three options scored within one rating point of each other (range 26-27). None of the options will impact wetlands, wetland buffers, aquatic habitat, farmland, cultural resources of more than local significance, or Tribal Trust lands.

The Urban Interchange will not impact any wildlife habitat, whereas the other two options will impact 1.43 acres of forest habitat. Displacements were similar among options, but the Medium Diamond might displace one more single family residence and one more business than the other two options.

Factors other than the environmental criteria also did not provide much distinction between options. FHWA and WSDOT preferred the Urban Interchange because it will provide improved traffic operation.

The Urban Interchange was selected as the preferred option based on the advantages for traffic movement, combined with the slightly better score for environmental criteria.

Table 2-10: Summary of Scores for Design Options at the SR 161/SR 167 Interchange

Screening / Selection Criteria	Impact Units	Urban Interchange			Diamond Medium			Diamond Low		
		Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating
1. Meets Purpose and Need		Yes	Yes	1	Yes	Yes	1	Yes	Yes	1
2. Category I & II Wetlands	acres	0	0	1	0	0	1	0	0	1
3. All Wetlands	acres	0	0	1	0	0	1	0	0	1
4. All Wetland Buffers	acres	0	0	1	0	0	1	0	0	1
5. Threatened and Endangered Species	number	6	12	2	6	12	2	6	12	2
6. Aquatic Priority Habitats and Life	acres	0	0	1	0	0	1	0	0	1
7. Wildlife Habitat	acres	0.84	1.68	1	1.32	2.64	2	1.32	2.64	2
8. Prime and Unique Farmlands	acres	0	0	1	0	0	1	0	0	1
9. All Farmland	acres	0	0	1	0	0	1	0	0	1
10. Floodplain	acres	0	0	1	0	0	1	0	0	1
11. Noise (Design Year)	sites	NA	NA	1	NA	NA	1	NA	NA	1
12. Air Quality (Design Year)	+ current			2			2			2
13. NRHP-eligible Cultural Resources	sites	0	0	1	0	0	1	0	0	1
14. All Cultural Resource Properties	sites	3	3	1	3	3	1	3	3	1
15. Environmental Justice Populations	parcels	0	0	1	0	0	1	0	0	1
16. Displacements	parcels	5-7	5-7	2	6-8	6-8	2	5-7	5-7	2
17. Tribal Trust Lands	parcels	0	0	1	0	0	1	0	0	1
18. Visual Quality (General Views)	+ current	blocked	blocked	2	degraded	degraded	2	degraded	degraded	2
19. Stormwater Treatment Capability	Table 3.2-1			1			1			1
20. High Cost Hazardous Waste Sites	dollars			1			1			1
21. All Hazardous Waste Sites	dollars			1			1			1
22. Pedestrian and Bicycle Access	Table 3.2-1			1			1			1
Total Score				26			27			27

Ratings: 1 = best, 2 = better, 3 = good

Note: These scores were used in the SAC concurrence described in Chapter 4.

2.6.6 Conclusion

The Build Alternative is preferred because it best meets the purpose and need for the project while incorporating reasonable measures to avoid or mitigate environmental impacts. It will improve regional mobility of the transportation system, reduce congestion and improve safety, provide improved system continuity between the SR 167 corridor and I-5, maintain or improve air quality, and serve multimodal local and port freight movement and passenger movement.

The Preferred Build Alternative includes:

- Direct connection with SR 509;
- Partial interchange with 54th Avenue East, preferred Loop Option;
- Freeway to freeway connection with I-5, including proposed HOV lanes;
- Realignment of 20th Street East and 70th Avenue East;
- Relocation of Hylebos Creek and Surprise Lake Drain and associated riparian areas;
- Full interchange at Valley Avenue with associated Park and Ride and riparian areas in connection with Wapato Creek, preferred Valley Avenue Option;
- Washington State Patrol Weigh Stations;
- Full interchange with SR 161, North Meridian, and associated park and ride, preferred Urban Option;
- Replacement of steel bridge and widening of the existing concrete bridge over the Puyallup River;
- Direct connection with existing freeway portion of SR 167.

Chapter 3

Affected Environment and Environmental Consequences

Tier II Final EIS

SR 167

Puyallup to SR 509

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Chapter 3

Affected Environment and Environmental Consequences

3.0 Introduction to Chapter 3

Technical studies prepared by WSDOT and various consultant teams assess the environmental consequences of the SR 167 Extension project. Fifteen disciplines or resource areas are included in the Tier II Final Environmental Impact Statement (FEIS):

1. Water Resources
2. Wetlands
3. Wildlife, Fish, and Threatened and Endangered Species
4. Air Quality
5. Noise
6. Energy
7. Hazardous Materials
8. Visual Quality
9. Public Services and Utilities
10. Land Use, Socioeconomics, and Environmental Justice
11. Farmland
12. Displacement, Disruption and Relocation
13. Transportation
14. Pedestrian and Bike Facilities
15. Cultural Resources

Each resource area is summarized in its own section within this chapter. These sections describe existing conditions and address the environmental effects of the No Build and Build Alternative with the different interchange options.

Many sections have been revised substantially since the Draft Environmental Impact Statement (DEIS) to incorporate additional studies or respond to agency and public comments. The water resources; wetlands; and wildlife, fish and threatened and endangered species sections are reorganized by basin (i.e., Hylebos Creek, Wapato Creek, and Lower Puyallup River) to present the results more consistently. Section 3.11 is reorganized to distinguish the discussions on land use, socioeconomics, and environmental justice.

Indirect and cumulative effects on individual resources are now discussed in their respective sections of Chapter 3. Cumulative effects for critical resources are summarized in Section 3.17, which also presents results from the *Net Environmental Benefits Analysis* (CH2M HILL 2005). The large 11- by 17-inch figures in the Tier II DEIS are now presented using a standard page size, making the document easier to use.

The following Environmental Matrix (Table 3.0-1) compares environmental effects and mitigation for the No Build Alternative and Preferred Build Alternative, including preferred interchange options and related facilities like the Riparian Restoration Proposal (RRP). It has also been revised and reformatted in an effort to make the table easier to read. Chapter 2 describes the Preferred Build Alternative in more detail and discusses how the preferred interchange options were selected.

Table 3.0-1: Matrix of Environmental Impacts

<p>No Build Alternative Other improvements by WSDOT and Local Agencies</p>	<p>Preferred Build Alternative Mainline, preferred interchange options, and related facilities, including RRP</p>
<p>Water Resources</p>	
<p>Construction Impacts <u>Clearing and grading:</u> None from this project. <u>Stream Crossings:</u> No temporary or new crossings. No improvements to existing crossings.</p> <p><u>Stormwater Runoff:</u> No change.</p> <p><u>Stream Improvements:</u> None. Area streams remain ditch-like, with little or no riparian area, and often near roads.</p> <p><u>Flooded Area:</u> 246 existing Hylebos acres in modeled 100-yr event. <u>FEMA Floodplain:</u> <u>None for this project, but floodplain encroachment is expected from other transportation improvements and future development of the area.</u></p> <p>Operational Impacts <u>Water Quality:</u> Continued degradation might occur due to increase in traffic. Cumulative Impacts Area streams remain highly modified without improved channels and riparian areas. Continued development increases impervious area, reducing infiltration and increasing stormwater runoff.</p> <p><u>Flooded Area:</u> 360 Hylebos acres in modeled 100-yr event with future development but no SR 167 project, a 45% increase from existing conditions.</p> <p>Mitigation None from this project.</p> <p>Unavoidable Adverse Impacts Continued degradation might occur due to increase in traffic.</p>	<p>Construction Impacts <u>Clearing and grading:</u> 710-719 acres, of which 286-295 acres are temporary or for RRP. <u>Stream Crossings:</u> 11 temporary 13 new 19 improved or removed <u>Other:</u> 42 near-water work sites 23 wellhead protection zones crossed. <u>Stormwater Runoff:</u> Decreased surface infiltration due to increased amount of impermeable ground surface.</p> <p><u>Stream Improvements:</u> 1960-ft increase in Hylebos Creek 84.9-acre increase in Hylebos Creek riparian buffer 4340-ft increase in Surprise Lake Drain 29.0-acre increase in Surprise Lake Drain riparian buffer 73-acre increase in Wapato Creek riparian buffer <u>Flooded Area:</u> 187 future Hylebos acres in modeled 100-yr event, a 25% <u>decrease</u> from existing conditions. <u>FEMA Floodplain:</u> 14.5 acres</p> <p>Operational Impacts <u>Water Quality:</u> Pollutant loads are expected to increase by <0.1% to 2.7% depending on parameter and basin. Cumulative Impacts RRP offers innovative approach to control stormwater flow, with good potential for water quality treatment as well. Modeling predicts the project will <u>reduce</u> 100-yr event flooding in Hylebos basin by 48% compared to a 45% increase for future development without the project. NEBA of the RRP identified water quality benefits by improving impaired conditions of high instream temperatures, low dissolved oxygen, chronic low instream flows in summer, high concentrations of nutrients, fecal coliform bacteria, and suspended solids. Other benefits include reduced flooding. Overall functioning of stream-riparian-complex is expected to improve, but no single project can compensate for cumulative impacts of past and future development.</p> <p>Mitigation Standard construction sediment and erosion control; constructed wetlands; deep fill infiltration; clear span structures at most crossings; as well as traditional treatments such as biofiltration swales and detention BMPs. Establishment of riparian restoration along Hylebos Creek and Surprise Lake Drainage to minimize conventional flow control treatment that would be needed otherwise.</p> <p>Unavoidable Adverse Impacts Potential for change in hydrology and ponding of surface water.</p>

Table 3.0-1: Matrix of Environmental Impacts

<p>No Build Alternative Other improvements by WSDOT and Local Agencies</p>	<p>Preferred Build Alternative Mainline, preferred interchange options, and related facilities, including RRP</p>
<p>Wetlands</p>	
<p>Construction Impacts No effects to existing wetlands and buffers.</p> <p>No increase in riparian habitat. No improvement in existing wetland functions.</p> <p>Operational Impacts Continued urbanization could result in wetland loss and degradation.</p> <p>Cumulative Impacts Cumulative effects are substantial because mitigation was not required during past development. Mitigation required for future development is not expected to offset past losses in wetland functions and values.</p> <p>Mitigation None required.</p> <p>Unavoidable Adverse Impacts Loss of wetland habitat because of continued development.</p>	<p>Construction Impacts 32.9 acres of mostly Category 3 wetlands 56.5 acres of wetland buffer</p> <p>RRP creates 189 acres of new riparian habitat. RRP improves functions of 74.2 acres of existing wetlands.</p> <p>Operational Impacts Wetland hydrology would be altered.</p> <p>Cumulative Impacts NEBA of the RRP included riparian wetlands and estimated 70% more cumulative benefits for RRP portion of the Build Alternative than the No Build. NEBA identified improvement of disturbed and degraded wetlands as a benefit of RRP. Overall functioning of stream-riparian-complex is expected to improve, but no single project can compensate for cumulative impacts of past and future development.</p> <p>Mitigation Wetland enhancement and creation would mitigate impacts.</p> <p>Unavoidable Adverse Impacts Loss of wetland habitat.</p>
<p>Wildlife, Fish, and Threatened and Endangered Species</p>	
<p>Construction Impacts No direct effect to wildlife, fish and vegetation.</p> <p>Expected effects of continuing development and increase in traffic would occur.</p> <p>Stream Crossings: No temporary or new crossings. No improvements to existing crossings.</p> <p>Operational Impacts Continued urbanization and traffic could result in habitat degradation.</p> <p>Cumulative Impacts Cumulative effects are substantial because past habitat loss, fragmentation, and stream alteration. Continued development will further fragment riparian habitat, add new stream crossings, and reduce potential restoration areas where floodplain connectivity and forested riparian habitats can be established.</p> <p>Mitigation None.</p> <p>Unavoidable Adverse Impacts Potential for loss of habitat.</p>	<p>Construction Impacts Wildlife Habitat Types Affected: 196 acres Developed, plus 86 acres of temporary disturbance 131 acres Agricultural, plus 50 acres of temporary disturbance 68 acres Grass/Shrub, plus 34 acres of temporary disturbance 17.8 acres Forest, plus 4.5 acres of temporary disturbance.</p> <p>Fisheries Effect: 33-35 near-water work sites Temporary reduction in water quality</p> <p>Stream Crossings: 11 temporary 13 new 19 improved/removed</p> <p>Operational Impacts Road would act as a barrier to some wildlife and result in the mortality of individual migratory birds and loss and fragmentation of existing habitat. Potential to effect water quality in fish bearing waters.</p> <p>Cumulative Impacts NEBA of the RRP included riparian uplands and stream habitat for fish, and estimated 70% more cumulative benefits for RRP portion of the Build Alternative than the No Build. NEBA identified several benefits of the RRP to fish and wildlife, including habitat protection, enhanced wildlife connectivity, improvements in stream limiting factors for salmon, and support of salmon recovery efforts. Overall functioning of stream-riparian-complex is expected to improve, but no single project can compensate for cumulative impacts of past and future development.</p> <p>Mitigation Avoid and minimize wherever possible. Follow regulations and permit conditions and coordinate with regulatory agencies. Provide clear span structures for most crossings. Standard construction sediment and erosion control; detention BMPs; swale to mitigate stormwater pollutant. An alternative approach to floodplain impacts by establishing floodplain and riparian restoration with wildlife corridors.</p> <p>Unavoidable Adverse Impacts Loss of wildlife habitat.</p>

Table 3.0-1: Matrix of Environmental Impacts

<p align="center">No Build Alternative Other improvements by WSDOT and Local Agencies</p>	<p align="center">Preferred Build Alternative Mainline, preferred interchange options, and related facilities, including RRP</p>
Air Quality	
<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> It is anticipated that the No-Build Alternative would cause more traffic congestion than the Build Alternative in the year 2030. As stated in the Tier I ROD, the No-Build increases air pollution because of congestion. Air quality standards might not be met.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction Impacts</u> Dust from excavation and grading. Minor increase in emission from construction equipment.</p> <p><u>Operational Impacts</u> Some of the area would show increase over existing pollutant level due to increase in traffic. Air quality standards would be met or exceeded.</p> <p><u>Mitigation</u> Standard construction measures require a fugitive dust plan.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>
Noise	
<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> 11 of 35 sites studied will approach or exceed FHWA criteria.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> 2-4 dBA increase in noise level.</p>	<p><u>Construction Impacts</u> Temporary increase in noise due to construction activities.</p> <p><u>Operational Impacts</u> 45 sites studied will approach or exceed FHWA criteria.</p> <p><u>Mitigation</u> Noise wall is feasible at five locations, but reasonable at only one location. Only one noise wall will be provided.</p> <p><u>Unavoidable Adverse Impacts</u> 2-18 dBA increase in noise level.</p>
Energy	
<p><u>Construction Impacts</u> None for this project.</p> <p><u>Operational Impacts</u> Increase in energy usage because of higher congestion and traffic volumes.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> Continued increase in traffic congestion.</p>	<p><u>Construction Impacts</u> Would use more energy than no build alternative, but no measurable impact at regional or local level.</p> <p><u>Operational Impacts</u> Moderate energy saving for vehicles on the local streets due to reduced congestion.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>
Hazardous Material	
<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> Impacts associated with normal operation of existing roads like spills affecting stormwater.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction Impacts</u> Potential to encounter contaminated site and asbestos or lead based paint during structure demolition. Petroleum pipeline needs to be moved.</p> <p><u>Operational Impacts</u> Impacts associated with normal operation of highway like spills affecting stormwater.</p> <p><u>Mitigation</u> Hazardous material sites would be cleaned before roadway construction. Spill prevention control plans would be implemented.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>
Visual Quality	
<p><u>Construction Impacts</u> None for this project. Temporary impacts because of other minor improvements.</p> <p><u>Operational Impacts</u> Visual impacts due to incremental urbanization of corridor.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction Impacts</u> Temporary visual impacts due to construction.</p> <p><u>Operational Impacts</u> Views would be greatly altered. There would be increased nighttime light and glare from vehicles and interchange lighting.</p> <p><u>Mitigation</u> Use architectural elements to blend roadway structure. Provide a visual screen either vegetative (landscaping) or architectural at key viewpoints.</p> <p><u>Unavoidable Adverse Impacts</u> Altered views.</p>

Table 3.0-1: Matrix of Environmental Impacts

<p>No Build Alternative Other improvements by WSDOT and Local Agencies</p>	<p>Preferred Build Alternative Mainline, preferred interchange options, and related facilities, including RRP</p>
Public Services and Utilities	
<p><u>Construction Impacts</u> Minimal due to improvements.</p> <p><u>Operational Impacts</u> Increasing delays due to traffic congestion at peak hours.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction Impacts</u> Possible detours due to road closures. Delay in emergency response time. Relocation of various utility lines and electric poles.</p> <p><u>Operational Impacts</u> Improvement in emergency response time and better public services through reduced congestion.</p> <p><u>Mitigation</u> Detours and road closures would be coordinated with police, fire response units, school districts and other utilities. Service providers affected by construction would be notified.</p> <p><u>Unavoidable Adverse Impacts</u> Emergency response delay during construction may occur.</p>
Land Use	
<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> None.</p> <p><u>Cumulative Impacts</u> Development of the project area for residential, commercial and industrial uses continues in response to local zoning. Community cohesion and social interaction could decrease as traffic problems get worse.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction Impacts</u> 303 acres of Right of Way acquisition, plus 214 acres for RRP.</p> <p><u>Operational Impacts</u> None.</p> <p><u>Cumulative Impacts</u> The rate of build out for high density uses in response to local zoning will increase, primarily near the new interchanges. No substantial cumulative effects on social interaction and movement within or between neighborhoods are expected.</p> <p><u>Mitigation</u> Acreage needed may be minimized through additional design features such as retaining walls and appropriate design modification.</p> <p><u>Unavoidable Adverse Impacts</u> Permanent conversion of the land use.</p>
Socioeconomics	
<p><u>Construction and Operational Impacts</u> Users continue to depend upon existing transportation system. Worsening traffic could discourage neighborhood interaction and community cohesiveness.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction and Operational Impacts</u> Long lasting impacts on community cohesion and social interaction. May be some temporary disruption to businesses and right of way acquisition. Agricultural employment would decrease. One 241-unit complex on 20th Street East with a requirement to fill 20% of units with low income families is impacted. It is estimated that 4-low income units would be impacted. Temporary construction jobs would be increased.</p> <p><u>Mitigation</u> Coordination of detour routes with the community. Right of Way acquisition program as per State and Federal law in awarding compensation and assistance.</p> <p><u>Unavoidable Adverse Impacts</u> Minimal.</p>
Environmental Justice	
<p><u>Construction and Operational Impacts</u> Future road improvements by local agencies could cause effect to localized populations.</p>	<p><u>Construction and Operational Impacts</u> No disproportionately high and adverse effects on minority, low-income, or disadvantage populations.</p>
Farmland	
<p><u>Construction and Operational Impacts</u> None at this time. Local agency improvements to roads may impact farmlands.</p> <p><u>Cumulative Impacts</u> Farmland becomes increasing scarce in response to economic pressures and consistent with local zoning.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction and Operational Impacts</u> 182 acres of farmland effected, plus 91 acres for RRP. Activities of 6 farmers would be affected. Three parcels would be fragmented but roadway would not create barrier to equipment.</p> <p><u>Cumulative Impacts</u> Farmland will become increasing scarce in response to economic pressures and consistent with local zoning.</p> <p><u>Mitigation</u> Erosion control measures would minimize loss of top soils. Coordination with affected farmers would be conducted. Access would be provided from local streets to fragmented parcels.</p> <p><u>Unavoidable Adverse Impacts</u> Permanent conversion of farmland to Transportation use.</p>

Table 3.0-1: Matrix of Environmental Impacts

<p>No Build Alternative Other improvements by WSDOT and Local Agencies</p>	<p>Preferred Build Alternative Mainline, preferred interchange options, and related facilities, including RRP</p>
<p>Displacement, Disruption and Relocation</p>	
<p><u>Construction and Operational Impacts</u> None at this time.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction and Operational Impacts</u> 57 Single Family units 12 Multi-Family units / 17 Manufactured Homes 23 Businesses 4 Public Facilities 2 Farms</p> <p><u>Mitigation</u> Relocation assistance for displaced residents and businesses.</p> <p><u>Unavoidable Adverse Impacts</u> Displacement of residents and businesses.</p>
<p>Transportation</p>	
<p><u>Construction Impacts</u> Minimal due to improvement in local work.</p> <p><u>Operational Impacts</u> Some of the local intersections would be over capacity.</p> <p><u>Mitigation</u> Local agencies may do improvements to local network.</p> <p><u>Unavoidable Adverse Impacts</u> More congestion on local network.</p>	<p><u>Construction Impacts</u> Possible detours and delays due to road closures. Minimal disruption in Union Pacific Railroad operation.</p> <p><u>Operational Impacts</u> Major improvements in traffic flow and circulation. 20th Street East would be realigned because of I-5 interchange.</p> <p><u>Mitigation</u> Detours and road closure would be planned and coordinated to have least impact. Coordination with railroad authority to minimize impact.</p> <p><u>Unavoidable Adverse Impacts</u> Temporary construction delays.</p>
<p>Pedestrian and Bike Facilities</p>	
<p><u>Construction Impacts</u> Minimal due to improvement in local network.</p> <p><u>Operational Impacts</u> None at this time. Increased traffic would reduce safety to non-motorized travelers. Future improvements depend on local regulation and funding availability.</p> <p><u>Mitigation</u> Local agencies may improve pedestrian and bike lanes.</p> <p><u>Unavoidable Adverse Impacts</u> None.</p>	<p><u>Construction Impacts</u> Possible detours and delays due to road closures. Additional heavy traffic on some roads. Fractured roadway surface and increased dust may be encountered.</p> <p><u>Operational Impacts</u> Non-motorized traffic would not be allowed from 54th Avenue East to 20th Street East on proposed SR 167. Separate shared-use path constructed between 54th Avenue East to SR 99 is a benefit for bikes and pedestrians.</p> <p><u>Mitigation</u> Detours and road closures would be planned and coordinated with local government to have least impact. Dust would be suppressed with water where feasible during construction.</p> <p><u>Unavoidable Adverse Impacts</u> Construction delays.</p>
<p>Cultural Resources</p>	
<p><u>Construction Effects</u> None.</p> <p><u>Operational Effects</u> None.</p> <p><u>Cumulative Effects</u> Cumulative effects on prehistoric and historic sites are substantial because of past, present, and future disturbance. Cumulative effects on traditional cultural properties of the Puyallup Tribe are mostly undocumented.</p> <p><u>Mitigation</u> None.</p> <p><u>Unavoidable Adverse Effects</u> None.</p>	<p><u>Construction Effects</u> One prehistoric site has been identified that is considered eligible for National Register of Historic Places (NRHP) would be impacted.. 3 NRHP-eligible historic structures are impacted. Possible disturbance to undocumented archaeological sites; and disturbance to Pierce County Inventory historical structures.</p> <p><u>Operational Effects</u> None.</p> <p><u>Cumulative Effects</u> Cumulative effects on prehistoric and historic sites are substantial because of past, present, and future disturbance. Consultations with Puyallup Tribe avoided additional cumulative effects on traditional cultural properties, which remain mostly undocumented.</p> <p><u>Mitigation</u> Memorandum of Agreement (MOA) with SHPO and Tribe mitigates for adverse effects. Discovery Plan developed under a future MOA will describe procedures if archaeological sites are encountered during construction.</p> <p><u>Unavoidable Adverse Effects</u> Possible disturbance of archaeological remains during construction.</p>

Chapter 3 analyzes the impacts of the alternatives on the different areas of the environment (referred to as elements of the environment under the State Environmental Policy Act [SEPA]). The selection process for deciding which environmental areas to review is discussed in Section 1.3.3. Each section in Chapter 3 includes an introduction, a list of studies and coordination conducted, a description of the affected environment, an analysis of the impacts of the No Build and Build Alternatives, and suggested or required mitigating measures.

The analysis of impacts includes direct, indirect, and cumulative impacts. The National Environmental Policy Act (NEPA) and SEPA rules recommend that the level of impact analysis be related to impact of the alternatives and options. As the impacts increase, so should the depth of the analysis. The analysis should allow for a comparison of the alternatives and options. To the extent possible, detailed technical studies should be summarized rather than quoted. The result should be a concise comparison that allows the reader to draw conclusions.

3.1 Study Area

The terms “study area” and “project area” are used interchangeably throughout Chapter 3. For the SR 167 Tier II EIS, the actions being evaluated are the proposed transportation improvements throughout the SR 167 corridor in combination with past, present, and future land use development and other relevant non-project actions primarily within Pierce County.

3.1.1 Direct Impact Area

Direct impacts from a project are those that occur at the same place and same time as the project. They are generally predictable and associated with the project actions. As shown in Figure 3.1-1, the study area begins at the Port of Tacoma Road and extends in a southeasterly direction to the SR 512/SR 167 interchange. The study area extends north and east of the proposed SR 167 to the hillsides above the floodplain of the Puyallup River, encompassing the Hylebos Basin. To the south and west, the study area extends to the Puyallup River.

3.1.2 Indirect and Cumulative Impacts

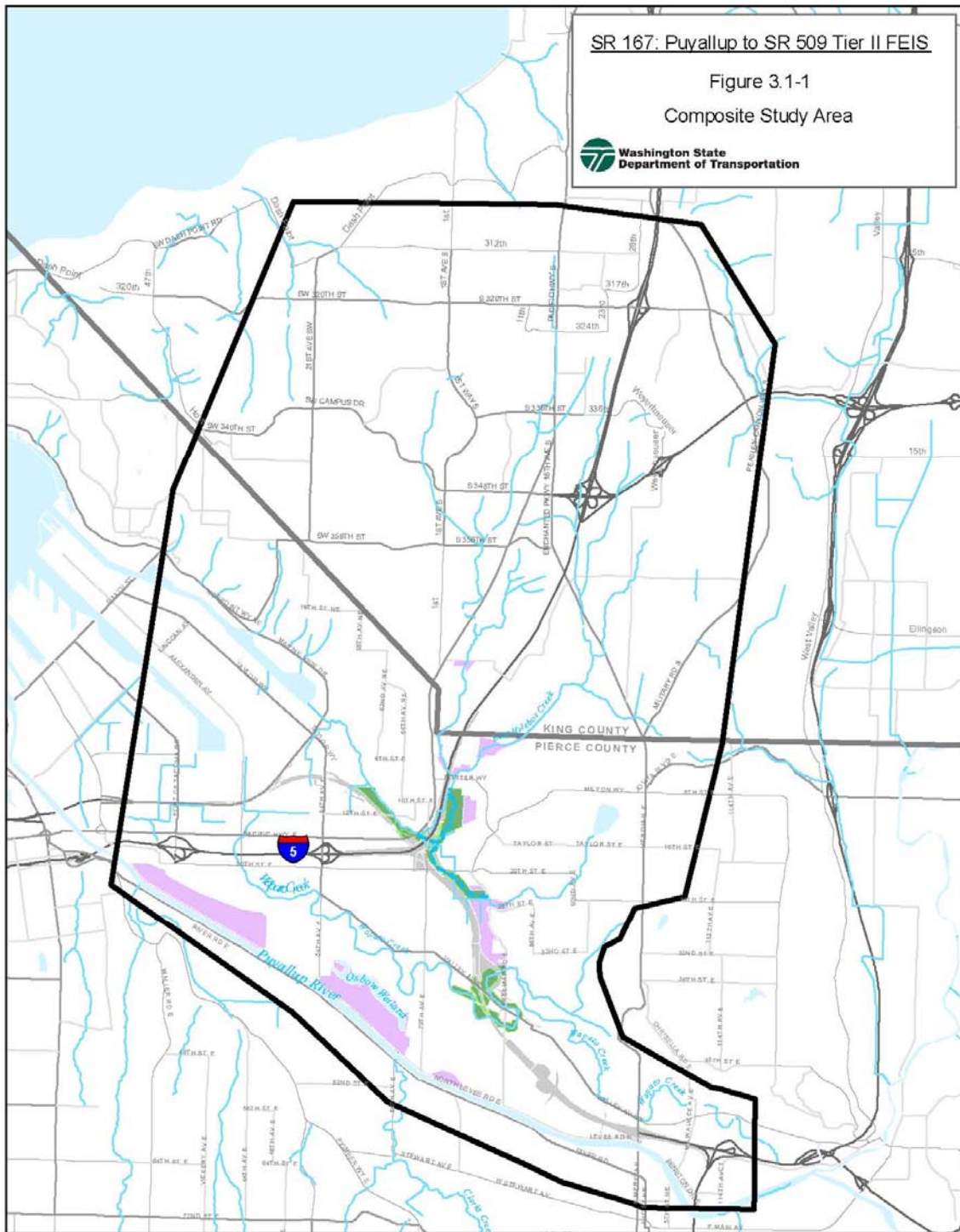
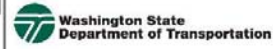
Indirect impacts are defined by the Council on Environmental Quality as impacts that are “caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR Section 1508.8).” Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (WSDOT 2005).

Color aerial photos taken in June 2002 by the USGS were used to interpret the extent of recent development within the project area (TerraServer 2004). The geographic boundary considered when addressing indirect impacts for the project includes the area up to 0.5 mile from the ROW boundaries of the interchange options.

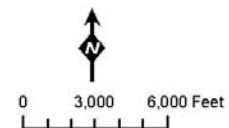
SR 167: Puyallup to SR 509 Tier II FEIS

Figure 3.1-1

Composite Study Area



- Riparian Restoration Proposal
- Preferred SR 167 Alignment
- Proposed Stream Relocation Site
- Study Area Limits
- Potential Wetland Mitigation Site



Cumulative impacts are defined by the Council on Environmental Quality regulations implementing NEPA as the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR Section 1508.7). Cumulative impacts can result from individually minor, but collective actions taking place over a period of time.

The indirect impacts and cumulative impacts analyses relied on information gained through the SR 167 Tier I EIS; the discipline reports prepared for the Tier II process; and meetings with the Environmental Protection Agency, U.S. Fish and Wildlife Service, and Washington Department of Fish and Wildlife. The scope of the analyses was based on public and agency input requested during formal scoping meetings in the EIS process; informal and formal input received from the public and agencies as a result of public meetings; and the results of prior research and technical analyses of direct and indirect effects conducted as part of the SR 167 EIS discipline studies. Information on baseline conditions was obtained through natural resource agencies responsible for their management, non-governmental environmental organizations and local government.

The following resources were considered to have impacts that required further detailed evaluation of indirect and cumulative impacts:

- Chapter 3.2 Water Resources
- Chapter 3.3 Wetlands
- Chapter 3.4 Wildlife, Fisheries and Threatened and Endangered Species
- Chapter 3.11 Land Use, Socioeconomic Impacts, and Environmental Justice
- Chapter 3.12 Farmland
- Chapter 3.16 Cultural Resources

Geographic Boundaries

Geographic boundaries for evaluating potential indirect and cumulative impacts were identified for each critical resource to reflect the area of logical influence for that critical resource. A geographic boundary for each resource analysis was identified by expanding the area of analysis to the point at which all potentially indirect and cumulative impacts would be captured and beyond which the resource would not be substantially affected. A geographic boundary of one quarter mile around interchanges was initially identified for the analysis of indirect impacts. This is because indirect impacts are expected to be linked to the rate of development, which would occur at these new interchanges.

For analyses of natural environment elements such as fish and aquatic habitat, the most meaningful natural boundary (in this case, the affected watershed) was then identified and used as the geographic boundary for analyses. This does not mean that substantial indirect and cumulative impacts were necessarily found to occur within these geographic units.

Where natural boundaries were not meaningful, a different analytical boundary was selected that would be meaningful. In addition, information was not always available for the desired geographic boundary. In that case, the most closely related data was used as the basis for best professional judgment of resource impacts. The regulatory interests of agencies with jurisdiction also influenced some analytical boundaries. Water quality and fish impacts were requested by sub-basin (sub-watershed) and accommodated where possible.

Temporal Boundaries

Similar to the geographic boundaries for evaluating potential indirect and cumulative impacts, temporal boundaries also were identified for each resource analysis depending on the accumulation characteristics of the effects being assessed and the regulatory interests of agencies with jurisdiction. Temporal boundaries define the period of time for which the analysis is conducted. Past temporal boundaries were often limited by available data and vary by element.

The year 2030 was selected as the future temporal boundary because it is the design year for the project. The design year represents the point at which we anticipate the project will reach its design capacity. This means that the traffic on the roadway would be able to travel at speeds for which the roadway was planned.

In addition, this time period is consistent with the horizon year of *Destination 2030* (PSRC 2001), the metropolitan transportation plan for the central Puget Sound region, and encompasses the time period for the region's long-range plan as described in *Vision 2020*, the region's growth management, economic, and transportation strategy. These two documents represent the planned land use development for the area and are by far the most consequential reasonable foreseeable actions that overlap geographically and temporally with the SR 167 project. *Destination 2030* identifies the SR 167 Extension as a part of the regional transportation plan.

The cumulative impacts of the No Build Alternative, which assumes implementation of *Vision 2020* and programmed and funded transportation improvements, were identified as the most meaningful baseline for comparing potential cumulative impacts of the Build Alternative on critical resources, ecosystems, and human communities of concern.

To help place indirect and cumulative impacts in context, an effort was made to find data on anticipated environmental and social change. However, little information was found. The review included internet searches and phone conversations with Pierce County, Port of Tacoma, Washington Department of Fish and Wildlife, Washington Department of Ecology, Washington Conservation Commission, Puget Sound Water Quality Action Team, Environmental Protection Agency, and U.S. Fish and Wildlife Service. When data were not readily available through Internet searches or WSDOT databases, personal contact was made with representatives from each of the agencies asking for trend data for the parameters analyzed. Additional trend information was obtained from the Northwest Environmental Watch. These references are identified in the section to which the information pertains.

Indirect and cumulative impacts detailed in the Tier II FEIS sections on specific resources are summarized in Section 3.17. Results of a cumulative *Net Environmental Benefits Analysis* are also presented in that section.

Activities Contributing to Cumulative Impacts

Activities occurring within the study area that are likely to contribute to the cumulative impacts include additional State and local road projects, continued commercial and industrial development, the planned expansion of the Port of Tacoma, and development associated with public facilities such as sports parks, pedestrian trails, and schools. *Port Vision 2020* is a study conducted by the Port of Tacoma to update and expand a 1990 analysis that led to extensive capital improvements. The planned improvements now include new wharf construction, wharf extensions, terminal expansions, new terminal construction, new container yards, and expansion of intermodal facilities (Port of Tacoma 2004).

State and local road improvements will occur within the time period specified for this analysis. The city of Fife (Fife) has jurisdiction over most of the land within the study area. Fife is currently working on design and environmental permitting for intersection improvements at 70th Avenue East/Valley Avenue East, and has identified several other road and interchange improvement; road extensions, and road widening projects within the study area in the transportation plan (2002). Similar road projects can be expected on a smaller scale from other local jurisdictions within the study area. The WSDOT Northwest Region is currently conducting the Triangle Study, which is examining scenarios to improve mobility in the I-5/SR 161/SR 18 area. Multiple transportation projects could result from this study, some of which may extend into the project area.

Land in the study area is zoned for commercial, industrial, and residential development. Future development projects will convert currently undeveloped land (vacant lots, farmlands, etc.). Transportation programs included in the Puget Sound Regional Council *Destination 2030* transportation plan, including the SR 167 Build Alternative, are expected to increase pressure for growth along major transportation corridors with the Urban Growth Area (PSRC 2001). Land use (development, logging, transportation improvements) which occurs upstream from the general study area also has the potential to contribute to cumulative impacts, especially to water quality due to sedimentation, erosion, and stormwater runoff.

In addition to the proposed SR 167 Extension project, proposed or anticipated actions and trends through the year 2020 include:

- Expansion of shipping operations at the Port of Tacoma. To accommodate anticipated increase in container volumes, the port plans to expand existing terminals and develop terminals for new clients. Simultaneous with terminal expansion the port plans waterway, rail, and road infrastructure improvements. (Port of Tacoma Port Vision 2020 1999).
- Construction of Freight Action Strategy for Seattle-Tacoma Corridor improvements included the construction of the Port of Tacoma Road Grade Separation Project and Shaw Road Grade Separation Project in Puyallup, both of which have been completed.

- Continuing industrial/manufacturing and commercial development of vacant, buildable parcels in Fife, Milton, and Puyallup valley area. This involves conversion of agricultural and open space within the urban areas of Fife, Milton, and Puyallup to industrial, commercial, and residential uses (such as the proposed CMC Heartland development of 850 homes and condominiums, a 150-bed assisted-living facility in Fife, and the Lloyds, Inc. development in Milton).
- Development of Puyallup Tribal properties in the Port of Tacoma and the Fife/Puyallup valley.
- Development of Pacific National Soccer Park.

Planned transportation system improvements in the vicinity of the proposed SR 167 highway extension as identified in the *Pierce County Six Year Improvement Program* (Pierce County 2000) are:

- Widening and reconstructing Canyon Road to extend north from Pioneer Way to connect with 70th Avenue East. This roadway would link the planned Port of Tacoma employment center in Frederickson with the Port of Tacoma and northward;
- Widening and reconstructing Valley Avenue from Freeman Road East to 20th Street East.

Planned transportation system improvements in the vicinity of the proposed SR 167 Extension Project as identified in the *WSDOT Highway System Plan* (WSDOT 1998) and *Destination 2030* (PSRC 2001) are:

- Improving the connections between SR 18, I-5, and SR 161 (“Triangle Project”);
- Widening SR 161 from 36th Street to I-5;
- Constructing Core HOV lanes along I-5 from Seattle to SR 512;
- Constructing Core HOV lanes along SR 167 from Puyallup to Seattle;
- Widening SR 16 from Tacoma Narrows Bridge to I-5, to include SR 16/I-5 interchange improvements.

3.1.3 Project Setting

Climate

Generally mild weather within the study area is the result of maritime polar air masses that form over the Pacific Ocean. The air masses are delivered to the Puget Sound region by westerly winds creating maritime climate conditions. The low marine temperatures and relatively warmer land mass frequently produce fog within the study area.

Within the Lower Puyallup River valley precipitation averages 40 inches per year with 75 percent rain, the primary form of precipitation, occurring between October and March (USGS 1986). Average summer temperatures are 62.9 °F with an average daytime high of 76.4 °F. The average winter temperature is 40.5°F with an average winter minimum of 33.1°F (Gray and Osbourne 1994). Prevailing winds develop out of the southwest with the average high speed of 10.4 miles per hour occurring during January.

Topography

The SR 167 project area is situated within the broad flat floodplain of the Puyallup valley and adjacent northern uplands. The dominant physiographic feature within the valley is the Puyallup River, which flows to the northwest and discharges to Commencement Bay. Within the floodplain, small streams flow to the northwest along gradients of less than 2 percent before discharging into Commencement Bay. Bluffs rise approximately 400 feet above the valley floor, forming upland terraces to the north of the project location. Streams flowing from upland lakes dissect the terraces prior to converging with the valley streams.

Geology

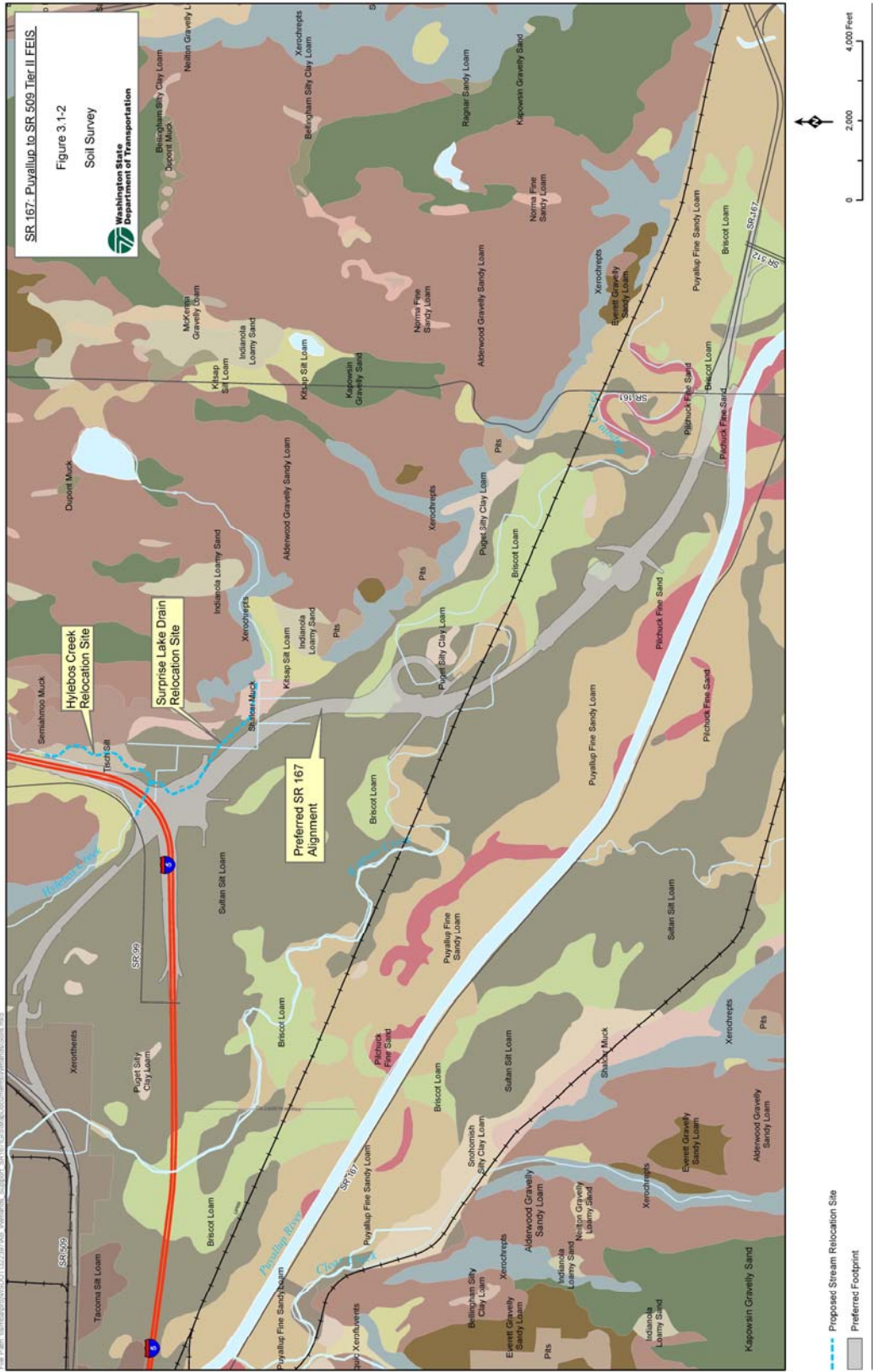
Glacial and fluvial geomorphologic processes have dominated the evolution of the geology and topography within the project area over the last 15,000 years. Four major glaciations left stratified deposits of till and outwash sediments in the Puget Lowland (Dragovich et al. 1994). Deposits within and near the project area accumulated during the final Fraser Glaciation.

Vashon Drift deposits to the northeast of the Puyallup valley consist of advance outwash overlain by compacted till. This sequence is overlain by Vashon recessional outwash along the I-5 corridor north of Fife. Additionally, streams deposited alluvium during warmer interglacial events. The alluvial units consist of sands, silts, and clays (Earth Tech 1998). The Puyallup valley was cut in advance outwash deposits by recessional meltwaters approximately 14,000 years ago (Dragovich et al. 1994).

Approximately 5,800 years ago the Osceola mudflow originated at Mt. Rainier and traveled as far as Fife. West of Puyallup, the mudflow deposited clay-rich, cobbles, gravels and boulders atop the marine sediments of what was then the Puyallup River Delta. Since then the delta has prograded westward to its present location within Commencement Bay. Glacial, mudflow, and marine deposits are presently covered by a veneer of alluvial silts and sands deposited on the floodplain of the Puyallup River.

Soils

Soils in the project areas are shown in Figure 3.1-2. Sultan series soils dominate the Puyallup valley along the planned SR 167 corridor. The soils are situated with slopes of less than 2 percent and were formed in alluvial deposits covered with deciduous and coniferous trees. The permeability of these soils is moderately slow (0.2 to 0.6 inch per hour). Sultan soils are generally not suitable for supporting heavy loads.



Also found locally within the valley, with one notable occurrence underlying a portion of the I-5 corridor east of the Port of Tacoma Road Interchange, is Briscot loam. The poorly drained Briscot loam soils were formed in alluvium under a deciduous and coniferous canopy. The permeability of these soils is classified as moderately slow.

Puyallup fine sandy loam is present along the eastern edge of the project area at the SR 167/SR 161 (North Meridian) Interchange. Puyallup fine sandy loam was formed in a sandy mixed alluvium under tree cover. These soils are classified as being well drained and having a moderately rapid permeability (2.0 to 6.0 inches per hour).

Xerothents are present along the western edge of the project area at the proposed SR 167/ SR 509 Connection. Xerothents, which were commonly wetlands, are locations that have been filled with dredged material and/or trash.

Three types of upland soils are found along the I-5 corridor north of Fife including; the Tisch silt, Kitsap silt loam 2 to 8 percent slopes, and Alderwood gravelly sandy loam 6 to 15 percent slopes. Tisch silt is a very poorly drained soil that originated from diatomaceous earth, volcanic ash, and decaying plant remains in upland depressions. These soils have a moderately slow permeability and a high water capacity. Kitsap silt loam 2 to 8 percent slopes is a moderately well drained soil that formed from glacially derived lake sediments in the Puget Sound uplands. The permeability of these soils is very slow (less than 0.06 inch per hour) and the water capacity is high. Alderwood gravelly sandy loam 6 to 15 percent is moderately well drained and is derived from glacial till. These soils have a very slow permeability and the water capacity is low.

Surface Water

The SR 167 project area lies within Water Resource Inventory Area 10 known as the Puyallup-White Basin. Proposed SR 167 highway improvements cross portions of Hylebos Creek, Wapato Creek, and Lower Puyallup River sub-basins. Primary surface waters in the study area include Hylebos Creek, Surprise Lake Drain, Fife Ditch, Hylebos Waterway, Wapato Creek, Old Oxbow Lake Ditch, and Puyallup River.

Population and Land Use

The proposed project runs through portions of the cities of Fife, Puyallup, Milton, Edgewood, Tacoma, and Pierce County. The bulk of the study area resides within the city limits of Fife. The area is zoned for industrial, commercial, and mixed residential and commercial uses. Existing land use within the proposed area is primarily industrial, commercial, vacant/undeveloped, and agricultural. Land use north of I-5 is primarily commercial and industrial. Vacant/undeveloped, agricultural, residential, and commercial uses are found along the southern segment of the project in the Fife/Puyallup valley. Within the last decade, the Fife valley area has increasingly become more industrialized with manufacturing and warehouse/distribution facilities replacing agricultural land.

The project would support and facilitate growth in the study area. The project is consistent with local and regional land use plans that have already addressed

growth in the study area. A similar level of projected growth is expected to occur in the study area with or without the project. The project may affect the rate and timing of growth and where development occurs, but it would not induce growth. Combined with market forces and economic conditions particularly from the Port of Tacoma's anticipated growth and expansion, development is expected to occur and has been occurring within this immediate area.

The *City of Fife Comprehensive Transportation Plan* (2002) contains a plan "with SR 167" and "without SR 167." Most of the future projects proposed are listed in both plans, with only a small number of improvements either added or removed due to the construction of SR 167. An extension of Frank Albert Road is included as part of the "with SR 167" plan, but not if SR 167 is not constructed. Nine additional road projects are proposed to improve traffic flow if SR 167 is not constructed, but they would not increase freight traffic mobility to and from the Port of Tacoma to the degree that the SR 167 project would.

Considerable population growth has occurred in the study area and is forecasted to continue through 2030 in Pierce County. Over the last 10 years, Pierce County population increased 19.5 percent from 586,203 to 700,600. During the same period the cities of Fife and Puyallup have grown at a more rapid rate (31.9 percent and 29.6 percent, respectively). Future growth estimates through 2020 for Pierce County show a similar growth rate to that experienced in the past (OFM 2000).

3.2 Water Resources (Waterways, Hydrology, Water Quality, Hydrogeology, and Floodplains)

This section provides a description of water resources in the study area and analysis of the potential impacts of the No Build and Build Alternatives. Studies and research conducted as part of the Tier II Final Environmental Impact Statement (FEIS) are listed. Waterways, floodplains, and groundwater in the study area are described, and the potential construction and operational impacts of the alternatives and options on these features are quantified. The Washington State Department of Transportation (WSDOT) and the Federal Highway Administration (FHWA) will adhere to all relevant regulations and obtain required permits, and mitigating measures will be implemented. Mitigation opportunities are introduced and evaluated at the end of this section.

Surface water, groundwater, and floodplains provide public water supply, aquatic habitat, and flood storage and attenuation in the Puyallup valley. Potential effects of the proposed project to water resources in the analysis area include changes in water quality, floodwater storage and displacement, erosion, and habitat quality and availability.

Because of the flat topography and moderately slow soil permeability of the study area, the Tier I EIS process suggested that localized surface drainage would be a major design consideration. The Tier I EIS process projected that soil densification below and adjacent to roadway embankments would have little impact because aquifers at or below 70 feet are the primary source of water in the study area.

Various methods of estimating stormwater quality and quantity can be used to evaluate the impact of the Build Alternative and its options on water resources. Pollutant loads of treated stormwater may provide a measure of impact among different options, as some pollutant loading can be expected regardless of treatment type.

FHWA and WSDOT reorganized and expanded this section in response to comments on the Tier II Draft Environmental Impact Statement (DEIS). Results are presented by basin (e.g., Hylebos, Wapato) rather than by mainline and interchange options. Additional recent water quality data are summarized. More preliminary design information is presented on stream channel design and the Riparian Restoration Proposal, which is compared to conventional stormwater treatments. An expanded discussion of cumulative impacts is included in this section and summarized in Section 3.17.

3.2.1 Studies Performed and Coordination Conducted

This section incorporates information compiled in the *Water Resources Discipline Study* (EnviroVision 2005). Information sources consulted for the DEIS and FEIS are described, as are the methods for analyzing impacts and coordination with agencies and stakeholders.

DEIS Information Sources

The City of Federal Way Department of Public Works Surface Water Management Division provided information regarding watershed planning and water quality conditions in the Hylebos Creek Watershed. The City of Puyallup Department of Public Works provided information about their public water supply systems.

The Tacoma-Pierce County Health Department supplied information on wellhead protection and groundwater quality. Representatives of the Pierce County Public Works and Utilities Department provided information related to watershed planning, stormwater management, and water quality.

The Puyallup Tribe of Indians, Fish and Wildlife Department, provided ambient water quality data for Wapato Creek and information regarding tribal regulatory jurisdiction over water resources.

The Washington State Department of Ecology (Ecology) Southwest Regional Office Water Quality Program provided information on water quality. The Ecology Environmental Investigations and Laboratory Services Program supplied information on water and sediment quality. The Ecology Standards Program was contacted for information on the classification of surface waters under Chapter 173-201A of the Washington Administrative Code (WAC 173-201A).

The United States Geological Survey (USGS) Water Resources Division in Tacoma provided information regarding the drainage area of the Puyallup River. The United States Environmental Protection Agency (EPA), Region 10 was contacted for information on historical sediment and water quality conditions within the Hylebos Waterway.

Portions of the Riparian Restoration Proposal (RRP) were developed with assistance from Washington Department of Fish and Wildlife (WDFW), Washington Department of Natural Resources (WDNR), United States Fish and Wildlife Service (USFWS), NOAA National Marine Fisheries Service (NOAA Fisheries), EPA, Ecology, the Puyallup Tribe of Indians- Environmental Protection Department, City of Fife - Planning Department, and Friends of the Hylebos Wetlands (FOHW).

FEIS Additional Information

Geographical Information System (GIS) and land use information for Hylebos and Wapato basins was used for existing land use data as well as review and documentation of future land use as portrayed in existing land use related plans for the various jurisdictions affected by the project.

Additional WSDOT design details were provided for the project including more detail on the RRP, stormwater treatment concepts, stream crossing information, and other project aspects that may affect water quality.

The FOHW provided water quality data from recent monitoring in the project vicinity.

The Puyallup Tribe of Indians was contacted to obtain additional or more recent water quality data. They provided annual average data for a few parameters for two sites in both the Hylebos and Wapato Creeks.

King County was contacted to obtain additional data for the Hylebos and they provided (through their website) a copy of a recent monitoring effort on the East Fork of Hylebos Creek.

A summary report to assess engineering solutions associated with alternatives to mitigate potential impacts of the B&L Woodwaste site on the Hylebos Creek relocation was reviewed to evaluate groundwater contamination concerns (Tetra-Tech 2004).

SR 167 Extension Preliminary Hydrologic Analysis Riparian Restoration for Wapato Creek at Valley Avenue Interchange (WSDOT 2004c) was used to evaluate flooding impacts to Wapato Creek.

Analysis of the SR 167 Extension and Riparian Restoration Proposal in the Hylebos Watershed; Hydrology, Hydraulics, and Geomorphology (MGS et al. 2004) was used to evaluate floodplain and channel impacts to Hylebos Creek and Surprise Lake Drain.

SR 167 Net Environmental Benefits Analysis (CH2M HILL 2005) was also reviewed.

Methods

A primary consideration of FHWA and WSDOT is the development of a safe public transportation infrastructure that minimizes environmental impacts and does not cause chronic maintenance problems associated with flooding. Floodwaters can cause loss of life and damage to transportation infrastructure, while emergency repairs associated with flooding can result in impacts to aquatic species and substantial operational costs. Thus, it is imperative for a project of this magnitude to have the most accurate flooding information available. In 1990 and 1996, flooding in the study area damaged WSDOT right-of-way (ROW) and extended beyond the boundaries of the 100-year floodplain identified on Flood Insurance Rate Maps produced by the Federal Emergency Management Agency (FEMA). It is also well known by local agencies that the FEMA Flood maps underestimate the extent of floodplains within the study area (King County 1990; Pierce County 1991).

In order to develop the information needed to avoid and mitigate flood hazards, WSDOT conducted a study to identify and map flood prone areas. These areas are more extensive than what is shown on the current FEMA maps (FEMA 1981 and 1987). Flood prone areas were developed from aerial photographs taken during the peaks of 1990 and 1996 flood events. The resulting maps were used to identify threats to public infrastructure and assess the impacts that could result from new construction of SR 167.

Floodplain storage displacement results in lost detention and can result in increased stream flows and bank erosion. Therefore, floodplain storage loss was also estimated for the purpose of developing appropriate mitigation. Hydrologic

analysis of the Hylebos Creek watershed was performed for the FEIS using the Hydrological Simulation Program Fortran (HSPF) and the U.S. Army Corps of Engineers' Hydrologic Engineering Centers River Analysis System (HEC-RAS) models to examine effects of the project on stream flows, floodplain elevations, velocities and erosion (MGS et al. 2004). Hydrology of the Wapato Creek project area was analyzed with MGSFlood, which is based on HSPF (WSDOT 2004b).

Stormwater pollutant loads in the DEIS were determined using the FHWA Method for Calculating Pollutant Loads (FHWA 1996). Variables in the FHWA method include drainage area, percent impervious surface (pavement area as a percentage of ROW area), and rainfall characteristics (mean volume and mean interval between events).

As detailed in the FHWA methodology, the event mean concentration reported from 50 percent of urban highway sites was used as an estimate of end of pipe pollutant concentrations for discharges of untreated stormwater. Treated stormwater pollutant concentrations were calculated assuming the pollutant removal efficiencies derived from research on constructed wetlands. Event mean load was calculated using the loading variables provided by FHWA (1996) for each parameter of interest.

For the DEIS, pollutant loading estimates for each interchange area were developed as a means of comparing different interchange configurations. It was clear from that study that there was no notable difference between configurations.

For the FEIS analysis, the pollutant loading estimates were developed by basin (e.g., Hylebos) rather than by interchange option. Estimated annual pollutant loads were calculated for each receiving water using pollutant yield values associated with existing and predicted future land use (Horner 1992). Pollutant loads were calculated for total suspended solids (TSS), total phosphorus (TP), total nitrogen (TN), lead (Pb), zinc (Zn), copper (Cu), and fecal coliform bacteria (FC). These parameters were assessed because they represent common water quality problems and/or they are commonly measured in stormwater runoff from roadways. The *Water Resources Discipline Study* (EnviroVision 2005) provides detail on the methods and results from this analysis. Summary tables are provided in Sections 3.2.5 and 3.2.7.

WSDOT geotechnical staff conducted a groundwater study to determine the potential for aquifer compaction and its impact to public water systems and groundwater flooding. Eleven monitoring wells were drilled to depths of up to 100 feet throughout the project area. Water levels within the wells were monitored for approximately one year by the WSDOT Geotechnical Branch (WSDOT 2001).

Descriptions of streamside vegetation (riparian) conditions and land use drainages were augmented with windshield surveys, physical stream channel measurements, and aerial photo interpretations. Maps were prepared using ArcView™ GIS. A list of public water supply wells was obtained from the Washington State Department of Health (DOH) and their Wellhead Protection Zones were delineated. Wellhead protection zones that overlap the SR 167

corridor were identified. (The SR 167 corridor was defined as the immediate roadway plus an additional 600-foot buffer to allow for GIS errors in scale and data collection.) WSDOT subsequently field verified the location of each public well. Local jurisdictions provided additional information on their water supply wells and respective wellhead protection zones.

3.2.2 Affected Environment

Surface Water Resources

The SR 167 project area lies within Water Resource Inventory Area (WRIA) 10 known as the Puyallup-White Basin. The construction and operation of the proposed SR 167 highway improvements has the potential to impact the following surface waters: Hylebos Creek, Surprise Lake Drain, Fife Ditch, Hylebos Waterway, Wapato Creek, Old Oxbow Lake Ditch, and Puyallup River.

Surface Water Quality

Table 3.2-1 provides a summary of recently proposed (2003) water quality standards for Aquatic Life Uses and Recreational Use since these are the most stringent and can be applied to all waters found in the project area. Currently the EPA is reviewing Ecology's proposed water quality standards for aquatic life criteria (EPA 2005).

The Puyallup River basin up to river mile 1.0 (approximately ½ mile downstream of the SR 509 bridge) has been designated Anadromous Salmon/Trout Rearing and Migration Only and Primary Contact Recreational Use. The EPA has recommended that river miles 7.3 to 31, outside the project area, be classified as Anadromous Salmon/Trout Spawning, Core Rearing, and Migration as well as the Primary Contact Recreational Use. All other freshwaters in the project area are designated as Salmon/Trout Spawning, Noncore Rearing and Migration and Primary Contact Recreation Use (WAC 173-201A).

Under Section 303(d) of the federal Clean Water Act, bodies of waters that are impaired or threatened, or do not meet State water quality standards need to be identified. Every two years, Ecology creates a list of those waters that do not, or are not expected to, meet water quality standards and includes the list in a statewide water quality assessment report. This report is often referred to as the "List of Impaired and Threatened Waterbodies," or the "303(d) list".

When surface waters are categorized as "polluted" on the 303(d) list, a "clean up plan" (often in the form of a total maximum daily load [TMDL] analysis) is required to identify methods for controlling pollution and monitoring the effectiveness of these controls. The 1998 303(d) List describes segments with excursions above criteria and identifies if a TMDL analysis is necessary. In the 2002/2004 303(d) List (Ecology 2002/2004), stream segments that are designated Category 5 are considered "polluted."

Table 3.2-1: Comparison of Freshwater Water Quality Standards

Class/Category	Temperature	Dissolved Oxygen	Bacteria ⁽²⁾	Turbidity	pH	
Proposed Aquatic Life and Recreational Use Criteria ⁽³⁾	Char	Highest 7-DADMax 12°C, with human induced impacts ≤0.3°C	Lowest 1-Day Minimum 9.5 mg/L, with human induced impacts ≤0.2 mg/L	Extraordinary Primary Contact - Fecal Coliform organism levels must not exceed a geometric mean value of 50/100mL, with no more than 10% of samples above 100/100 mL Primary Contact - Fecal Coliform organism levels must not exceed a geometric mean value of 100/100mL, with no more than 10% of samples above 200/100 mL Secondary Contact – Enterococci levels must not exceed a geometric mean of 200/100mL, with no more than 10% of samples above 400/100 mL	5 NTU over background with background ≤50 NTU; or a 10% increase when NTU is >50	6.5 to 8.5, human induced variation <0.2
		Highest 7-DADMax 16°C, with human induced impacts ≤0.3°C	Lowest 1-Day Minimum 9.5 mg/L, with human induced impacts ≤0.2 mg/L	Same for all Aquatic Life Categories	Same as for Char.	6.5 to 8.5, human induced variation <0.2
		Highest 7-DADMax 17.5°C, with human induced impacts ≤0.3°C	Lowest 1-Day Minimum 8.0 mg/L, with human induced impacts ≤0.2 mg/L	Same for all Aquatic Life Categories	Same as for Char.	6.5 to 8.5, human induced variation <0.2
		Highest 7-DADMax 17.5°C, with human induced impacts ≤0.3°C	Lowest 1-Day Minimum 6.5 mg/L, with human induced impacts ≤0.2 mg/L	Same for all Aquatic Life Categories	10 NTU over background with background ≤50 NTU; or a 20% increase when NTU is >50	6.5 to 8.5, human induced variation <0.2
		Highest 7-DADMax 18°C, with human induced impacts ≤0.3°C	Lowest 1-Day Minimum 8.0 mg/L, with human induced impacts ≤0.2 mg/L	Same for all Aquatic Life Categories	Same as for Char.	6.5 to 8.5, human induced variation <0.2
		Highest 7-DADMax 20°C, with human induced impacts ≤0.3°C	Lowest 1-Day Minimum 6.5 mg/L, with human induced impacts ≤0.2 mg/L	Same for all Aquatic Life Categories	Same as for Char.	6.5 to 8.5, human induced variation <0.2
Andromous Salmon & Trout	Spawning, Core Rearing, & Migration					
Non-Andromous Trout	Spawning, Noncore Rearing, & Migration Only					
	Warm Water Species					
<p>⁽¹⁾ This table is a subset of the Washington State Water Quality Criteria (WAC 173-201A 1992 and 2003). Additional criteria exist for metals, toxics and marine waters.</p> <p>⁽²⁾ Bacteria standards are based on recreational use criteria described in the WAC. Primary Contact means activities where there will be direct contact with water including swimming and submergence. Secondary Contact activities are those where there would be limited contact with the water, such as wading or fishing. These standards have been approved for use by the EPA.</p> <p>⁽³⁾ Washington State Department of Ecology proposed water quality standards currently in review with the Environmental Protection Agency (Ecology 2002/2004).</p>						

The 1998 and 2002/2004 303(d) lists included several segments of waterbodies found within the project area. Table 3.2-2 summarizes these impaired waterbodies, and for 2002/2004 listings, the categories have been listed. Figure 3.2-1 indicates location of 303(d) listed segments in the project area.

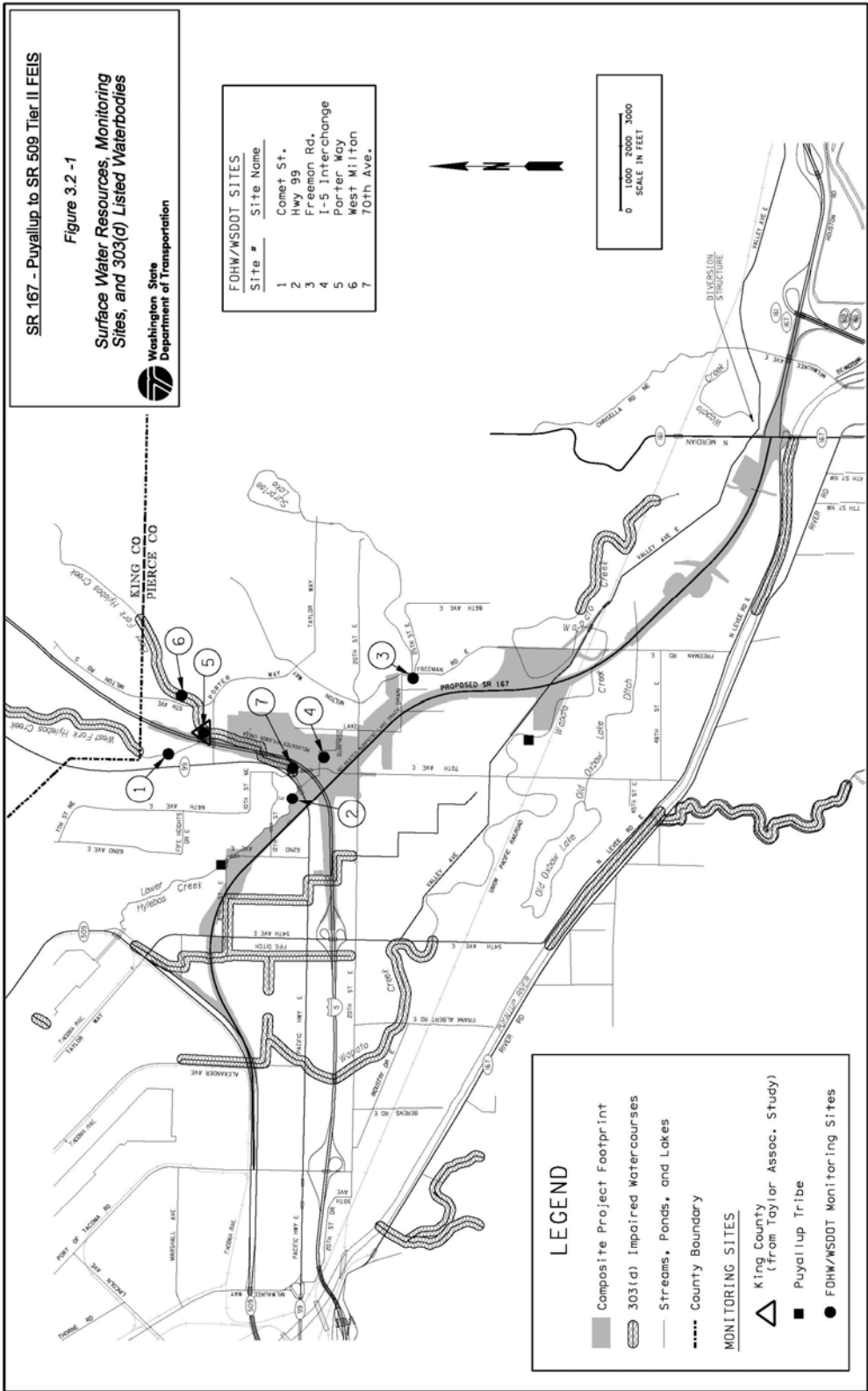
Table 3.2-2: Summary of 303(d) Impaired Waterbodies

Waterbody	1998 List	2002/2004 List ⁽¹⁾
Puyallup River Basin Puyallup River	As, FC, Pb, Temp, pH	Category 5: Cu, Pb, FC Category 2: Cu, DO, FC, Pb, Hg, Temp, Turbidity
Hylebos Creek Basin East Fork Hylebos West Fork Hylebos Fife Ditch Hylebos Waterway/ Commencement Bay	FC FC FC, Ammonia-N, DO Benzene, FC, DO, Dioxin, Tetrachloroethylene	Category 5: FC Category 2: DO and pH Category 5: FC and Temp Category 5: FC, Ammonia-N, DO Category 5: DO, FC Category 2: pH, Temp, benzene, Cu, Tetrachloroethylene, Trichloroethylene
Wapato Creek Basin Wapato Mainstem	DO, Instream Flow, Benzene, FC	Category 5: DO, FC Category 2: Benzene, FC

⁽¹⁾ Category 5 – Polluted water that require a TMDL, Category 2 – Waters of Concern.
FC = Fecal Coliform, DO = Dissolved Oxygen, As = Arsenic, Pb = Lead, Cu = Copper, Hg = Mercury

Only one pollutant cleanup plan or TMDL has been developed for the project area. In 1993, a TMDL was completed for the Puyallup River for biochemical oxygen demand, ammonia, and residual chlorine (Pelletier 1993). This TMDL was amended in 1994. A TMDL for fecal coliform bacteria was proposed for the next review period. The analysis would include the mainstem Puyallup and White rivers and their associated tributaries listed for FC (McKee, K., Pers. Comm. 2005). A temperature TMDL was proposed at one time but is not currently planned.

In addition to State water quality standards, basin specific thresholds were set by King County to allow comparison between subbasins and to identify problem areas in the Hylebos Watershed (King County 1991). Threshold values were established for two parameters that were not covered (at the time) under State or federal water quality standards. A threshold of 1.25 mg/L (milligrams per liter) was set for nitrate+nitrite (N+N) and a threshold of 50 mg/L was set for TSS (King County 1991). These values were determined based on review of other study results, monitoring experience and professional judgment (King County 1991). Other thresholds (e.g., 0.05 mg/L for TP) for the Hylebos Watershed were set according to existing EPA recommended guidelines and State Board of Health Drinking Water Standards.



Floodplains and Flooding

To assess affected area under typical high flood conditions, a number of methods were used to estimate the acres of floodplain potentially impacted by the project.



Flooding along I-5 at Hylebos Creek in February 1996.

The 100-year floodplain as previously mapped by FEMA provided the first level of analysis. However, review of aerial photos from the 1996 flood indicated that the flooded area was substantially larger. Consequently, the DEIS analysis included estimates of what has been termed the “flood prone area” to allow a more accurate analysis of impacted area. In the Hylebos basin where the majority of the project impacts occur, yet another method for estimating floodplain area was used. This involved hydrologic modeling and was used to estimate the existing 100-year floodplain and the floodplain under future build-out conditions in the drainage area.

Hylebos Basin

The Hylebos Creek watershed drains over 18 square miles of land from the city of Federal Way to the Hylebos Waterway and Commencement Bay in the city of Tacoma (King County 1990). The watershed consists of three subbasins: the East Fork Hylebos Creek, the West Fork Hylebos Creek, and Lower Hylebos Creek.

Both the East and West Forks of Hylebos Creek originate in Federal Way and flow south along either side of I-5 into Milton where they join and form the mainstem of Hylebos Creek and the beginning of Lower Hylebos Creek subbasin. South of the convergence of the two forks, near I-5 and the 70th Avenue East overpass, the Lower Hylebos Creek flows northwest, through the Tacoma tide flats, before discharging to the Hylebos Waterway.

Surprise Lake Drain is a tributary to the Lower Hylebos Creek. Fife Ditch discharges even lower in the basin in the Hylebos Creek Estuary. The SR 167 project footprint lies at the lower end of the Hylebos watershed and almost entirely within the Lower Hylebos Creek subbasin.

The Hylebos Waterway is one of seven waterways situated within the Commencement Bay tide flats at the western boundary of the project area. The Hylebos Waterway is an estuary that receives fresh surface water from Hylebos Creek, Fife Ditch, Surprise Lake Drain, and direct runoff from the surrounding tide flats. Aquifers within the Puyallup valley and the adjacent uplands also contribute fresh water to the waterway. This section describes the existing surface waters in the Hylebos Basin. After the primary streams and constructed drains or ditches are characterized, hydrology and flooding are discussed and water quality is summarized.

Hylebos Creek

Urbanization of the Hylebos Creek basins has disrupted the hydrology of these systems. The headwaters of West Fork Hylebos Creek originate as a spidery web of smaller tributaries at Panther Lake (the corner of 348th Street and 1st Avenue South), and near the vicinity of the Sea-Tac Mall at Pacific Highway and South 320th Street. The tributaries converge in the vicinity of the West Hylebos Wetlands and then converge with the North Fork just north of South 373rd and Pacific Highway forming the main trunk of the West Fork of Hylebos Creek. Tributaries north of 348th Street receive runoff from a highly urbanized land use area, consisting primarily of commercial, multifamily residential housing, and associated roads. These areas have a high percentage of impervious surfaces, and often lack adequate stormwater detention or are served by undersized detention ponds. Therefore, runoff is quickly conveyed to the tributaries, which results in short duration, high volume flows. These tributaries then flow into the 93-acre West Hylebos wetland. Despite less intensive land use and the presence of large forested areas south of the West Hylebos wetland, tributaries have been piped and undergone encroachment and bank armoring along several reaches. Additionally, flash discharges from the urbanized sub-catchments to the north are conveyed to these lower segments. Pierce County (1991) estimated that flood peaks on the West Fork Hylebos Creek have increased 80 percent over the pre-developed forested condition.

The headwaters of East Fork Hylebos Creek subbasin originate at Lake Killarney, North Lake, and north of 320th Street. The tributary originating west of I-5 conveys runoff from highly urbanized areas of commercial development. Originally a tributary to the West Fork Hylebos Creek, this drainage was constrained to pipes and channels during the construction of I-5. Currently, it joins other East Fork Hylebos Creek tributaries east of the Wild Waves Water Park and south of SR 161. From the lakes to SR 161, the stream gradients are gentle and the velocity is slow. Stream gradients and velocities increase south of the highway until they reach the valley floor in the city of Milton. These increased stream flows have been attributed to residential development, gravel mining, and other site-specific land uses within the subbasin. Urban runoff originating in the headwaters of the subbasin increases peak flows, leading to erosion of the channel substrate and substantial channel incision along reaches of East Fork Hylebos Creek. Throughout the basin, wetlands have been filled or disconnected from the floodplain thus reducing floodwater storage while impervious surface has reduced detention time, and increased flow rates. King County (1990) estimated that flood peaks on the East Fork Hylebos Creek have increased 60 percent over the pre-developed forested condition.



Lower Hylebos Creek, I-5 vicinity.

The Lower Hylebos Creek subbasin originates at the confluence of the East and West Forks of Hylebos Creek. It flows through a broad floodplain in the city of Milton, turns northwest and flows beneath a bridge on I-5 into Tacoma, where it slowly makes its way through the tide flats, and discharges to the Hylebos Waterway and Commencement Bay. Surprise Lake Drain is a tributary to Lower Hylebos Creek and enters just upstream of the Highway 99 bridge crossing. Fife Ditch flows into the Hylebos Creek estuary through a tide gate and pump station.

Consequently, although it can be considered to be part of the Hylebos watershed, its proximity to the mouth of the stream limits its impact as a typical tributary. Lower Hylebos Creek and Fife

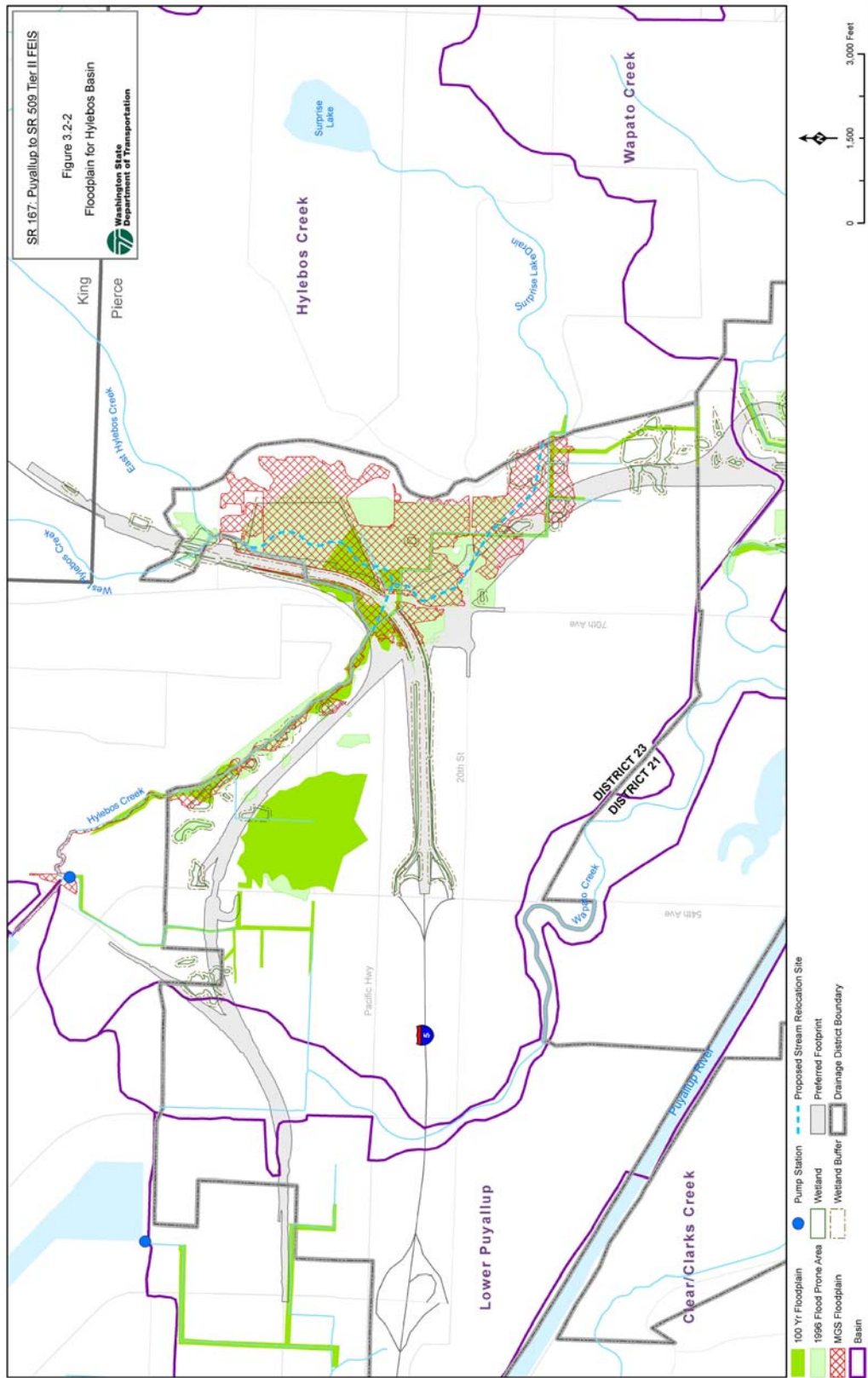
Ditch convey runoff from the following land use types: light manufacturing and single family residential in the city of Milton; industrial, commercial, and residential in the city of Fife; and industrial and residential in the city of Tacoma.

In Lower Hylebos Creek the floodplain has been filled, channelized, and encroached upon, resulting in a reduction of floodplain storage. The stream is confined to a narrow channel, constricted between I-5 on the left bank and a vertical wall of concrete blocks on the right bank. There is no riparian vegetation or large woody debris along this reach. Downstream of this reach in the segment between 70th Avenue East and Porter Way, the stream runs through a fairly straight trapezoidal channel that is incised several feet and with nearly vertical banks. There is no streambed gravel and little or no overhanging riparian vegetation. The banks are primarily vegetated with invasive reed canary grass and blackberries.

Hydrology and Flooding

During recent large flood events (January 1990 and February 1996) the entire floodplain as defined by the FEMA Flood Insurance Rate Map (FIRM) was inundated along with several areas outside the mapped boundaries (FEMA 1981 and 1987). These two storms were calculated to be approximately a 20-year (1996) and nearly a 100-year (1990) rain event. The designated floodplain and flood prone area (as defined by the 1996 event) are depicted in Figure 3.2-2.

A hydrologic analysis of the lower reaches of Hylebos Creek (from Porter Way to the mouth and including Surprise Lake Drain), was performed using the HSPF and HEC-RAS models to examine effects of the project on stream flows, floodplain elevations, velocities and erosion (MGS et al. 2004). The flood magnitude just upstream of the project area (Porter Way) is considerably higher than immediately downstream due to flood storage in the large wetland and broad floodplain south of Porter Way. The discharge then increases as inflow enters from the Lower Hylebos subbasin and Surprise Lake Drain.



The flood season for Hylebos Creek is from October to March. The greatest floods are caused by rainfall versus melting snow. The stream rises quickly during heavy rainfall because of the relatively steep terrain and development in the upper watershed (MGS et al. 2004). Generally, streams rise to flood stage within a day of peak rainfall and duration is only a few days. In an extreme flood event, large portions of the Lower Hylebos Creek watershed are flooded. In 1991, flood peaks on Lower Hylebos Creek were predicted to more than double in size over pre-developed forested flows once the basin is fully developed (King County 1991). Regional stormwater ponds included in the basin plan should moderate the increase in peak flows when they are constructed.

The lack of capacity to handle high flows, and the very flat low lands adjoining the stream appear to be the major cause of flooding in Lower Hylebos Creek (Pierce County 1991). The trapezoidal channel typically ranges from 12 to 16 feet wide, has 5-foot-high banks, and a low gradient. The water crossings at 12th Street, 67th Avenue, 62nd Avenue, and 8th Street East are only 16 feet wide. These can be expected to constrict flows and collect debris leading to local non-systemic flooding during smaller events and exacerbating flooding during large events. Currently, the channel appears to be actively maintained to remove obstructions and improve stream flow efficiency.

Water surface elevations for floods of the selected recurrence intervals were computed using the HEC-RAS model (MGS et al. 2004). Over 50 cross sections and flood profiles were modeled on the Hylebos beginning just below the confluence of the East and West forks and ending at Hylebos Waterway. Another approximately 25 cross sections were modeled on Surprise Lake Drain. Under existing conditions the flood elevation ranged from 15.75 feet at Porter Way to 8.04 feet near the mouth at 4th Street East. and several bridges were identified as being either overtopped or subject to pressure flow during a 100-year flood event.

Under existing conditions, approximately 246 acres are predicted for inundation during a 100-year flood event. Most of the flooding (approximately 220 acres) occurs upstream of SR 99. The SR 99 bridge represents a substantial restriction to flood flows, as are the Surprise Lake Drain culverts under I-5. For the 100-year flood, levels are expected to be contained by the crown of the I-5 roadbed and would inundate the area between SR 99 and I-5 with spill onto the southbound I-5 traffic lanes. The large wetland area to the east of I-5 and north of the Interurban Trail ROW would also be inundated; the agricultural lands south of the trail and adjacent to Surprise Lake Drain would also be inundated. The 100-year flood elevations would be high enough to allow co-mingling of Hylebos Creek and the Surprise Lake Drain where they would both flow over the Interurban Trail ROW.

Downstream of SR 99 to 8th Street East, the floodplain is limited to an area extending approximately 100 feet south of the channel. Flooded area increased due to the limited capacity of the many bridges that cross the channel in this stream segment. Downstream of 8th Street East, Hylebos is contained within its banks at the 100-year flood. Although the 4th Street Bridge represents an obstruction to flood flows, flood waters backup into the Milgard Nature Area which was designed for periodic inundation.

Since low flows can also be a problem in Hylebos Creek, mean monthly flow statistics were also computed using the HSPF model. The lowest flows were predicted to occur in August. Minimum stream flows for the mouth of the Hylebos were predicted to be 10.7 cfs and for the mouth of Surprise Lake 1.4 cfs. Groundwater discharge that occurs along the mainstem of the creek, upstream of the project area, was identified as the water source responsible for maintaining adequate summer flow in the project area (MGS et al. 2004).

Water Quality

The Municipality of Metropolitan Seattle (Metro) monitored base flow conditions between May of 1987 and April of 1988 (Metro 1989, as cited in King County 1990). Monitoring results indicated that FC exceeded state standards on four occasions in the West Hylebos and on one occasion in the East Hylebos.

King County monitored water quality within the three subbasins during storm flow conditions in December of 1989 and October of 1990. The monitoring results showed numerous exceedances of state water quality standards, federal recommendations, and basin specific thresholds (Table 3.2-3). FC and the metals Cu and Zn exceeded State standards in the majority of samples, while the nutrients, TP and N+N and TSS often exceeded federal recommendations and basin thresholds.

Table 3.2-3: Number of Samples Exceeding Federal Recommendations (F), State Standards (S) and Basin Specific Thresholds (BS) in Hylebos Creek. (Adapted from King County 1990)

	Standard or Threshold	East Hylebos ⁽¹⁾	West Hylebos ⁽¹⁾	Lower Hylebos ⁽¹⁾
Fecal Coliform	100/100 mL (S)	10/13	25/26	4/4
Total Phosphorus	0.10 mg/L (F)	6/13	14/26	4/4
Nitrate + Nitrite	1.25 mg/L (BS)	3/13	0/26	2/4
Total Suspended Solids	50 mg/L (BS)	6/17	9/28	2/4
Copper ⁽²⁾	67.58 ug/L (S)	12/13	19/20	3/4
Zinc ⁽²⁾	46.53 ug/L (S)	6/15	23/27	1/4

⁽¹⁾ Number of exceedances/total number of samples.

⁽²⁾ Exceedances based on concentrations in excess of acute metals criteria.

More recent water quality monitoring was conducted on East Hylebos Creek (Taylor and Assoc. 2002). Water quality and flow information was collected from four sites on six occasions; four of which were storm events. Only one of the stations (located where 5th Avenue crosses the mainstem) was located near the project impact area, just upstream of the confluence of the East and West forks. Figure 3.2-1 depicts the location of the station, as well as other project area monitoring stations described in this section. FC bacteria exceeded State standards in almost all samples. TSS and TP routinely exceeded recommended thresholds at all stations. State water quality standards are not directly comparable due to duration of sample collection period in the study. However, at each station the concentration of pollutants increased substantially between baseflow and storm events; indicating the pollutant source is runoff generated.

The Puyallup Tribe of Indians has an ongoing monitoring program in the project area. This program includes two monitoring stations on the Lower Hylebos Creek. They have been monitoring since 1998. These data indicate there are at

least occasional exceedances of dissolved oxygen (DO) and pH standards and that nutrient concentrations (TP and N+N) are high. Both of these stations are located in the Lower Hylebos subbasin (Figure 3.2-1).

The FOHW have been monitoring in the Hylebos basin monthly since November 2003 (Figure 3.2-1). High temperatures occurred at all three stations where it was measured. TSS concentrations also appear to be elevated on occasion. Evaluation of metals criteria exceedance can not be made without coincident measurements of hardness. However, it is possible that both Cu and Pb exceeded acute toxicity criteria at all three stations where it was measured. The *Water Resources Discipline Study* (EnviroVision 2005) provides more details on these data.

The long-term monitoring program is planned as a means of improving understanding of the water quality condition of Hylebos Creek near the project area, and to allow for long term evaluation of possible impacts from the roadway. Monitoring sites are shown in Figure 3.2-1. Monitoring includes measurements of temperature, turbidity, pH, hardness, DO, TSS, nitrates, phosphorus and heavy metals. Temperature is currently measured through a continuous recorder; the remaining parameters are currently measured through quarterly grab samples from the six sites. Storm event sampling will also occur at a subset of the six sites.

Washington State Department of Ecology (1983, 1985a, 1985b) reported elevated arsenic and cadmium levels, originating from two industrial landfills, in the waters and sediments of the Lower Hylebos. The B&L Woodwaste landfill was identified as contributing high levels of arsenic, turbidity, solids, ammonia, phosphorus and possibly tannic acid to the Lower Hylebos via the Surprise Lake Drain. The US Gypsum landfill was found to be discharging arsenic and cadmium directly to the Lower Hylebos and possibly through contaminated groundwater leachate. The B&L Woodwaste and US Gypsum sites have undergone remediation and are subject to ongoing monitoring.

FC bacteria are listed as problems throughout the basin (Category 5: Polluted). Other Category 5 listings include temperature in the West Fork, ammonia-N and DO in Fife Ditch and DO in the Hylebos Waterway. Category 2 (waters of concern) listings included DO and pH in the East Fork, and pH, temperature, Cu, and a few organic pollutants (i.e., benzene, tetrachloroethylene, and trichloroethylene) in Hylebos Waterway. Of these known water quality problems, Cu and Zn are the parameters that can be most directly linked to highway runoff and therefore are a more direct concern for the project. However, seasonal considerations of possible indirect affects on flow and therefore temperature and DO concentrations are also a concern.

Surprise Lake Drain

Surprise Lake Drain originates at the spring-fed Surprise Lake north of the Puyallup River valley. Its drainage includes residential areas in the city of Edgewood south to the valley below, and agricultural and residential runoff from the city of Fife. It flows through a series of linear ditches to its confluence with Lower Hylebos Creek. The ditches consist of bare soil trapezoidal channels, about 3 feet wide at the base and about 4 feet deep that zigzag around property lines.



Surprise Lake Drain, Freeman Road vicinity.

Surprise Lake Drain crosses under Freeman Road through a 3-foot diameter concrete culvert. About 180 feet downstream of the Freeman Road culvert is a privately owned 24-inch diameter concrete culvert pipe. Once Surprise Lake Drain crosses Freeman Road, the channel becomes an agricultural ditch. The crossing under 20th

Street East is through a 5.5-foot span by 3.5-foot rise corrugated metal pipe arch culvert. The crossings under 70th Avenue East and I-5 are through 8.5-foot span by 5.5-foot rise corrugated metal pipe arch culverts. Limited riparian vegetation is present between 70th Avenue East and I-5, but juvenile coho salmon were observed where habitat was available.

Hydrology and Flooding

The general hydrology and flooding information described under Hylebos Creek also relates to this tributary. Under existing conditions the flow at the mouth (i.e., confluence with Lower Hylebos) for the 2-year and 100-year return frequency storms is 62 and 104 cfs, respectively (MGS et al. 2004). August low flows for the mouth of this stream were predicted to be 1.1 cfs. During the 100-year flood predicted through modeling and aerial photo interpretation (Figure 3.2-2) the entire area is inundated and the flows would be expected to co-mingle with the Lower Hylebos. As a consequence, the floodplain area described for the Hylebos includes flooded area within Surprise Lake Drain.

As described previously, approximately 25 cross sections were modeled to evaluate flood elevations on Surprise Lake Drain. Under existing conditions the 100-year flood elevation at Freeman Road was predicted at 19.49 feet. The flood elevation near the mouth would be similar to what was calculated for Hylebos at SR 99, which was 13.93 feet (MGS et al. 2004).

Water Quality

There are no 303(d) listings specific to Surprise Lake Drain. The only water quality data identified for the Surprise Lake Drain is associated with the recent monitoring by FOHW that was described previously. The data indicated that temperature probably frequently exceeds standards during the summer and that turbidity and TSS are also higher than measured in other parts of the Hylebos system. There may also be occasional exceedances of acute toxicity standards for Cu. Since the WSDOT/FOHW monitoring program includes a site up- and

downstream of the area proposed for relocation, over the long term conditions in this stream and the impacts from the project will be better known.

Fife Ditch

Fife Ditch drains runoff from 2 square miles, including industrial sections of the Port of Tacoma, and industrial, commercial, residential, and agricultural sections of the city of Fife (Parametrix 1991). The ditch conveys the runoff through a tide gate into the Lower Hylebos Creek near its terminus at the Hylebos Waterway. A pump station located at the tide gate is used to control the discharge. This system is considered to be under capacity since water backs up here during flood events. Riparian coverage is almost non-existent along the ditch.

Two active Drainage Districts (#21 and #23) operate in the area and have authority over ditch maintenance. The drainage districts were originally created by farmers with agricultural lands that required maintenance on drainage. Their primary goal is to maintain channel conveyance capacity. Normal maintenance activities include; cutting back riparian vegetation (primarily reed canary grass) and dredging sloughed material out of the channels. Drainage District #23 is also responsible for operation and maintenance of the tide gates and pumps that control Fife Ditch flow into the mouth of Hylebos Creek.

Hydrology and Flooding

This drainage was not included in the detailed hydrologic assessment and modeling efforts done for this project, because only a small amount of land is affected in this basin. The Fife industrial area is flat and poorly drained. Under normal conditions the Fife Ditch drains to Hylebos Creek estuary near the crossing of SR 509 via a tide gate. During periods of high flow, surface water is routed through a pumping station (Figure 3.2-2); consequently, flooding is typically not too extensive. However, during the January 1990 flood, much of the Fife Ditch drainage basin flooded; there were standing pools of water throughout the basin and the collector channels were full. This is designated as the flood prone area in Figure 3.2-2. Surface water flows have been documented varying from 0.3 to 16.0 cfs and are characterized as sluggish. Channel geometry is linear and uniform and sediments consist primarily of silts and clays (USGS 1986).

Water Quality

Available data indicate that Fife Ditch does not meet State water quality standards. Studies performed by the USGS between August 1983 and September 1984 indicated that concentrations of DO and FC exceeded state standards. High levels of ammonia-N were also measured (USGS 1986). Ambient monitoring records for this waterway include two instances of arsenic and one instance of Hg at levels near the chronic toxicity criteria, indicating the potential for future problems (Ecology 1995b). Currently, Ecology has included Fife Ditch on the 303(d) list due to low DO, high FC, and high ammonia.

Hylebos Waterway

Historically the Hylebos Waterway was part of a large saltwater marsh within Commencement Bay. The marshes were filled in the early 20th century and now

support heavy industrial uses. As the receiving waters from multiple drainages, the Hylebos Waterway receives runoff from most types of land use including: agricultural, low to high-density residential, commercial, light and heavy industrial, and roads.

Wapato and Lower Puyallup Basins

Wapato Basin

Wapato Creek drains 3.5 square miles of land from north of the city of Puyallup, the city of Fife, and the Port of Tacoma to the Blair Waterway and Commencement Bay in the city of Tacoma. Simmons Creek, a tributary to Wapato Creek, receives runoff from a portion of the city of Edgewood's Urban Growth Area. Wapato Creek receives a substantial amount of runoff directly from adjacent agricultural, residential, commercial and industrial lands in the cities of Puyallup and Fife. Wapato Creek has been greatly altered from its natural condition, and riparian cover along most of the system is thin to nonexistent. Channel sediments consist primarily of clays and sands.

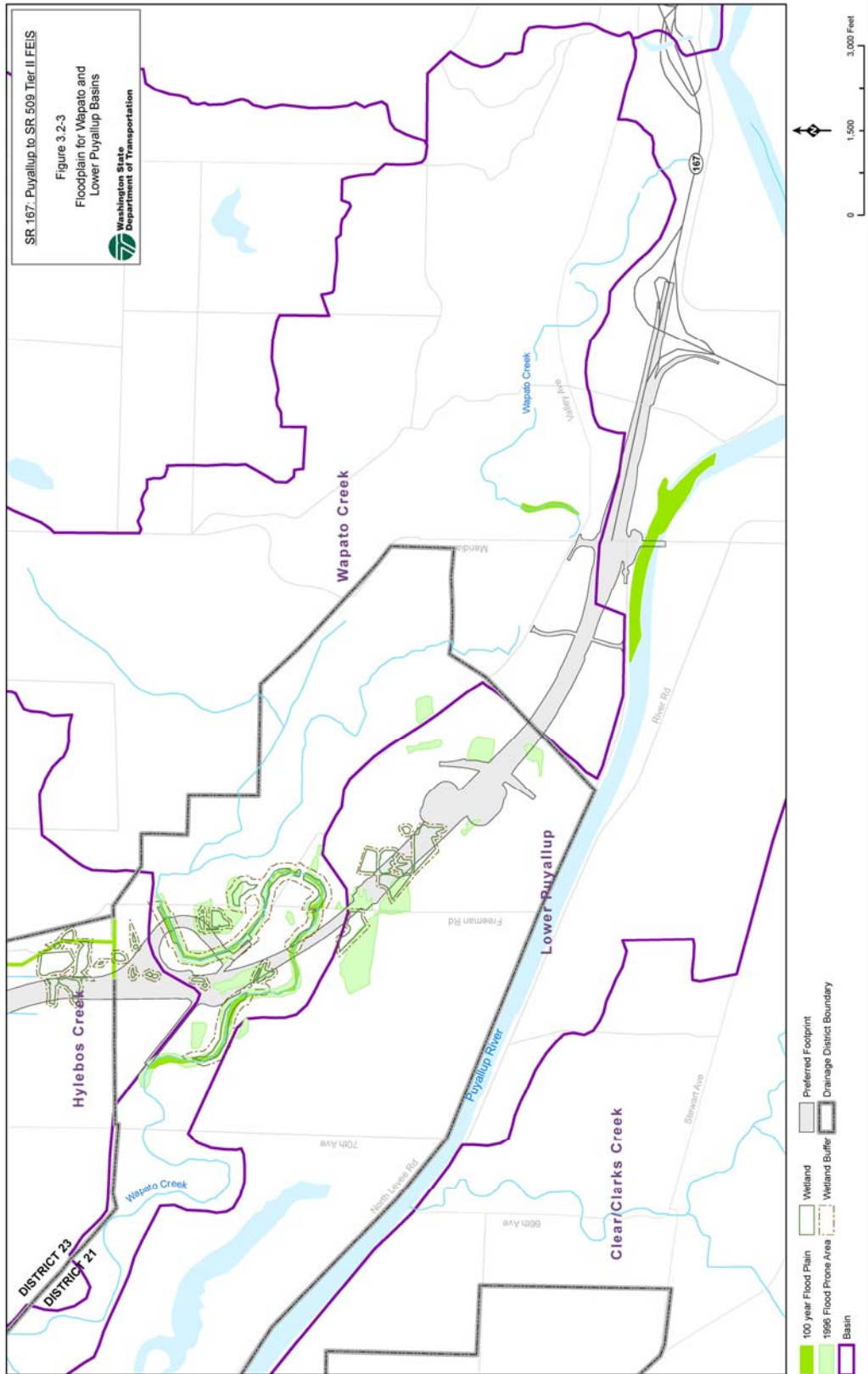
Wapato Creek

Wapato Creek, in the vicinity of the proposed Valley Avenue Interchange, occupies a low gradient and sinuous channel. The channel is formed in silt dominated soils and as a result has cohesive soil banks and a silty-sand substrate bottom with little or no gravel. The banks are gradually sloping and generally uniform. The flood prone area averages less than 200 square feet (Figure 3.2-3).

A culvert placed in the upper reach near the intersection of Valley Avenue East and SR 161, in or after 1977, diverts up to 120 cfs from Wapato Creek into the Puyallup River (JMM 1991). Approximately 1.5 square miles of Wapato Creeks' upper basin drains to this diversion. A narrow area, north of the Puyallup River levee and south of Wapato Creek basin, also drains to the diversion structure. The area upstream of this diversion is referred to in the FEIS as Upper Wapato Creek.

Hydrology and Flooding

Lower Wapato Creek watershed is flat and the channel has limited capacity. The estimated 25-year flood flow for the Wapato Creek watershed is 165 cfs (Pierce County 1991), and much of that flow is intercepted and routed to the Puyallup River through the diversion structure. The remainder flows through Wapato Creek. During the February 1996 flood event, the diversion structure discharged most of the peak flows from Wapato Creek to the Puyallup River before the peak flows from the Puyallup River reached the lower valley. This reduced much of the flood impact in the Wapato Creek watershed. Although the diversion structure minimizes flood impacts, it also contributes to chronic summer low flow problems.



Because the diversion structure effectively removed much of the flood risk in the Wapato Creek watershed, the FIRM flood maps show only a narrow width of floodplain along Wapato Creek (FEMA 1981 and 1987). Aerial photos taken during the February 1996 flood indicate that the limit of Wapato Creek's floodwater extends beyond the boundary shown on the FIRM floodplain map. However, the review indicated Wapato Creek remained within its banks over the majority of its length and seldom flooded onto adjacent fields. Isolated areas of flooding were observed in the fields in the same vicinity.

Wapato Creek crosses Freeman Road three times. From upstream to downstream, the first crossing of Freeman Road is through a fairly new 8.8-foot span by 6.4-foot rise corrugated metal pipe-arch culvert. The channel in the vicinity of this culvert varies from 4 to 7 feet wide, with little riparian vegetation. The second Wapato Creek crossing under Freeman Road, near the intersection with Valley Avenue, is through two 4.8-foot diameter concrete culverts in parallel. The channel in the vicinity of this crossing is 10 feet wide, with mud and sediment bottom. About 150 feet upstream of the crossing the channel is 5 feet wide. The channel is 6 to 8 feet wide downstream of the crossing.

Downstream of the second Freeman Road crossing, Wapato Creek flows through a private driveway culvert, a bridge at Valley Avenue, and a pipe under the railroad. The private driveway culvert is a 6-foot diameter corrugated metal pipe that has about 1-foot of cover. The Valley Avenue Bridge has a 46-foot horizontal span, 10-foot vertical clearance, and is the best Wapato Creek crossing structure in terms of floodplains and ecological connectivity. The railroad crossing is a long, 6-foot diameter corrugated metal multi-plate culvert pipe. The channel from the second Freeman Road crossing to the railroad crossing has fairly good riparian cover, although many of the plant species are non-native. The channel width in this area varies from 5 to 8 feet wide with a muddy bottom.



Wapato Creek, at southern most Freeman Road crossing.

The third Freeman Road crossing is another set of two 4.8-foot diameter concrete culvert pipes in parallel. From the railroad crossing to the third Freeman Road crossing, and downstream towards

Valley Avenue, Wapato Creek has an average channel width of 7 feet. The channel flows through agricultural pastures with no riparian vegetation. The bankfull floodplain channel appears to be about 200 feet wide. In addition to road crossings, there are six undersized culverts in the project area associated with private driveways.

Water Quality

Available data indicate that Wapato Creek does not always meet water quality standards. During late 1983 and early 1984, USGS reported DO and FC problems (USGS 1986). In 1998 the Puyallup Tribe of Indians documented several exceedances of state and federal standards and basin specific criteria (Puyallup Tribe 1998). State standards for pH were not met at multiple sites

within the basin. Two sites experienced N+N concentrations in excess of federal recommendations and TP concentrations above levels determined by the Puyallup Tribe of Indians to be protective of salmonids.

More recent data by the Tribe indicate that there continue to be times when DO, pH and temperatures do not meet standards, especially at the downstream station (Goldau Road in Fife). The conditions of low oxygen and high temperatures would occur during late summer. Exceedances for pH might occur at any time, depending upon the cause, but it is likely they occurred primarily during winter months as was documented during the Puyallup Tribe's 1998 study. Nutrient levels (TP and N+N) also continued to be high. The *Water Resources Discipline Study* (EnviroVision 2005) provides more details on these data.

Ecology has listed (303(d)) sections of Wapato Creek as "polluted" (Category 5) for FC bacteria and DO and as "concern" (Category 2) for FC bacteria and benzene. Figure 3.2-2 indicates which stream segments are included on the list. Table 3.2-2 lists the impairment for each segment. No TMDLs are currently planned in the Wapato Basin, however it is possible that the bacteria TMDL scheduled for the Puyallup River will be expanded to include the Wapato Basin.

Old Oxbow Lake Ditch

Old Oxbow Lake Ditch drains mostly agricultural lands that fall between the Wapato Creek divide and the Puyallup River levee system. The ditch drains to Old Oxbow Lake, an old Puyallup River oxbow that is now isolated behind the levee, but connects to the Puyallup River through a floodgate.

Hydrology and Flooding

The floodplain was not mapped for this drainage and no hydrology data were identified. It is a small drainage basin that is protected from flooding by the levees around the Puyallup and the tide gate. Under widespread regional flooding that would occur if the levees were breached, this entire area would be inundated.

Water Quality

No water quality data have been identified for this water body and there are no 303(d) listings.

Puyallup River

The Puyallup River drains approximately 970 square miles (USGS 1986) and is often described as two watersheds: the Upper Puyallup River watershed and the Lower Puyallup River watershed. The headwaters of the Upper Puyallup River are located at the toe of a glacier along the flank of the heavily forested Mt. Rainier. The Lower Puyallup River begins at the river's convergence with its first major tributary, the Carbon River, near the city of Orting. Estuarine conditions exist from the mouth upstream to river mile 2.2. The project is located in the Lower Puyallup watershed.

Below the city of Orting, the Puyallup River primarily drains agricultural land until it joins the White (Stuck) River, near the city of Sumner. The Carbon and

White rivers convey flows from 75 percent of the Lower Puyallup River Watershed drainage area. Smaller creeks that discharge directly or indirectly into the Puyallup River below the city of Orting, but are outside of the project area, include: Horse Haven, Canyon Falls, Fennel, Elhi, Alderton, Clarks, Rody, Deer, Squally, Diru, Swan, and Salishan. From the city of Sumner to the mouth of the Puyallup River at Commencement Bay in the city of Tacoma, the river drains agricultural, industrial, commercial, and residential areas. Mean annual flow at a gauging station located in the city of Puyallup, near the confluence with Clarks Creek, is 3,456 cubic feet per second (cfs) (USGS 1986).

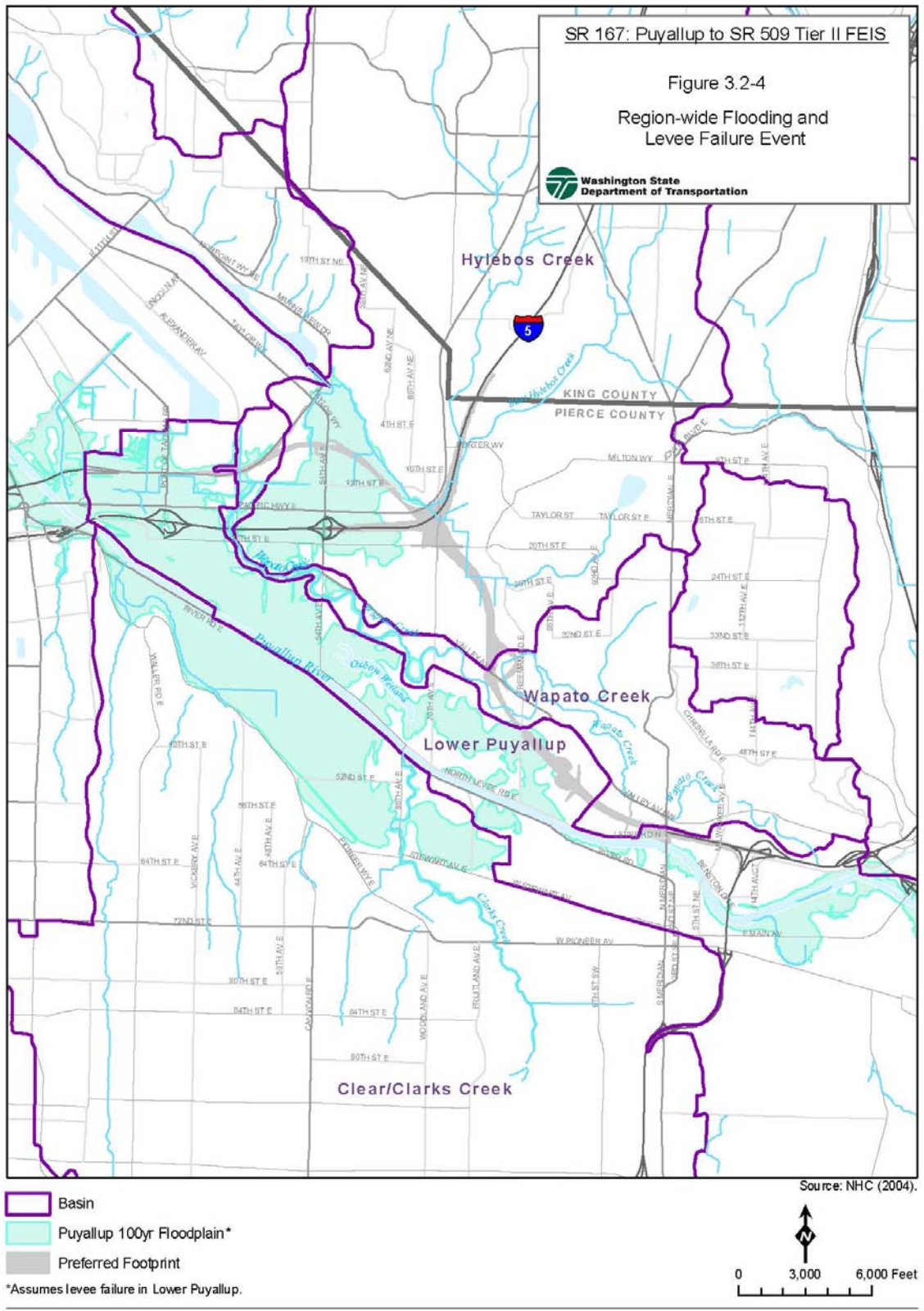
Hydrology and Flooding

Historically, major floods have occurred frequently in the Puyallup River. Since Mud Mountain Dam began operating in 1943, the discharges have been regulated and flooding greatly reduced. Although flooding still occurs relatively frequently (five occurrences since 1990) most of the flooding occurs in reaches upstream of the project area. Downstream of the city of Puyallup (within the SR 167 project area), the Puyallup River channel has been dredged, straightened, and stabilized with riprap and concrete. It is also confined between earthen flood control levees which contain most flood flows. Since 1943, regional flooding that affected this lower reach has only occurred once, in 1996, during what was approximately a 60-year storm event in the lower basin (Northwest Hydraulics Consultants 2004). During this event, county officials noted that water levels came close to overtopping the levees in several locations. Aerial photos from this event were used to define the “flood prone areas” (shown in Figures 3.2-2 and 3.2-3).

The past FIRM and aerial photos of flood prone areas indicate that the river is largely held within its banks within the project area. Recent modeling of regional flooding conditions based on sediment buildup in the Puyallup River leading to levee failure (Northwest Hydraulics Consultants, 2004) indicate that the Lower Puyallup River can be expected to merge with Clear/Clarks Creek basin to the south and the Oxbow, Wapato and Hylebos basins to the north under these extreme conditions (Figure 3.2-4). The modifications to the channel have reduced the frequency of flooding but also effectively removed any functional connection between the river and its floodplain.

Water Quality

One municipality, one industry, and two fish hatcheries discharge to the Lower Puyallup River and its tributaries under the Ecology’s National Pollutant Discharge Elimination System (NPDES) permit program (Ecology 1993). Nine municipalities, three industries and two fish hatcheries have NPDES permits to discharge to the Upper Puyallup River and its tributaries. Additionally, two tribal fish hatcheries discharge to the Puyallup River; one discharges to the Upper Puyallup River and one to the Lower Puyallup River. The tribal hatcheries do not require NPDES permits.



Analytical results from sampling conducted in 1984 by the USGS indicated that cadmium, Cu, Pb, mercury (Hg), and Zn occurred at levels above chronic and/or acute toxicity criteria (USGS 1986). Based upon these results, the river from river mile 0 to 1.5 was included on the 304(1) short list in January of 1989. The 304(1) short list included those waters which were not expected to meet water quality standards due to discharges of toxic pollutants from point sources. Later that year, the Tacoma Central Wastewater Treatment Plant discharges were re-routed to Commencement Bay and the river was removed from the list.

No excessive metals concentrations were measured in an evaluation done by the city of Puyallup between May of 1994 and August of 1997, suggesting that the problem had been alleviated. However, FC monitoring conducted at the same location between October 1991 and September 1997 indicated that bacteria concentrations exceed state standards.

Through a TMDL study, Ecology set load allocations for 5-day biochemical oxygen demand (19,500 lbs/day); ammonia (3,330 lbs/day as nitrogen); and total residual chlorine (45.9 lbs/day) for the Puyallup River. These load allocations allow for additional discharges by future NPDES permit holders and presently unaccounted for nonpoint pollution sources. Currently, the river is listed under Section 303(d) as polluted (Category 5) for Cu, Pb, FC in some segments. Cu, Pb, Hg, DO, FC, temperature, and turbidity are a concern (Category 2) in other areas. A TMDL study for bacteria has been proposed for the next review period. The analysis would include streams in the Puyallup and White River watersheds.

Maintenance of the Puyallup River's channel previously involved dredging to remove sediment and debris that would build up near the mouth of the river. However, dredging is no longer performed and sediment is beginning to accumulate. Over the long-term design life of the project, the build-up of sediment in the Puyallup River could reduce the flow capacity of the channel.

Groundwater

Groundwater within the Lower Puyallup valley is found in deep aquifers of undifferentiated glacial and nonglacial sediments and relatively shallow aquifers containing deposits of alluvial sediments. The uplands north of the Lower Puyallup valley are situated above aquifers composed of glacial and nonglacial deposits. Regional, intermediate, and local groundwater flow paths (Freeze and Cherry 1979; Toth 1970) have not been well documented within the project area.

Local groundwater flow is characterized as moving from upland areas into the alluvial aquifers, the Puyallup River, and the Puget Sound (USGS 1986; Earth Tech 1998). The water table within the Lower Puyallup valley is shallow, often at or just below the ground surface during the winter months. Within the neighboring uplands the water table varies with soil composition and is frequently well below the ground surface.

Within the Lower Puyallup River valley the alluvial aquifers reach depths of between 200 and 400 feet below the ground surface. Aquifer compositions range from sands and gravels to fine sands. The aquifers are discontinuously confined by silt and clay deposits. The extent and composition of aquifers within the Lower Puyallup River valley watershed have not been well studied. However,

the entire Puyallup valley is designated as a Critical Aquifer Recharge Area (Figure 3.2-5). There is a sole source aquifer on the south side of the Puyallup River within the Central Pierce County Aquifer. WSDOT has confirmed with EPA that this project will not impact the sole source aquifer.

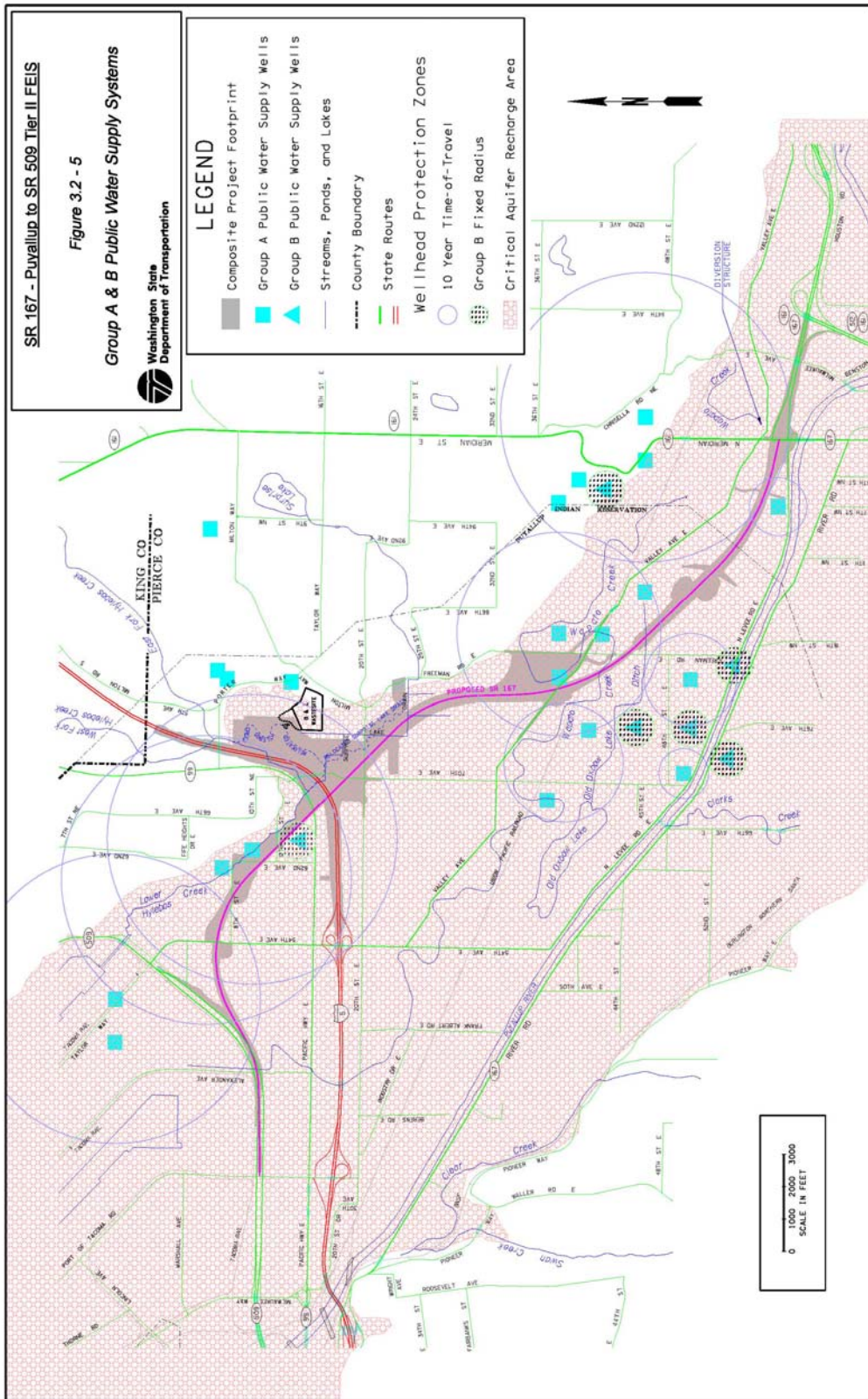
The alluvial aquifers provide water to the majority of public water systems within the Lower Puyallup River valley. The productivity of the shallow alluvial aquifers varies with composition. In general, these aquifers are less porous and water does not flow as quickly as the deeper glacial and nonglacial aquifers. Within the city of Fife, well yields from the alluvial aquifers have been estimated to range between 40 and 2,500 gallons per minute (gpm) (Earth Tech 1998) and well yields beneath the city of Puyallup Recreation Center were documented at 700 gpm. The contact between shallow alluvial and deeper glacial/nonglacial aquifers is indistinguishable in some areas (Earth Tech 1998) and prominently delineated by thick alluvial silts (Hart Crowser 1993) in others.

The Lower Puyallup River valley glacial and nonglacial aquifers are situated below the alluvial sediments extending to depths in excess of 900 feet below the ground surface. The glacial aquifers are composed of outwash sands and gravels and bounded by aquitards composed of tills. The nonglacial aquifers are composed of alluvial sands and gravels interstratified with the glacial aquifers. Well yields within the glacial and nonglacial aquifers are higher than the overlying alluvial aquifers and are likely to be highly productive sources of groundwater for future water system development (Earth Tech 1998; Hart Crowser 1993).

Aquifers situated beneath the uplands are composed of glacial and nonglacial aquifers at elevations ranging from 600 feet above sea level to 1,200 feet below sea level. The glacial aquifers are composed of outwash sands and gravels and bounded by aquitards composed of tills. The nonglacial aquifers are composed of alluvial sands and gravels and are interstratified with the glacial aquifers.

Agricultural farmlands of the Lower Puyallup valley often experience local nonsystemic flooding. The predominant soil of the project area is generally an organic silt loam material that exhibits moderately slow permeability. The surface runoff in the project area infiltrates to a shallow confined aquifer. It is expected that the water in this shallow aquifer moves laterally in a horizontal direction rather than downward in a vertical direction. This lateral movement can be restricted by the construction of roadways and buildings, which has a densifying effect on the underlying soils. When this occurs, localized saturation of the soils is expected to occur during periods of extended rainfall. The result is standing floodwater in the fields. Many of these areas exist near and around Wapato Creek. Another area with frequent occurrences of standing water is north of I-5, between Lower Hylebos Creek and Fife Ditch.

In most instances, the standing floodwater results in isolated ponding with no directional flow. However, aerial photos show areas where the standing water develops into concentrated, overland flows. One such area occurs at Freeman Road, just south of the most southern crossing of Wapato Creek. This overland flow begins near Freeman Road and continues west, past 70th Avenue East, to the old Puyallup River oxbows.



Shallow groundwater in the project area is susceptible to both excavations that intercept groundwater movements and loads that compress the substrate and retard flows. These shallow groundwater flows are important in maintaining summer flow in area streams.

Water quality within the Lower Puyallup River valley aquifers is generally good (Woodward et al. 1995; USGS 1986). The low permeability of alluvial aquifers decreases the risk of groundwater contamination while the high water table acts to prevent filtration of pollutants and thus increases the risk of contamination. The deeper glacial and nonglacial aquifers face little risk of contamination where thick deposits of clays and silts separate them from the upper alluvial aquifers. However, where these deposits do not exist, the lower aquifers' high permeability makes them more vulnerable to contamination.

One known groundwater contamination site is the old B&L Woodwaste Landfill which is located in the Hylebos basin and is now closed. Currently the site includes a closed approximately eight-acre lined cell of consolidated woodwaste, a leachate collection system, and a stormwater runoff control system (Tetra-Tech 2004). The city of Milton has three wells within this area. Two are not in use, but the third is one of two wells that provide a majority of the water supply. This well extends to a depth of approximately 100 feet. There may also be other wells in the vicinity of this contaminant site.

It is not known how much groundwater extraction is occurring within the project area; however, Ecology reports that withdrawals in WRIA 10 "have shown a rapid and steady increase" (Ecology 1995a). Water uses within the project area correspond to similar uses within the larger watershed (WRIA 10) including: commercial/industrial, general domestic, multiple and single domestic, environmental quality, fire protection, fish propagation, heat exchange, irrigation, mining, municipal supply, recreation, and stock watering.

Based on the DOH database, 19 Group A water supply wells have been identified in the project area and 6 Group B wells. Group A wells provide 15 or more connections. Group B systems provide between 2 and 14 connections to the water supply system. During the environmental review process, 7 additional wells were identified by the City of Milton that were not found in the database search. These are wells that are close to or within the project impact area, or whose wellhead protection zones extend into the project area. Four of these are not currently used. Figure 3.2-5 depicts the general location of Group A and B wells in the project area. Some of the wells are located very close to each other and show up as one location. This is why 21 Group A wells are shown instead of 26.

While this information provides a good starting point for identification of potentially impacted wells, it does not include private wells. Group A and B wells can be overlooked if, for example, their location information is not accurate. A more extensive effort to identify impacted wells will be undertaken before this project can be constructed.

Wellhead protection zones have been identified for many Group A water supply systems, based on the distance a pollutant will travel in six months, one year, five

years and ten years. Group B wellhead protection zones are represented as a 600-foot radius around the wellhead. The locations of known water supply systems and designated wellhead protection zones within the project area are shown in Figure 3.2-5. The SR 167 project footprint intersects at least eight Group A wellhead protection zones and at least one Group B wellhead zone. Because wellhead protection zones can overlap, and because not all wells have designated protection zones, the number of wellhead protection zones is not equal to the number of water supply wells.

3.2.3 Stormwater Treatment and Riparian Restoration Proposal

Stormwater treatment is necessary because all man-made features, including roadways and other developments, interfere with the natural flow of stormwater by diverting it or causing it to migrate to new locations, create new impervious surfaces that increase the rate and velocity of flow, and reduce or change areas where percolation can occur to replenish groundwater systems.

Due to the potential impacts associated with stormwater, runoff generated by the highway must meet flow control requirements and water quality treatment requirements (known as stormwater Best Management Practices [BMPs]) that have been set to protect in-stream water quality and hydrology. These requirements are defined in the *Stormwater Management Manual for Western Washington* (Ecology 2001) and are reflected in the *WSDOT Highway Runoff Manual* (WSDOT 2004a). Therefore, by design, it is expected that water quality standards will be met and hydrology maintained to the extent defined by the regulations. This does not imply that additional pollutant loading will not occur or that there may not be some modification in hydrology as a result of the project. Stormwater control is a critical component of this project and the initial design phases have led to development of a stormwater control strategy that is both diverse and innovative. The following description of the Riparian Restoration Proposal (RRP) approach to stormwater treatment and rationale is provided due to the innovative nature of the approach, and as background to the impacts discussed under each basin.

The RRP is a more comprehensive stormwater management plan (SWMP) that covers all of the watersheds in the project corridor. Additional information will be developed during final design to further define and clarify the SWMP approach. The RRP approach was selected because it does not change the amount of flooding, but controls it through natural methods. The RRP would create an environment where flooding and channel migration is not detrimental to houses, roads, private property, public infrastructure, etc., because they are removed and new channel migration zones and riparian buffers are established.

The advantage of the RRP approach is that it removes existing encroachments and restores the riparian ecosystem and natural course of flooding. The RRP would reduce the amount of stormwater coming onto the project from off-site sources by maintaining natural flooding conditions. Stormwater coming from within the right-of-way would be handled with traditional conventional methods onsite before being released into the RRP system.

Conventional stormwater approaches tend to detain and collect stormwater both coming onto the project from outside and water collected on-site within the right-of-way. Stormwater detention ponds can regulate the amount and flow of water leaving the project and allow for treatment before it percolates into groundwater or is released into the surrounding environment. However, conventional methods often conflict with natural processes by blocking channels, altering direction or rates of flow, and require handling of large amounts of water from off-site sources that would not need to be dealt with under a RRP method.

Stormwater treatment requirements include those associated with pollutant removal (water quality) and those associated with reducing and minimizing runoff volume and speed (water quantity). Runoff generated from the corridor must receive both water quality and water quantity treatment. This is described in more detail in the next section. At this time (i.e., preliminary design) stormwater treatment is expected to occur through the RRP, supplemented with standard stormwater treatment facilities (i.e., biofiltration swales, detention ponds, constructed wetlands, and manufactured treatment vaults), possibly deep fill infiltration, and landscaped fill slopes. The RRP is proposed as an alternative to conventional flow control BMPs, such as stormwater detention facilities.

Deep fill infiltration refers to infiltrating stormwater into the highway median strip and allowing the fill underneath to act as a large sand filter and stormwater detention unit. The surface of the median would include compost amended soils or similar filtration media to provide basic quality treatment prior to infiltration. Landscaped fill slopes refers to fill slopes that are landscaped with native vegetation rather than grass and where soil amendments and compost are added to the planting area. Landscaped fill slopes are included in the *WSDOT Highway Runoff Manual* (WSDOT 2004a). Deep fill infiltration is a stormwater management proposal that would warrant coordination with Ecology for use.

Enhanced treatment for removal of dissolved metals will be provided for those highway surfaces that exceed the traffic volume threshold established in the *WSDOT Highway Runoff Manual* (WSDOT 2004a).

Comparison of RRP to Conventional Treatment Design

Preliminary design of the SR 167 project utilized stormwater detention criteria as defined by Ecology's 2001 stormwater design manual (Ecology 2001) flow duration standard. The intent of the standard is to prevent stream channel erosion and instability over that which occurs under pre-developed conditions. The size of detention facilities resulting from application of the 2001 standard are large; often five times larger than facilities designed to previous standards. In the case of the SR 167 project, this increase in size is exacerbated by the project location in a low-lying area where it encroaches on floodplain and wetlands. This requires that the stormwater ponds be sized to compensate for flood storage loss associated with their placement as well as water storage needs associated only with the roadways contribution to impervious surface.

Due to the size and number of stormwater facilities that would have been required under the new standard, and the potential loss or encroachment on wetlands, riparian areas, and floodplain, FHWA and WSDOT developed an alternative approach. The RRP approach effectively meets the goals of the flow

duration standard (i.e., control stream erosion and stability) while also reducing existing flood levels and inundation area, enhancing degraded stream segments, and providing improved stream/riparian corridor habitat that would benefit the entire watershed. The stormwater manual (Ecology 2001) includes a provision whereby alternative stormwater controls may be used if they are supported by a watershed analysis that is tailored to the location of interest, with the goal of providing equal or better protection of stream resources than the standard required by the manual. The analysis performed for the Hylebos RRP has met this provision. The Wapato RRP has not yet been formally submitted for review; however, WSDOT has designed the Wapato RRP with the expectation that it might also meet stormwater flow control requirements. FHWA and WSDOT are currently working with Ecology and resource agencies on this plan.

In those areas where RRP is utilized, stormwater runoff from the highway would receive enhanced water quality treatment as it leaves the highway but then would be dispersed overland through protected riparian areas. All of the RRP area would essentially act to detain and absorb the runoff and allow it to be transported at a more natural pace and volume toward the stream. Because of the slow expected speed of the runoff and the long distance of travel (relative to a typical bioswale) the RRP would also effectively act as a final polishing step for pollutant removal. The RRP also involves removal or replacement of problem stream crossings. Undersized stream crossings can cause flooding as well as stream downcutting and erosion from higher velocity discharges. Project implementation would result in removal of a number of stream crossings and substantial improvements to existing stream crossings; typically involving removal of traditional culverts and replacement with bridges or arches that span the stream, if possible.

There are three RRP areas associated with the project; Hylebos Creek, Surprise Lake Drain, and Wapato Creek. Hylebos and Surprise Lake Drain RRPs also involve stream relocations. Details on each of the three RRPs and their impacts are described in detail in Section 3.2-4.



Conceptual Riparian Restoration results for Lower Hylebos Creek.



Conceptual Riparian Restoration results for Surprise Lake Drain.

With conventional stormwater treatment, Hylebos Creek would still need to be relocated from Porter Way to 70th Avenue East and riparian area around the relocated stream would be established. However, Surprise Lake Drain would not be relocated and the RRP area identified around the relocated Surprise Lake Drain would not be established. Also the RRP area identified east of the I-5

corridor would not be established. The result is that the 54¹ acres of upland riparian buffer (buffer not associated with Hylebos relocation) that would be protected in the Hylebos area (including Surprise Lake Drain) under the RRP, would not be protected with the conventional treatment approach. In addition, 12 large stormwater ponds covering 34 acres in the vicinity of the I-5 Interchange would be required. This would result in 8 acres of additional wetland impact at this intersection.

With conventional treatment in the Wapato Creek portion of the project area (the Valley Avenue interchange area), the riparian upland buffer in the RRP area would be greatly reduced (from 60 acres to 7 acres) and approximately 16 stormwater ponds covering 24 acres would be required. Based on field conditions, the number and size of stormwater ponds may change during final design and construction.

A *Net Environmental Benefits Analysis* (NEBA, Section 3.17.2) was performed to quantitatively estimate and compare the relative ecological losses and gains between the use of conventional stormwater treatment ponds and the RRP approach. Project wide, the RRP was found to have 57 percent greater environmental benefit than the conventional treatment approach. In the Hylebos Basin there was an estimated 64 percent increase, in Surprise Lake Drain an estimated 79 percent increase, and in Wapato Basin a 43 percent increase in environmental benefits. These benefits were primarily due to improvements in wetlands, riparian uplands, and stream channel.

Use of the RRP represents an innovative approach to stormwater flow control and will minimize the need for conventional stormwater detention facilities for the SR 167 project. Its direct function is to address stormwater flow control, however RRP will also provide benefits that may be even more critical to the proper functioning of stream resources. Some of these benefits include

- Prevention of streambank erosion through both control of stormwater discharge and through direct stabilization of the streambank via riparian planting;
- Improved shading of the stream through streamside plantings and eventual development of a more diverse terrestrial and aquatic habitat structure;
- Reduction in transport of pollutants from the surrounding area and possibly improvement in the streams ability to assimilate pollutants generated upstream;
- More natural interaction of the streams and their associated floodplains that would allow the stream channels to form and change naturally;
- Wildlife corridor improvement and links to other existing habitat areas and development of more diverse terrestrial and riparian habitats;

¹ The results of the analysis describe acreages for upland riparian buffer, stormwater ponds, and additional wetland effects in approximate numbers that have been rounded to the nearest whole number.

- Reduction in the need for manmade structures (pipelines, culverts, outlets) and promoting natural dispersion and drainage patterns.

Evaluation of Pollutant Contribution

The type and quantity of pollutants in stormwater generated from highways varies widely. The variation is dependent upon the volume of traffic using the highway, highway maintenance activities (e.g., sweeping and vegetation control), the number of days between rain events (i.e., how much pollutants have accumulated on the roadway surface), surrounding land use, the characteristics of the rain event, and other factors. The reported data for urban stormwater and highway runoff quality is generally similar in terms of pollutant constituents and concentrations (FHWA 1996). The exceptions to this are elevated levels of heavy metals (particularly Cu and Zn) that are generated by vehicle use, wear, and emissions. Pb was previously considered an important metal associated with highway runoff, but the concentrations have decreased substantially as a result of the use of unleaded gasoline. For example, in recent monitoring of runoff from Washington State highways, Pb is frequently below detection limits (WSDOT 2004b).

Table 3.2-4 provides a summary of concentrations of key highway related pollutants reported in untreated stormwater from recent WSDOT monitoring efforts in high volume highways (WSDOT 2004b). The associated surface water quality standard is also included. The data depict the typical large range in measured concentrations of these pollutants. Concentrations of dissolved Cu and dissolved Zn are shown to routinely exceed water quality standards in untreated stormwater. Due to the low level of concern currently associated with lead, it has been removed from further analysis in this FEIS.

One purpose of stormwater BMPs is to remove these pollutants from the stormwater before they enter area water resources. However, the amount of pollutants removed or efficiency in terms of the percent reduction in pollutants is highly variable.

Table 3.2-4: Average and Range of Key Highway Related Pollutants Measured in Untreated Stormwater at High Traffic Sites

Parameter	Mean	Range	Acute Toxicity Standard ⁽¹⁾
TSS (mg/L)	121	ND – 1,416	
Total Cadmium (µg/L)	0.96	ND – 5.6	
Dissolved Cadmium (µg/L)	0.22	ND – 0.48	1.2
Total Copper (µg/L)	27.2	3.9 - 220	
Dissolved Copper (µg/L)	6.12	2.0 - 18	6
Total Lead (µg/L)	17.6	ND - 260	
Dissolved Lead (µg/L)	NA	ND	20
Total Zinc (µg/L)	154	17 – 1,200	
Dissolved Zinc (µg/L)	52.8	8.9 - 100	47

Source: WSDOT 2004b. Based on 41 samples from five different sites. High traffic represents ADT 90,000-120,000.

⁽¹⁾ Acute toxicity criteria for surface waters (WAC 173-201a), was calculated using a hardness value of 35, the average value measured in WSDOT stormwater samples (WSDOT 2004b).

ND = Not Detected NA = Not Applicable

Table 3.2-5 provides a comparison of pollutant removal efficiencies for various stormwater BMP types. The median values shown depict typical (50 percent of the time) pollutant removal efficiencies. The large standard deviations are evidence of the many factors that can impact removal efficiencies. Note that the removal efficiencies for metals are based on the concentration of total metals, not the dissolved form that is most toxic. The removal efficiency for dissolved metals is typically much lower. In recent monitoring of a suite of BMPs done by WSDOT (WSDOT 2004b) the reduction in total cadmium ranged from 36 to 85 percent, for total Cu from 72 to 91 percent, and for total Zn 55 to 86 percent. The removal rates for dissolved constituents was much lower. For dissolved Cu reductions were 8 to 60 percent, while for Zn they were 0 to 80 percent and dissolved cadmium ranged from increasing to a decrease of 62 percent.

Table 3.2-5: Percent Pollutant Removal Efficiencies (Median and Standard Deviations) of Different Stormwater Treatment Systems

	Total Suspended Solids	Total Phosphorus	Soluble Phosphorus	Total Nitrogen	Nitrates and Nitrites	Total Copper	Total Zinc
Dry Ponds	47 +/- 32	19 +/- 13	-6 +/- 8.7	25 +/- 16	3.5 +/- 23	26	26 +/- 37
Wet Ponds	80 +/- 27	51 +/- 21	66 +/- 27	33 +/- 20	43 +/- 39	57 +/- 22	66 +/- 22
Constructed Wetlands	76 +/- 43	49 +/- 36	36 +/- 45	30 +/- 34	67 +/- 54	40 +/- 45	44 +/- 40
Filtering Practices	86 +/- 23	59 +/- 38	3 +/- 46	38 +/- 16	-14 +/- 47	49 +/- 26	88 +/- 17
Infiltration	95	80 +/- 24	85	51 +/- 24	82	NA	99
Open Channel	81 +/- 14	34 +/- 33	38 +/- 46	84 ⁽³⁾	31 +/- 49	51 +/- 40	71 +/- 36

Source: Winer 2000
NA = Data is not available

Clearly, it is difficult to directly evaluate this wide range in incoming pollutant concentrations and wide range in removal efficiencies measured from conventional stormwater BMPs against water quality standards or expected pollutant loadings. A general conclusion from WSDOT’s monitoring efforts is that “with treatment” 52 percent and 77 percent of dissolved Cu and dissolved Zn samples, respectively, met State standards (WSDOT 2004b), while 98 percent of dissolved cadmium met the standards. In this case “treatment” refers to a basic treatment facility. The stormwater generated from SR 167 is required to receive both basic treatment and enhanced treatment for metals removal and therefore should meet a higher rate of removal of dissolved metals than demonstrated by the monitoring data described above.

As described previously, enhanced treatment will involve either dispersion over a wide riparian buffer (i.e., over RRP area), filtration through special sand or other media filters, or use of manufactured, specialized treatment vaults designed for this purpose. WSDOT and others are currently testing different enhanced treatment technologies and will eventually be able to provide information on measured removal efficiencies for them. However, by providing enhanced treatment and therefore meeting the requirements of Ecology’s stormwater management manual and the WSDOT *Highway Runoff Manual* (WSDOT 2004a) it is “presumed” that the project is in compliance with State and Federal water quality regulations.

A last consideration for evaluating compliance with State toxicity standards is that the information provided in the previous paragraphs refers to either “untreated stormwater” or “treated stormwater,” while the water quality standards are based on the “receiving water” (i.e., Hylebos or Wapato Creeks). While the intention is that the acute toxicity criteria be met as close to the point of discharge as practicable, there is an allowed mixing zone. In the case of these metals, the maximum mixing zone would not extend more than 30 feet downstream, or not utilize more than 2.5 percent of the flow, or not occupy more than 25 percent of the width of the stream, whichever is most restrictive.

The mixing zone allowance needs to be applied on a site and conditions specific basis to make a determination of compliance. Using dissolved Cu as an example, and the maximum concentration measured by WSDOT (18 µg/L) and assuming an average of measured removal efficiencies (34 percent) would result in a maximum discharge concentration of 11.9 ug/L, after basic treatment. This means that the mixing zone would need to provide approximately a 2:1 dilution ratio to reach the water quality standard of about 6 ug/L. The predicted 2 year storm event flows in Hylebos (at SR 99 crossing) was 219 cfs (MGS et al. 2004), which means the discharge volume could be as high as approximately 5.5 cfs and still meet the standard (assuming flow was the most restrictive of the mixing zone criteria).

In summary, proposed stormwater treatment for the project is designed to meet or exceed requirements of Ecology’s stormwater management manual or the WSDOT *Highway Runoff Manual* (WSDOT 2004a). The RRP approach is expected to provide a number of benefits beyond stormwater control that will improve overall stream functions. Overall, it has been calculated that the net environmental benefits to project area wetlands, streams, and uplands will be 75 percent greater than if the project is not built and 57 percent greater than if the project is built but conventional stormwater treatment is used (CH2M HILL 2005).

3.2.4 Impacts of Construction

No Build Alternative

No direct construction-related impacts to water resources are expected under this alternative. However, the study area is undergoing industrial, commercial, and residential development. The City of Fife and the City of Puyallup have implemented Comprehensive Plans under which land continues to be developed and roads, utilities, schools, and other facilities will continue to be improved, with associated pressures on water resources.

WSDOT would also continue with ongoing transportation projects in this area, with associated construction-related impacts. These projects would include improvements to I-5, SR 509, SR 99, SR 161, and SR 167. Specific improvements could include adding capacity, building HOV lanes, constructing park and ride lots, and improving intersections. Construction and operation of such projects would have the same types of impacts as the Build Alternative.

Build Alternative (Preferred)

The potential for impact of construction to water resources can generally be related to the amount of land disturbance, the existence of potential contaminants in the project area, and the number of construction activities that are planned in or near surface waters. The following is a general description of construction period related impacts that apply to all parts of the build alternative. More detail on activities specific to each surface water basin and project elements within those basins are then described.

Removal of vegetation and soil disturbance increases the likelihood of site erosion and subsequently the potential for increased turbidity and sediment delivery to surface waters. Construction activities that will disturb soil, include: site clearing and grading, in-water work associated with culvert and bridge work, excavation, filling, hauling, landscaping, and geotechnical drilling. Erosion and sedimentation rates are generally proportional to the amount of clearing and grading, slope steepness and length, proximity to receiving waters, and the occurrence of large storms during the construction period. Steep or long slopes are not an issue in the project area, but construction will be occurring in, and in close proximity to, a number of surface water resources. Construction will also occur year-round, which increases the likelihood of encountering a large storm event during construction.

The erodibility for soils in the project area is slight. Tisch soils are rated as having “very slow” runoff and therefore a low erosion hazard. For all other soils, Briscot, Sultan, Alderwood, Puyallup and Kitsap, runoff is rated as “slow” and the hazard for water erosion is slight (Thurston County and Kitsap County Soil Surveys 1974).

Culvert replacements and other in-water work will result in direct physical disturbance to streams and streambeds as well as loss of streamside vegetation, which may result in increased sediment loading and turbidity. The activity at each site may last from one day to one week or longer for pier construction, depending upon complexity and the amount of streambed and bank re-shaping required. Diversion pump systems may be used in many cases to divert the stream during construction.

If possible, proposed bridges or culverts over Hylebos, Surprise Lake Drain, and Wapato Creek (including Wapato Creek’s associated wetlands) will completely span these waterbodies, minimizing in-water work. However, since they will result in construction activities occurring near the water, there is still a high potential for movement of disturbed soils and other materials to the stream resulting in increased sediment loading and turbidity. The Build Alternative may also require some in-water piers for the new bridge over the Puyallup River and widening of the existing bridge is likely to require locating piers within the ordinary high water mark. In addition, three temporary structures (i.e., a temporary river crossing and two work trestles), will require in-water piers in the Puyallup River during construction.

Suspended solids increases can impact aquatic systems. In streams, high-suspended solids loads can injure or kill adult fish and damage spawning grounds. Sustained high suspended solids loads can result in increased

sedimentation, which can result in a decrease in the stream channel's ability to pass high flows, resulting in an increased tendency for flooding. Destabilization of the stream bank can also occur as the channel responds to increased sediment loading by incising or widening.

These potential construction related impacts are addressed through development of a Temporary Erosion and Sedimentation Control (TESC) Plan for each construction site. This plan is a working document that sets forth the BMPs that will be used during construction to prevent erosion and control sedimentation. They may include anything from installation of silt fencing, hay bales and sediment ponds, to truck wash facilities. WSDOT also requires that stormwater BMPs be installed and operational prior to earthwork. During the life of the construction project, erosion and sediment control BMPs are continuously monitored and the TESC plan is modified in response to changing site and weather conditions. Specific elements of a TESC plan and BMPs are described in detail in the WSDOT *Highway Runoff Manual* (WSDOT 2004a).

Construction site discharges are regulated via the State Water Quality Standards. The proper application of TESC BMPs is intended to result in compliance with water quality standards to the greatest extent practicable.

The flat topography in the project corridor will generally cause runoff from cleared and graded areas to pond on-site rather than flow to surface waters. However, where soil is disturbed in close proximity to streams or ditches, impacts to surface water could occur. Should off-site movement of materials occur, the impact would likely be of moderate magnitude and short duration. However, an extreme storm event that surpasses Ecology's design criteria (Ecology 2001) could overwhelm even permanent BMPs, potentially discharging water that exceeds State Surface Water Quality Standards for turbidity.

In addition to land disturbance related concerns, construction activity can also increase the potential for contaminant release. Construction equipment, materials, and waste on the site represent potential sources of pollutants. These sources include oil and grease, hydraulic fluid, and concrete leachate. These materials could be introduced into the stormwater system and, if not contained or treated, could contaminate ground- and surface water resources. The size of potential contaminant spills ranges from small to large: for example, from leaking heavy equipment to a punctured fuel storage tank. The potential for surface water impacts from contaminant releases is related to the proximity of the staging and construction sites to streams and flood prone areas. Within the construction area, the high water table increases the potential for a large spill and accumulations of small spills to result in contaminated groundwater, especially during the winter months.

Construction activity can also exacerbate existing contaminant problems if there are unknown buried contaminant sources in the project area. Contaminated soils and sediments disturbed by earthwork can result in the delivery of toxic substances to surface waters.

Although all discharges to surface and groundwater are a concern, those that occur in wellhead protection zones or over aquifer recharge areas, are of greater

concern due to the vulnerability of groundwater and/or drinking water to contamination in these areas. Type A and B public water supply systems that have designated wellhead protection zones that overlap staging area boundaries or construction sites are shown in Figure 3.2-5. Construction of the project could necessitate the removal and replacement of some of these water supply systems, if they are too close to the potential area of impact. Also, as indicated in Figure 3.2-5, the project area is located within an identified Aquifer Recharge area. The low permeability of the shallow alluvial aquifers decreases the risk of contamination; conversely, the high water table prevents filtration of pollutants and increases the risk of contamination from a spill.

Current construction practices seek to eliminate or minimize contaminant releases that commonly occur at storage and staging areas and construction sites. WSDOT contractors are required to develop and implement a Spill Prevention Control and Countermeasure (SPCC) plan. The SPCC plan specifies the procedures, equipment, and materials used to prevent and control spills of contaminated soil, petroleum products, contaminated water, or other hazardous substances. Contractors are required to provide WSDOT a SPCC plan prior to commencing work. Elements of the SPCC plan are further discussed in the *Hazardous Materials Discipline Study* (WSDOT 2004).

Clearing and grading estimates, the number of in-water or near water work sites, and existence of wellhead protection zones are described for each potentially affected drainage basin in the following project specific impacts sections.

Hylebos Basin

Construction activities that are specific to the Hylebos Basin include construction of the mainline between 20th Street East and the 54th Avenue East interchange, construction of two interchanges (54th Avenue East and I-5), re-alignment of 20th Street East, filling and re-locating of a portion of Hylebos Creek and Surprise Lake Drain, and construction of the RRP for both Hylebos and Surprise Lake Drain. These activities will result in 4.4 acres of temporary wetland impact to Hylebos Creek and 2.9 acres of temporary impact to Surprise Lake Drain (Section 3.3-3). These impacts are related to construction of the new stream channels. This temporary loss of wetlands is not likely to cause water-quality-related impacts other than what occurs through general disturbance of land by construction activities, which is accounted for in the descriptions of clearing and grading impacts. Potential wetland mitigation sites have also been identified in this basin. If one of these sites is selected, enhancement or restoration activities at the site would also result in a temporary impact to the wetland and possibly an impact to nearby surface waters. Due to the conceptual nature of the wetland mitigation plan these impacts cannot be qualitatively or quantitatively described at this time.

54th Avenue East Interchange

Table 3.2-6 provides a comparison of the primary construction activities that influence the magnitude of impacts. The magnitude of impacts from the Loop Ramp (preferred) and Half Diamond options are not expected to differ notably. Since there is no substantive difference between options at this interchange, the following analysis applies to both.

The Loop Ramp (preferred) and Half Diamond options will result in approximately 54.6 and 56.2 acres of clearing and grubbing, respectively. An additional approximately 52.5 acres of clearing and grading will be required for completion of mainline segments not directly associated with this interchange area. One new stream crossing of Fife Ditch is required under both options, the specific type of stream crossing is not yet known. At least two existing undersized stream crossings will be removed, which should help to improve flood passage. Construction site runoff from either option will discharge to Lower Hylebos Creek and Fife Ditch. Fill will be left on-site for an extended period of time in order to compact the soils beneath the mainline and interchanges.

Under both design options, there is a risk of increased movement of materials to the stream and increased turbidity from near water work (i.e., work occurring within or near the stream channel) is minimal. It is not yet known whether the new stream crossing of Fife Ditch for this interchange will be a clear span (i.e., a bridge that does not require support structures within the immediate stream corridor). This type of crossing would require no in-water work, but would result in disturbance of soils within or near the riparian zone. Therefore, modifications to the two existing stream crossings and possibly also the new stream crossing will require in-water work.

Table 3.2-6: Hylebos Basin Impacts Associated with Roadway Construction

	54th AVE E		I-5	Stream Relocation & RRP
	<i>Loop Ramp</i>	<i>Half Diamond</i>		
Acres of Clearing and Grading for Mainline	52.5 Total (10.7 are temporary)		79.3 Total (13.4 are temporary)	
Acres of Clearing and Grading at Interchange	56.2 Total (13.1 are temporary)	54.6 Total (12.2 are temporary)	55 Total (12.6 are temporary)	131.6
Wellhead Protection Zones Crossed	3	3	5	5
Temporary Stream Crossings	0	0	7	0
New stream crossings	1	1	3	6
Existing Crossings Improved or Removed	2	2	7	1
Total near water work sites	3	3	17	7

Note: If multiple structures cross at the same location, only the lowest structure was counted.

Due to the amount of required structure, construction can be expected to occur year-round. Exposed soils and soil disturbing activities occurring between October and April present the greatest potential for encountering erosive rain events. Some of the construction and staging areas will be located within flood prone areas.

Construction activities and staging areas associated with this interchange will be located within the wellhead protection zone (10-year time of travel) of three Group A water supply systems (Figure 3.2-5). Two of these wellhead protection zones are also within the area of impact from the I-5 Interchange. These activities could impact groundwater through the introduction of contaminants or disturbance of contaminated soils. Such groundwater impacts are avoided and/or

minimized through the implementation of the SPCC plan. Additional protective measures may be implemented as specified with individual wellhead protection plans. Wells that lie directly beneath the project footprint will be decommissioned in accordance with state laws. City of Fife wells 5 and 6 may need to be abandoned, which would impact the City's water supply and require an alternate source be found. Water rights transfers and/or new water rights will be obtained from Ecology prior to decommissioning the wells. The potential for the introduction of contaminants to groundwater does not differ between options.

Because TESC BMPs and SPCC plan will be fully implemented, construction activities at the 54th Avenue East Interchange are expected to result in compliance with water quality standards.

I-5 Interchange

Approximately 55 acres will undergo clearing and grubbing and two new stream crossings will be necessary at this interchange (Table 3.2-6). At this time, it is expected that four existing crossings will be improved. These, in combination with temporary crossings, will result in a total of ten in- or near-water work sites. Construction site runoff is discharged toward Lower Hylebos Creek.

In-water work will occur as a result of the replacement of an existing culvert with a bridge span structure and widening of two bridges under I-5, which will require in-water pilings.

Construction activities and staging areas associated with this interchange will be located within four wellhead protection zones (10-year time of travel) for Group A water supplies, including the composite wellhead protection zone for seven City of Milton wells, and one Group B water supply (Figure 3.2-5). There is little potential for effects on the City of Milton wells through new contamination sources (because a highway corridor already exists in the area) or aquifer flow patterns.

These construction activities will be subject to the same potential sources of erosion and sedimentation and introduced contaminant impacts described in Section 6.1. Impacts will be avoided or minimized through the implementation of the TESC and SPCC plans and, therefore, the proposed activities are expected to be in compliance with water quality standards.

Stream Relocation and Riparian Restoration Proposal

Impacts associated with stream relocation and RRP development are summarized in Table 3.2-7. Approximately 2,050 lineal feet of Hylebos Creek (representing approximately 0.47 acre of streambed) and 2.5 acres of stream buffer would be filled to construct the I-5 Interchange. In addition, another 1,000 lineal feet of Surprise Lake Drain (representing 0.14 acre of streambed) would be filled or culverted (Table 3.2-7). Because agricultural activities extend to the top of the bank in this portion of the Surprise Lake Drain, there is no functional riparian buffer loss.

Table 3.2-7: Summary of Stream and Buffer Construction Impact Areas in the Hylebos Basin

	Loss due to Filling			Gain from Relocation & RRP		
	<i>Stream (feet)</i>	<i>Stream (Acres)</i>	<i>Buffer (Acres)</i>	<i>Stream (feet)</i>	<i>Stream (Acres)</i>	<i>Buffer (Acres)</i>
Hylebos Creek	2,050	0.47	2.5	4,010	2.21	87.4
Surprise Lake	1,000	0.14	0 ⁽¹⁾	5,340	1.23	29.0

⁽¹⁾ No functional riparian buffer exists.

To compensate for the channel and buffer lost to fill, two new stream channel and buffer sections will be constructed. The new channels would be constructed to achieve a more natural sinuosity and channel configuration than the existing ditched and straightened channels. Approximately 4,010 lineal feet of new Hylebos Creek channel will be constructed and over 87 acres of riparian zone will be protected surrounding the new and existing channel within the project limits.

The entire section of the Surprise Lake Drain channel, from its confluence with the mainstem of Hylebos Creek to the crossing at Freeman Road will be restored and/or relocated into a new channel to improve the quality and condition of the stream, provide flood control, and habitat benefits. This amounts to approximately 5,340 lineal feet of new channel. Additionally, 29 acres of adjacent riparian area will be protected.

Approximately 700 feet of existing Surprise Lake Drain channel is impacted by mainline SR 167. This is a ditched portion of the channel located on the south side of the proposed highway corridor that is not within the RRP area. New bridge crossings will be constructed under the north- and south-bound lanes of I-5 to convey the combined Hylebos Creek and Surprise Lake Drain to the confluence with the old channel just upstream of SR 99.

In the I-5 interchange area, re-vegetation and riparian plantings can begin in the portions of the RRP that will not be disturbed through any planned construction activities. And, portions of 8th Street East, 62nd Avenue, 67th Avenue, and adjoining residential buildings would be removed from the riparian buffer and floodplain. This will allow this area to begin to provide some filtering and storage capacity before the new stream channel is built. The actual stream relocation work will be carefully timed to insure that it does not become an obstacle during construction and also to avoid critical salmon migration periods. Relocation will begin with constructing the new channel, which will require clearing of approximately 132 acres and planting riparian vegetation (Table 3.2-6).

The proposed design of the “Preferred Option” at I-5 and Hylebos Creek would eliminate two existing stream crossings and replace them with only one that clear spans the stream channel. The two existing stream crossing structures would remain as they are an integral part of the roadway, but would no longer be necessary to convey flows of the relocated Hylebos Creek.

In-stream work during the removal of culverts and bridges, diversion of the stream, and the construction of new stream crossings will result in increased loading of suspended materials and therefore increased turbidity and sedimentation within Hylebos Creek. However, the turbidity increase is expected to be fairly short-lived and will be timed to avoid critical periods of salmon migration. The sedimentation affects would occur over a longer reach of the stream and be longer term in nature. Stream diversion will result in the same type of turbidity and suspended materials increase associated with the in-water work. However, it is also expected that smaller turbidity pulses will continue to occur during the first few rain events after diversion, as disturbed materials are washed downstream.

Potential impacts associated with contaminant spills or affects to water supplies and wellhead protection zones for this portion of the project are the same as those described for the I-5 Interchange.

Wapato Basin

Construction activities that are specific to the Wapato Basin include construction of the mainline between 20th Street East and the two Washington State Patrol (WSP) weigh stations, the Valley Avenue Interchange, a Park and Ride lot, and the RRP for Wapato Creek. Temporary wetland impacts for this project have been defined as those associated with stream relocation activities, therefore, no temporary wetland impacts have been identified in this Basin.

Valley Avenue Interchange

Approximately 105.4 to 127.3 acres will undergo clearing and grading depending upon which interchange option is selected (Table 3.2-8). This includes land associated with the Park and Ride lot. Additionally, approximately 95 acres will be impacted during construction of mainline segments. There will be either one, two, or three new stream crossings depending on the option. One crossing could be a culvert, but the other two are either clear span bridges or high structures that will not require in-water work. Two temporary crossings are planned at this time.

Under the preferred option (Valley Avenue), there will be five near- or in-water worksites. One of the stream crossings has been designed to span both Wapato Creek and adjacent wetlands in order to further avoid wetland impacts from this option. The Freeman Road and Valley Avenue Realignment Options have six and seven sites, respectively.

The Valley Avenue option listed in Table 3.2-8 has the fewest total near-water or in-water work sites of all the proposed interchange options. The Freeman Road and Valley Avenue Realignment options would have more impacts to near or in-water work sites than the Valley Avenue option.

Construction site runoff is discharged toward Wapato Creek. Construction of the Park and Ride lot associated with this interchange will not require in- or near-water work.

Table 3.2-8: Wapato Basin Impact Areas Associated with Roadway Construction

	Valley Avenue				Wapato RRP
	<i>Valley Ave</i>	<i>Freeman Rd</i>	<i>Valley Realignment</i>	<i>Park & Ride</i>	
Acres of Clearing and Grading for Mainline	94.8 acres Total (20.9 are temporary)				
Acres of Clearing and Grading for Interchange	127.3 Total (13.6 are temporary)	113.2 Total (14.6 are temporary)	105.4 Total (17.3 are temporary)	8.4 Total (1.1 are temporary)	60.8-69.3
Wellhead Protection Zones Crossed	2	2	2	2	2
Temporary Crossings	2	2	2	0	0
New stream crossings	3	1	2	0	0
Existing Crossings Improved or Removed	0	3	3	0	8
Total near water work sites	5	6	7	0	8

Construction activities and staging areas associated with this interchange will be located within two designated wellhead protection zones (10-year time of travel) for Group A water supplies (Figure 3.2-5).

Construction activities at this interchange will be subject to the same potential sources of erosion and sedimentation and introduced contaminant impacts described for the Build Alternative at the beginning of the construction impacts section. Impacts will be avoided or minimized through the implementation of the TESC and SPCC plans.

Valley Avenue Park and Ride Lot

Approximately eight acres of clearing and grading would be required to construct the Park and Ride lot. These construction activities would be located within the same two designated wellhead protection zones (10-year time of travel) for Group A water supplies as potentially affected by the Valley Avenue Interchange. No additional stream crossings or other in-water work is associated with this project element.

Construction activities at the Park and Ride will be subject to the same potential sources of erosion and sedimentation and introduced contaminant impacts as described for Interchange areas. Impacts will be avoided or minimized through the implementation of the TESC and SPCC plans. Wapato Creek lies within approximately 100 to 200 feet of the footprint of this Park and Ride lot.

Wapato Riparian Restoration Proposal

The RRP for Wapato Creek would result in at least a 300-foot-wide corridor through which Wapato Creek would flow. Although it was FHWA and WSDOT’s goal to provide at least 200 feet along each side, in this area the corridor width is confined by the railroad on one side and the Valley Avenue Park and Ride lot on the other. Establishing the RRP would involve land acquisition along a continuous reach of 9,000 linear feet and conversion of about

73 acres of developed land to riparian habitat. Restoration would involve limited land disturbance associated with removing human encroachment (buildings, roads, culverts, etc.) in the RRP area and planting with native vegetation. Six existing, privately owned culverts and bridges that are undersized would be removed. Another two undersized culverts are slated for replacement to meet current design standards. Removal, replacement, and installation of new culverts represents the only in-water work related impact for this project element.

Old Oxbow Lake Ditch Basin

Over 20 acres of clearing and grading might be affected to construct the 18 to 19 acres of roadway that would be added to this Basin. However, stormwater controls will direct any runoff from these areas toward Wapato Creek and the Puyallup River. No stream crossings or other impacts are expected to this Basin.

Puyallup River Basin

Construction activities that are specific to the Puyallup Basin include; construction of the mainline between from the WSP weigh stations to the project end, the SR 161 Interchange, modification or replacement of two bridges over the Puyallup and the SR 161 Park and Ride lot. Potential wetland mitigation sites have also been identified in this basin. If one of these sites is selected, enhancement or restoration activities at the site would also result in a temporary impact to the wetland and possibly an impact to surface waters, if there are any close by. Due to the conceptual nature of the wetland mitigation plan these impacts cannot be qualitatively or quantitatively described at this time.

SR 161 Interchange

Approximately 41 acres will undergo clearing and grading under all three options (Table 3.2-9). Under all options, no new stream crossings are planned. However, two existing bridges over the Puyallup River will be affected. The steel bridge (northbound traffic) will be replaced. At this time, it is uncertain whether the replacement structure will span the river. More detailed analysis is needed to determine the type and profile of the replacement structure. The concrete bridge (southbound traffic) will be widened. In order to provide a conservative assessment of impacts, it is assumed that some piers will be located within the ordinary high water of the river for both the replaced and widened bridges. Three temporary structures, including a temporary river crossing and two work trestles, will also require in-water piers.

Table 3.2-9: Puyallup Basin Impact Area Associated with Roadway Construction

	SR 161			Park & Ride
	<i>Urban</i>	<i>Diamond Low</i>	<i>Diamond Med.</i>	
Acres of Clearing and Grading	40.7 Total (7.8 temporary)	41.4 Total (6.9 temporary)	41.4 Total (6.9 temporary)	4 Total (0.8 temporary)
Wellhead Protection Zones Crossed	2	2	2	2
Temporary Crossings	3	3	3	0
New stream crossings	0	0	0	0
Existing Crossings Improved or Removed	2	2	2	0
Total Near-water work sites	2	2	2	0

⁽¹⁾ Clearing and grading associated with mainline segments near this Interchange have been included in estimates for previously described interchange areas.

Construction of the new bridge requires that support structures are first put in place and then the bridge deck is built. To minimize the potential for impacts during formation of the support structures, casings are typically placed within the stream prior to drilling shafts and pouring concrete. Concrete leachate is then pumped from the casings and disposed of off-site. Installation of the casings may disturb soils and channel sediments resulting in short-term turbidity increases within the Puyallup River. Increased turbidity levels would probably be minor in comparison to background levels of glaciofluvial suspended solids. The casings would prevent or minimize the discharge of turbid water to the Puyallup River during the drilling of shafts. Concrete pouring activities could generate a temporary increase in pH and turbidity levels. However, the use of casings and leachate pumping is used to minimize and/or prevent such impacts.

Lead-contaminated paint chips and debris could be generated during the demolition or retrofit of the existing bridge. Without mitigation, such debris could enter the Puyallup River resulting in an impact. Although the details involved in bridge removal are not yet defined, performance standards are being developed for this project element that will focus on avoidance/minimization. Two preliminary performance standards during bridge removal are (1) no material or debris will enter the water and (2) containment will be achieved by the work trestles and the temporary detour. Additional performance measures may be identified in the Biological Opinion for the project.

Construction activities and staging areas associated with this interchange will be located within two designated wellhead protection zones (10-year time of travel) for Group A water supplies (Figure 3.2-5). City of Puyallup well 17 may be within the project footprint and need to be abandoned, which would affect the City's water supply, although this well is not a primary source for the City.

Construction activities at this interchange will be subject to the same potential sources of erosion and sedimentation and introduced contaminant impacts as generally described for the Build Alternative. Impacts will be avoided or minimized through the implementation of the TESC and SPCC plans.

SR 161 Park and Ride Lot

Approximately four acres of clearing and grading would be required to construct the Park and Ride lot (Table 3.2-9). These construction activities would be located within the same two designated wellhead protection zones (10-year time of travel) for Group A water supplies as potentially affected by the SR 161 Interchange. No additional stream crossings or other in-water work is associated with this project element.

Construction activities at the Park and Ride will be subject to the same potential sources of erosion and sedimentation and introduced contaminant impacts as described for Interchange areas. Impacts will be avoided or minimized through the implementation of the TESC and SPCC plans. Since there are no surface waters within 500 feet of this site, the potential for impact is very small.

3.2.5 Impacts of Operation

No Build Alternative

No direct, project-related operation effects on water resources would occur under the No-Build alternative. However, impacts to water resources would occur as non-project-related urban development pressure increases in the project area. The further urbanization of the project area would continue to occur as planned by the local jurisdictions as a result of their Growth Management Act (GMA) planning. The entire area has been re-zoned to facilitate conversion from rural agricultural land uses to more urban development of industrial, commercial, and residential uses. The potential effects of such land use conversion on water resources include increases in runoff and pollutant loading as impervious surface is added and floodplains are filled. Ultimately, ongoing development under the no build alternative would not likely result in lower potential for adverse impacts to water resources than building the proposed project facilities.

No-Build Alternative Land use Changes

In the City of Fife, south of I-5 to the city limits (Freeman Road), the land use has traditionally been farming; most of the land has been agricultural and vacant. However, the city annexed the land and removed the agricultural overlay designation and designated the majority of the land as industrial/commercial (Fife Comprehensive Plan Amendment, 2002). This land use conversion (from agricultural to industrial/commercial) is currently occurring and is expected to continue as planned by the comprehensive plan. (Fife Comprehensive Plan, land use maps, conversations with City Planning Office, and County Assessor database). The City has designated 1,571 acres for industrial development, approximately 47 percent of the entire City (Fife Comprehensive Plan, 2002 [Land Use Element p.2-19]). There are different transportation project scenarios identified in the City of Fife's adopted Transportation Plan (2002) that are influenced by whether or not SR 167 is constructed.

The City of Puyallup's unincorporated West Valley Sub-area (urban growth area (UGA)) has been in agricultural uses with some dispersed housing. North of the Puyallup River, which is within the project area, there are industrial and distribution uses. The UGA and incorporated land north of the river has been designated as Light Manufacturing (industrial/commercial) land use. "In portions of the UGA, agricultural lands provide a base for needed industrial development..." (Puyallup Comprehensive Plan 2005 update). Currently the UGA has been proposed for an industrial park development (City of Puyallup Current Projects Map). The remaining vacant land is being considered for other industrial land development (Puyallup Comprehensive Plan, land use maps, conversations with City Planning Office, and County Assessor database).

The City of Milton UGA that is south and west of Milton, adjacent to the Fife city limits along SR 99/Pacific Highway, is expected to be developed for residential and commercial uses (Milton Comprehensive Plan, land use maps [2002]).

Build Alternative (Preferred)

Project Land Use Changes

The land use changes to occur with the action are expected to occur similar to that without the No-Build Alternative. Land use change trends are expected to follow existing land use plans, zoning designations, and regulations adopted pursuant to the GMA by the affected jurisdictions that directly surround the proposed SR 167 highway extension (see attached local zoning figure 3.11-2). Zoning designations in the study area were obtained from the following sources: City of Fife zoning map (2000); Pierce County map of zones designated “general” and plat maps with zoning overlays (2000); City of Puyallup zoning map (2000); City of Milton zoning map (1999); and City of Tacoma zoning map (2000). However, there are different transportation project scenarios identified in the City of Fife’s adopted Transportation Plan (2002) that are influenced by whether or not SR 167 is constructed.

The operation of the new SR 167 corridor has the potential to impact surface water quality and hydrology and groundwater resources over the long term. Potential sources of impacts include increases in peak flows and pollutant loads via stormwater runoff, maintenance activities, and contaminant spills on impervious surface.

The Build Alternative could reduce traffic on local roadways in 2030, compared to the No Build Alternative in 2030, according to traffic studies (PSRC 2001). The Build Alternative may thereby lower pollutant loadings on these local roadways, while increasing vehicle volumes on SR 167. The Build Alternative also would provide mitigating BMPs to treat runoff, while they do not exist on local roadways. Therefore, construction of this alternative might not worsen water quality in the Puyallup valley as a whole.

Traffic-related accidental spills of materials of a variable nature also could occur within the ROW on an infrequent basis. Proper design, location, and maintenance of stormwater management facilities will be important to reduce the potential of a spill resulting in contamination of surface or groundwater. Structures such as catchbasins, oil/water separators, and biofiltration swales provide intermediate locations between the roadway and local water resources where spilled materials can be more easily detained and removed.

Another potential source of pollutants is through highway maintenance practices. Maintenance activities that may impact the surface water and groundwater resources within the study area include: sanding and deicing, catch basin cleaning, ditch cleaning, herbicide applications, stormwater BMP maintenance, and bridge cleaning and painting. The *Water Resources Discipline Study* (EnviroVision 2005) describes current WSDOT maintenance practices that minimize the amount of impact to surface water and groundwater.

The amount of impact arising from maintenance activities is related to the amount of roadway. Overall, maintenance activities are not likely to result in any impacts over the life of the project. Many of the maintenance practices are in fact required to protect water quality by maintaining the effectiveness of the

stormwater control facilities. The alternatives do not differ substantially in the amount of impact they may impose from maintenance practices.

The primary concerns for groundwater quality are due to the potential for contaminant spills from highway accidents or from general maintenance practices. As with maintenance related concerns, spilled materials would naturally be conveyed to the stormwater system where there is some opportunity for treatment and removal before the material would reach surface or groundwater.

There are also groundwater concerns associated with the potential for decreased aquifer recharge and subsequent decreases in stream baseflows in hydraulically connected streams and wetlands. A decrease in subsurface flow through the stream hyporheic zone could also impact oxygen and temperature in this zone, which provides important habitat for stream macroinvertebrates, fish eggs, and other organisms. Two potential contributing factors have been identified. First, that excessive soil compaction (primarily at roadway embankments) could inhibit the infiltration of groundwater. And, second, that increases in impervious surface would accelerate surface runoff and therefore also decrease infiltration.

There are a number of factors that diminish these concerns. First, recent hydrologic studies have indicated that baseflow to Lower Hylebos is largely generated from the upper watershed (MGS et al. 2004). Consequently, for the majority of the project area, baseflow is not driven by subsurface flow generated in the project area. In addition, the RRP's and utilization of deep fill infiltration may enhance aquifer recharge in their immediate area above what might normally occur. This could offset possible losses due to other aspects of the project. Furthermore, a preliminary analysis (i.e., based on conditions at a nearby site, site soils, and assumptions about roadway embankment heights and horizontal conductivity), suggested that impacts to groundwater flow regimes from embankments should be minimal. Additional field testing of vertical and horizontal flows under embankments is planned.

A last groundwater concern is the existing groundwater contamination associated with the now closed B&L Woodwaste site, which may be impacted by the Hylebos Creek relocation. Sections 3.8.3 and 3.8.5 provide information on this site.

Hylebos Basin

Project elements located within the Hylebos Basin that need to be addressed in terms of potential long-term operational impacts include; the mainline between 20th Street East and the 54th Avenue East interchange, two interchanges; 54th Avenue East and I-5, and the Hylebos and Surprise Lake Drain RRP's, and permanent impacts to wetlands.

Land Use Assessment

Table 3.2-10 depicts land use estimates for the Hylebos and Wapato basins. Existing land use estimates were based on GIS analysis of the individual basins, while future land use conditions were based on compliance with local comprehensive plans. These plans were developed on a 20-year planning

horizon, and therefore reflect the future condition in about 2025. The *Water Resources Discipline Study* (EnviroVision 2005) provides more details on land use assessment.

Table 3.2-10: Current and Future Land Use (%) for Hylebos and Wapato Basins

Land Use	Hylebos Basin		Wapato Basin	
	<i>Current</i>	<i>Future</i>	<i>Current</i>	<i>Future</i>
Water/Wetlands	5.2	5.8	1.4	1.3
Forest	21.9	-	0.3	-
Grass	32.9	3.5	20.6	-
Multi-Family	4.2	8.9	14.0	4.1
Moderate Density	1.9	14.7	-	47.5
High Density	11.7	29.3	42.7	6.6
Commercial	22.2	36.9	21.1	39.4
SR 167	-	0.9	-	1.1

The land use predictions were used to estimate changes in impervious surface. Table 3.2-11 provides a comparison of changes in percent impervious area between existing and future land use. The largest increases in impervious surface are predicted to occur in the East Hylebos and Surprise Lake Drain subbasins. However, the vast majority of this increase is not associated with the SR 167 corridor. In fact, the Hylebos RRP alone would effectively preclude development and remove existing development from 116 acres of mostly commercial /industrial land in the lower Hylebos watershed. Future land use conditions are discussed more fully in Section 3.2-7 on Cumulative Impacts.

Table 3.2-11: Current and Future Percent Impervious Surface in the Basins

Basin	Subbasin	Acres	Current %	Future	
				(w/ SR 167)	SR 167 % ⁽¹⁾
Hylebos	West	5,856	28.6	42.1%	0.1
	East	3,950	17.3	42.0%	0.2
	Lower	747	21.5	25.2%	4.9
	Surprise Lake	1,627	22.7	51.3%	3.2
<i>Total Basin</i>		12,180	23.7	42.2%	0.9
Fife Ditch		1,043	50.4	76.8%	1.9
Wapato		2,801	34.6	43.0%	1.0

⁽¹⁾ Percent of SR 167 Corridor relative to total basin or subbasin acres.

Note: Puyallup Basin was not modeled using land use.

Hydrology and Flooding

Since the Hylebos basin is most affected by the project, an extensive analysis of the stream was done to document the hydrologic and geomorphic character of the streams. A model was developed to evaluate the hydrologic and flooding impacts from stream relocation and development of the RRP and to insure that the RRP could meet or exceed stormwater control requirements. The primary issues that were evaluated through this effort were the impacts to the size of the floodplain or the frequency or magnitude of flooding, changes to stream baseflows or low flow conditions, and potential impacts to stream stability or erosion.

Three methods have been used to estimate the area of the floodplain during different design phases of this project. The first was based on the FEMA floodplain maps, which represented the officially designated floodplain during early phases of the project. However, the FEMA floodplain markedly underestimated the area that was flooded during recent large storm events. Therefore, aerial photos from the flood events in 1996 were used to delineate the “flood prone area”; this phrase was used to reduce confusion between the official 100-year floodplain and the known frequently flooded area. In the Hylebos Basin, a third estimate of floodplain area was developed through hydrologic modeling of the basin. The greatest advantage of the modeling effort is that it is based on land use and can be used to predict flooding during future build-out conditions.

Table 3.2-12 summarizes the estimated flooded area using the two or three methods. (In this Table all impacts that do not vary by interchange option are summarized under the “Mainline Segment” to enhance ease of comparison between options.) Those acres affected by the I-5 Interchange and the 54th Avenue East Interchange primarily impact the Hylebos basin. Using the worst case estimate for the mainline (i.e., those associated with the MGS modeled floodplain) there are almost 35 acres of floodplain impact associated with the I-5 Interchange, while the 54th Avenue East interchange has a maximum of about 2 acres of impact.

Table 3.2-12: Acres of Floodplain Impacts from Mainline and Different Interchange Options using Three Estimating Methods

Project/Option	100-year Floodplain	Flood Prone Areas	MGS Floodplain
<u>MAINLINE SEGMENT</u>			
SR 509	0.97	1.75	0.38
I-5	12.26	29.2	34.05
Valley Avenue	0.13	5.34	0
SR 161	0	0.63	0
Mainline Total	13.36	36.92	34.43
<u>INTERCHANGE</u>			
54th Avenue East			
Loop Ramp (Preferred)	0.46	0	0
Half Diamond	2.02	0.01	0
Valley Avenue			
Freeman Road	1.01	1.56	0
Valley Ave. (Preferred)	0.7	3.21	0
Valley Ave. Realignment	0.35	3.37	0
SR 161			
Urban	0	0	0
Low Diamond	0	0	0
Medium Diamond	0	0	0
Total (minimum)	14.17	38.48	34.43
Total (maximum)	16.39	40.3	34.43

Under existing conditions, approximately 246 acres are predicted to be inundated during a 100-year flood event (MGS et al. 2004). Construction of the new stream channels, development of the RRP, improvements to stream crossings and removal of existing obstructions to flood flows would improve the flooding condition. The result is that the flooded area is predicted to decrease to 187 acres; a 25 percent reduction over existing conditions. As stated previously, because flood discharge in the lower Hylebos is dominated by runoff from the upper watershed, replacing lost floodplain storage (as through the RRP) would better manage stormwater than construction of conventional detention facilities.

Low flows were also assessed through the modeling effort. There were concerns that the increased impervious surface would cause less aquifer recharge and ultimately lower baseflows. Conversely, it was also possible that baseflows would increase since additional vegetation and lower urbanized land use associated with the RRP would result in increased storage of winter runoff in the streambanks and release via subsurface flow during summer. Hydrologic modeling indicated there was little difference in predicted low flows between the existing condition and future scenario with the project. This is largely because summer low flows are maintained by groundwater discharge to the stream that occurs along the mainstem of Hylebos Creek upstream of the project area (MGS et al. 2004) and also because the area impacted by the project (and RRP) is small compared to the overall basin.

The geomorphic analysis determined that the lower Hylebos and Surprise Lake streams are founded in cohesive soils that are resistant to erosion when compared to the more typical gravel-bedded streams. Streambank erosion would only occur during floods with recurrence intervals of greater than about 10 years for the majority of the study area. It was determined that the lower Hylebos and Surprise Lake Drain stream channels will be stable under future build-out conditions with the SR 167 project.

Water Quality

Results from a pollutant loading analysis performed for the FEIS are provided in Table 3.2-13. Water quality parameters analyzed were total suspended solids (TSS), total phosphorus (TP), total nitrogen (TN), lead (Pb), zinc (Zn), copper (Cu), and fecal coliform bacteria (FC). The pollutant yield constants used for this analysis were derived from monitoring in the Pacific Northwest and therefore were considered more applicable than other data sources. However, this still represents a very general pollutant estimating method. For example, pollutant yields are not provided for agricultural land, so the yield constants for grass were used for this land use, which is prevalent along Surprise Lake Drain. Also constants are not provided for agricultural chemicals. The estimates in Table 3.2-13 are for SR 167 stormwater runoff using predicted treatment efficiencies of constructed wetlands (Winer 2000).

Table 3.2-13: Estimated Median Annual Pollutant Loads⁽¹⁾ (kg/yr) from SR 167 after Stormwater Treatment⁽²⁾ of Highway Runoff

SUBBASIN	TSS	TP	TN	Zn	Cu
Hylebos West	264	1.2	3.7	0.4	0.1
Hylebos East	346	1.6	4.8	0.5	0.1
Hylebos Lower	1777	8.3	24.8	2.6	0.5
Surprise Lake Drain	2528	11.8	35.2	3.6	0.8
Fife Ditch	985	4.6	13.7	1.4	0.3
<i>Total Hylebos Basin</i>	<i>5900</i>	<i>27.5</i>	<i>82.3</i>	<i>8.5</i>	<i>1.8</i>
Wapato Basin	1845	6.9	29.0	8.1	4.7
Puyallup Basin	2674	5.7	50.4	25.6	17.4
<i>Total SR 167</i>	<i>10419</i>	<i>40.0</i>	<i>161.7</i>	<i>42.2</i>	<i>23.9</i>

⁽¹⁾Based on land use specific pollutant yields (Horner 1992).

⁽²⁾Based on median pollutant removal efficiencies for constructed wetlands (Winer 2000) of 76% for TSS, 49% for TP, 30% for TN, 44% for Zn, and 40% for Cu.

Treated runoff from SR 167 represents a small percentage of the total pollutant loading estimated for existing land uses in the respective subbasins (Table 3.2-14). None of the estimated SR 167 loadings in Hylebos Creek East, Fife Ditch, Hylebos Creek West, and Wapato Creek basins exceed 2 percent for any of the pollutants analyzed. Only for TSS and TP in Lower Hylebos Creek subbasin and for TP in Surprise Lake Drain does treated SR 167 runoff exceed 5 percent of estimated loadings from existing land uses.

An overall percentage for SR 167 can not be estimated because the Puyallup basin percentages are not based on modeling of land uses, like the other percentages are.

Table 3.2-14: Treated SR 167 Runoff as a Percent⁽¹⁾ of Total Estimated Pollutant Loads from All Existing Land Uses

SUBBASIN	TSS	TP	TN	Zn	Cu
Hylebos West	0.10	0.16	0.05	0.02	0.01
Hylebos East	0.20	0.30	0.08	0.05	0.01
Hylebos Lower	7.74	9.72	2.90	2.38	0.61
Surprise Lake Drain	3.11	5.08	1.54	0.69	0.19
<i>Total Hylebos Basin</i>	<i>0.89</i>	<i>1.42</i>	<i>0.40</i>	<i>0.21</i>	<i>0.06</i>
Fife Ditch	1.33	2.72	0.89	0.22	0.06
Wapato	1.40	1.70	0.70	0.90	0.70
Puyallup	0.20	0.60	NA	3.20	1.00

⁽¹⁾Values in Table 3.2-13 and mean annual pollutant yield estimates in the SR 167 Water Resources Discipline Study and technical memos were used to calculate percentages. Puyallup Basin was not modeled using land use.

Highway runoff is not considered to be a substantial contributor to the 303(d) listed water quality problems identified for this area (e.g., ammonia, DO, pH, temperature and FC bacteria). Although highways do contribute FC, the yield is estimated to be lower than what is generated from most other land use types (Horner 1992). The estimated yield from SR 167 in TN to Fife Ditch, where ammonia-N concentrations are a problem, is less than 2 percent of the loading from existing land uses, and the nitrogen would not be expected to be in the form of ammonia.

There could be concerns associated with indirect impacts from the roadway on temperature if the additional impervious surface represented by the highway caused a reduction in aquifer recharge and thus caused a reduction in summer stream flows. However, the establishment and protection of the riparian restoration areas (through the RRP) should offset the potential for reductions in recharge. The RRP's will also directly affect (improve) stream temperatures through improved streamside shading, which could also contribute to improved oxygen conditions.

There are additional water quality listings for Hylebos Waterway and Commencement Bay. These include benzene, dioxin, tetrachloroethylene, and trichloroethylene. Although these substances are sometimes detected in highway runoff, they are not a common constituent (Kobringer 1984) and highway runoff is not considered a major contributing source. Therefore, project development would not be expected to affect these 303(d) listings.

Because many existing vacant and agricultural lands in the Fife valley are being converted to commercial and industrial uses, and this trend is expected to

continue, pollutant loadings were also estimated for future conditions in the subbasins. These results are presented in Section 3.2.7 on Cumulative Impacts. Because development will continue during the rest of the planning phase, throughout the design phase, and during phased construction of SR 167, direct effect of operation on pollutant loadings is expected to fall between the percentages estimated for existing and future conditions.

54th Avenue East Interchange

The total amount of stormwater pollutants generated by the highway is dependent upon the volume of traffic. Each interchange option will experience the same traffic volume. Thus, the estimated pollutant contribution is expected to be the same. However, the difference in impervious surface could affect the volume of runoff generated. The two interchange options, the Preferred Loop Ramp and the Half Diamond, will generate runoff from 30.3 and 31.3 acres of impervious surface, respectively. The difference would not be considered large in terms of runoff generated between options.

A series of biofiltration swales, constructed wetlands and ponds are proposed to detain and treat stormwater. Approximately 71 acres of new impervious (93 percent of the generated runoff) will drain to Hylebos Creek, 4.6 acres (7 percent) to Fife Ditch, which discharges to the creek near the mouth. The portion discharging to Hylebos Creek will receive further treatment as it disperses overland through the RRP area.

The new stream crossing of Fife Ditch will be designed to result in no long-term impact to water quality. Removal of undersized bridges on Lower Hylebos Creek should result in long-term improvement in terms of both floodwater passage and stream channel integrity. All stream crossings will be designed to pass 100-year storm runoff. All bridge and culvert work is likely to result in some permanent vegetation removal and placement of fill in the floodplain; for example for bridge support structures. Removal of fill encroachments in the floodplain will also represent a long-term benefit to water resource function.

Because water quality/flow control BMPs will be fully implemented with both options and maintenance practices will follow standard procedures designed to minimize impacts, highway runoff generated at the 54th Avenue East Interchange location is not likely to present major water quality impacts. Additionally, the magnitude of impacts from the Preferred Loop Ramp and Half Diamond options are not expected to differ notably.

I-5 Interchange

At this interchange, 54.1 acres of new impervious surface will drain to Lower Hylebos Creek, and 20.2 acres will drain to Fife Ditch. Therefore, 73 percent of the stormwater runoff generated will be discharged to Lower Hylebos Creek and 27 percent to Fife Ditch. Ultimately, since Fife Ditch drains to the Hylebos Creek estuary, all of this will affect the Hylebos Waterway.

Stormwater treatment at this interchange and mainline segment is expected to occur through ecology embankments, biofiltration swales, constructed wetlands,

and ponds. Much of the discharge will receive enhanced treatment as it is dispersed through either the Surprise Lake RRP or the Hylebos RRP area.

Most of the new stream crossings at this interchange are expected to be span bridges and therefore should result in no long-term impact to water resources. The new stream crossings will span the streams' ordinary high water mark. Improvements to two existing crossings will improve floodwater passage and stream channel integrity. All bridge and culvert work is likely to result in some permanent vegetation removal and placement of fill in the floodplain; for example for bridge support structures.

Stormwater runoff and maintenance related impacts from the I-5 Interchange will be the same as those encountered at the 54th Avenue East Interchange. The potential magnitude of the impact is relative to the amount of roadway built. Because water quality/flow control BMPs will be fully implemented and maintenance practices will follow standard procedures designed to minimize impacts, highway runoff generated at the I-5 Interchange is not expected to result in substantial water quality impacts.

Hylebos Relocation and Riparian Restoration Proposal

Under existing conditions, Hylebos Creek in the I-5 interchange area is confined and constricted in a narrow channel between I-5 on the one bank and a vertical concrete wall on the other. The new channels would be constructed to achieve a more natural sinuosity and channel configuration, will have natural vegetated stream banks, and an intact riparian buffer.

The Hylebos RRP includes relocation and enhancement of Hylebos Creek as well as restoration of the riparian buffer. In the approximately 3,400-lineal-foot reach of Hylebos Creek in the vicinity of 8th Street East and Highway 99, 28.9 acres of riparian and floodplain area will be restored and protected. Portions of 8th Street East, 62nd Avenue, 67th Avenue, and adjoining residential buildings would be removed from this property. Restoration and protection would include; removing human encroachments, establishing native plants, removing invasive/nuisance plants, and developing a long term riparian management and invasive plant control plan.

The RRP concept is ecologically based and intended to provide a continuous functioning corridor between the estuary and the lower segments of Hylebos Creek. For example, the inclusion of the RRP area that is northwest of I-5 will ensure better downstream conveyance and will bring continuity with other nearby restoration projects. Although these benefits may not be as easily matched to specific project impacts, they are nonetheless critical considerations for the ecological success of the project.

The second part of the Hylebos RRP involves the reach in the vicinity of Highway 99 to Porter Way. This is currently a highly degraded, channelized stream; 2,050 lineal feet of which would be filled and 2.5 acres of associated buffer would be displaced to build the highway. Approximately 4,010 lineal feet of new channel would be constructed and over 87 acres of new riparian habitat would be developed through enhancement and protection. The resultant protected riparian corridor would be 150 to 600 feet wide. In addition to

constructing a more natural meandering stream channel, the riparian area would be planted with appropriate riparian vegetation.

About 500 feet of existing Hylebos stream channel in the vicinity of the Highway 99 crossing does not need to be filled for construction of the highway. This segment will remain to serve as potential off-channel habitat.

One important direct water quality benefit from the RRP will be to stream temperature. Within this stream segment summer temperature can be expected to improve due to riparian shading. Over the long term, as the channel matures and develops shaded pools, they will provide cool refuge areas during summer low flows. Suspended solids, nutrient, bacteria, and possibly other contaminants should also decrease in the area immediately surrounding the RRP. This decrease would occur through improved filtering of surface runoff as it moves through the well-vegetated RRPs. While the RRPs cannot address upstream sources of these pollutants, the overall improved function of the streams may allow them to better assimilate these pollutants.

In addition to the improvements in water quality and quantity that can be somewhat quantified, there are important qualitative benefits from the RRP that are more difficult to evaluate but just as critical. A stream and its associated riparian area is a complex ecosystem formed and driven by a combination of hydrologic, geomorphic, and biological functions and processes. The RRP represents a more comprehensive approach to addressing lost ecosystem functions that would address much more than stormwater discharges. Sections 3.3 and 3.4 describe many of these additional benefits to wetlands and biological resources.

The WSDOT hydraulics manual generally requires that bridges have a minimum of 3 feet of freeboard during the 100-year flood to protect bridges and ensure that flood debris does not block traffic lanes. A number of measures have been recommended (MGS et al. 2004) to meet this requirement specifically for the 20th Street East and northbound I-5 bridge over relocated Hylebos Creek.

These measures would lower the flood elevations by more than one foot and would result in further reduction in the size of the future floodplain area when compared to the future with the project but without these mitigation steps. It would result in a minimum of approximately 25 percent reduction over existing conditions. It would also prevent the Interurban Trail ROW from being overtopped and better protect the city of Fife proposed soccer complex. The lowered floodplain would increase floodplain storage downstream of SR 99, but would increase the floodplain area between SR 99 and 4th Street compared to the existing condition. Since this area is designated as RRP, there would be no additional threat to private property or structures.

Surprise Lake Drain Relocation and Riparian Restoration Proposal

This RRP entails relocation and restoration of the entire section of the Surprise Lake Drain from its upstream crossing under Freeman Road to its confluence with Hylebos Creek. Currently this stream is a series of linear, trapezoidal channels that wind through farmland. The new channel would be approximately 5,340 feet long and would include a floodway channel that varies between 60 to

150 feet wide. A low flow channel would meander within the floodway channel to provide for low flow conditions. This would also involve developing 29 acres of riparian habitat. Most of the new riparian corridor would be approximately 400 feet wide; the exception is the area near the city of Fife proposed soccer complex where it is reduced to 150 feet to accommodate the fields. No adverse impacts or reduced stormwater protection is expected due to the smaller 150-foot-wide riparian corridor at the Fife soccer complex. The smaller 150-foot-wide riparian corridor at the Fife soccer complex would have no adverse effect on stormwater protection because the surrounding area is constrained by urban land uses, contains other stormwater protection features, and would not require the full 400-foot-wide corridor to achieve expected stormwater protection. Low berms are proposed upstream of 20th Street East to contain flood discharge and prevent flow from expanding beyond the limits of the riparian corridor. Details on the channel design process and preliminary channel configuration are provided in the hydrologic study of Hylebos (MGS et al. 2004).

The relocated Surprise Lake Drain and surrounding RRP are also located within the I-5 Interchange impact area. Suspended solids, nutrient, bacteria, and possibly other contaminants (e.g. pesticides) should also decrease in the area immediately surrounding the RRP. This decrease would occur through two mechanisms; improved filtering of surface runoff as it moves through the well-vegetated riparian buffers and through conversion of what is now primarily agricultural land that can be expected to generate pollutants such as nutrients and pesticides, to protected riparian buffers. Removal of drain tiles beneath agricultural fields and changes to surface water hydrology should enhance formation of riparian wetlands. In addition, by removing the tiles and removing the land from agricultural use the potential for pesticides and fertilizers commonly generated by agricultural lands to enter the stream should also be reduced.

Wapato Basin

As expected in this portion of the Puyallup Watershed, existing forest and grass will be converted to commercial and other higher intensity uses in the future. The proposed new roadway would represent less than 1 percent of the future land use for the entire Wapato Basin. The Wapato Basin is expected to experience an increase of almost 10 percent in total impervious surface, 2 percent of this 10 percent increase (24 acres) can be attributed to the highway corridor.

Hydrology and Flooding

As previously described, the Wapato RRP in combination with conventional stormwater control ponds are proposed to mitigate the potential impacts to hydrology and flooding from project development in the Wapato Basin. During initial design phases, conventional treatment systems were considered for this interchange area.

The *Water Resources Discipline Study* (EnviroVision 2005) provides a comparison of the conventional approach to meeting stormwater control needs and the innovative approach represented by the RRP for Wapato Creek. With conventional facilities almost 24 acres of land would be required for the ponds; it would be very difficult to locate these large ponds without additional impacts to wetlands and floodplains. According to model results (WSDOT 2004c),

implementation of the RRP would result in fewer stormwater ponds and smaller pond sizes. Six conventional stormwater treatment ponds would be used in combination with the RRP area to meet required flow duration standards. During construction, actual design may change based on field conditions.

Floodplain impacts in Wapato basin would primarily be associated with the Valley Avenue Interchange. Using the worst case flood prone areas estimate, construction of this interchange would impact 1.6 to 3.4 acres of flood prone area (Table 3.2-11). Although the detailed modeling of future land use conditions was not performed for the Wapato, it can be assumed that development will occur at the same pace as in the Hylebos basin.

The Hylebos Creek Basin and Wapato Creek Basin are similar in that the upper watershed is a mixture of commercial and residential property and, as you travel downstream to the lower reaches of each watershed, they converge on each other in the Puyallup River Valley and enter Commencement Bay. The land use in the upper watershed is fairly stable and mostly built out. However, in the lower reaches this area has historically been used for farmland and, over the last 10 years, is being converted to industrial warehouses. Because the property around these two creeks is zoned primarily industrial, and based upon the growth that has occurred in the Puyallup River Valley over the last 10 years, we expect the development in these basins to continue to be mirror images of each other.

The RRP is not expected to reduce flooding; however, it is intended to remove many homes and buildings that are frequently flooded. The area that has been identified to implement the RRP is very urbanized and void of a natural environment. In fact, Hylebos Creek and Surprise Lake Drain have been forced into man-made ditches, some of which are lined with concrete and choked with reed canary grass and blackberries. The goal of the RRP is to restore these streams to a natural environment by allowing them to meander through a forest of native vegetation. This will allow the stream and natural environment to more easily handle and react to flooding conditions because the stream banks will be armored with the type of vegetation that resists erosion and traps sediment and debris, which creates natural pools and eddies. Not only will the RRP help these streams encounter flooding events, it will also provide year-round benefits by offering shade to the stream during the summer months. Consequently, no substantive change to the flooding condition, as compared to the future condition without the SR 167 project is expected.

Low flows were not assessed through the modeling effort for Wapato Creek. It is not known how much the potential impact to reduced aquifer recharge from increased impervious surface would be offset by increased storage and subsurface flow from the RRP and bioretention elements of the project. It is likely that the impact would be similar to Hylebos Creek. Therefore, there would be little difference between existing and future conditions.

Water Quality

Table 3.2-14 includes a summary of the predicted percent change in pollutant loads for the study area, including Wapato Basin. As shown, all pollutants except nitrogen and FC are predicted to increase. The largest percent increases

will occur in loads of the metals and TP. As indicated by Table 3.2-14, less than 1 percent of the increase in metals load can be attributed to SR 167 runoff.

The 303(d) listed problems in Wapato (i.e., oxygen, flow, FC and benzene) are not likely to be appreciably impacted by the roadway project. It is possible that summertime low flows could be indirectly affected by the project through lower aquifer recharge due to increased impervious area. However, the establishment and protection of the riparian restoration areas through the RRP and use of deep fill infiltration for stormwater may offset this affect, although it is unknown the extent to which this would be the case. The RRP's will also directly affect (improve) stream temperatures through improved streamside shading, which could also contribute to improved oxygen conditions. Although benzene is sometimes detected in highway runoff, it is not considered to be major contributing source and project development is not expected to affect this 303(d) listing.

Valley Avenue Interchange

The amount of stormwater pollutants generated by the highway is largely dependent upon traffic volumes; therefore pollutant contribution is not expected to change between options. However, differences in impervious surface could affect the volume of runoff generated. Approximately 41 to 48 acres of new impervious surface would be created for this interchange. Less than 10 percent of this would be directed toward the Old Oxbow Lake Basin, approximately 50 percent would be directed to the Hylebos Basin and the remainder to the Upper Wapato Basin. There is almost a 15 percent difference (6.5 acres) between the option with the least impervious surface area (Valley Avenue) and the option with greatest impervious surface area (Valley Avenue Realignment) (Figure 2-14).

Stormwater from this portion of the project will be treated via biofiltration swales, deep fill infiltration, landscaped fill slopes with composted soils, constructed wetlands, ponds and through the RRP. All of the stormwater generated from the highway will be treated to meet flow and water quality control requirements as described in the WSDOT *Highway Runoff Manual* (WSDOT 2004a). Therefore, by design, it is expected that water quality standards will be met and hydrology maintained to the extent defined by the regulations. Some of the discharge will receive enhanced treatment as it discharges through the Wapato Creek RRP area. This does not imply that additional pollutant loading will not occur or that there may not be some modification in hydrology as a result of the project. The magnitude of impacts from the different options are not expected to differ notably.

The new stream crossings planned for this interchange are expected to be clear spans and are expected to result in no long-term water quality impacts. The new stream crossings will span the streams' ordinary high water mark. For the Valley Avenue Option (preferred), one stream crossing has been further expanded to span the associated wetland and thereby decrease wetlands impacts as well. All bridge and culvert work is likely to result in some permanent vegetation removal and placement of fill in the floodplain; for example for bridge support structures. The eight undersized crossings that will be removed or improved as a result of

the project (Table 3.2-8) would result in overall improvements to stream functioning and reduced flooding and related erosion.

Valley Avenue Park and Ride Lot

Stormwater would also be generated by this impervious area. This added area is included in the calculation of added impervious area described for the Valley Avenue Interchange options and included in initial calculations for stormwater treatment needs. Stormwater generated from this site would also need to meet flow and water quality control requirements as described in the WSDOT *Highway Runoff Manual* (WSDOT 2004a). No other potential long-term impacts to water quality have been identified for the Park and Ride lot.

Wapato Riparian Restoration Proposal

The Wapato Creek RRP addresses flow control mitigation for impervious surface added for the Valley Avenue Interchange area. The RRP is a site specific stormwater management plan that is designed to address many of the existing impairments of Wapato Creek while meeting flow control requirements. Runoff from the interchange will sheet flow off the roadway and infiltrate into landscaped fill slopes or receive some other type of approved water quality treatment. Runoff leaving the fill slopes will then be naturally dispersed toward the riparian buffer. The riparian buffer between the highway and stream will provide additional treatment of any surface runoff. Runoff from overpasses and the longer structures will be routed to conventional stormwater ponds for runoff treatment.

The Wapato RRP entails establishing an approximately 9,000-lineal-foot-long continuous riparian buffer along both sides of the stream, except for a section adjacent to Valley Avenue. The RRP would result in an approximately 300-foot-wide corridor through which Wapato Creek would flow. Approximately 73 acres of existing farmlands and residences will be converted into a riparian landscape by removing encroachments (buildings, roads, culverts and other infrastructure) from the land. The riparian area will be planted with native vegetation. This restoration will allow for more natural floodplain processes to occur within the channel migration zone. This will involve some in-stream work associated with removal or replacement of existing encroachments and stream crossings.

This portion of Wapato Creek is impacted by agricultural and urban development land uses and lacks riparian vegetation and instream structure. These conditions can be expected to contribute to temperature, DO, and bacteria problems in the stream. Establishment of a well-vegetated, protected riparian buffer will, in the near term, result in improved bank stability, improved summer temperature and oxygen conditions, and decreased pollutant loading from overland runoff that enters via the riparian buffer. Over the long term, the buffer is wide enough to allow for eventual establishment of large trees, which will in turn eventually contribute to instream structure and more diverse habitat and more stream shading. Also, the conversion of developed lands to forested conditions could reduce surface runoff from this area and increase infiltration and aquifer recharge. Removal of the six existing privately owned culverts, removal of human encroachments in the floodplain, improved channel stability and

additional protected floodplain area will result in long-term improvements from restored fluvial processes.

The improvements to water quality as a result of this would be similar to those described for the Hylebos Creek and RRP without those benefits that are directly associated with stream relocation activities. Direct impacts would include improvements to summer stream temperatures due to improved riparian shading, improved removal (via filtering through the RRP) of suspended solids, nutrients, bacteria and other contaminants. More qualitative improvements might include improved bank stability, better food and cover for aquatic and terrestrial organisms, better protection of more natural floodplain processes and generally a more intact, functioning riparian corridor.

Old Oxbow Lake Ditch

Although there are no interchange areas or other project components for which Old Oxbow Lake Ditch is the primary discharge point, construction of two of the interchange areas (Valley Avenue and SR 161) will result in an increase in impervious surface in the basin. An increase of 18 to 19 acres is predicted. However, stormwater from this impervious area is expected to be directed primarily toward Wapato Creek and the Puyallup River. No stream crossings or other impacts are expected to this Basin. The largest potential impact is from the deep fill infiltration that may be used to minimize mainline stormwater discharge near the southern terminus of the Valley Avenue Interchange area. Some of the water that moves through this fill would likely move underground and contribute flow toward this stream. This could result in ponding during the winter but also in increased aquifer recharge that may improve summer period hydrology in this system.

Puyallup Basin

Due to the size of this basin and the small area impacted by the roadway, no land use analysis was done and therefore no pollutant load changes could be estimated that would be meaningful for assessing the magnitude of potential impact. It can be expected that in the lower end of the basin, development will continue to occur at approximately the same rate as predicted for the other basins. This will result in a similar increase in pollutant loads. However, an even smaller portion of these loads will be attributable to the expanded SR 167 roadway, since the roadway will account for a very small portion of the developed area.

Only one of the Interchange areas (SR 161) is located within this basin. It would result in an addition of 17 to 21 acres of impervious area, depending upon which interchange configuration is selected. No direct floodplain or flood prone area impacts are identified for this Basin. The amount of impervious surface added is similar to the total amount of impervious surface that would be added to the Wapato Basin. Therefore, the total load of highway-generated pollutants contributed to the Puyallup Basin would also be similar.

SR 161

The amount of stormwater pollutants generated by the highway is largely dependent upon traffic volumes; therefore pollutant contribution is not expected to change between options. However, differences in impervious surface could

affect the volume of runoff generated. Approximately 33 to 39 acres of new impervious area will be created for this interchange and the connecting mainline, depending upon the alignment option selected. The preferred Urban option has the most impervious area increase. Approximately 50 percent of this will be in the Puyallup Basin, 40 percent in the Old Oxbow Basin, and the rest in the Upper Wapato Basin.

Stormwater from this portion of the project will be treated via biofiltration swales, deep fill infiltration, constructed wetlands, and treatment. Although the impervious area includes portions of Old Oxbow Lake and Wapato Basins, the stormwater will be directed toward the Puyallup River. The stormwater generated from the highway will be treated to meet flow and water quality control requirements as described in the WSDOT *Highway Runoff Manual* (WSDOT 2004a). Therefore, by design, it is expected that water quality standards will be met and hydrology maintained to the extent defined by the regulations. This does not imply that additional pollutant loading will not occur or that there may not be some modification in hydrology as a result of the project.

Because BMPs and maintenance practices will follow standard procedures designed to minimize impacts, highway runoff generated from the interchange area is not likely to present substantial water quality impacts. The magnitude of impacts from the different options are not expected to differ notably.

There are no new stream crossings planned or removal of existing crossings, however the existing steel bridge over the Puyallup River (northbound SR 161) will be replaced and the existing concrete bridge (southbound SR 161) will be widened. More design detail is needed to determine whether the new northbound bridge can be spanned and still meet flood and alignment needs. Widening of the concrete bridge may not require additional in-water support structures. However, to provide a conservative assessment of impacts, it is assumed that some piers will be located within the ordinary high water mark of the river for both the replaced and widened bridges. All bridge and culvert work is likely to result in some permanent vegetation removal and placement of fill in the floodplain; for example for bridge support structures.

SR 161 Park and Ride Lot

Stormwater would also be generated by this impervious area. This added area is included in the calculation of added impervious described for the SR 161 Interchange.

3.2.6 Indirect Impacts

Indirect impacts are those effects caused by the proposed action that are later in time or farther removed in distance, but still reasonably foreseeable. The geographic boundary for indirect impacts to water resources includes the area in the immediate vicinity of the project corridor interchanges as well as the drainage area that is within an area of influence. Indirect impacts for this project will not vary by water basin or by any of the Interchange options.

No Build Alternative

Development would continue in the project area according to land use plans, zoning designations, and regulations adopted by affected communities. The population increase will result in conversion of low-intensity land use, such as agriculture and open space to higher intensity land uses such as residential, commercial, and industrial (Port of Tacoma 1999).

Under the No Build Alternative, development would occur in a piece-meal fashion which is likely to be concentrated in the area near the Port of Tacoma, Commencement Bay and the I-5 corridor and radiating out from there. One impact from many small development projects as compared to this large roadway project is that there will be fewer opportunities to provide for the type of large-scale mitigation projects that are proposed for the SR 167 Extension project (i.e., stream relocation and riparian revegetation).

Build Alternative

The SR 167 Extension project is compatible with and would support planned and anticipated urban growth in the project area by reducing congestion and travel time, especially in the Fife area. This project would not be expected to induce unplanned regional growth; however, it would enable growth and influence the pattern of development within the indirect impact area. The project could alter the rate, timing, and location of development within the project corridor and result in more immediate impacts to water resource functions. For example, the area immediately adjacent to the highway corridor interchanges would be more quickly developed and would be likely to include more commercial and higher intensity land use developments than might occur without the project. This, in turn, results in a ripple affect on development as it is translated across the basin. At some point in time and distance from the project area interchanges, this ripple affect would not be measurably different from what would occur without the project.

Development increases impervious surface and increases the amount of pollutants potentially generated, which can result in important changes to local hydrology (i.e., increased flooding, decreased base flows and stream channel alterations). Over the long term, these changes would not be notably different (in terms of their potential impact to water resources) if the development in the project corridor was a mixed urban setting rather than primarily highway.

One aspect of development that can affect indirect water resource impacts is how much of the development occurs near water resources. Impacts are greater or more difficult to protect against, when they occur closer to surface water resources. The proposed project will not directly or indirectly cause development to occur close to surface waters and in fact prevents development from occurring near some portions of affected streams. In the case of the two stream relocations, the streams are effectively moved away from developed areas. As a consequence, for this aspect of the project, the indirect effects of the Build Alternative may be less than those of the No Build Alternative.

The Build Alternative is not expected to cause indirect impacts to groundwater that would not occur without the project. Impervious surface will increase with

or without the project and the extent to which this affects groundwater recharge will be the same. The potential for contamination of groundwater would not change under the Build Alternative.

3.2.7 Cumulative Impacts

Cumulative impacts are those impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collective actions taking place over a period of time.

Pierce County is currently developing a Habitat Protection and Regulatory Package. While this package is not being developed in response to the SR 167 Build Alternative, the proposed regulations pertain to development occurring within the unincorporated portions of Pierce County and will guide conditions, treatment and mitigation in portions of the project study area. The changes eliminate exemptions currently granted in the stormwater management regulations for areas that are located within critical areas, increase buffers around environmentally sensitive areas which provide a greater filter for stormwater runoff, and require tree conservation which serves to infiltrate stormwater runoff through evaporation and transpiration of rainfall. The proposal also includes a low impact development chapter that is designed to reduce the stormwater impacts resulting from current development practices and to establish the pre-European settlement condition as the pre-developed condition for purposes of hydrologic modeling. Incorporated areas of Pierce County include the cities of Fife, Milton, Puyallup, Edgewood, and Tacoma. Development in these areas will be guided by local ordinances.

All new development will need to meet requirements of the stormwater manual (Ecology 2001) and other regulatory requirements that are protective of streams and stream functions (i.e., stream and wetland buffers, construction site controls, mitigation needs). However, these will not fully control or compensate for the increases in impervious surface, changes to hydraulics and hydrology, and pollutant loading that is associated with highly developed areas. Therefore, projected future growth will continue to have a cumulative adverse impact on the quality of surface and groundwater. Impacts to water resources would be incremental in relation to the incremental increases in impervious surface and pollutants generated by the development.

No Build Alternative

Under the No Build Alternative, development would continue in the project area according to land use plans, zoning designations, and regulations adopted by affected communities. The population increase will result in conversion of low-intensity land use, such as agriculture and open space, to higher intensity land use, such as residential, commercial, and industrial. This planned development may occur at a slower pace than under the Build Alternative. Predicted future land use changes are described in Section 3.11. This growth will occur in the project area with or without the SR 167 Extension project. However, under the No Build Alternative, this development would not be focused first in the area of

the proposed roadway corridor, and the rate and timing of the development would differ, as described above.

Traffic congestion would continue to increase under the No Build Alternative, resulting in more congestion-related delays and incompatible use of residential streets for heavy trucks. However, users would continue to depend on the existing transportation system, and trips may be influenced by traffic backups and delays caused by overcrowded travel conditions. Eventually, new roadways would be built to accommodate the traffic but they would be local roads. Since the quantity of pollutants generated is directly related to the number of vehicles on the road, the No Build Alternative will not result in any decrease in pollutants generated.

Figure 3.2-6 shows results of modeling 100-year floodplains in the Hylebos basin under future conditions with and without the SR 167 Extension project. A future 100-year flood under the No Build Alternative would result in 360 acres being flooded, a 45 percent increase over existing conditions.

Build Alternative

For the preferred Build Alternative, 187 acres will be flooded during the future 100-year flood. Thus, the Build Alternative will minimize cumulative impacts of future development on 100-year flooding in the Hylebos basin by 48 percent from that predicted for the No Build Alternative.

Results from a pollutant loading analysis performed for the FEIS are provided in Table 3.2-15. The pollutant yield constants used for this analysis were derived from monitoring in the Pacific Northwest and therefore were considered more applicable than other data sources. However, this still represents a very general pollutant estimating method. The table indicates the percent change in pollutant loads between existing and future conditions. The future condition was based on the land use analysis previously described. As shown, in almost all cases the pollutant load generated is predicted to increase in the future. The very high percent increases in metals are simply driven by the fact that the yield of these pollutants increases by hundreds and thousands-fold when progressing from the existing semi-rural watershed condition to commercial. The most notable exception to the overall pollutant loading increases is in the Lower Hylebos basin where a decrease in the load of certain pollutants (suspended solids, lead, zinc [Zn], and bacteria) is predicted. This is the result of two changes in land use: there was a decrease in commercial land use and an increase in water/wetlands land use in this basin. A reduction in pollution loads occurs because commercial land pollutant yields are far higher for these pollutants than highway-generated yields. More importantly, the decrease in loading values reflect the impact of the Hylebos and Surprise Lake Drain RRP in this basin.

Table 3.2-15: Predicted Percent Change in Median Annual Pollutant Loads⁽¹⁾ Generated Under Existing and Future Land Use (with SR 167) Conditions (negative numbers indicate a decrease)

BASIN	SUBBASIN	TSS	TP	TN	Pb	Zn	Cu	FC
Hylebos	West	53.7	54.7	63.8	326.4	639.2	1,159.1	37.6
	East	78.1	88.1	55.5	247.7	263.1	247.3	35.3
	Lower	-11.1	55.7	0.8	-10.7	-9.1	1.1	-18.4
	Surprise Lake	30.2	85.5	12.7	113.1	103.3	109.8	-14.4
	<i>Total Basin</i>	51.7	68.9	47.6	216.7	279.2	324.0	23.0
Fife Ditch		28.0	24.4	1.2	70.1	88.5	70.4	-49.8
Wapato		10.4	19.6	-3.9	61.8	65.0	52.2	-28.8

⁽¹⁾Based on land use specific pollutant yields (Horner 1992).

Note: Puyallup Basin was not modeled using land use.

The percent increase shown in Table 3.2-15 represents the load that will be generated by the land under future conditions. This is not the same as the amount that would be expected to enter the streams. Stormwater treatment systems and maintenance practices such as street sweeping will greatly reduce the load. Table 3.2-16 represents the predicted percent change in load that might be discharged to water resources. It was calculated by applying the load reductions associated with constructed wetland facilities to the predicted generated loads in Table 3.2-15. This is not an entirely accurate representation of future loads because it assumes existing development would also receive additional treatment and all development would use constructed wetlands for treatment. Nonetheless, the table is informative for comparative purposes at this preliminary design stage. In this pollutant-loading analysis the most important objective was that the potential impacts from the highway be equitably compared to existing and future land use scenarios. Reductions associated with constructed wetlands were used because this represents one of the more common stormwater BMPs used by WSDOT.

Table 3.2-16: Predicted Percent Change in Median Annual Pollutant Loads⁽¹⁾ Discharged Under Existing and Future Land Use (with treated SR 167) Conditions (negative numbers indicate a decrease)

BASIN	SUBBASIN	TSS	TP	TN	Pb	Zn	Cu	FC
Hylebos	West	12.9	27.9	44.7	29.4	358.0	695.5	-
	East	18.8	44.9	38.9	22.3	147.3	148.4	-
	Lower	-19.5	28.4	0.6	-20.5	-13.1	0.7	-
	Surprise Lake	7.3	43.6	8.9	10.2	57.9	65.9	-
	<i>Total Basin</i>	12.4	35.1	33.3	19.5	156.3	194.4	-
Fife Ditch		6.7	12.4	0.8	6.3	49.6	42.3	-
Wapato		2.5	10.0	-5.1	5.6	36.4	31.3	-

⁽¹⁾Based on land use specific pollutant yields (Horner 1992).

Note: Puyallup Basin was not modeled using land use.

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Figure 3.2-6

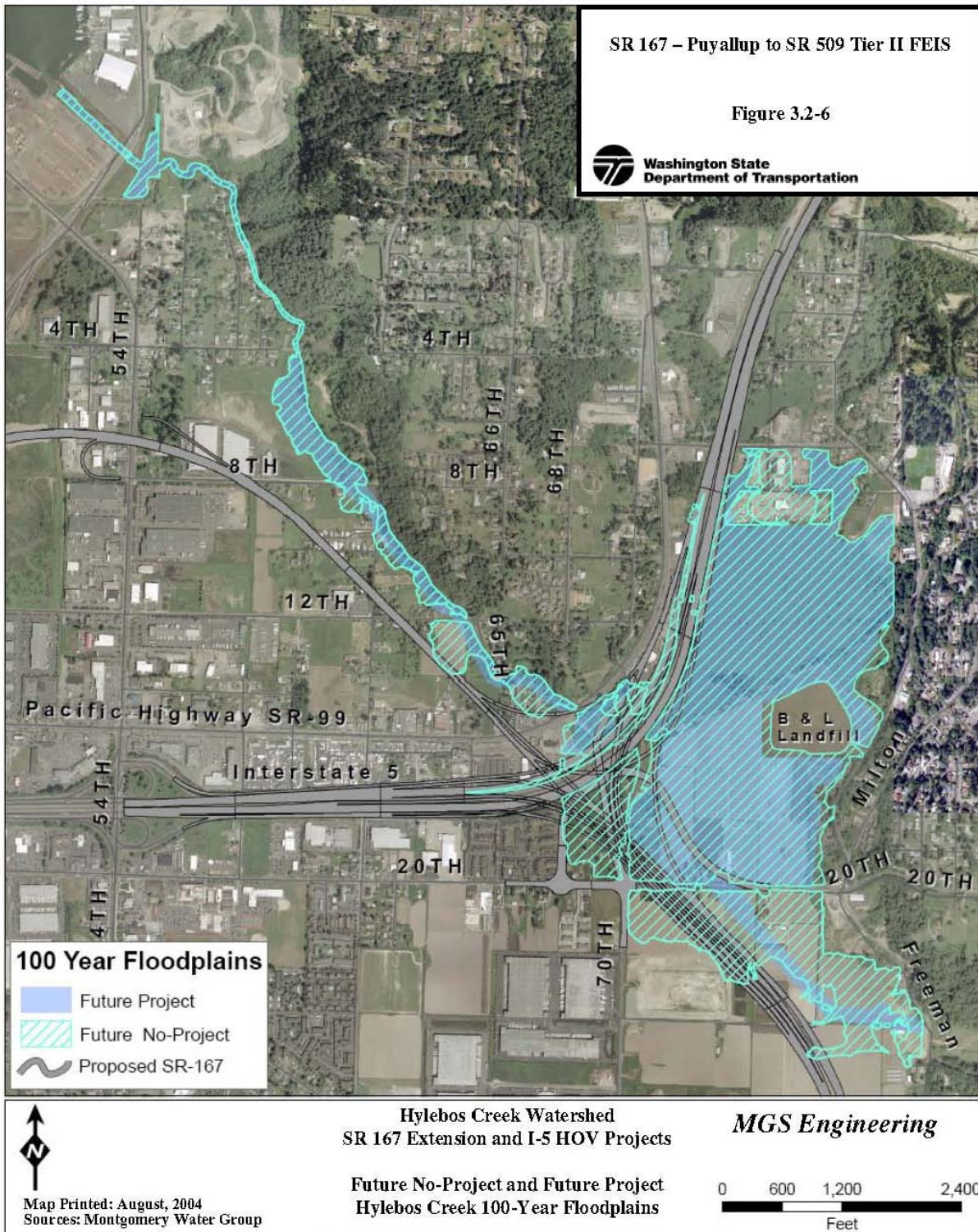


Table 3.2-17, indicates the percentage of the increase that can be attributed to SR 167. The percent of the future increase that can be attributed to SR 167 is typically some small fraction of 1 percent. The exceptions to this occur in Lower Hylebos and to a lesser extent in Surprise Lake and Fife Ditch subbasins. The larger percent contributions from the highway are a reflection of the fact that the highway represents a proportionately larger volume of the landmass in these basins. In the lower Hylebos the roadway would account for 7 percent to 8 percent of the predicted increase in TSS and Pb and almost 10 percent of the increase in TP. It is important to understand the distinction between Tables 3.2-16 and 3.2-17. For example, in the case of TSS in the Lower Hylebos, Table 3.2-16 indicates that there will be an overall decrease in the load of this pollutant in the future. However, there will still be a load of TSS generated from the subbasin; Table 3.2-17, indicates that almost 8 percent of this total load will be generated from the highway.

The percent increases predicted for metals may be the most serious concern, since some of the streams already exhibit elevated metals concentrations. It is not yet feasible for WSDOT (or other developers) to reasonably expect to remove all of these pollutants. Current monitoring data indicates that after basic treatment, water quality standards for metals are met 52 percent (dissolved copper), 77 percent (dissolved Zn), 98 percent (dissolved cadmium) and 100 percent (dissolved lead) of the time.

Table 3.2-17: Percent of Future Pollutant Loading Attributed to SR 167

BASIN	SUBBASIN	TSS	TP	TN	Pb	Zn	Cu	FC
Hylebos	West	0.10	0.16	0.05	0.06	0.02	0.01	<0.01
	East	0.20	0.30	0.08	0.14	0.05	0.01	<0.01
	Lower	7.74	9.72	2.90	6.70	2.38	0.61	0.10
	Surprise Lake	3.11	5.08	1.54	1.76	0.69	0.19	0.05
	<i>Total Basin</i>	0.89	1.42	0.40	0.57	0.21	0.06	0.01
Fife Ditch		1.33	2.72	0.89	0.58	0.22	0.06	0.05
Wapato		1.40	1.70	0.70	1.70	0.90	0.70	0.02

Note: Puyallup Basin was not modeled using land use.

These results do not reflect the additional load that would be removed from enhanced treatment (for example, it does not account for removal that would occur as the runoff that moves over the wide buffers that constitute the RRP). Consequently, the increases shown in the Table for the Lower Hylebos, Surprise Lake, and Wapato systems are higher than would be expected and even less likely to contribute to water quality problems. Last, the largest increases are predicted for lead. As indicated by stormwater monitoring data from Washington State and elsewhere, the contributions of this pollutant have greatly decreased in recent years. The yield value used for these predictions cannot be supported by more recent data.

To put the percent increases in loading into perspective with actual predicted loads; the following example is provided for total Cu contributions to Lower Hylebos Creek. The existing annual load for Cu was predicted to be 143.42 Kg/yr (from *Water Resources Discipline Study* [EnviroVision, 2005]). Assuming most of this receives conventional basic treatment, then 26 to 57 percent of this load will be avoided, resulting in an annual input to the stream of 62 to 106

Kg/yr. If SR 167 is built, the future load of Cu is predicted to be 145.02 Kg/yr; assuming the same removal efficiencies as above, the annual input to Lower Hylebos would be 62 to 107 Kg/yr. This does not take into account the additional removal that should be attained by enhanced treatment of the highway runoff. However, even if enhanced treatment provided 90 percent removal efficiencies for the SR 167 area, the estimated annual input to Hylebos Creek would change by less than 0.01 kg/yr.

The SR 167 project would contribute to the cumulative impacts that will occur in the project area. In general, its contribution will be proportional to its share of the developed area (e.g., approximately 2 percent of the Hylebos and Wapato Basins future impervious). However, it is not likely that other small and scattered development projects will offer the extensive stormwater treatment, mitigation, and long-term protective operations and maintenance practices that a project of this size does. In that sense, the proposed roadway's contribution to cumulative impacts would be lessened.

The RRP and protected stream corridors are expected to result in many indirect improvements to stream and wetland functions that reach beyond reduction in pollutant loads and flooding. The RRP, in combination with two adjacent restoration projects, will help to establish a continuous functioning riparian corridor in the lower segment of Hylebos Creek that nearly extends to the estuary. This will represent a large improvement in overall stream and riparian area function when compared to what is currently present. In Wapato basin the project does not extend to the estuary but the length of stream corridor and wetland habitat protected is substantial. It is unknown the extent to which the stream relocations and RRP can compensate for future upstream impacts and whether productivity can be sustained in these streams in the future. For example, although temperature should improve in the protected stream reaches, whether it improves enough to compensate for upstream impacts and brings this segment of the stream into compliance with standards, is dependent upon the upstream changes.

In summary, the Build Alternative is expected to improve the overall functioning of the stream- riparian-wetland complex in the project area. Certainly the affected stream segments themselves are expected to be properly functioning, which is not the case under the current condition. However, no single project can compensate for all future development. It is likely that water quality, habitat complexity and many other water resource metrics will be impacted by future development regulated by other agencies.

3.2.8 Hydrology and Water Quality Permits Requirements

The primary impacts associated with construction and operation of SR 167 include instream work, an increase in the number of stream crossings, loss of floodplain storage, and potential increase in pollutant loads and changes to the hydrologic regime of local surface waters. These impacts are largely avoided or mitigated through existing regulations and permits. Requirements contained in regulatory permits, agreements, and plans may include additional specific mitigation measures and monitoring requirements, which ensure that activities

are conducted in a manner that protects surface and groundwater quality. Construction site sediment discharges are regulated via the State Water Quality Standards for turbidity. State Water Quality Standards are applied to construction site runoff at or downstream from the point of discharge.

NPDES General Construction Permit is required for construction sites larger than five acres of discharge stormwater. The permit is issued by Ecology on behalf of the EPA. Obtaining a permit involves submitting a public Notice of Intent and developing a Stormwater Site Plan (SSP). Elements within the SSP include: (1) Project Overview, (2) TESC Plan, (3) BMP Selection Form, (4) a project specific Maintenance and Operations Schedule, (5) Vegetation Management Plan, and (6) Downstream Analysis Plan.

WSDOT's Municipal NPDES permit for Separate Storm Sewer Systems requires that WSDOT provide water quantity and quality treatment in order to minimize and avoid water quality impacts to surface waters as specified in NPDES Phase I permit areas.

A Hydraulic Project Approval (HPA) permit is required for all in-water work occurring below the ordinary high water mark, including stream bank protection, bridge and pier construction, channel relocation, placement of outfall structures, and culvert replacement. WDFW issues the HPA permit to ensure that construction is performed in a manner that prevents damage to the state's fish, shellfish, and their habitat. To this end, the HPA sets forth conditions on construction activities such as erosion control requirements, timing restrictions, procedures, and guidelines for in-water construction work, monitoring requirements, and additional project mitigation requirements.

WSDOT and Ecology established an Implementing Agreement in 1998 that specifies the conditions under which short-term modifications to the state's water quality standards are allowed. In- or near-water activities that will unavoidably violate state water quality criteria on a short-term basis required a temporary modification of water quality criteria. Activities requiring a temporary modification included discharges of turbid stormwater runoff from construction sites after All Known and Reasonable Technologies have been applied. While the Order no longer directly applies, WSDOT routinely follows the guidelines set forth in it.

Clearing and grading activities occurring outside of WSDOT right-of-way require a city grading permit. The grading permits specify procedures and design criteria to minimize and avoid impacts to surface water. Potential jurisdictions issuing grading permits include the Cities of Puyallup, Fife, and Tacoma.

Wellhead Protection Plans are developed by Group A and B purveyors in accordance with the Federal and State Safe Drinking Water Acts. Construction and operations occurring within the boundaries of established wellhead protection zones will necessitate coordination with purveyors and implementation of measures, specified in the wellhead protection plans, which would minimize or eliminate contaminant impacts. The Wellhead Protection Program is implemented by the DOH. City and County Health Departments are responsible for coordinating wellhead protection measures for multiple purveyors.

The City of Fife requires all development in flood hazard areas to be in accordance with the flood damage prevention ordinance. Flood hazard areas are to be identified using city and county flood insurance studies, in conjunction with FEMA maps.

3.2.9 Mitigating Measures

The primary impacts associated with construction and operation of SR 167 include instream work, an increase in the number of stream crossings, loss of floodplain storage, and potential increase in pollutant loads and changes to the hydrologic regime of local surface waters. These impacts are largely minimized through existing regulations and permits. Requirements contained in regulatory permits, agreements, and plans may include additional specific mitigation measures and monitoring requirements, which further ensure that activities are conducted in a manner that protects surface and groundwater quality.

Numerous applicable permits, plans and agreements require construction and operations to be performed in a manner that is protective of water resources. Through the reiterative process of project design and environmental evaluation that has been followed for the SR 167 project, a number of measures that may have been considered as mitigation at one time have now become part of the project design, which are briefly summarized below. It is possible that more specific mitigation measures will be identified during final phases of design and permitting.

Construction Mitigation

The placing of fill and stockpiling of native soils would increase slope steepness and the probability that soils would be exposed to erosive rains for up to one year, particularly during the winter months. In addition to the general procedures used to stabilize disturbed soils, specific measures can be implemented to reduce the erosion potential of soil stockpiles. These measures include cat-tracking the slopes and hydro-seeding the fill piles with bonded fiber matrix mulch. The tops of the piles can be flattened and the perimeter of the tops can be bermed to prevent the formation of rills on the steep slopes. The flattened tops of the piles should be graded such that the water travels a short distance before being collected and then transported, via flex pipe, downslope to a sediment pond or, if sufficient quality is maintained, discharged off-site.

On most WSDOT projects, construction contracts are written to give the contractor leeway as to when they will work. However, the contract will be written to control the timing of earthwork, minimizing the exposure of disturbed soils during the rainy winter months. The contract could require that major soil disturbing activities be performed during the summer, while specifying that disturbed areas be protected and that concrete and bridge work be performed during the winter.

When staging areas cannot be located outside of frequently flooded areas, fuels, oils, and other potential contaminants will be confined within a berm or barrier.

Operational Mitigation

A number of measures (MGS et al. 2004) to reduce flood elevations at the 20th Street East bridge and/or the northbound I-5 bridges have been recommended. These hydraulic mitigation measures include

- Widening the culvert at 12th Street East;
- Creating an approximately 100-foot-wide off-channel depressed floodplain (bench cut) adjacent to the south side of Hylebos Creek from SR 99 to 12th Street East;
- Widening the channel immediately downstream of 12th Street East to smooth the transition from the new box culvert to the existing channel;
- Removing debris and maintaining invert elevation of the channel under SR 99.

New stream crossings will be designed to pass the 100-year storm event at a minimum. When practicable, these structures will support natural stream processes by minimizing channel constriction and riprap placement.

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3.3 Wetlands

Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (Environmental Laboratory 1987). This definition has been expanded in Pierce County: wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including but not limited to irrigation *and* drainage ditches, grass-lined swales, canals, detention facilities, retention facilities, wastewater treatment facilities, farm ponds, and landscape amenities. However, wetlands include those artificial wetlands intentionally created from non-wetland sites to mitigate conversion of wetlands.

This wetland definition considers the three main attributes common to all wetlands: hydrophytic vegetation, hydric soils, and wetland hydrology. Hydrophytic vegetation can be defined as plant life growing in areas that are at least periodically deficient in oxygen as a result of excessive water content (Federal Interagency Committee for Wetland Delineation 1989). Hydric soils are frequently wet and often associated with wetlands. Hydric soils occupy a relatively minor portion of the project area and have been identified as Briscot loam, Puget silty clay loam, and Tisch silt. Wetland hydrology occurs where the soil is saturated with water or covered by shallow water consecutively for a substantial period (usually one to two weeks) during the growing season. Inundation and saturation lead to anaerobic soil conditions, which precipitate the development of hydric soils and hydrophytic vegetative communities.

As required by the Washington State Growth Management Act (HB 2929), Pierce County, the City of Fife, and the City of Puyallup have completed wetland inventories and passed ordinances regulating wetlands. Wetlands in the project area are classified as palustrine, which includes non-tidal wetlands dominated by trees, shrubs, or emergents such as reed canarygrass and tidal wetlands where salinity due to ocean-derived salts is below 0.5 parts per thousand (Cowardin et al. 1979).

Wetlands provide a number of functions and values in the biological, hydrological, and societal landscape. They serve to store both surface and subsurface water. This storage can reduce peak water flow after a storm or flood, recharge water tables and aquifers, and lengthen stream flow period. Because of their landscape geomorphic position and adapted vegetation, many wetlands are particularly adapted to attenuating stormwater pulses. Wetlands can remove pollutants such as zinc, lead, nitrogen, phosphorus, and some organic contaminants. The ability to treat stormwater is highly site-specific, depending greatly upon soil type, hydrologic regime, landscape position and vegetative community. Wetlands may provide breeding, foraging, resting, and migrating habitat for wildlife and may support native and rare plant species. Wetlands can also function as recreational or educational sites.

Wetlands are sensitive resources, and their functions and values may be adversely impacted by hydrologic alterations, sediment or pollutant loads, fragmentation, invasive species introductions, or filling and grading. These

activities may affect wetland hydrology, water quality, and plant and animal migration, may precipitate invasion by plant and animal pests, and may increase wildlife-vehicle collisions.

Regulatory Authority

The responsibility for wetland protection is generally shared by one or more federal, state, and local agencies. Because no universal permit requirements exist, the wetland process for this project would likely have to meet the requirements of more than one regulatory agency. The following guiding plans and policies may apply to the wetlands in the analysis area.

Federal Regulations

- Clean Water Act (CWA) (1972)
- Executive Order (EO) 11990, Protection of Wetlands

State Regulations

- Washington State Department of Transportation (WSDOT) and Washington Department of Fish and Wildlife (WDFW) Memorandum of Agreement Implementing Wetlands Protection and Management (1993)
- Alternative Mitigation Policy Guidance, Washington State Department of Ecology (Ecology) and WDFW (2000)
- Working Agreement between the U.S. Army Corps of Engineers (COE), Federal Highway Administration (FHWA), and WSDOT (1993)
- State Shoreline Management Act (SMA) (1972)

Local Regulations

- Local critical or sensitive area regulations for wetlands and streams for the cities of Puyallup and Fife as well as Pierce County

The above listed regulations define the sequencing to address impacts to wetlands due to alterations in the landscapes. This sequence for avoiding, minimizing, and mitigating for wetland impacts would be followed throughout the design and permitting process. Avoidance and minimization measures are discussed further in Section 3.3.5, Mitigation Measures.

Section 404 of the CWA requires a permit for discharging, dredging, or placing fill material within waters of the United States, including wetlands. The COE is responsible for authorizing 404 impacts. The COE requires the permittee to restore, create, enhance, or preserve nearby wetlands as compensation for impacts to existing wetlands. An individual 404(b) permit would be required for the placement of fill material. A Joint Aquatic Resource Permits Application (JARPA) is used to apply for COE wetland permits, including 404(b) permits.

Under CWA Section 401, COE Section 404(b) permits are sent to Ecology for certification of compliance with state water quality standards. The proposed project would require a certification of compliance from Ecology. Finally, a 20-day public notice period is required prior to issuance of the final COE permit that authorizes construction in waters of the U.S.

Wetlands and special aquatic sites are protected under Presidential EO 11990, "Protection of Wetlands," Governor's EO 89-10 and EO 90-04, "Protection of Wetlands," and WSDOT Directives 22-27 and 31-12. These orders and directives require the use of all practicable measures to avoid impact and provide mitigation for any unavoidable impacts.

Critical or Sensitive Areas Ordinances protect locally designated wetlands. Local agencies may regulate wetlands that are not covered by state or federal regulations, and their regulations may be more restrictive. WSDOT projects must comply with local laws, except when they conflict with state law.

Local governments are also responsible for implementing the SMA, with assistance from Ecology. Under the SMA, a permit is required for projects involving substantial development of waters or shorelines of the state. SMA requirements and guidelines are presently being revised. Applications for SMA permits are covered by JARPA.

The Tier I process concluded that the preferred corridor alternative would be the least environmentally damaging practicable alternative. This corridor alternative affects 32.9 acres of wetlands, compared to 37.89 acres and 44.08 acres for other practicable alternatives (see revised Tier I results in Section 4.1.3).

Potential wetlands were identified during the Tier I process and delineated as part of the Tier II process; acreage of wetland impact was determined for the preferred alternative. FHWA and WSDOT will apply all practicable avoidance and minimization measures during final design. The Tier II process includes a description of planned mitigation measures.

Because much of the proposed highway corridor bisects agricultural land, several of the wetlands identified during project work are located in areas that are being actively farmed. Such wetlands may be designated Farmed Wetlands or Prior Converted Cropland and are regulated by the Natural Resources Conservation Service under the Food Security Act. Wetlands that are not associated with farming activities are regulated by the COE under Section 404 of the CWA. However, because FHWA and WSDOT are proposing to convert farmland to a non-agricultural use, the COE would assert jurisdiction over all farmed wetlands in the analysis area.

In addition, Ecology regulates wetlands on the state level under their CWA Section 401 Water Quality certification program. Ecology does not differentiate wetlands associated with farming activities from those that are not. Because of these factors, WSDOT delineated all wetlands with the assumption that both the COE and Ecology would regulate all wetlands associated with this project. FHWA and WSDOT based proposed mitigation on all wetlands impacted, regardless of whether they are farmed.

3.3.1 Studies Performed and Coordination Conducted

This chapter incorporates information compiled in the *SR 167 Tier II EIS Wetlands Discipline Report* (CH2M HILL 2005). U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps; Pierce County, city of Fife, and city of Puyallup wetland inventory maps; and field studies were used to identify wetlands in the project area. NWI data identify 3,014 acres of wetlands in the lower Puyallup River Watershed (Water Resource Inventory Area [WRIA] 10).

Wetlands within the project area were delineated between 1994 and 2004. The delineation methods used in these studies were similar, but the delineations were conducted with different study areas and for different purposes. The delineated wetlands are described in the *SR 167 Tier II EIS Wetlands Discipline Report* (CH2M HILL 2005). Wetlands delineated from 1994 to 1997 are described in further detail in Null and Clay-Poole (1997). Wetlands delineated by CH2M Hill in 2003 and 2004 are described in further detail in the *Wetland Delineation Report for the Proposed Wapato Creek Restoration Area* (CH2M HILL 2004a) and the *Wetland Delineation Report for Wapato Creek Park and Ride Facility* (CH2M HILL 2004b). During final design and permitting, wetland delineation and categorizations older than three years will be revisited, and the COE will be invited upon confirmation of wetland impacts prior to construction to review final delineation and categorization in the field.

Wetland determinations were made using observable vegetation, hydrology, and soils, in conjunction with data from Soil Survey for Pierce County, Washington (USDA 1979), United States Geological Survey (USGS) topographic maps, and NWI maps of the USFWS. Wetland delineations were made in accordance with the COE *Wetland Delineation Manual* (Environmental Laboratory 1987). Wetland delineation and categorization was reviewed in the field and approved by the COE on April 27, 2000. Wetlands were classified according to the USFWS system (Cowardin et al. 1979) and categorized according to the Ecology rating system (Ecology 1993) and using the 1997 *Washington State Wetlands Identification and Delineation Manual* (Ecology 1997). The *Wetland Functions Characterization Tool for Linear Projects* (WSDOT 2000) was used to perform a functional assessment of each wetland.

Some ditch areas dug in uplands for drainage purposes may exhibit hydrology and hydrophytic vegetation. At the time that the wetlands were delineated for this project, ditches intentionally excavated through uplands were not typically regulated as wetlands according to guidance from the regulatory agencies (COE and Ecology). Subsequently, guidance on ditches resulting from the recent U.S. Supreme Court decision (referred to as the Talent decision) has recently become available. Therefore, before initiating permitting, these areas should be examined to determine if they may now be jurisdictional under the Clean Water Act, Section 404 program.

Ecology staff at the Wetlands Section and Environmental Review Section was contacted and apprised of the project in advance of Tier I completion. Coordination with federal, state, and local agencies, and the Puyallup Tribe of Indians continued as part of the Tier II process. This coordination included

opportunities to comment on revisions to the discipline report between the DEIS and FEIS.

3.3.2 Affected Environment

Seventy-two jurisdictional wetlands were located and delineated in the project area (Figures 3.3-1 and 3.3-2). There are 12 Category II, 59 Category III, and 1 Category IV wetlands. Wetlands in the project area are found in the Hylebos, Wapato, and Lower Puyallup Basins. Wetlands in the project area include riverine and palustrine systems, which are defined by Cowardin (1979) as follows:

- Riverine systems include all wetlands and deepwater habitats contained within a channel, which is further defined as an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.
- Palustrine systems include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 percent.

Most delineated wetlands are palustrine. These include palustrine emergent (i.e., Cowardin codes that start PEM), palustrine forested (PFO), palustrine scrub-shrub (PSS), and palustrine (PUS). Some of the wetlands in the project area are associated with ditches and dredged stream channels. Existing conditions of project area wetlands in each Basin are summarized below.

Biologists categorized wetlands in the analysis area according to Ecology's rating system (Ecology 1993). This rating system was designed to differentiate between wetlands based on wetland functions and values, sensitivity to disturbance, rarity of the wetland type, and whether the wetland can be replaced. Category I is the highest rating and refers to only a small percentage of wetlands in Washington State. Category II wetlands are those that provide habitat for very sensitive or important plants or animals, are difficult to replace, or have very high function values, particularly for wildlife. These wetlands occur more commonly than Category I wetlands, but still need a high level of protection (buffer). Category III wetlands provide important functions and values but are more common than the Category II wetlands. Category III wetlands require a moderate level of protection. Category IV wetlands are the smallest, most isolated, have the least diverse vegetation, and are often dominated by invasive or exotic species.

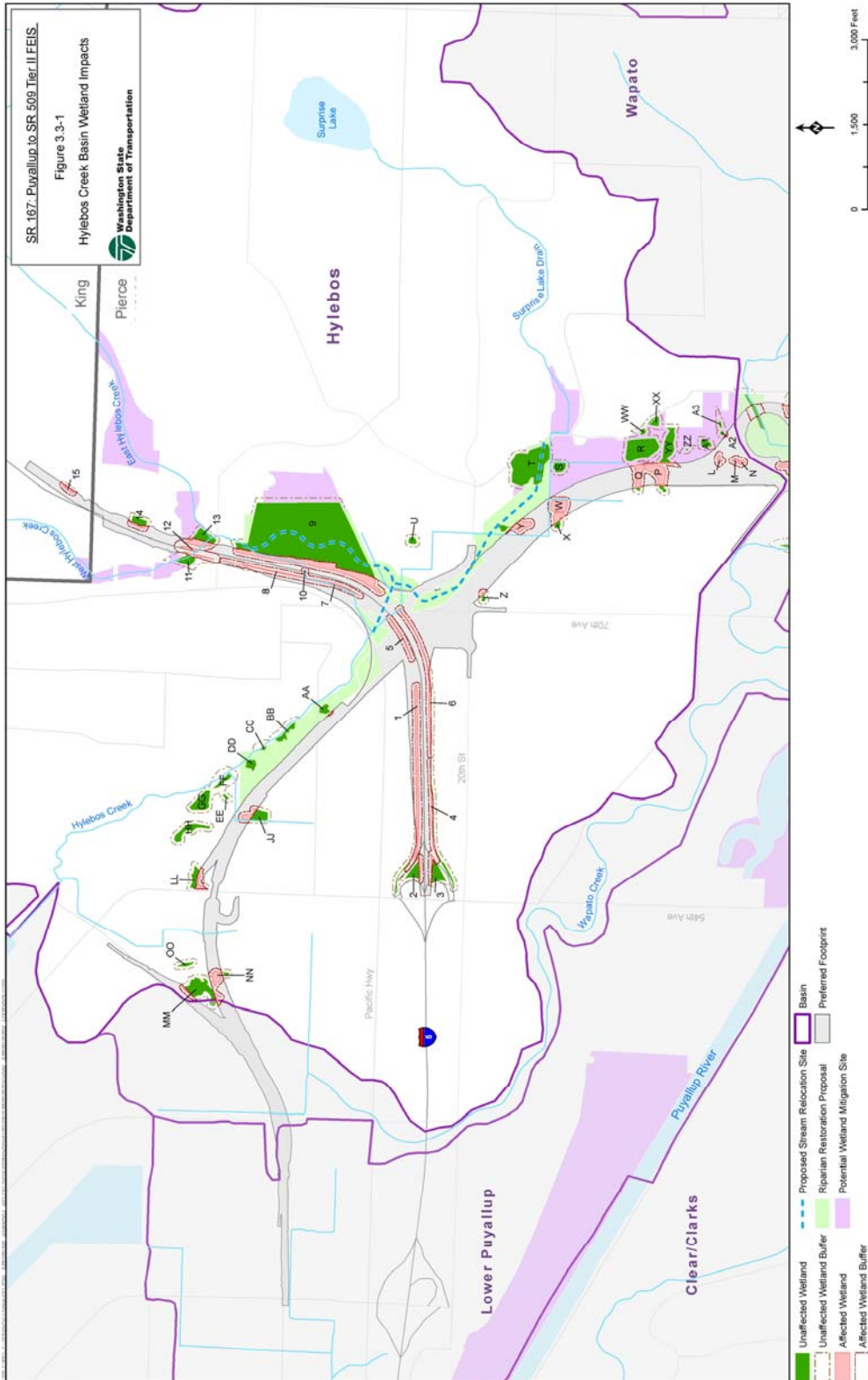
Hylebos Basin

Most of the wetlands in the project area are found in the Hylebos basin (Table 3.3-1). Many of these wetlands are associated with either Hylebos Creek or Surprise Lake Drain. Representative wetland conditions are shown in the photographs that follow Figure 3.3-1.

Four of these wetlands are Category II wetlands and the remaining 44 are Category III, according to the Ecology rating system. Wetlands 1 through 15 are all primarily palustrine emergent wetlands that are adjacent to I-5 between the county line and 54th Avenue East (Figure 3.3-1). Many other wetlands are farmed.

Table 3.3-1: Wetland Classes and Ratings for Hylebos Basin

Wetland	Area (acres)	Cowardin Class	Ecology Category	Prior Converted / Farmed Wetland
L	0.17	PUS3E	III	FW
M	0.14	PUS3E	III	FW
N	0.14	PUS3E	III	FW
P	1.9	PFO1E	III	NA
Q	1.2	PFO1E	III	NA
R	4.3	PUS3E	III	FW
S	0.78	PUS3E	III	FW
T	8.2	PUS3E	III	FW
U	0.34	PUS3E	III	PC
W	1.3	PUS3E	III	FW
X	0.85	PUS3E	III	FW
Y	1.4	PUS3E	III	FW
Z	0.22	PUS3E	III	PC
AA	0.57	PUS3E	III	FW
BB	0.84	PFO1E	II	NA
CC	0.13	PEM1E	III	NA
DD	0.66	PEM1E	III	NA
EE	0.12	PUS3E	III	FW
FF	0.56	PEM1E	II	NA
GG	1.8	PUS3E	III	FW
HH	1.5	PUS3E	III	FW
JJ	1.5	PUS3E	III	PC
LL	1.2	PFO1E	III	NA
MM	3.2	PEM1E	III	NA
NN	0.79	PEM1E	III	NA
OO	0.32	PEM1E	III	NA
WW	0.20	PEM2Ef	III	FW
XX	0.60	PEM1E	III	FW
YY	2.3	PEM2Ef	III	FW
ZZ	0.06	PEM2Ef	III	FW
1	3.2	PEM1E	III	NA
2	1.2	PEM1E	III	NA
3	1.6	PEM1E	III	NA
4	1.5	PEM1E	III	NA
5	0.35	PEM1E	III	NA
6	1.3	PEM1E	III	NA
7	0.49	PEM1E	III	NA
8	0.51	PEM1E	III	NA
9	49.7	PEM1E	III	NA
10	0.02	PEM1E	III	NA
11	1.3	PEM1E	II	NA
12	0.26	PEM1E	II	NA
13	2.2	PEM1E	III	NA
14	0.92	PEM1E	III	NA
15	0.14	PEM1E	III	NA
A1	0.50	PEM2Ef	III	FW
A2	0.10	PEM2Ef	III	FW
A3	0.12	PEM2Ef	III	FW
Total	102.7			





Existing Hylebos Creek in the Vicinity of I-5



Existing Surprise Lake Drain West of Freeman Road



Interstate 5
Wetland 9 East of I-5, Dominated by Reed
Canarygrass



Hylebos
Creek
62nd
Ave.
Wetland CC between Hylebos Creek and 62nd
Avenue East

Wapato Basin

Eight of the wetlands in the Wapato Basin are classified as Category II, eight as Category III, and one as Category IV, according to the Ecology rating system (Table 3.3-2). Seven of the wetlands are closely associated with the riparian corridor of Wapato Creek (Figure 3.3-2). Representative conditions are shown in the photographs following Figure 3.3-2.

Table 3.3-2: Wetland Classes and Ratings for Wapato Basin

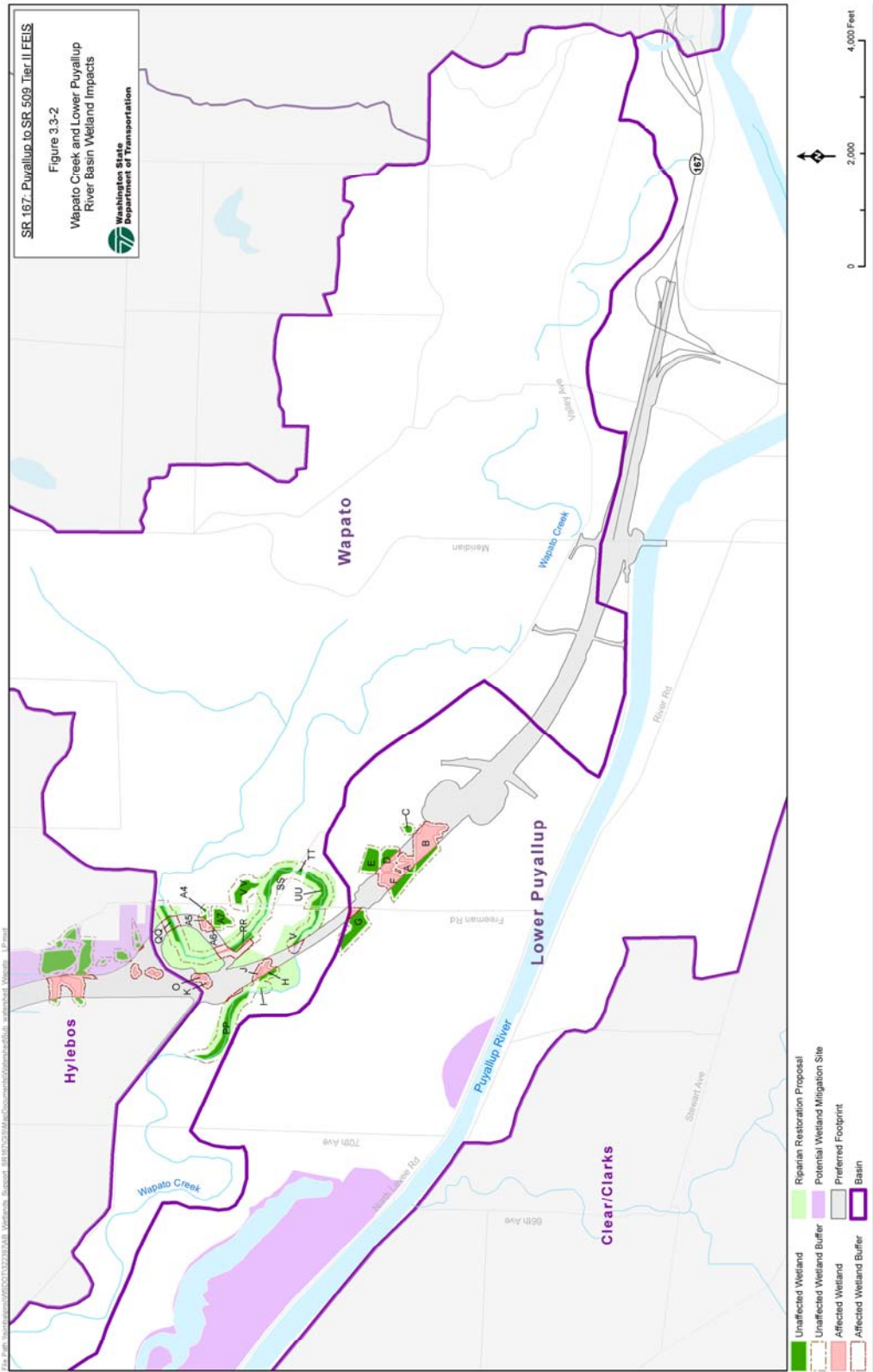
Wetland	Area (acres)	Cowardin Class	Ecology Category	Prior Converted / Farmed Wetland
H	0.96	PUS3E	III	FW
I	0.01	PSS1E	II	NA
J	0.18	PEM1E	III	NA
K	0.09	PUS3E	III	PC
O	0.28	PUS3E	III	PC
V	0.68	PEM1E	II	NA
PP	3.8	PEM1C, PFO1C	II	NA
QQ	1.5	PSS1E, PEM1E	II	NA
RR	1.8	PEM1E, PFO1E	II	NA
SS	2.0	PFO1E	II	NA
TT	0.2	PFO1E	II	NA
UU	2.3	PEM1E	II	NA
VV	1.8	PEM1E	III	FW
A4	0.04	PEM2Ef	III	FW
A5	0.38	PEM2Ef	III	FW
A6	0.08	PEM2Ef	IV	FW
A7	1.4	PEM2Ef, PSS1E	III	FW
Total	17.5			

Lower Puyallup Basin

Seven of the delineated wetlands in the Lower Puyallup basin are classified as Category III wetlands under the Ecology rating system (Table 3.3-3). Six of these wetlands are associated with agricultural fields. The seventh, Wetland G, is a mixed PEM/PSS wetland located west of Freeman Road (Figure 3.3-2).

Table 3.3-3: Wetland Classes and Ratings for Lower Puyallup Basin

Wetland	Area (acres)	Cowardin Class	Ecology Category	Prior Converted / Farmed Wetland
A	1.2	PUS3E	III	FW
B	5.0	PEM1E	III	NA
C	0.32	PUS3E	III	PC
D	2.0	PUS3E	III	PC
E	2.2	PUS3E	III	FW
F	2.8	PEM1E	III	NA
G	3.2	PEM1E/PSSE	III	NA
Total	16.72			





Freeman Rd.

Wetland QQ Looking Southwest from Freeman Road



Wapato
Creek

Wetland PP and Wapato Creek in Horse Pasture



Freeman Rd.

Wapato Creek

Wetland V and Wapato Creek



Wapato Creek

Wetland UU and Wapato Creek

Wetland Vegetation

In general, three types of plant communities exist within wetlands in the project area: emergent, scrub-shrub, and forested wetlands. Freshwater emergent communities occur in wetlands within wet croplands and wet pastures. Freshwater emergent wetland communities within the project area are frequently dominated by reed canarygrass (*Phalaris arundinacea*) a non-native invasive weed, bentgrass (*Agrostis* spp.), fescue (*Festuca* spp.), soft rush (*Juncus effusus*), or creeping buttercup (*Ranunculus repens*). Slough sedge (*Carex obnupta*), Douglas' spiraea (*Spiraea douglasii*), Himalayan blackberry (*Rubus procerus*), and trailing blackberry (*R. ursinus*) are often found in scattered patches within freshwater emergent communities.

Scrub-shrub wetlands in the project area are typically dominated by willow, redosier dogwood (*Cornus sericea*), Douglas' spiraea, salmonberry (*Rubus spectabilis*), or Himalayan blackberry. The groundcover often contains creeping buttercup, lady fern (*Athyrium filix-femina*), reed canarygrass, and bentgrass. Forested wetlands are dominated by red alder, Oregon ash (*Fraxinus latifolia*), and black cottonwood (*P. balsamifera* ssp. *trichocarpa*) in the overstory and salmonberry in the understory. The groundcover is composed of slough sedge, creeping buttercup, false lily-of-the-valley (*Maianthemum dilatatum*), lady fern, and occasional skunk cabbage (*Lysichiton americanum*).

Soils

Most of the soils within the project area formed in alluvium. The Natural Resource Conservation Service Soil Survey of Pierce County Area, Washington, has mapped several soil series within the project area, including: Sultan silt loam, Briscot loam, Puyallup fine sandy loam, and Xerothents, fill area. Sultan soils dominate the project area, while the Briscot and Puyallup soils are mapped in scattered locations throughout the corridor. Minor amounts of other soil series, including Tisch silt, Puget silty clay loam, and Pilchuck fine sand, also occur within the preferred alignment. The Xerothents, fill areas are mapped at the northern end of the project, on the Port of Tacoma property that abuts SR 509. Of these soil series, Briscot loam, Tisch silt, and Puget silty clay loam are classified as a hydric soil by the Natural Resource Conservation Service. Actual soils observed in the area of the project are generally consistent with the soil survey.

Hydrology

Hydrology in the project area is mainly driven by floodwater and groundwater in the Puyallup River, its tributaries, and the independent drainages (Hylebos Creek, Wapato Creek, Surprise Lake Drain) in the project area. Many of the wetlands within the project area are supported by surface water retention, due to impermeable soils within the upper 12 to 18 inches of the soil profile.

Some ditched areas were observed to have hydrology and hydrophytic vegetation, but were not flagged as wetlands. Recent guidance on ditches resulting from the Talent decision was not available at the time wetlands and streams were delineated on this project. The ditches in the project area will be assessed and delineated as appropriate prior to initiation of project construction.

Wetland Rating System

No Category I wetlands occur in the analysis area. Twelve Category II wetlands occur in the study area, although only three would be impacted by proposed construction (see Section 3.3.3).

All but one remaining wetlands in the analysis area are Category III. One Category IV wetland is found in the project area – Wetland A6 in the Wapato Basin.

Before initiating permitting or preparing a final wetland mitigation plan, wetlands and ditches affected by this project will be reevaluated. Ecology recently released a new wetland rating system for Western Washington (Hruby 2004).

Functions and Values

Functions were described using two accepted methods: (1) the *Washington State Wetlands Rating System for Western Washington* (Ecology 1993) and (2) the *Wetland Functions Characterization Tool for Linear Projects* (WSDOT 2000). As described above, most of the wetlands being impacted are Category III, reflecting the decreased potential for providing functions because many of the wetlands are disturbed by farming or remain disturbed by past land uses such as farming. The existing functions of the wetlands in the project footprint are generally impaired.

The water quality and flood storage functions of these wetlands are generally moderate. The habitat functions are generally low. Using the WSDOT (2000) method, functions for wetlands to be impacted by the SR 167 Extension project were identified and are described in the *Wetlands Discipline Report* (CH2M HILL 2005). The primary functions of the Category III wetlands based on the functions assessment completed would be flood flow alteration, sediment and heavy metals retention, and nutrient and toxicant removal. Three of the Category III wetlands (P, Q, and LL) were classified as forested. Wetlands P and Q, which occur in a hybrid black cottonwood plantation previously owned by the Washington State University Cooperative Extension, may also have educational or scientific value as a publicly owned site that is used for biological research. Wetland LL was the only wetland that was rated as having a moderate potential for general habitat suitability and native plant richness.

The functions of the Category II wetlands associated with Wapato and Hylebos Creeks (i.e., 11, 12, RR, and V) are flood flow alteration, sediment and heavy metals retention, nutrient and toxicant removal, and erosion control and shoreline stabilization.

Due to the farmed nature of many of the wetlands within the project corridor, the functions of the wetlands are generally impaired, and appear to provide moderate physical functions (water quality and flood storage) but low biological functions (habitat). This results from the fact that many of these wetlands lack vegetation, have little or no vegetated buffers, are intensively farmed, and are located within a relatively developed setting. The biological functions of many of these wetlands are limited, but are provided at a higher level by other wetlands which

are vegetated and not being farmed (tilled). The wetlands within the corridor that provide higher levels of biological function are associated with or near Hylebos and Wapato Creeks, which is why they were rated as Category II. The farmed, unvegetated wetlands were rated as Category III wetlands. The functions of these wetlands have been evaluated in a similar fashion to other projects, and although the description of functions for each wetland may be brief, the primary functions likely to be provided are identified for each wetland.

3.3.3 Impacts of Construction

This section discusses short-term and long-term construction impacts to wetlands, wetland buffers, and wetland functions and values for the No Build and Build Alternatives.

No Build Alternative

No direct construction-related impacts to wetlands are expected under this alternative. However, the area would continue to undergo industrial, commercial, and residential development, with associated construction-related impacts. The existing rate of development under the No Build Alternative would not necessarily be the rate at which development would occur near the new interchanges under the Build Alternative.

Impacts on wetlands would be incremental in association with numerous small- and medium-sized commercial, industrial, and residential developments, which are expected on undeveloped lands throughout the project area. Mitigation of impacts would likely be small, isolated, and fragmented. Despite the goal of “no net loss” required by regulatory agencies and local jurisdictions, studies show that the goal is not being met. A recent study by Ecology found that 46 percent of the 24 mitigation projects evaluated were fully or moderately successful while 54 percent were judged to be minimally or not successful (Johnson et al. 2002). The study, however, did not include mitigation projects conducted by WSDOT, which have generally been successful.

Build Alternative (Preferred)

Direct impacts to wetlands under the Build Alternative would consist of a combination of temporary and permanent impacts. For the SR 167 Extension project, temporary wetland disturbances are those that will be necessary for implementing the stream relocation and restoration of wetlands within the riparian restoration areas (see Section 3.3.6, Riparian Restoration Proposal). Under the Build Alternative, a total of approximately 6.6 acres of wetlands could be temporarily impacted (Table 3.3-4).

Table 3.3-4: Temporary Wetland Impacts

Wetland	Wetland Acreage	Impacts (acres)	% of Wetland Impacted	Ecology Category	Cowardin Class	Sub-Basin
T	8.2	1.7	21	III	PEM2Ef	Surprise Lake Drain
Y	1.4	0.5	36	III	PUS3Ef	Surprise Lake Drain
9	50	4.4	9	III	PEM1E	Lower Hylebos
Total	59.6	6.6	11			

Under the Build Alternative, the area of wetland that could be permanently impacted ranges from 32.8 to 33.6 acres depending on the interchange options selected (Table 3.3-5). Impacts of the interchanges would vary depending upon the project option constructed. The maximum wetland buffer area that would be impacted, including both the mainline and highest-impact options, is approximately 58 acres.

Impacts of each option on wetlands and wetland buffers were compared using the environmental screening criteria described in Table 2-4 (Section 2.3).

All the wetland impacts occur within the Puyallup River watershed (WRIA 10). Approximately 72 percent (23.7 acres) of the impacts on wetlands occur in the Hylebos Basin. Approximately 23 percent (7.6 acres) of the impacts on wetlands occur in the Lower Puyallup Basin. Approximately five percent (1.6 acres) of the impacts on wetlands occur in the Wapato Basin.

The wetland impacts for each interchange and associated options are summarized below. Mainline impacts on wetlands are included with each associated interchange option. The *Wetlands Discipline Report* (CH2M HILL 2005) describes impacts on individual wetlands for each option.

SR 509/SR 167 Connection

No construction impacts are expected to be associated with the connection of SR 167 to SR 509.

54th Avenue East Partial Interchange

Wetland impacts for the two interchange options range from 1.7 acres for the Loop Ramp Option (preferred) to 2.1 acres for the Half Diamond Option. All the affected wetlands are Category III wetlands located in the Hylebos Basin.

Table 3.3-5: Range of Permanent Wetland Impacts

Interchange	Interchange Option Impacts (acres)	Mainline Impacts (acres)	Total Impacts (acres)
SR 509 / SR 167 Connection	0.0	0.0	0.0
54th Avenue East Partial Interchange			
- Loop Ramp Option – Preferred	0.38	1.30	1.68
- Half Diamond Option	0.81	1.30	2.11
Interstate 5 Interchange	0.0	18.8	18.8
Valley Avenue Interchange			
- Freeman Road Option	1.56	5.62	7.18
- Valley Avenue Option – Preferred	1.67	5.62	7.29
- Valley Avenue Realignment Option	1.91	5.62	7.53
SR 161 / SR 167 Interchange			
- Urban Interchange Option – Preferred	0.0	5.12	5.12
- Low Diamond Option	0.0	5.12	5.12
- Medium Diamond Option	0.0	5.12	5.12
Total Range of Wetland Impacts	1.94 – 2.72	30.84	32.78 – 33.56

Interstate 5 Interchange

Wetland impacts for the Interstate 5 interchange are 18.8 acres. This includes 16.4 acres of impact from road fill, and an additional 1.8 acres from channel excavation in wetlands to construct the relocated Hylebos Creek (1.1 acres in Wetland 9) and Surprise Lake Drain (0.7 acre in Wetland T). In addition, a berm to contain the floodplain will impact 0.6 acre of Wetland T. All of these impacts are located within the Hylebos Basin. All but 0.5 acre of the impact are to Category III wetlands. Wetlands 11 and 12 are Category II wetlands.

Valley Avenue Interchange

Wetland impacts for the three Valley Avenue interchange options include 7.18 acres for the Freeman Road Option, 7.53 acres for the Valley Avenue Realignment Option, and 7.29 acres for the Valley Avenue Option (preferred). Impacts under all three options are distributed throughout all three basins. The Freeman Road option would have the most impact to Category II wetlands (0.38 acre), and the Valley Avenue Option the least (0.12 acre).

SR 161 / SR 167 Interchange

Wetland impacts for the SR 161 / SR 167 interchange are 5.1 acres, which are the same for all three options. This impact includes two Category III wetlands, Wetlands A and B.

Wetland Impacts By Ecology Category

The wetland impacts by Ecology (1993) wetland category are summarized for the preferred alternative in Table 3.3-6. Only two percent (0.8 acre) of the wetlands to be impacted are Category II wetlands, which are associated with Wapato and Hylebos Basins. The overwhelming majority (98 percent or 32.1 acres) of the wetlands impacted are Category III wetlands. A very minor amount of Category IV wetlands (0.04 acre) would also be impacted.

Table 3.3-6: Wetland Impacts by Category for the Build Alternative

Wetland Category (Ecology, 1993)	Wetland Impacts (acres)	Percent of Total
II	0.8	2
III	32.1	98
IV	0.04	<1
Total	32.94	

Wetland Buffer Impacts

Under the Build Alternative, the area of wetland buffer that could be impacted ranges from 56.5 to 58.2 acres depending on the interchange options selected (Table 3.3-7). In most cases, existing buffers are in a state equally as degraded as the wetlands themselves. For example, some of the buffers lack vegetation entirely because they are regularly disturbed by farming. Others are regularly mowed during maintenance within the I-5 right-of-way or are regularly grazed by livestock. Others are dominated by non-native noxious weeds such as reed canarygrass. Virtually none of the existing buffers are dominated by native trees and shrubs.

Table 3.3-7: Range of Wetland Buffer Impacts for the SR 167 Extension Project

Interchange	Impacts in Acres (Mainline + Option)
SR 509 / SR 167 Connection	0.0
54th Avenue East Partial Interchange - Loop Ramp Option – Preferred	2.70
- Half Diamond Option	2.99
Interstate 5 Interchange	37.24
Valley Avenue Interchange - Valley Avenue Option – Preferred	13.84
- Valley Avenue Realignment Option	14.73
- Freeman Road Option	15.28
SR 161 / SR 167 Interchange - Urban Interchange Option – Preferred	2.71
- Low Diamond Option	2.71
- Medium Diamond Option	2.71
Total Range of Wetland Impacts	56.5 – 58.2

3.3.4 Impacts of Operation

No Build Alternative

No direct, project-related operation effects on wetlands would occur under this alternative.

Build Alternative (Preferred)

Potential operational impacts of the Build Alternative to wetlands are limited to those wetlands located immediately adjacent to roadway sections without stormwater collection or compost-amended fill slopes. Sediment and heavy metals retention, and nutrient and toxicant removal are primary functions of many of the wetlands in the project area. Stormwater BMPs will substantially reduce the potential for operational impacts on wetlands.

Many of these wetlands lack vegetation, have no vegetated buffers, are intensively farmed, and are located within a relatively developed setting. The wetlands within the corridor that provide higher levels of biological function are associated with or are near Hylebos and Wapato Creeks, which is why they were rated as Category II.

Increased vehicular noise could permanently disturb or deter wildlife from some of these higher quality, proximate wetlands, thereby lowering the wetland's habitat value. Providing wildlife habitat is not a primary function of most of the wetlands in the immediate corridor, however. Section 3.6 provides further discussion of noise impacts.

Wetland hydrology may be altered through the placement of fill and the reduction of storage volume, through changes in permeable surface area, or through rerouting of drainage that currently supports wetlands. Increases in impervious surface may alter groundwater hydrologic regimes within the study area and affect the ability of wetlands to provide flood flow alteration, a primary function of many of the wetlands in the project area. Floodplain and water storage impacts are described in Section 3.2.

3.3.5 Indirect Wetland Impacts

Indirect impacts are those effects caused by the proposed action that are later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Considerable population growth has occurred in the project area and is forecasted to continue through 2030 in Pierce County. This continual growth in combination with the SR 167 Extension project would result in indirect impacts on wetlands in the project area.

No Build Alternative

Development would continue in the project area according to land use plans, zoning designations, and regulations adopted by affected communities. The population increase will result in conversion of low-intensity land use, such as agriculture and open space to higher intensity land uses such as residential, commercial, and industrial. Under the No Build Alternative, development will not be focused first in the area of the proposed roadway. Instead, development would occur in more of a piece-meal fashion resulting in fewer opportunities to provide for the type of large-scale mitigation projects that are proposed for the

SR 167 Extension project (i.e., restoration of streams, riparian wetlands, and riparian uplands).

Build Alternative (Preferred)

Indirect impacts on wetlands beyond the project corridor are difficult to quantify because wetlands were only delineated within the proposed project corridor. As a result, information about wetlands needed to conduct an indirect analysis is limited to what is available in the *SR 167 Tier I Final Environmental Impact Statement* (WSDOT and FHWA 1999). These maps include wetland inventory information from the Cities of Fife and Puyallup, Pierce County, and the National Wetland Inventory. In addition, color aerial photos taken in June 2002 by the United States Geological Survey (USGS) were used to interpret the extent of recent development within the project area (TerraServer 2004). The geographic boundary considered when addressing indirect impacts for the project includes the area up to one-quarter mile from the right-of-way boundaries of the interchange options.

Indirect wetland impacts associated with this project are not considered to be substantial. The proposed project, by substantially improving travel and accessibility, may serve to accelerate short-term planned development in the vicinity of the new freeway interchanges. Some indirect impacts on wetlands related to the Build Alternative may result, but they would be limited to the vicinity of the Valley Avenue interchange.

The Build Alternative would not be expected to induce unplanned regional growth. However, it may influence the pattern development within the study area. For instance, the SR 167 Extension project could accelerate the planned transition of the North Fife area from residential/agricultural to industrial/commercial use and the Fife/Puyallup Valley from agricultural/vacant to mixed commercial-residential and industrial. Although a similar overall level of growth and development would be expected by the year 2030 compared to the No Build Alternative, the proposed project could alter the rate, timing, and location of development within the corridor area as planned by local and regional jurisdictions. The Build Alternative is compatible with planned and anticipated urban growth in the Fife and Puyallup area according to adopted local and regional plans (Cities of Fife and Puyallup, Pierce County, and Puget Sound Regional Council) by reducing congestion and travel time, especially in the Fife area.

The long-term indirect effect of the Build Alternative to wetlands may be considerably less than under the No Build Alternative because the environmental mitigation associated with the Build Alternative would likely be more extensive and more successful than under the No Build Alternative. The Build Alternative would provide high quality restoration of streams, riparian wetlands, and riparian uplands from existing habitats that are substantially disturbed and not properly functioning. The scope and scale of habitat proposed to be restored or enhanced at one or more of the potential wetland mitigation sites will be a substantial benefit to wildlife in the area in the long term. The stream relocations and associated benefits from riparian restoration at Hylebos Creek, Wapato Creek, and Surprise Lake Drain may not otherwise occur. Not only would the Build

Alternative provide larger wetland mitigation than ongoing development. Historically, its success is more likely because WSDOT owns, maintains, monitors, and ensures success of our mitigation sites, which according to Johnson et al. (2002) has not consistently been the case for private developers.

A substantial increase in wetland area and function is expected from the riparian restoration of the Wapato Creek, Surprise Lake Drain, and Hylebos Creek. The RRP would convert a substantial area of agricultural lands, zoned for industrial and commercial development, into riparian areas and wetlands, which would be protected from development (See Section 3.3.6). The wetland mitigation, stream mitigation, and riparian restoration offer opportunities to connect to other habitat restoration projects occurring in the Puyallup River valley.

Indirect impacts of the Build Alternative are discussed for each Basin and interchange below.

Hylebos Basin

SR 509 / SR 167 Connection. Indirect impacts on wetlands within the vicinity of the proposed SR 509 / SR 167 connection are not expected. The area within one-quarter mile of the proposed connection is already generally developed, and WSDOT and FHWA (1999) did not identify any wetlands in the area.

54th Avenue East Partial Interchange. The 54th Avenue East interchange is expected to provide direct local access that could promote development and result in limited indirect impacts on wetlands. Within one-quarter mile of the interchange are wetlands mapped by WSDOT and FHWA (1999) and the Hylebos Creek floodplain. However, much of this area is already developed and the land use is predominantly industrial. As part of the proposed project, 8th Street East east of SR 167 would be closed, thus limiting local access somewhat in this case. Removal of portions of 8th Street East, 62nd Avenue, 67th Avenue, and adjoining residential buildings within the RRP should increase the floodplain and result in re-establishment of some riparian wetlands.

Interstate 5 Interchange. Indirect impacts on wetlands within the vicinity of the proposed Interstate 5 interchange are not expected because no direct local access will result. Approximately 116 acres along Hylebos Creek and the Surprise Lake Drain (a tributary to Hylebos Creek) just north along Freeman Road would also be acquired in the proposed Hylebos Creek Riparian Restoration Area, of which 61.8 acres have been delineated as wetlands. The effect of restoring undeveloped uplands and wetlands to riparian habitat should help protect wetlands in the area and result in a net environmental benefit that would not result from the No Build Alternative.

Wapato and Lower Puyallup Basins

Valley Avenue Interchange. The Valley Avenue interchange is expected to provide direct local access that could promote development and result in some indirect impacts on wetlands. Wetlands mapped in the area by WSDOT and FHWA (1999) and delineated by CH2M HILL (2004a and 2004b) are generally associated with Wapato Creek, which is protected under the City of Fife's Critical Areas Ordinance (Fife 2003). Indirect impacts to other wetlands in the

area are expected to be minimized by FHWA and WSDOT's proposal to acquire 73 acres in the vicinity of Valley Avenue and Freeman Road as part of the Wapato Creek Riparian Restoration Area, of which 12.4 acres have been delineated as wetlands.

SR 161 / SR 167 Interchange. Indirect impacts on wetlands within the vicinity of the proposed SR 161 / SR 167 interchange are not expected. The area within one-quarter mile of the proposed interchange is generally developed, and WSDOT and FHWA (1999) did not identify any wetlands in the area.

3.3.6 Cumulative Wetland Impacts

Cumulative impacts are effects on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively substantial actions taking place over a period of time.

The geographic boundary for this analysis includes the land within and adjacent to the project area. The temporal analysis includes information from 1780 to the impacts anticipated by 2030, as described in the growth management plans for county and city governments and Destination 2030 (PSRC 2001).

Urbanization is the primary cause of wetland loss within the central Puget Sound region and the project area. According to a 1997 Washington State Department of Natural Resources (DNR) report, more than 90 percent of the wetlands in urban areas in Washington have been lost (1997). Despite the goal of "no net loss," studies show that these goals are not being met. The magnitude of impacts on wetland functions is unknown. Primary wetland functions lost in the project area are due to an increase of impervious surfaces, which reduces aquifer recharge and alters wetland hydrology, and a decrease in overall wetland area and functional capability. These functions primarily include fish and wildlife habitat, stormwater retention, and sediment and toxics retention.

As future planned development for the area is constructed, wetlands will be impacted and habitat for wetland-associated species will be fragmented. The fragmentation of habitat results in more pressure on wildlife within the remaining habitat. Stresses can include reduced access to food and overcrowding, which can result in increased disease and/or aggression. Some of these impacts may be offset through requirements for compensatory mitigation.

Offsetting the impacts of ongoing and future development are several organizations that are involved with planning and implementing habitat restoration projects in the project area. These organizations include local governments, the Puyallup River Watershed Council, the Pierce County Conservation District, the Commencement Bay Natural Resources Trustees, and citizen groups such as the Friends of the Hylebos Wetlands (FOHW). Some of the wetland and riparian restoration projects currently planned in the vicinity of the proposed SR 167 Extension project include:

Hylebos Basin

- Lower Hylebos Nature Park (Jordan Site)—The City of Fife in cooperation with the Commencement Bay Natural Resources Trustees is developing a 15.3-acre stream and wetland restoration project adjacent to lower Hylebos Creek.
- Spring Valley Ranch—As mitigation for the I-5 HOV-lane construction project from Port of Tacoma Road to the King-Pierce County Line, WSDOT acquired in late 2004 a 27-acre site along the West Branch of Hylebos Creek. WSDOT is working with project partners to develop a restoration plan for this site.

Lower Puyallup Basin

- Frank Albert Site—The Puyallup Tribe of Indians in cooperation with the Commencement Bay Natural Resources Trustees are developing a 20-acre intertidal freshwater off-channel wetland next to the Puyallup River.
- Gog-Le-Hi-Te Expansion—The Puyallup Tribe of Indians is developing plans to expand the existing Gog-Le-Hi-Te site by approximately 9 acres. The site is connected to the Puyallup River.

To avoid and minimize cumulative impacts on wetlands from projects such as the SR 167 Extension project and other future development, effective as of March 2005, Pierce County implemented *Directions for Protecting and Restoring Habitat* (Pierce County 2005). This comprehensive regulatory package established new regulations and amended existing regulations to provide enhanced habitat protection and restoration. It was added to Title 18E of the Pierce County Code and implemented on March 1, 2005. The package formalized wetland review procedures and policies previously provided in several documents. These procedures and policies included wetland delineation methodology, a rating and certification form, and wetland review. The package also expanded the hydrology requirements associated with mitigation plans. The regulations pertain to development activities in the unincorporated portions of Pierce County (Pierce County 2004). Incorporated areas of Pierce County include Fife, Milton, Puyallup, Edgewood, and Tacoma. Development in these areas will be guided by local ordinances.

The current and future context of wetlands conversion and development is radically different from the historical lack of regulation, which allowed the substantial loss of wetlands in the Pierce County and Commencement Bay area. Wetlands are now recognized as an important and valuable natural resource, and their protection is a matter of public interest. As a result, rates and amounts of wetland losses in the proposed project area for the near future may be substantially less than past trends indicate. Many agencies and jurisdictions are responsible for permitting, regulating, and protecting wetlands. Federal wetland regulations do not allow fill or activities in COE jurisdictional wetlands unless there are no practical alternatives. Wetland regulations adopted by the Cities of Tacoma, Puyallup, and Fife stipulate mitigation performance standards when regulated activities occur in wetlands, and call for no net loss of wetland area, functions, and values. Such policies regarding no net loss and replacement of

wetlands will provide much greater protection of wetlands than in the past, and thereby limit future loss of wetlands from indirect and cumulative impacts of the proposed project.

No Build Alternative

The cumulative wetland impacts over time that are associated with commercial, industrial, and residential development under the No Build Alternative would likely be similar to what would occur with the Build Alternative.

Build Alternative (Preferred)

Cumulative wetland impacts associated with this project are not considered to be substantial. The current high conversion rate of wetlands in the Puyallup River Basin will continue irrespective of the proposed project. The lack of available data on wetland loss and replacement as a result of compensatory mitigation makes it difficult to determine the extent of ecological impacts due to wetland loss. In addition, the long-term impacts on wetlands associated with this project are not considered substantial due to the degree of mitigation provided and the innovative use of riparian restoration for stormwater management. Without mitigation, the Build Alternative would remove a substantial amount of disturbed wetland habitat in the Puyallup River Basin. It would be expected to lead to some degradation of wetland functions due to the direct filling of wetlands and their buffers and the addition of impervious surface.

The incremental effect on wetlands from this project along with other land use effects and transportation improvement projects in the region (i.e., Canyon Road extension project and Valley Avenue reconstruction project) would contribute to and hasten the build out of high-density uses within the project area. The conversion to higher intensity land uses is consistent with and supports the policy framework for future development as identified in the comprehensive plans and development regulations adopted by the Cities of Fife and Puyallup.

3.3.7 Mitigation Measures

Mitigation Requirements

Wetlands and special aquatic sites are protected under Presidential Executive Order 11990, Protection of Wetlands (President of the United States 1977), Governor's Executive Orders EO 89-10 and EO 90-04, Protection of Wetlands (Governor of the State of Washington 1989), and WSDOT Directives 22-27 and 31-12 (HR) (WSDOT 1979). These orders and directives require the use of all practicable measures to avoid impacts and provide mitigation for any unavoidable impacts.

The executive orders stipulate that all state agencies shall use the following definition of mitigation, and in the following order of preference:

1. Avoiding the impact altogether by not taking a certain action or part of an action

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or minimize impacts
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments
6. Monitoring the impact and taking appropriate corrective measures

Mitigation for individual actions may include a combination of these measures.

Both the COE and Ecology generally require compensatory mitigation for fills in “waters of the United States” (including wetlands) greater than 0.1 acre (COE 2002) through the 404 permit program. Moreover, most local governments have mitigation requirements for wetland impacts under their critical area ordinances. At this time, there are no universal rules that establish mitigation requirements that will meet the requirements of all agencies in advance of actual project permitting. In this instance FHWA and WSDOT expect that federal, state, and local regulatory agencies would require FHWA and WSDOT’s wetland mitigation plan to be consistent with mitigation ratios established by Ecology.

Table 3.3-8 lists the current guidelines for mitigation ratios to be applied for a given impact. These ratios are based on the Implementing Agreement that WSDOT has with Ecology (WSDOT and Ecology 1993). Compensation acreage is dependent on the quality of the wetland impacted and the category of wetland being restored, created, or enhanced.

Table 3.3-8: Applicable Mitigation Ratios (from Implementing Agreement [WSDOT and Ecology 1993])

Impact Wetland Category	Mitigation Type			
	Restoration and Creation		Enhancement	
	Category II	Category III	Category II	Category III
I	4:1	6:1	8:1	10:1
II	2:1	3:1	3-4:1	4-6:1
III	1-1.5:1	1.5-2:1	1.5-3:1	2-4:1
IV	0.75-1.25:1	1-1.5:1	1-2:1	2-3:1

The final wetland mitigation plan would compensate for any unavoidable impact on wetlands, including buffer impacts, which would require mitigation under the critical area ordinance of the City of Fife. Mitigation may also include establishing a buffer area at the selected wetland mitigation site(s) and enhancing buffers adjacent to the residual wetlands (remaining parts of impacted wetlands).

Definitions for mitigation types are:

- **Restoration**—Actions taken to intentionally reestablish wetland area, and functions and values where wetlands previously existed, but are currently absent due to the absence of wetland hydrology or hydric soils.
- **Creation**—Actions taken to intentionally establish a wetland at a site where none previously existed (as far as can be determined from historical information).
- **Enhancement**—Actions taken to intentionally improve wetland functions, processes, and values of existing but degraded wetlands where all three defining wetland criteria are currently met (i.e., hydrology, vegetation, soils).

Mitigation Analysis for SR 167 Extension Project

Through conceptual project design, impacts to wetlands have been avoided or minimized as much as possible, but future opportunities for avoidance and minimization will be pursued in final design. The mainline was shifted away from Hylebos Creek north of I-5. This minimized impacts and allowed for a large buffer. Each project option being considered was reviewed by the WSDOT Environmental Services Office and refined based on this review. During final design, site-specific design criteria will be applied to each interchange, mainline segment, and bridge. These can include realignment of the mainline and ramps to minimize impacts to wetlands, adjustment of bridge lengths to avoid wetlands for one stream crossing at Valley Avenue, and revegetating Hylebos and Wapato Creeks, and Surprise Lake Drain to improve habitat. The Hylebos Creek relocation will remove an existing bottleneck along I-5, increase capacity, and improve riparian habitat.

Specific functions lost in each impacted wetland are identified in the *Wetlands Discipline Report* (CH2M HILL). All these lost functions would not necessarily be replaced in the basin in which the impact occurs. FHWA and WSDOT have analyzed impacts by basin and are proposing mitigation for the Build Alternative in the Puyallup River watershed in accordance with regulatory requirements. The Hylebos basin impacts make up approximately 60 percent of the total wetland impact. The primary functions identified in the Hylebos basin are flood flow alteration, sediment and heavy metals retention, nutrient and toxicant removal, water storage, erosion control, food web productivity, and wildlife habitat.

Ten sites identified within the project vicinity offer the potential to compensate for unavoidable project impacts on wetlands. The sites shown in Figure 3.3-3 and summarized in Table 3.3-9 have potential for wetland mitigation. One or more sites may be needed to meet the wetland mitigation needs of the project. These sites are described in more detail in the *Conceptual Mitigation Plan* (CH2M HILL and MWG 2005).

The general criteria used to identify and evaluate potential wetland mitigation sites in the *Conceptual Mitigation Plan* that will continue to be used in the final mitigation plan are:

- Watershed Focus – The mitigation site(s) shall be located in the Puyallup River watershed (WRIA 10). Regulatory guidelines require FHWA and WSDOT to analyze and mitigate impacts by watershed. Sites should be prioritized, if possible, to occur within the project area (on-site) and occur within the sub-watershed where substantial impacts to wetlands occur.
- Replacement of Functions and Values Lost – The mitigation site(s) will provide “in kind” replacement of lost wetland functions and values.
- Habitat Connectivity – Sites adjacent to existing restoration sites, or providing connectivity to otherwise fragmented smaller wetland areas should be prioritized if possible. Large, linked sites tend to be more successful and provide greater levels of ecological function.
- Reliable Hydrology – The site(s) should have reliable, on-site source(s) of groundwater and/or surface water hydrology capable of supporting wetlands.
- Undeveloped Condition – The site(s) should be generally undeveloped to minimize the number of displacements and to minimize cost. Also, fewer landowners simplifies the process and increases the likelihood of success.
- Uncontaminated – The site should be relatively free of hazardous materials.
- Stakeholder Support – Sites that are considered a restoration priority among stakeholders should be favored.
- Satisfies Regulatory Requirements – Any site needs to be capable of satisfying regulatory requirements for wetland creation/restoration and/or enhancement.

Off-channel habitat potential will be identified at the sites. Off-channel habitat for fish is the top limiting factor in the Puyallup River watershed.

FHWA and WSDOT will select one or more preferred wetland mitigation site(s) after the Record of Decision is issued and before permitting and a final mitigation plan are completed. A number of additional sites were also considered for mitigation but were not evaluated further due to various causes. These included sites that had been acquired as mitigation for other projects (e.g., Spring Valley Ranch, Gog-Le-Hi-Te Expansion) or were not considered to be suitable for wetland mitigation. These additional sites are summarized in Appendix A of the *Conceptual Mitigation Plan* (CH2M HILL and MWG 2005).

The mitigation wetlands to be restored/created and enhanced at the potential wetland mitigation sites are expected to substantially exceed the area and function of the moderate- to low-function, disturbed wetlands to be impacted by the Preferred Build Alternative. The mitigation wetlands at the potential wetland mitigation sites are expected to be Category II wetlands.

The potential mitigation wetland sites will result in substantial habitat value as characterized by:

- Large wetland area;
- Numerous wetland classes (emergent, scrub-shrub, forested);
- High plant species diversity (multiple species in each wetland class);
- High structural diversity (multiple vegetation strata—herb, shrub, tree);
- High degree of interspersed among wetland classes;
- Stream segments that would also provide habitat for fish at several of the potential wetland mitigation sites;
- Forest, shrub, or grassland buffers present for the majority of the wetland circumference.

Applying the *Wetland Functions Characterization Tool for Linear Projects* (WSDOT 2000), the potential wetland mitigation sites would rate high for most of the wetland functions. On the other hand, the wetlands to be impacted as part of the Preferred Build Alternative at best rated moderate for 5 of 14 wetland functions, and rated low or unlikely to provide the remaining functions.

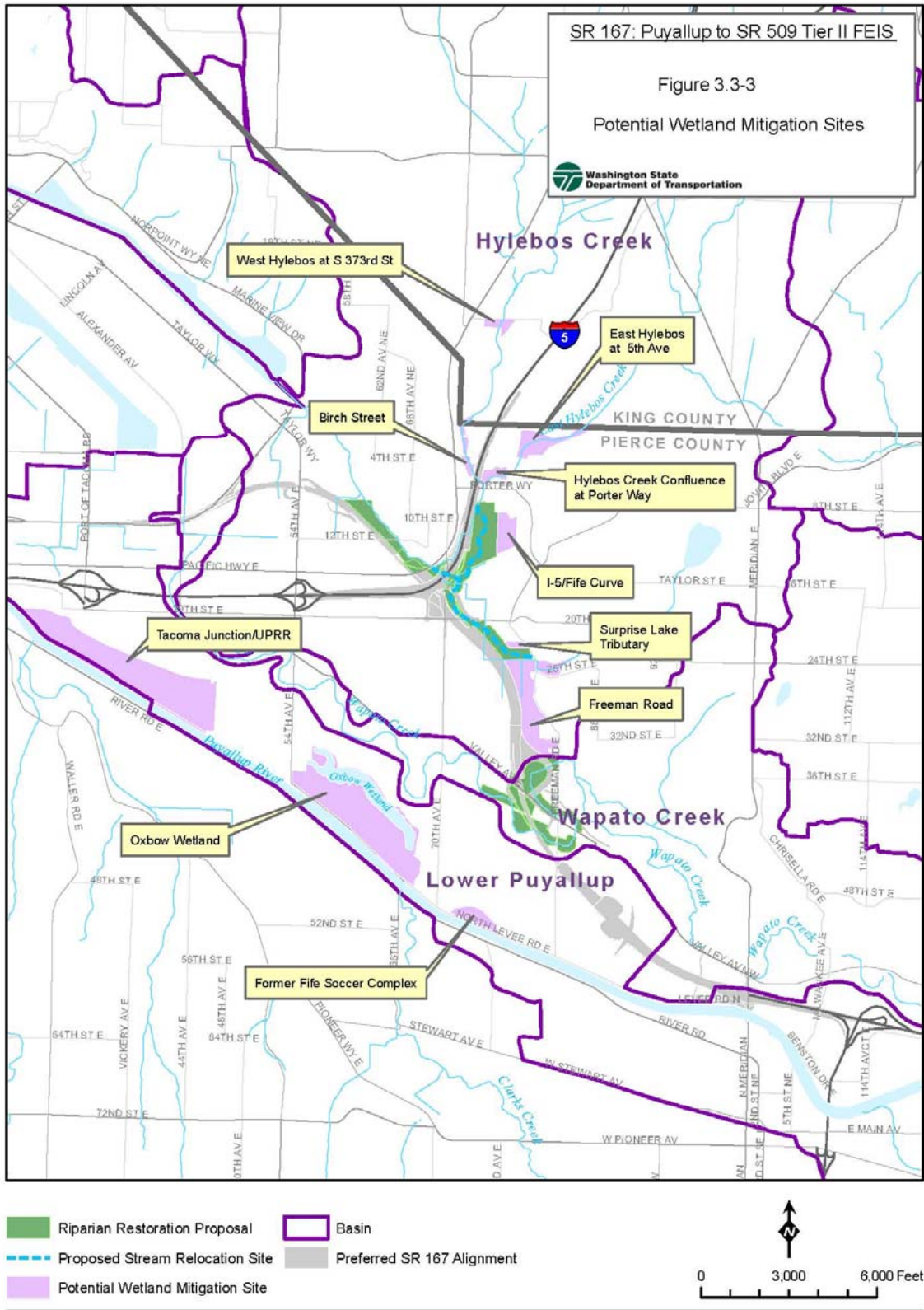


Table 3.3-9: Potential Wetland Mitigation Sites Identified for the SR 167 Extension Project

No.	Site Name	Basin	Approx Site Size (acres)	Estimated Restoration/Creation Acres	Estimated Enhancement Acres	Within SR 167 Project Area	Connectivity Potential	Stream Restoration Potential	Approx No. of Parcels	General Comments
1	Freeman Road	Hylebos	50	40	10	X	High	-	8	Good wetland restoration potential, large site, within SR 167 project area and Hylebos Basin, connects to SR 167 RRP, shallow groundwater, seasonal surface water, few owners, portions of most of the parcels at this site are within the preferred road alignment and could simplify acquisition.
2	Surprise Lake Tributary (Mortenson Farm)	Hylebos	9	2.5	5	X	High	X	7	Good wetland enhancement and stream restoration potential, small site, within SR 167 project area and Hylebos Basin, connects with SR 167 RRP, primary owner (City of Edgewood) is a potential restoration partner.
3	I-5 / Fife Curve	Hylebos	18	-	18	X	High	-	6	Good wetland enhancement/restoration potential, large site, hydrology unknown but shallow groundwater assumed, reed canarygrass dominates, within SR 167 project area and Hylebos Basin, could connect with SR 167 RRP, public and private owners, areas of known arsenic contamination.
4	West Hylebos Creek at S. 373rd Street	Hylebos	8	1	7	-	High	X	2	Good wetland enhancement and stream restoration potential, small site, beyond SR 167 project area, two parcels with one owner, important spawning habitat, connects to WSDOT Spring Valley Ranch restoration site and the General Metals restoration site.
5	Hylebos Creek Confluence at Porter Way	Hylebos	8	-	8	-	High	X	12	Good wetland enhancement and stream restoration potential, small site, just upstream of SR 167 project area, reed canarygrass dominates, includes important habitat at confluence of East and West Hylebos Creek.
6	Former Fife Soccer Complex	Lower Puyallup	15	12	-	-	Low	-	6	Good wetland restoration potential, off channel river habitat, medium-sized site, substantial excavation needed.
7	Tacoma Junction (UPRR) *	Lower Puyallup	150	75	75	-	Medium	-	8	Good wetland restoration potential, large site, substantial off-channel river habitat, good hydrology, substantial excavation needed.
8	Oxbow Wetland	Lower Puyallup	189	100	15	-	Medium	-	40	Good wetland restoration potential—Large site, substantial potential off-channel river habitat, good hydrology, substantial residential displacements, substantial excavation needed, opportunities to coordinate with Puyallup Tribe of Indians. Also approximately 30 acres of preservation.
9	Birch Street	Hylebos	11	-	11	-	High	X	18	Good wetland enhancement/restoration and stream restoration potential, beyond SR 167 project area, numerous parcels and owners.
10	East Hylebos Creek east of 5th Ave	Hylebos	25	-	25	-	High	X	12	Good wetland enhancement and stream restoration potential, medium-sized site, connects to existing FOHW restoration sites at West Milton Nature Reserve.

3.3.8 Benefits of the Riparian Restoration Proposal

In an effort to manage stormwater from 184.6 acres of new impervious surface from the construction of the SR 167 Extension project, approximately 189 acres of existing farmlands, residences, buildings, and roads are proposed to be converted into a riparian landscape. The RRP is being proposed to Ecology as an alternative stormwater management practice for stormwater flow control for the SR 167 Extension project. Although the RRP cannot provide compensatory wetland mitigation, it will offer substantial benefits to wetlands, salmon, and a variety of upland and aquatic species in the project area.

The RRP would enhance a substantial amount of wetlands and protect them by enhancing the surrounding uplands that would serve as wetland buffers. The RRP will also provide wildlife habitat and other essential elements beneficial to this rapidly urbanizing area. The RRP would acquire the property necessary to reestablish riparian buffers along 4.4 miles of existing and relocated streams and allow for more natural floodplain processes to occur within a channel migration zone. Buildings, roads, culverts, and other infrastructure would be removed and the land use would be converted back to a riparian forest planted with native vegetation. Existing fill materials that were placed in the floodplain would be removed in some areas to improve floodplain capacity. Replanting the banks with native riparian vegetation would minimize streambank erosion more directly than conventional detention ponds. In addition to stabilizing the channels, this proposal would develop 189 acres of habitat and establish wildlife linkages between fragmented upland habitats. The RRP would also provide opportunities for passive recreation and environmental education.

The RRP would result in considerable benefits to streams, such as increasing shade to maintain cooler water temperatures, establish woody vegetation which increases bank stability, and helps form habitat for fish and wildlife. The riparian habitat created by the RRP will be a mix of riparian wetland, wetland buffer, and upland habitats.

Table 3.3-10: Riparian Restoration Proposal Areas by Stream

Stream	Area (acres)
Hylebos Creek	87
Surprise Lake Drain	29
Wapato Creek	73
Total	189

The RRP would develop 29 acres of new riparian habitat along Hylebos Creek between 8th Street East and Highway 99 by removing existing portions of surface streets and residential buildings that are within the floodplain of the stream (Figure 3.3-3). Between Highway 99 and Porter Way, the RRP would establish 4,010 linear feet of new stream channel and 58.0 acres of new riparian habitat by moving the stream to the opposite side of I-5. About 650 linear feet of existing Hylebos Creek would remain as off-channel habitat. FHWA and

WSDOT are also proposing to restore the entire length of Surprise Lake Drain from its confluence with mainstem Hylebos Creek to the crossing at Freeman Road, which will develop 29 acres of new riparian habitat. In the Wapato Basin, the RRP includes restoring riparian vegetation along approximately 9,000 feet of Wapato Creek, and converting about 73 acres of developed land back to habitat that will likely be a mix of riparian wetland, wetland buffer, and upland habitat. Work in both Basins includes replacing under-sized culverts, restoring riparian buffers, and restoring connectivity with adjacent upland habitats.

The RRP would substantially increase wetland functions for habitat and water quality in the Hylebos and Wapato Basins. The RRP would improve the function of an estimated 74.2 acres of existing wetlands onsite and within the Basins of those being impacted (i.e., Hylebos and Wapato). Of that amount, habitat and water quality functions for approximately 61.8 acres of existing wetlands would be increased within in the Hylebos Basin, where the proposed project affects 23.7 acres of wetlands.

In addition, approximately 12.4 acres of wetland functions would be increased within existing wetlands in the Wapato Basin, where the project impacts 1.6 acres of wetlands. The wetlands near Wapato Creek are currently disturbed by grazing and farming practices. These existing wetlands in the RRP would function to better provide floodwater storage and water quality enhancement.

An undetermined amount of additional wetlands would also likely be established in the process of stream stabilization in the riparian areas by restoring hydrology. In addition, buffers at wetland sites adjacent to Hylebos Creek, Surprise Lake Drain, and Wapato Creek would also be enhanced under the RRP.

The RRP would also have beneficial effects on the agricultural wetlands and riparian areas adjacent to Wapato Creek and Surprise Lake Drain. This would be accomplished by acquiring some agricultural lands and removing structures and impervious surfaces, and filling ditches and severing drain tiles and pipes that increase runoff (for example, in the vicinity of Wetland T). Through the acquisition, these lands would be conserved rather than converted to commercial or industrial development, and the riparian areas could become wetland and wetland buffer areas. Water quality in Hylebos and Wapato Creeks could directly benefit from reduced input of fertilizer, herbicides, insecticides, and other chemicals used in farming. The RRP would improve the functions in farmed wetlands by allowing them to revert back to a variety of wetland types. The Surprise Lake Drain RRP will convert an area of agricultural lands, which the City of Fife has zoned for industrial and commercial development.

Additional information is needed to confirm the RRP's positive or negative effects on adjacent wetlands. This information should include current and proposed topography, confirmation of wetland locations, and functions assessments for these wetlands.

Improvements in wetland functions within the RRP may be supported by information that details where the following would occur in the RRP:

- Wetlands have been re-established (likely where drain tiles are broken in drained farmed areas).
- Wetlands have been rehabilitated so that they function at a higher level (restore natural hydroperiod, re-connect with flood plain of active channel).
- Wetlands have been enhanced by development of riparian vegetation.

The RRP will be used for stormwater treatment and mitigation for project impacts on streams. Therefore, credit will not be applied towards mitigation for wetland fill activities. However, the environmental benefits should be considered over and above the compensatory wetland mitigation proposed at the potential wetland mitigation sites (see Section 3.3.5, Mitigation Measures).

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3.4 Wildlife, Fish, and Threatened and Endangered Species

The Tier I Environmental Impact Statement (EIS) analysis described urban areas, agricultural lands, grasslands, scrub lands, coniferous and deciduous forests, wetlands, and riparian corridors in the study area. It identified the major potential impacts to fish and wildlife as terrestrial habitat loss, water quality and aquatic habitat degradation, and disturbance from noise and activity during the construction process.

Relative impacts of roadway construction and operation can be assessed by rating the importance of the species and habitat affected. For this analysis, an interchange option is rated based on whether it adversely affects a threatened or endangered species; the area of aquatic and riparian habitat affected, whether priority species occur in this habitat; and whether mitigation occurs for the affected habitat.

This section describes the existing fish, wildlife, vegetation, and aquatic habitat in the study area. Impacts of construction and operation to these resources are quantified and a screening criteria analysis provides a quantitative means of measuring the relative impacts for each interchange option. Regulations that would likely affect construction of the project are listed along with required permits. Finally, the chapter discusses mitigation opportunities and possibilities, both those already implemented at earlier stages and those proposed for future consideration.

Additional analysis was conducted to determine potential project related impacts to migratory birds per the Migratory Bird Treaty Act (16 U.S.C. 703-711) (MBTA). The MBTA is a federal regulation managed by the U.S. Fish and Wildlife Service (USFWS) to conserve migratory bird populations and their habitats.

3.4.1 Studies Performed and Coordination Conducted

This section incorporates information compiled in the *Fish and Wildlife Discipline Report* (DEA and WSDOT 2005) and other sources.

Information from the USFWS, the Washington Department of Fish and Wildlife (WDFW), and the Washington Department of Natural Resources was used to determine if any state or federally listed proposed, threatened, or endangered animal or plant species are located in the project area. The NOAA National Marine Fisheries Services (NOAA Fisheries) provided information on Threatened and Endangered (T&E) anadromous fish species. The Puyallup Tribe was contacted to obtain information on tribal fisheries. Contacts with local experts and interpretation of aerial photography of the project area were used to identify potential habitat areas and land use as it relates to fish and wildlife habitat. Site inspections were conducted to verify the aerial photo interpretation.

Wetlands within the project area were identified and further evaluated through intensive field studies. These studies are documented in the *Wetlands Discipline Report* (WSDOT and CH2M HILL 2005) and Section 3.3 of this document.

Riparian communities were identified using National Wetland Inventory maps, United States Geological Survey (USGS) topographic quadrangle maps, aerial photographs, and field reviews of the project area.

Analysis of agency information, along with previous technical studies completed in this area, agency reports, natural resource inventories, and resource maps, allowed for an assessment of resources that could be affected by the proposed project.

Potential impacts of the Build Alternative to wildlife and habitats within the State Route (SR) 167 corridor were assessed primarily by determining the amount and characteristics of impacted habitat under the Build Alternative. The amount of habitat that would be temporarily and permanently disturbed and/or removed was estimated within the study corridor.

In accordance with the Endangered Species Act (ESA), WSDOT prepared a Biological Assessment (BA) on behalf of the Federal Highway Administration (FHWA) for submittal to the USFWS and the NOAA Fisheries. The BA provides a detailed evaluation of all federally listed species and critical habitat potentially impacted by the project.

The study area consists of a corridor centered on the project alignment. This corridor extends approximately 200-600 feet on either side of the proposed roadway centerline. Project area boundaries were determined from the preliminary design work and minor changes during final design may be necessary to support the build alternative.

Continuing consultations will result in a Biological Opinion (BO) that describes conservation and performance measures to protect ESA-listed fish and wildlife. Terms and conditions from the BO will be incorporated into the Tier II Record of Decision.

Migratory Birds

The study area for migratory birds encompasses habitat types within one mile of the project area because migratory birds often travel extended distances between nesting and wintering habitats, and briefly occupy diverse habitat types along their migration route. Others nest, winter, or forage in specific habitat types.

The potential occurrence of migratory birds in the MBTA study area was based on documented sightings and inferences based on existing habitats within 1 mile of the project area. Aerial photographs and WDFW Priority Habitat and Species (PHS) maps were evaluated to determine habitat types within the MBTA study area. Based on the review of existing information, habitats within the MBTA study area include marine/estuarine habitats (portions of Commencement Bay), rivers and streams (Puyallup River, Wapato Creek, Hylebos Creek, and Surprise Lake Drain), riparian habitat, wetlands, and conifer-hardwood forest, agricultural land, grass fields, and urban lands.

The documented occurrence of nesting species was ascertained by reviewing Smith et al. (1997). Project specific WDFW PHS maps were also reviewed for documented occurrences of priority species (WDFW, 2004). Potential species

occurrence was determined by first listing habitat types in the MBTA study area, and then comparing these with the habitat types defined by Johnson and O'Neil (2001). All species described by Johnson and O'Neil as using specific habitat types in the MBTA study area were then listed as potentially occurring in the MBTA study area based on the availability of suitable habitat. Appendix B of the *Wildlife, Fish, and Threatened and Endangered Species Discipline Report* (DEA and WSDOT 2005) includes the complete MBTA analysis and lists all documented and potential migratory bird species that could occur and type of use (feeding or breeding) in the study area.

Potential direct impacts to migratory birds resulting from habitat loss, fragmentation, and disturbance from proposed construction were assessed. These impacts are segmented into construction impacts and operational impacts. For the MBTA analysis, the loss of habitat was quantified by overlaying the proposed alignment over a base map. Existing habitat types on the base map were identified as either developed (residential/commercial/industrial), not developed (grass fields/shrub areas/forest), or agricultural. Aerial photographs were also used to identify habitat types in the MBTA study area.

3.4.2 Affected Environment

The study area (Figures 3.4-1 through 3.4-11) consists of semi-rural agricultural land, forested and shrub upland, wetlands, riparian corridors, and intensively developed land. The Puyallup River is located in the southern portion and is channelized in a generally east-west configuration. Wapato and Hylebos Creeks also occur in the project corridor along with other smaller drainages (see Section 3.2, Water Resources). The following sections provide additional information on wildlife, wildlife habitat, fisheries, and vegetation in the study area. The study area is composed of a mixture of land uses including agriculture, roadway infrastructure, single-family residences, and commercial development.

Wildlife species composition in the study area varies with habitat type, location, and level of disturbance. The project vicinity encompasses several major habitat types: (1) developed areas (including developed residential, commercial, and industrial areas); (2) agricultural lands; (3) grass/shrub lands (4) forested areas, and (5) freshwater and riparian wetlands. The *Wildlife, Fish, and Threatened and Endangered Species Discipline Report* (DEA and WSDOT 2005) contains a complete list of wildlife species that may occur in the project vicinity.

In order to associate migratory bird use with existing habitat elements, the MBTA study area was segmented into eight habitat types as defined by Johnson and O'Neil (2001). These habitat types are described in detail in Appendix B of the *Wildlife, Fish, and Threatened and Endangered Species Discipline Report* (DEA and WSDOT 2005) and are identified as follows:

- Herbaceous Wetlands
- Westside Lowlands Conifer-Hardwood Forest
- Open water: Lakes, Rivers, and Streams

- Marine: Bays and Estuaries
- Agriculture Pastures and Mixed Environments (at pasture margins)
- Westside Riparian Wetlands
- Urban and Mixed Environments (infrastructure, landscaping, maintained right-of-way [ROW])
- Westside Grasslands

Wildlife and Wildlife Habitat

Urban areas within the project study area provide a mosaic of pavement, buildings, maintained landscaped areas, and unmaintained shrub and grasslands that are inhabited by a variety of birds and small mammals. Common bird species occurring in this habitat type are disturbance tolerant species such as ring-billed gull (*Larus delawarensis*), American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), American crow (*Corvus corax*), violet-green swallow (*Tachycineta thalassina*), mallard (*Anas platyrhynchos*), and Canada goose (*Branta canadensis*). Mammal species expected to occur in urban lands in the project area include opossum (*Didelphis marsupialis*), raccoon (*Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*), deer mouse (*Peromyscus maniculatus*), eastern cottontail (*Sylvilagus floridanus*), striped skunk (*Mephitis mephitis*) and bats (*Myotis* spp.). Larger mammals, including black-tailed deer (*Odocoileus hemionis columbianus*) and coyote (*Canis latrans*), may occasionally be found in the study area in these habitats.

The developed habitats in the project study corridor amount to approximately 441 acres. This acreage is located primarily between SR 509 and SR 5, in the rapidly developing Fife area to the southeast of SR 5 and in the Valley Avenue/Freeman Road intersection area. For the purposes of this study, existing roadways such as SR 509 and I-5 are considered as developed habitats because wildlife species are generally not expected to use paved portions of roadways except occasionally as a source of food (carrion) or grit. Developed areas often include other habitat types such as agricultural lands and wetlands. These are generally small and disconnected from other suitable habitats, which limits their use, especially by species that prefer contiguous vegetated cover to travel between habitat blocks.

Agricultural lands, which include pastures, hayfields, and croplands, provide habitat for species living in more open environments such as California quail (*Callipepla californica*), ring-necked pheasant (*Phasianus colchicus*), white-crowned sparrow (*Zonotrichia leucophrys*), chipping sparrow (*Spizella passerina*), European starling, Canada goose, blackbirds, gulls, crows, and predators such as red tailed hawk (*Buteo jamaicensis*) and barn owl (*Tyto alba*). Mammal species expected to occur in these areas include coyote, opossum, striped skunk, eastern cottontail, meadow mouse (*Microtus* spp.), and shrew (*Sorex* spp.). Deer are expected to use agricultural lands adjacent to forested

areas. Wildlife use of these habitats varies by season, for example, waterfowl occupy flooded pastures and croplands in the wintertime.

Grasslands, shrub lands, and abandoned agricultural fields in the project area provide habitat for many small mammals and passerine birds. Bird species expected to occur in these habitats include most of those found on agricultural lands, as well as American goldfinch (*Carduelis tristis*), common bushtit (*Psaltriparus minimus*), black-capped chickadee (*Parus atricapillus*), chestnut-backed chickadee (*P. rufescens*), spotted towhee (*Pipilo erythrophthalmus*), Bewick's wren (*Thryomanes bewickii*), winter wren (*Troglodytes troglodytes*), and various warblers (*Dendroica* spp.) and flycatchers (*Epidonax* spp.). This category of habitat is the most variable. Fields that appear abandoned may temporarily be fallow between crop rotations. Abandoned fields and shrub lands are also often precursors to development. Many small blocks of habitat (less than one acre) that could be considered in this category are located within, and included in, the developed habitats acreage.

A few small sized upland forest habitats are located in the project area. A diverse group of both breeding and year-round resident birds are expected to be present in this habitat. Appendix B of the *Wildlife, Fish, and Threatened and Endangered Species Discipline Report* includes the complete MBTA analysis and lists all documented and potential migratory bird species that could occur and type of use (feeding or breeding) in the study area (DEA and WSDOT 2005).

The primary species anticipated to occur include black-capped chickadee, dark-eyed junco (*Junco hyemalis*), song sparrow (*Melospiza melodia*), golden-crowned kinglet (*Regulus satrapa*), American robin, house finch (*Carpodacus mexicanus*), pine siskin (*Carduelis pinus*), winter wren, house wren (*T. aedon*), Bewick's wren, northern flicker, American crow, and red-tailed hawk. Spring-summer residents are expected to include numerous species of warblers, vireos (*Vireo* spp.), thrushes, especially the varied thrush (*Ixoreus naevius*), flycatchers, rufous (*Selasphorus rufus*) and Anna's (*Calypte anna*) hummingbirds, violet-green and tree (*T. bicolor*) swallows, and finches (*Carpodacus* spp.). Mammals expected to occur in this habitat include deer, raccoon, and opossum. The forest leaf litter and ground cover provide good foraging habitat for omnivorous and insectivorous small mammals. These areas are expected to support long-tailed weasels (*Mustela frenata*), deer mice, voles (*Microtus* spp.), and other small mammals such as Townsend's chipmunk (*Eutamias townsendii*).

The three forested areas within the study area include a small deciduous forest located just east of 54th Avenue East, a plantation cottonwood stand in the middle of the corridor, and a deciduous forested stand located north of the Puyallup River near the terminus of the corridor.

Wetlands and riparian corridors typically have greater wildlife use than upland habitats. Mammals, including red fox (*Vulpes vulpes*) and coyote, may use the riparian corridors for foraging and travel. Many species of passerine birds use riparian areas for feeding, resting, and nesting. Resident waterfowl species, including mallard, wood duck (*Aix sponsa*), and Canada goose, are expected to use the rivers, streams and associated wetlands in the project area for nesting and brood-rearing in summer and as wintering grounds during the remainder of the

year. Amphibians, including Pacific tree frog (*Hyla regilla*), red-legged frog (*Rana aurora*), and northwestern salamander (*Ambystoma gracile*) also use the wetlands. Details on the wetlands in the corridor can be found in the *Wetlands Discipline Report* (WSDOT and CH2M HILL 2005) and Section 3.3 of this document. Riparian corridors adjacent to aquatic systems are extremely narrow and limited in the study corridor, and make up approximately five acres. Development and agricultural activities often abut the creeks leaving little to no buffer.

Open water lake, river, and stream habitats were included in the extended MBTA study area. This incorporates sections of Wapato and Hylebos creeks, and the Puyallup River. Appendix B of the *Wildlife, Fish, and Threatened and Endangered Species Discipline Report* lists all migratory birds that can potentially use open water habitats in the study area for feeding, breeding, or both (DEA and WSDOT 2005). Common species associated with open water habitats include waterfowl such as western grebes (*Aechmophorus occidentalis*), spotted sandpiper (*Acititis macularia*), violet-green swallow, double-crested cormorant (*Phalacrocorax auritus*), common loon (*Gavia immer*), kingfisher (*Ceryle alcyon*), great blue heron (*Ardea herodias*), and ring-billed gulls. Additionally, river otter (*Lontra canadensis*) and western pearlshell mussels (*Margaritifera falcata*) can occur in these habitats.

Marine bay and estuarine habitats were included in the extended MBTA study area. This incorporates Port of Tacoma waterways associated with Commencement Bay. Species associated with marine habitats are similar to those mentioned for open water habitats. The USFWS, the WDFW PHS Program, and the Washington Natural Heritage Program maintain records of sensitive, threatened, and endangered species occurring in the state. No such species were observed on the site during field investigations conducted on November 24, 2003; March 15 and 16, 2004; and April 13, 2004; but the possibility of them occurring still exists.

Wintering bald eagles (*Haliaeetus leucocephalus*) (a state and federal threatened species) may occur in the project vicinity from October 31 to March 31. Wintering eagles forage along the Puyallup River in low numbers and Hylebos Creek may provide some foraging opportunity. Within the project area, the Puyallup River is located within a rapidly developing zone and receives heavy exposure to traffic, fishermen and other urban related activities. Eagles accustomed to noise and human activities are likely to forage along this portion of the river. Due to the project duration (up to 13 years) the extended exposure of foraging eagles to project-related disturbance is expected to result in additional acclimation.

The spotted frog (*R. pretiosa*), a USFWS candidate species, may occur in the vicinity. However, spotted frogs have been virtually eliminated from the Puget Sound lowlands likely due to wetland destruction and the introduction of non-native species. There are no wetlands in the project area that provide suitable permanent open water habitat for spotted frogs. Spotted frogs prefer ponds, lakes, slough-like streams, and springs.

Special Federal Status Migratory Birds

The MBTA was originally created in 1916 to stop the “indiscriminate slaughter” by market hunters targeting birds that migrate between the United States and Canada. The MBTA specifies that no one may take, possess, import, export, transport, sell, purchase, or barter, any migratory bird, or parts including nests and eggs unless authorized by a valid permit.

The MBTA includes 861 protected species. The MBTA list has been refined for the MBTA study area and is presented in its entirety in Appendix B of the *Wildlife, Fish, and Threatened and Endangered Species Discipline Report* (DEA and WSDOT 2005). Based on the analysis of existing information on species distribution and occurrence, and habitat preference and availability in the study area, up to 211 species of birds could potentially occur in the vicinity of the proposed project. Occurrence includes nesting, foraging, wintering, and seasonal migration throughout the study area. Some migratory birds protected under the MBTA are also listed as either endangered, threatened, proposed, candidate, or species of concern by the USFWS. Species with dual listings that could occur in Western Washington are described below.

Endangered Species

Migratory birds listed as an endangered species by the USFWS that could occur in western Washington include the brown pelican (*Pelecanus occidentalis*) and short-tailed albatross (*Phoebastria albatrus*). Because neither of these species or their habitat occurs in the MBTA study area, no further analysis is warranted.

Threatened Species

Migratory birds listed as threatened by the USFWS that could occur in western Washington include the bald eagle, marbled murrelet (*Brachyramphus marmoratus*), northern spotted owl (*Strix occidentalis caurina*), and western snowy plover (*Charadrius alexandrinus nivosus*). Neither the northern spotted owl nor western snowy plover are expected to occur in the MBTA study area. Therefore, they will not be further analyzed.

Bald Eagle

Bald eagles are commonly observed along salt and freshwater bodies of Puget Sound. They typically nest in the largest Douglas-fir (*Pseudotsuga menziesii*) or black cottonwood (*Populus balsamifera*) trees within a stand, often near a water source that supports potential prey. Three nest sites are located over 1 mile from the project area. Although nesting habitat is generally lacking in the project area, the MBTA study area does contain suitable nesting trees. The Puyallup River and Puget Sound provide a potential feeding and migration corridor. Foraging activities and over flights can be expected to occur in the MBTA study area.

Marbled Murrelet

The marbled murrelet is a small seabird that utilizes the near shore marine environment for foraging. Nesting habitat is typically associated with low elevation and mature or old growth trees. They are known to forage in South Puget Sound and possible breeding evidence has been recorded in eastern Pierce County. Only marginally suitable foraging habitat is present in Commencement

Bay, because it is largely developed in the study area and disturbance levels are high. Therefore, murrelets are not expected to forage in marine waters within the MBTA study area. Marbled murrelets could utilize portions of the MBTA study area as a travel corridor between suitable nesting habitat in the Cascade foothills and foraging habitat in Puget Sound. However, no suitable nesting habitat currently exists in the MBTA study area.

Proposed Species

No bird currently proposed by the USFWS for listing as either threatened or endangered occur in the MBTA study area.

Candidate Species

Migratory birds listed as a candidate species by the USFWS that could occur in western Washington include the streaked horned lark (*Eremophila alpestris strigata*) and yellow-billed cuckoo (*Coccyzus americanus*). Yellow-billed cuckoos are not expected to occur in the MBTA study area as they are believed to extirpated from western Washington. Therefore, they won't be analyzed further.

Streaked Horned Lark

The streaked horned lark is a very local and rare breeder in Washington State. Breeding habitat is referred to as remnant grasslands in prairie habitat and beaches. The only documented nesting occurrence in Pierce County is limited to Fort Lewis/McChord Air Force Base. However, other sightings have occurred in Pierce County (McKenna), but nesting status outside the remnant prairie habitat on Fort Lewis and McChord Air Force Base is uncertain. The lack of remnant prairie habitat in the MBTA study area suggests nesting is unlikely. Migrants traveling between suitable nesting habitat and wintering habitat could occasionally be present in the MBTA study area.

Species of Concern

Migratory birds listed as a species of concern by the USFWS that could occur in western Washington include the Aleutian Canada goose (*B. canadensis leucopareia*), Cassin's auklet (*Ptychoramphus aleuticus*), Northern goshawk (*Accipiter gentilis*), olive-sided flycatcher (*Contopus cooperi*), Oregon vesper sparrow (*Pooecetes gramineus affinis*), peregrine falcon (*Falco peregrinus*), and tufted puffin (*Fratercula cirrhata*). Since the Aleutian Canada goose, Cassin's auklet, Northern goshawk, and tufted puffin are not expected to occur in the study area they will not be further analyzed.

Olive-Sided Flycatcher

The olive-sided flycatcher could occur in the MBTA study area during the spring, summer, and fall either nesting in suitable habitat or during migration. Most occurrences in the MBTA study area are likely migrants due to the scarcity of large-diameter coniferous trees, but nesting is possible. They are fairly common in Washington State from early May through mid August. Breeding has been confirmed in numerous areas of Pierce County, but not in the MBTA study area (Smith et al. 1997). However, possible breeding evidence has been documented in the northwest Pierce County.

The olive-sided flycatcher is an edge species that prefers forest habitat adjacent to clearings such as water bodies or fields. They will occasionally breed in city parks or developed areas if suitable large trees are present. Nest trees are typically coniferous, but sometimes deciduous. They build a shallow twig nest on a horizontal branch within a cluster of needles 7 to 50 feet above ground. Nests are usually built in conifer trees near the end of large horizontal branches. Three to four eggs are typically laid between May and July, incubate in two weeks, and fledglings leave the nest in an additional three to four weeks.

Oregon Vesper Sparrow

The Oregon vesper sparrow could occur in the MBTA study area during the spring, summer, and fall either nesting in suitable habitat or during migration. Although breeding has been documented in southwestern Pierce County, vesper sparrows are primarily associated with steppe habitats of eastern Washington. They are a rare breeder in western Washington where they typically utilize remnant prairie habitat. They nest on the ground in or adjacent to shrubby cover.

Peregrine Falcon

The peregrine falcon could occur in the MBTA study area during the spring, summer, and fall. The peregrine falcon typically nests on high cliffs or rock faces, but will nest on bridges or tall buildings. They have nested in downtown Seattle and in Tacoma. Suitable nesting habitat is sparse but present in the MBTA study area. Peregrine falcons have been documented nesting in the MBTA study area and will also migrate through and forage in the study area.

The WDFW PHS Program database did not indicate the presence of any other species in addition to those previously indicated by the USFWS to potentially be within the project area. The PHS database did document the occurrence of an individual western pond turtle (*Clemmys marmorata*) near Commencement Bay in the 1980s outside of the study corridor. It also documented the presence of a bald eagle nesting territory, and two great blue heron (*Ardea herodias*) rookeries, all three of which are located outside the project area. However, both of these species may occasionally be found foraging in wetlands located in the project area or observed flying over.

Due to existing development, there are no substantial wildlife habitat linkages in the project area. Minor linkages, such as limited riparian corridors, do exist. These small remaining corridors are very important because of the continuing loss of habitat in the study area.

Fisheries

The proposed SR 167 corridor lies within Water Resource Inventory Area (WRIA) 10, which sustains populations of all Pacific salmon except sockeye (*Oncorhynchus nerka*). Populations of steelhead (*O. mykiss*) and char (Dolly Varden [*Salvelinus malma*] and bull trout [*S. confluentus*]) also live within the watershed. Existing fish-bearing waters within the study area, which may be affected by the project, include the Puyallup River, Hylebos Creek, Wapato Creek, and Surprise Lake Drain.

Special Status Species and Habitat

Presently, there are two federally protected fish species that potentially occur within the project area. These are Chinook salmon (*O. tshawytscha*) of the Puget Sound Evolutionarily Significant Unit (ESU) and bull trout of the Coastal/Puget Sound Distinct Population Segment (DPS). They are listed as “threatened” under the ESA by NOAA Fisheries and USFWS, respectively. The ESU includes all naturally spawned populations of Chinook salmon from rivers and streams flowing into Puget Sound. In 2005, critical habitat was designated for the Puget Sound Chinook salmon ESU. The Puyallup River, the Hylebos Creek mainstem, and West Hylebos Creek are included in the designation as part of Unit 12, “Puyallup Sub-Basin.” In January 2001, USFWS proposed to list Dolly Varden under the “Similarity of Appearance” provisions of the ESA, for the Coastal/Puget Sound DPS of bull trout. The proposal to list Dolly Varden, due to the similarity of appearance of bull trout, includes all 34 “native char” subpopulations described in the bull trout rule (64 FR 58910). In 2005, USFWS designated critical habitat for the Coastal/Puget Sound DPS of bull trout (71 FR 56212). In 2006, the Puget Sound steelhead DPS was proposed for a listing as threatened (71 FR 15666). The Puyallup River is included in the Puyallup critical habitat sub-unit.

The Pacific Fisheries Management Council (PFMC) has designated Essential Fish Habitat (EFH) for federally managed groundfish and coastal pelagic fisheries (NOAA Fisheries 1999). The PFMC has also recommended an EFH designation for the Pacific Salmon Fishery (PFMC 1999). The EFH designation for groundfish and coastal pelagics is defined as those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery. The marine extent of groundfish and coastal pelagic EFH includes those waters from the near shore and tidal submerged environment within Washington, Oregon, and California state territorial waters out to the exclusive economic zone 231.5 miles offshore between Canada and the Mexican border.

The EFH proposed designation for the Pacific Salmon Fishery includes all those streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassible barriers identified by PFMC (1999). In the estuarine and marine areas, proposed designated EFH for salmon extends from near shore and tidal submerged environments within state territorial waters out of the exclusive economic zone offshore of Washington, Oregon, and California north of Point Conception (PFMC 1999). An impact assessment for EFH regulated groundfish and salmonids has been conducted for this project. Table 3.4-1 illustrates the preliminary effect determination for categories regulated under EFH.

Table 3.4-1: EFH Categories That May Occur Within the Action Area.

Common Name	Effect Determination
Groundfish	No Adverse Effect
Salmonids	Adverse Effect

Puyallup River

The Puyallup River drains approximately 970 square miles and is divided into two watersheds: the upper Puyallup River watershed and the lower Puyallup River watershed. The river drains agricultural, industrial, commercial, and residential areas. The headwaters of the upper Puyallup River are located at the base of a glacier along the heavily forested flank of Mt. Rainier. The lower Puyallup River begins at the river's convergence with its first major tributary, the Carbon River, near the City of Orting. Below the City of Orting the Puyallup River primarily drains agricultural land until it meets up with the White (Stuck) River, near the City of Sumner. The Carbon and White Rivers convey flow from 75 percent of the lower Puyallup River watershed's drainage area. The following smaller streams discharge directly or indirectly into the Puyallup River below the City of Orting but are outside of the project area: Canyon Falls Creek, Fennel Creek, Rody Creek, Deer Creek, Squally Creek, Diru Creek, Clarks Creek, and Swan Creek. Biological and physical features of the river are described in detail in Section 3.2, Water Resources.

The lower Puyallup River's channel within the project area has been dredged, straightened and stabilized with riprap, concrete and earthen levees. FHWA and WSDOT intend to improve the Puyallup watershed by implementing riparian restoration in sections of the Hylebos, Wapato, and Surprise Lake drainages.

Chinook Salmon

Puyallup River Chinook salmon stocks consist of spring, summer/fall and fall runs. Chinook salmon stocks within the Puyallup basin have been grouped together based on geographic separation from other Puget Sound Chinook salmon stocks (WDFW et al. 1993). Spawning Chinook salmon in the Puyallup River basin occur primarily in the major tributaries, including the lower White River, west fork of the White River, lower Clearwater River, lower Greenwater River, and Huckleberry Creek (Warren 1994; WDFW et al. 1993). Limited numbers of spring Chinook salmon also utilize the upper reaches of the Puyallup and Carbon Rivers.

Coho Salmon

Coho salmon (*O. kisutch*) utilize almost all of the accessible tributaries in the Puyallup River basin. They generally enter the Puyallup from August through November and spawn October through January (WDFW et al. 1993). They rear year round within the Puyallup River system and generally out-migrate after one year. Two coho salmon stocks, the Puyallup coho and the White coho, have been identified within the Puyallup River basin.

Chum Salmon

Three stocks of chum salmon (*O. keta*) return to the Puyallup River starting in late September and extending through December (Williams et al. 1975). The Puyallup/ Carbon River stock status and escapement are unknown (WDFW et al. 1993).

The chum salmon stocks of the Puyallup River spawn low in the Puyallup River. Most spawning occurs in the lower White, Puyallup, Carbon, Canyon Falls,

Fennel, Clark and South Prairie creeks. The Puyallup/Carbon River stock is believed to be geographically isolated and has been identified as a unique native stock.

Pink Salmon

There is only one Puyallup River pink salmon (*O. nerka*) stock. It is considered to be distinct from other Puget Sound stocks based on geographical separation of the spawning grounds (WDFW 1993). Puyallup pink salmon spawn in the Puyallup and Carbon rivers as well as some of the larger tributaries.

Steelhead

Three distinct steelhead populations exist in the Puyallup River system. They are the Puyallup, White River, and Carbon River stocks. All three are winter run steelhead. Stock status was considered healthy for all three stocks in 1992 (SASSI 1992), but has been on a steady decline over the past decade.

Bull Trout/Dolly Varden

Five local bull trout/Dolly Varden populations exist, including the upper Puyallup and Mowich Rivers, White River, West Fork White River, Greenwater River, and Carbon River (USFWS 2004). The Puyallup core area is critical for maintaining the distribution of the anadromous life history because it is the only major watershed in south Puget Sound supporting a breeding population.

Habitat for three of the four bull trout/Dolly Varden life histories is available. These include resident, fluvial and anadromous life forms. Spawning occurs in the upper reaches of the basin, primarily in September. Rearing also occurs primarily in the upper basin (USFWS 2005).

The status of bull trout in the Puyallup River is largely unknown. However, trap counts in the White River system indicate that the number of bull trout are extremely low relative to other anadromous core populations within the Puget Sound Management Unit (USFWS 2004).

Cutthroat Trout

Coastal cutthroat trout (*O. clarki clarki*) occur in virtually all-perennial streams of the Puyallup River system, assuming no passage barriers. They are considered distinct due to the geographical separation of spawning grounds (WDFW 2000). Anadromous cutthroat trout generally utilize the mainstem Puyallup, White River, Carbon River, and their major tributaries. Resident lake trout occur throughout the anadromous zone in small numbers, and large coastal river cutthroat may be present in Kapowsin Lake and in Greenwater Lake. As with most systems, the resident form is present throughout most perennial coastal streams.

Limiting Factors

The Puyallup River has four reaches listed on the Washington Department of Ecology's (Ecology) 2002 303(d) water quality list. Two of the reaches are listed due to high fecal coliform levels, one from high levels of arsenic, and one due to low summer in-stream flows.

The headwaters of the White River are located at the glaciers of Mt. Rainier. Hence, the Puyallup River has higher turbidity levels, shifting braided channels, and naturally colder water temperatures downstream of the confluence with the White River. Although these natural limiting factors occur, human-induced disturbances still have a greater impact on fish production. Human-induced habitat impacts include: sedimentation and flood potential due to encroachment by urban and industrial development and logging; fish passage blockage from dams and impassable culverts; extensive floodplain disconnection caused by dikes; fine sediment loading from bank instability; insufficient quantity and size of large woody debris (LWD); damage to side channel habitat and pools; widespread riparian destruction; and violations of Ecology's water quality and quantity regulations (Kerwin 1999).

Hylebos Creek

The Hylebos Creek watershed drains over 18 square miles of land from the City of Federal Way to the Hylebos Waterway and Commencement Bay in the City of Tacoma (King County 1990). The watershed consists of three sub-basins: the East Fork Hylebos Creek, the West Fork Hylebos Creek, and Lower Hylebos Creek/Surprise Lake Tributary.

The headwaters of the West Fork Hylebos Creek sub-basin originate near Sea-Tac Mall at South 320th Street and Pacific Highway. The Panther Lake tributary to the West Fork Hylebos Creek begins at Panther Lake (near the corner of South 348th Street and 1st Avenue). Tributaries north of 348th Street drain highly urbanized areas, consisting primarily of commercial businesses, multifamily housing, individual residences, and roads, into the 93-acre West Fork Hylebos wetland. These developed areas have a high percentage of impervious surface and often lack adequate stormwater detention or are served by undersized detention ponds. Additionally, flash discharges from the urbanized sub-catchments to the north are conveyed to this system. It is estimated that flood peaks on the West Fork Hylebos Creek have increased 80 percent over the pre-developed forested condition. The headwaters of the East Fork Hylebos Creek sub-basin originate at Killarney Lake, North Lake, and north of 320th Street. The tributary originating west of I-5 conveys runoff from highly urbanized areas of commercial development. Between the lakes and SR 161, the tributaries experience gentle gradients and slow velocities.

The Lower Hylebos Creek sub-basin originates at the confluence of the East and West Forks of Hylebos Creek. It conveys runoff from areas featuring light manufacturing, residential, industrial, and commercial uses. Section 3.2, Water Resources, details the biological and physical features of Hylebos Creek.

Chinook Salmon

A few observations have indicated that there is a very small Chinook salmon population within the Hylebos watershed. Friends of the Hylebos Wetlands (FOHW) report that adults generally enter the system in September. Most spawning occurs immediately below 373rd Street up to SR 99 (Nauer, pers comm. 2001). No stock status is available (WDFW et al. 1993). No salmon redds or adult Chinook salmon were observed during 2001 surveys on two reaches of the West and North forks. Fall 2000 surveys documented spawning

Chinook salmon in several locations (Table 3.4-2). FOHW reported that in 2001, one Chinook salmon was observed at Birch Street, 0.5 mile upstream from the project area. In 2002, nine Chinook salmon were observed at 373rd Street, over 1 mile upstream from the project area. In 2003, two Chinook salmon were observed at 8th Street East, approximately 0.6 mile downstream of the I-5 interchange. In 2004, no redds were observed between S. 373rd Street and SR 99, though several adults were sighted there. Nine adults and six redds were observed upstream of SR 99 and S. 360th Street.

Coho Salmon

The Hylebos system provides fair to good spawning habitat for coho salmon (Williams et al. 1975). Adults generally enter the watershed via the Hylebos Waterway from October through November. Spawning occurs from mid-October to December between 373rd Street and SR 99 (Nauer, pers comm. 2001). No stock status information is available (WDFW et al. 1993). Due to the adaptive rearing capabilities of coho salmon, juvenile coho salmon can virtually be found in all of Hylebos Creek and its tributaries year around, assuming accessibility.

Table 3.4-2: Chinook Salmon Observed in the Hylebos System in 2000

Location	Date	Number of Fish Observed
S. 373 Street	10/5/2000	2
	10/6/2000	3
	10/11/2000	1
	10/13/2000	1
	10/17/2000	1
S. 364th Street	10/21/2000	3
Brook Lake	11/6/2000	1

Source: Bowditch 2001.

In 2000, the Hylebos Stream Team observed 128 coho salmon throughout various segments of the basin, including West Hylebos (Bowditch, pers. comm. 2001). Ten live coho salmon and several carcasses were identified in the vicinity of South 373rd and nearly a dozen more coho salmon were reported in Brook Lake (Urabeck, pers. comm. 2001). FOHW reported that in 2001, 73 coho salmon were observed upstream of the project area in West Hylebos Creek and 74 coho salmon were observed in West Hylebos Creek upstream of the project area in 2002. A total of 103 coho salmon were observed upstream of the project area in West Hylebos Creek in 2003.

Chum Salmon

The Hylebos also provides fair to good spawning habitat for chum salmon (Williams et al. 1975). Generally, spawning chum salmon are in Hylebos Creek only during the month of November (Bowditch, pers. comm. 2001). FOHW reported that adult chum salmon could also be present in December. Juveniles emigrate to Puget Sound following emergence. Irregular spawning surveys indicate the presence of a naturally spawning population of chum. No chum

salmon were documented during 1999 surveys (Urabeck, pers. comm. 2001). However FOHW reported that in 2000, 7 chum salmon were observed in West Hylebos Creek upstream of the project area (at 373rd Street). No chum salmon were observed in 2001 but a total of 11 were recorded at and upstream of 373rd Street in 2002. FOHW report 2 chum salmon at 373rd Street in 2003. Existing survey information is not adequate to assess total spawning population, timing, or distribution, and therefore stock origin and stock status are unknown for Hylebos fall chum (WDFW, et al. 1993).

Pink Salmon

One pink salmon was documented by FOHW in West Hylebos Creek at 373rd Street in 2003. Pink salmon were not detected in previous surveys.

Steelhead

Occasionally, steelhead trout have been observed within the Hylebos Creek watershed (Bowditch, pers. comm. 2001). Run timing is generally from December through May. Spawning occurs from March to mid-June. The majority of steelhead trout rear for two years and then emigrate in May and late July. Spawning has been observed between 373rd Street and SR 99 (Nauer, pers. comm. 2001). No origin or stock status is available.

Bull Trout/Dolly Varden

No bull trout have been observed in Hylebos Creek. Foraging Puyallup River strays of the anadromous form is possible, although unlikely due to insufficient habitat (e.g., LWD, cold groundwater influences). Bull trout could use the area near the mouth of Hylebos Creek on a seasonal basis to forage, as long as the water temperatures are conducive and prey is available (Chan, pers. comm. 2004). Prey is most likely to be present during the spring juvenile salmon outmigration.

Cutthroat Trout

Resident coastal cutthroat trout are present throughout Hylebos Creek (Nauer, pers. comm. 2001). Populations have most likely declined due to typical problems associated with urbanization, such as increased stream temperatures and sediment loading.

Limiting Factors

There are two sections of Hylebos Creek listed on the Ecology 2002 303(d) list (see Figure 3.2-7), one on the West Fork of Hylebos and one on the mainstem Hylebos. Both are due to high levels of fecal coliform. Due to intense urbanization of the Hylebos watershed, stormwater runoff is quickly conveyed to Hylebos Creek and its tributaries, resulting in short duration, high volume flows. Elevated peak flows have caused erosion of channel substrate, substantially impacting Hylebos Creek and the associated aquatic species.

Currently, documented habitat limiting factors include fish passage (e.g. culverts and dams), floodplain connectivity (e.g. dike construction), bank instability (e.g. fine sediment loading), insufficient quantity and size of LWD, lack of side channel habitat and pools, widespread riparian destruction, and violations of

Ecology's water quality and quantity recommendations (Kerwin 1999). King County documented fecal coliform, copper, and zinc level which exceeded state water quality standards (King County 1990).

The majority of the stream has been affected by human alteration, including dredging, removal of associated riparian habitat, and/or installation of culverts. Some culverts have become impassable to fish over time due to increased flow/velocities from development within the watershed (e.g., SR 99) (Nauer, pers. comm. 2001). Inventories in the Hylebos drainage, including information from FOHW, identified 11 definite partial or complete fish barriers (WDFW 2000 criteria) (namely culverts), and an additional 6 that were most likely partial barriers but required hydraulic analysis (PCCD 2001). Stream crossings on the Hylebos Creek system and associated fish passage status are shown in Figure 3.4-1.

Wapato Creek

Wapato Creek drains 3.5 square miles of land from north of the City of Puyallup, the City of Fife, and the Port of Tacoma to the Blair Waterway and Commencement Bay in the City of Tacoma. Wapato Creek receives a substantial amount of runoff directly from adjacent agricultural, residential, commercial, and industrial lands in the cities of Puyallup and Fife. Wapato Creek has been greatly altered from its natural condition, and riparian cover along most of the system is sparse to nonexistent. Section 3.2, Water Resources, provides a detailed description of the Creek.

Chinook Salmon

There are no confirmed occurrences of Chinook salmon within the Wapato Creek system.

Coho Salmon

Spawning habitat for coho salmon in Wapato Creek is limited, although spawning does occur in at least one Wapato Creek tributary. Low numbers of coho salmon utilize substantial portions of Wapato Creek, Simons Creek, and the majority of their tributaries for rearing.

Chum Salmon

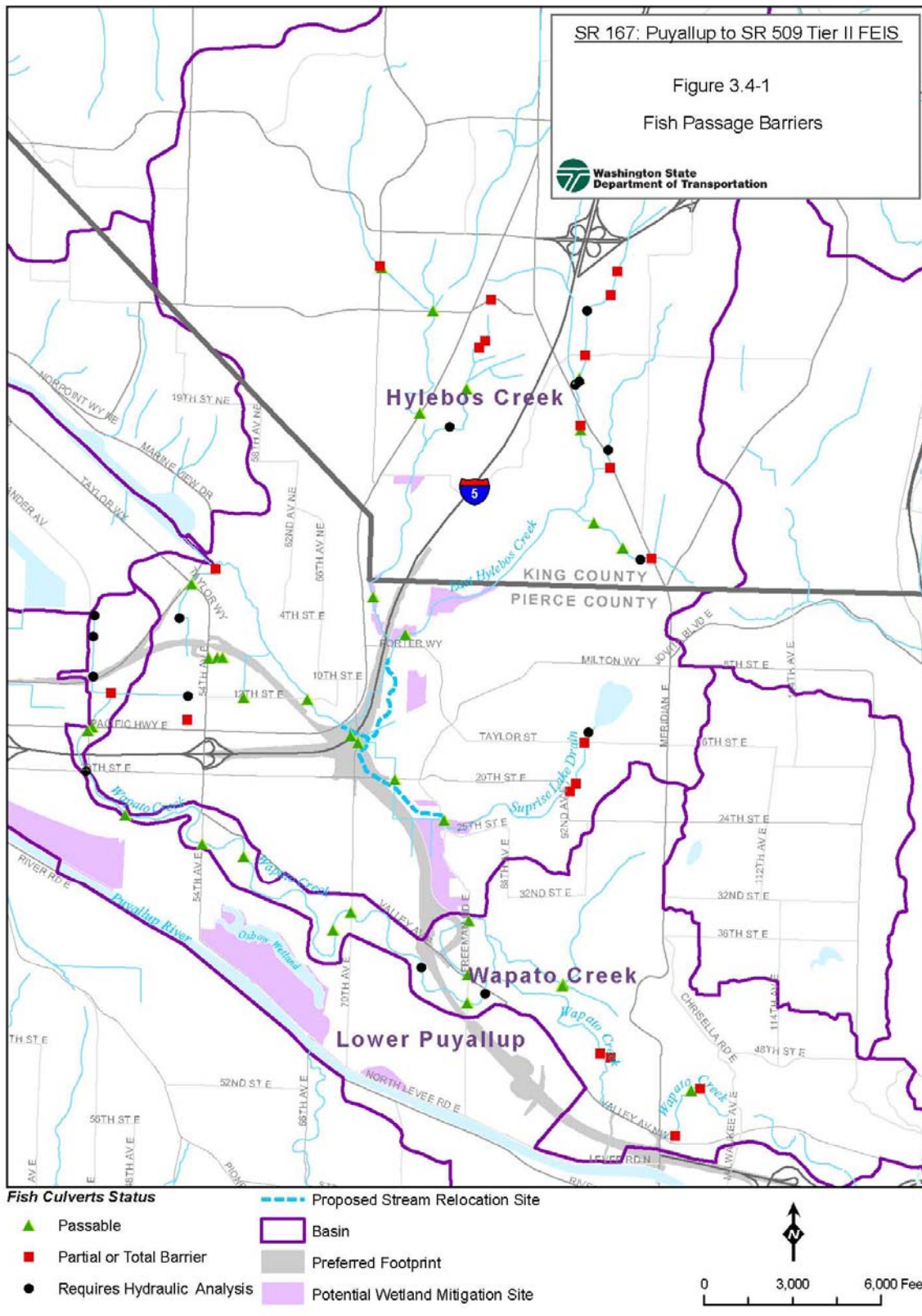
Chum salmon use is now extremely limited in the Wapato Creek system. Spawning is virtually non-existent due to severe habitat degradation.

Pink Salmon

There is no documented pink salmon use of Wapato Creek.

Steelhead

Spawning steelhead has occasionally been observed in Wapato Creek and Simons Creek (Nauer, pers. comm. 2001). Rearing habitat is limited due to water temperature increases and substrate limitations.



Bull Trout/Dolly Varden

Bull trout use of Wapato Creek is very unlikely due to the low elevations of the Wapato drainage basin and increased temperatures due to sparse or non-existent riparian cover (Nauer, pers. comm. 2001).

Cutthroat Trout

Coastal cutthroat trout are present in Wapato Creek (Nauer, pers. comm. 2001). Populations have most likely declined due to the typical problems associated with urbanization, such as increased stream temperatures and sediment loading to the system.

Limiting Factors

Wapato Creek is severely degraded. Eight sections of the stream in the project area are on the Ecology 2002 303(d) list, four from low summer in-stream flows, two due to high levels of fecal coliform, and two from low dissolved oxygen levels.

Urbanization and stormwater runoff have had detrimental effects on Wapato Creek. Impervious surfacing has reduced infiltration during rain events in turn affecting the groundwater storage capacity. Due to a lack of riparian buffer and groundwater recharge during the dry season the stream experiences extremely low flows (with resultant high temperature regimes) occasionally drying up in the summer (Nauer, pers. comm. 2001). Wapato Creek also has limited spawning habitat. Currently, documented limiting factors include fish passage (e.g., culverts), floodplain connectivity, bank stability (as a result of agricultural practices), LWD, side channel habitat, pools, excessive fines, riparian destruction, and water quality and quantity (Kerwin 1999).

The Pierce County Conservation District inventoried the Wapato drainage and recorded five definite fish impassable barriers (WDFW 2000 criteria) (namely culverts outside the project limits) and an additional six that were most likely partial barriers, but required hydraulic analysis. Road crossings on Wapato Creek and their associated fish passage status are shown in Figure 3.4-1.

Surprise Lake Drain

Surprise Lake Drain originates at the spring fed Surprise Lake, north of the Puyallup River Valley. Although the name of the stream implies that it is not a natural drainage, above Freeman Road it is considered a natural stream system that historically flowed into Wapato Creek. The stream conveys runoff from roughly two square miles of agricultural fields and residential areas in the City of Edgewood south to the valley below through a series of ditches to lower Hylebos Creek.

Above the Freeman Road crossing of Surprise Lake Drain, riparian vegetation provides an average of 80 percent canopy cover upstream to Surprise Lake. The land use is primarily residential with scattered livestock pastures. Downstream of the Freeman Road crossing, land use is mainly agricultural and the stream has been ditched and continually dredged. The system is fully described in Section 3.2, Water Resources.

Coho Salmon

Coho is the only salmon species documented in Surprise Lake Drain. Spawning coho salmon have been observed near Freeman Road (Nauer, pers. comm. 2001). Approximately one dozen coho salmon juveniles were observed immediately below the Taylor Street crossing in a Spring 2001 survey (WSDOT 2001).

Cutthroat Trout

The coastal cutthroat trout population is limited in the Surprise Lake Drain system due to low summer flows (Nauer, pers. comm. 2001). Some individuals most likely move in or out of the system to forage during periods of higher flows.

Limiting Factors

Due to severely degraded riparian habitat conditions, the most apparent limiting factors in the Surprise Lake Drain system are high summer temperature conditions and lack of complex habitat throughout the creek/ditch. Except for the headwater extremes, virtually the entire creek/ditch riparian zone is agricultural field. Personal observations revealed that habitat limiting factors would most likely include; temperature, fish passage, floodplain connectivity, bank stability, LWD, side channel habitat, pools, fines, riparian destruction, water quality and quantity and sediment contamination. Current land use within the Surprise Lake Drain subbasin is primarily agricultural, with scattered livestock pasture and high-density residential development.

Vegetation

A variety of plant communities occur within the project boundary. These include agricultural and pasture lands, grasslands, shrub lands, landscaped areas, forested lands and wetlands. Invasive weed species such as Himalayan blackberry (*Rubus procerus*) and reed canarygrass (*Phalaris arundinacea*) are prevalent within most of these vegetative communities. Native vegetation is a fundamental component of a naturally functioning ecosystem, providing food and shelter to wildlife in in-stream habitat complexity for native fish. Therefore, the majority of the habitat in the study area is considered degraded.

Farmland in the project area occurs in small parcels adjacent to residences, small businesses, and industrial parks, as well as larger agricultural parcels. A number of edible and non-edible crops are produced in the project area. Pasture lands support a community of mixed herbaceous plants including fescue (*Festuca* spp.), bentgrass (*Agrostis* spp.), bluegrass (*Poa* spp.), orchard grass (*Dactylus* spp.), ryegrass (*Lolium perrene*), clover (*Trifolium* spp.), plantain (*Plantago* spp.), thistle (*Cirsium* spp.), creeping buttercup (*Ranunculus repens*), and chickweed (*Stellaris* spp.). Thickets of Himalayan (an invasive plant) and evergreen blackberry (*R. vitifolius*) frequently occur along the edges of pasture areas.

Grasslands and shrub lands are common in the project area. Most of these communities occur on abandoned agricultural fields. In open grassy communities, the vegetation includes fescue, bentgrass, ryegrass, orchard grass, clover, fireweed (*Epilobium angustifolium*), thistle, foxglove (*Digitalis purpurea*), tansy (*Tanacetum vulgare*), vetch (*Vicia* spp.), creeping buttercup,

mustard (*Brassicaceae*), and dandelion (*Taraxacum officinale*). Shrub species commonly invading this community include Himalayan and evergreen blackberry and Scot's broom (*Cytissus scoparius*).

Shrubs and tree saplings are the dominant vegetation in agricultural parcels that have been lying idle for many consecutive growing seasons and in clear-cut areas. Invasive shrub species, primarily Himalayan and evergreen blackberry, typically dominate, although some drier areas are dominated by Scot's broom. Red alder (*Alnus rubra*) and black cottonwood are the most common tree saplings. Groundcover in these shrub/sapling communities is composed primarily of grassland species.

Coniferous, deciduous, and mixed upland forest occurs in the project area. Because most of the original forestlands in the project area have been cleared for agriculture, the remaining forested areas are small, isolated parcels. Coniferous forests are found mainly along the east side of the project area, above the valley floor. Douglas-fir, western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*) are the dominant tree species. Madrona (*Arbutus menziesii*) trees are frequently dominant species in the slopes above Hylebos Creek. Deciduous forests occupy riparian corridors and recently disturbed areas. Black cottonwood and red alder are dominant in these communities; big leaf maple (*Acer macrophyllum*) also occurs in many areas. Mixed deciduous/coniferous forests occur in previously disturbed areas where sufficient time has elapsed since disturbance to allow conifers to become established beneath a deciduous overstory. These mixed forests are also located along the eastern portion of the project area. In these communities, black cottonwood, red alder, big leaf maple, Douglas fir, western hemlock, and western red cedar make up the forest canopy.

Shrub species found in all upland forest types include snowberry (*Symphoricarpus albus*), vine maple (*A. circinatum*), Indian plum (*Oemleria cerasiformis*), hazelnut (*Corylus cornuta*), red huckleberry (*Vaccinium parvifolium*), red elderberry (*Sambucus racemosa*), oceanspray (*Holodiscus discolor*), salal (*Gaultheria shallon*), Himalayan blackberry, and evergreen blackberry. The groundcover is commonly composed of bentgrass, fescue, sword fern (*Polystichum munitum*), bleeding heart (*Dicentra formosa*), piggy back (*Tolmiea menziesii*), and creeping buttercup.

Forested wetlands also exist in the project area. These wetlands support deciduous plant communities typically dominated by black cottonwood and red alder trees. Big leaf maple trees are common on the upland edge of mature wetland forests in the project area. Understory vegetation in forested wetlands typically comprises salmonberry, willow (*Salix* spp.), spiraea (*Spiraea* spp.), Himalayan blackberry, and trailing blackberry (*R. ursinus*).

Riparian plant communities occur in the analysis area immediately adjacent to Wapato and Hylebos creeks and portions of the Puyallup River. In many of these areas, the shrub community is dominated by Himalayan blackberry and reed canarygrass, which forms a dense thicket along the shoreline. In other areas, willow dominates the riparian community. Riparian shrub lands also may contain scattered hawthorn (*Crataegus douglassi*) and red alder saplings. Black cottonwood and red alder in the overstory and willow, Himalayan blackberry and

red elderberry in the understory dominate the forest community in disturbed riparian areas.

Habitat in the immediate vicinity of the proposed corridor is primarily large blocks of abandoned agricultural lands and shrub lands, with the limited undisturbed riparian corridors along Wapato and Hylebos creeks and some vegetative communities within developed areas.

3.4.3 Impacts of Construction

Construction-related impacts to vegetation, wildlife, migratory birds, and fisheries expected to occur in this proposed corridor are described in the following sections. General mitigation concepts are included in Section 3.4.7, Mitigating Measures.

No Build Alternative

No direct construction-related effects on wildlife, wildlife habitat, fisheries, fish habitat, migratory birds, or vegetation are expected to occur under this option. Impacts are currently occurring, however, and would continue to occur, as non-project related urban development continues in the project area. Expected impacts of continuing development include terrestrial and aquatic habitat loss and degradation, increased disturbance to wildlife and their prey (including freshwater invertebrates), and reductions in plant species diversity.

Build Alternative (Preferred)

Wildlife and Wildlife Habitat

The Build Alternative invariably results in the elimination of some existing habitat in the project area. However it will also result in conversion to habitats both more suitable (riparian restoration areas and wetland mitigation areas) and less suitable (isolated vegetated areas, stormwater detention ponds) to wildlife. Figures 3.4-2 through 3.4-11 show impacted and converted habitat within the project footprint. Overall, there is a net loss in usable wildlife habitat. A maximum of 221.1 acres of moderate to low quality agricultural, grassland/shrub, forested wildlife habitat, out of a total of over 800 acres in the study corridor, may be permanently impacted (Table 3.4-3). Permanent impacts include new roadway and cut and fill slopes. Cut and fill slopes will be reseeded, as necessary, and stabilized. Therefore, these areas will not become impervious surface but will be revegetated. However, cut and fill slopes were not considered wildlife habitat. A maximum of 94.2 acres may be temporarily impacted (Table 3.4-4). Temporary impacts include areas outside the project footprint that will or may be impacted by moving/operating heavy construction equipment.

The impacts of new roadways to wildlife, aside from the direct loss of habitat, can include habitat fragmentation, reduction in population sizes, lower population viability, displacement mortality, changes in hydrology including increased stormwater runoff, an increase in invasive plant species, increased erosion and sedimentation, increases in air pollution, light and glare impacts, noise disturbance, road avoidance, and road kill.

SR 167: Puyallup to SR 509 Tier II FEIS

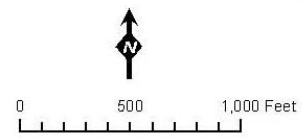
Figure 3.4-2

Wildlife Habitat Impact 54th Avenue East Interchange Loop Ramp Option (Preferred)



- Developed
- Agricultural
- Grass/Shrub
- Forested
- Fill Impact
- Shading Impact
- Riparian Restoration

Date: Aerial Photo 2003

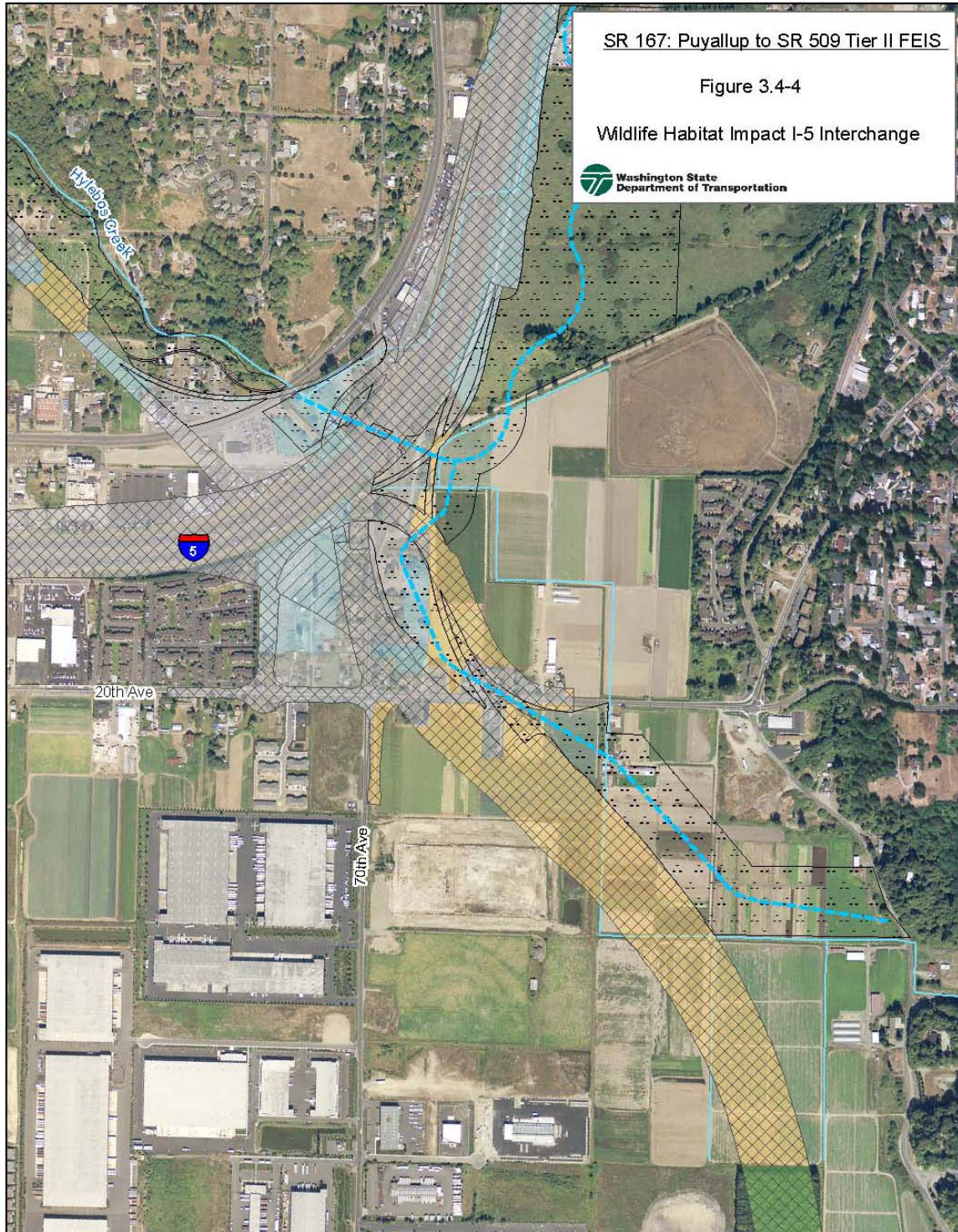
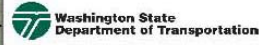




SR 167: Puyallup to SR 509 Tier II FEIS

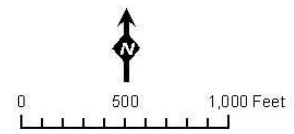
Figure 3.4-4

Wildlife Habitat Impact I-5 Interchange



Date: Aerial Photo 2003

- | | |
|--------------|---------------------------------|
| Developed | Fill Impact |
| Agricultural | Shading Impact |
| Grass/Shrub | Riparian Restoration |
| Forested | Proposed Stream Relocation Site |



SR 167: Puyallup to SR 509 Tier II FEIS

Figure 3.4-5

Wildlife Habitat Impact Valley Avenue Interchange Valley Avenue Option (Preferred)

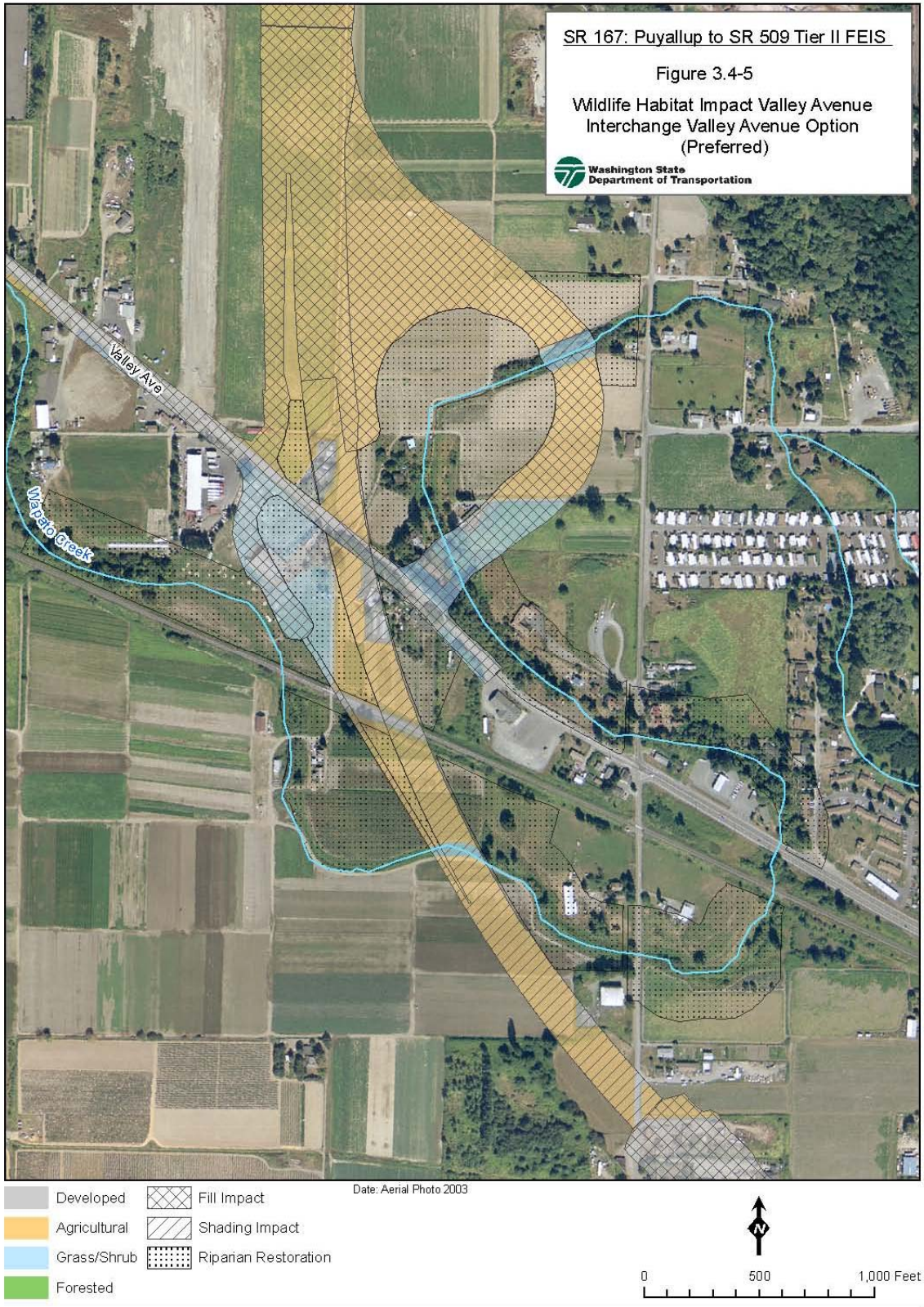
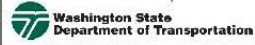
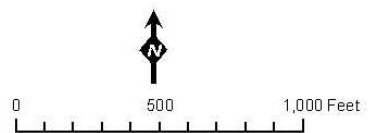
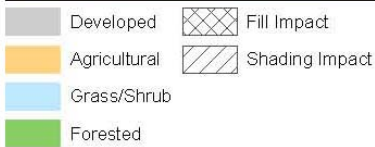


Figure 3.4-6

Wildlife Habitat Impact Valley Avenue Interchange Freeman Road Option



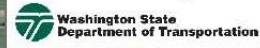
Date: Aerial Photo 2003



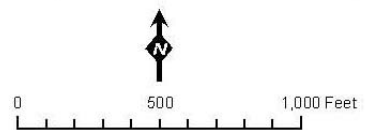
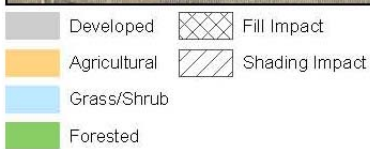
SR 167: Puyallup to SR 509 Tier II FEIS

Figure 3.4-7

Wildlife Habitat Impact Valley Avenue
Interchange Valley Avenue
Realignment Option



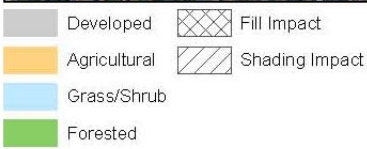
Date: Aerial Photo 2003



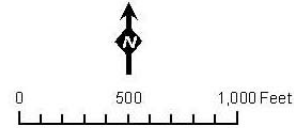
SR 167: Puyallup to SR 509 Tier II FEIS

Figure 3.4-8

Wildlife Habitat Impact between
Valley Avenue Interchange and SR 161/
SR 167 Interchange



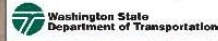
Date: Aerial Photo 2003



SR 167: Puyallup to SR 509 Tier II FEIS

Figure 3.4-9

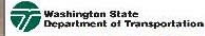
Wildlife Habitat Impact SR 161/
SR 167 Interchange Urban Option
(Preferred)



SR 167: Puyallup to SR 509 Tier II FEIS

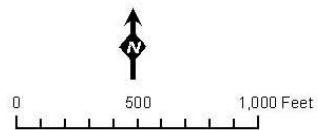
Figure 3.4-10

Wildlife Habitat Impact SR 167/
SR 167 Interchange Low Diamond Option



Date: Aerial Photo 2003

- | | |
|--------------|----------------|
| Developed | Fill Impact |
| Agricultural | Shading Impact |
| Grass/Shrub | |
| Forested | |





Vegetation will be removed and replaced with new impervious surface, cut and fill slopes, and stormwater detention ponds, resulting in reduced habitat value for wildlife and permanent loss of wildlife habitat. The corridor includes approximately 216 acres of agricultural lands and 441 acres of developed property. As with the forested areas, construction in these areas will reduce the available habitat for wildlife species. No bald eagle nesting or roosting habitat is known to exist within the study area boundary. Trees growing along the Puyallup River are limited to young, less than 12-inch-diameter at breast height red alder and black cottonwoods, which lack the large limbs typical of ideal perch trees. No impacts to wintering bald eagles would be anticipated under any build option since eagle use is expected to be low, and limited to birds that are accustomed to human disturbance.

The project will permanently impact approximately 30.4 acres of primarily disturbed and hydrologically isolated scrub-shrub, emergent, and forested wetlands. The *Wetlands Discipline Report* (2005b) identified only limited wildlife habitat function for amphibians on less than 10 percent of the impacted wetlands, although at least a portion of the impacted wetlands likely receive use by mammals, waterfowl, and other bird species. Proposed wetland mitigation will offset impacts to on-site wetlands.

Construction activities and increased vehicle traffic associated with construction would be expected to cause displacement of birds, including migratory birds, and mammals using habitats adjacent to the project corridor.

Wildlife, MBTA species, and otherwise could be displaced or harmed by construction activities. Displaced individuals would be expected to leave disturbed habitats in the project area and move to similar habitats elsewhere; increased competition for limited resources in the new habitat would result in wildlife losses. Many wildlife species are nocturnal and are relatively inactive during daylight hours. They typically retreat to burrows and other resting areas, and generally would not be affected by construction activities that occur during daylight hours. Noise effects on wildlife would be temporary. Artificial lighting during nighttime construction could temporarily disrupt the foraging activities of nocturnal wildlife. Illumination at interchanges could have similar impacts on wildlife in the long-term. The project area is partially in an existing developed area with high traffic volumes. Wildlife currently existing in developed areas are expected to continue using the area after the construction is completed. Due to the large scale of the project, impacts to wildlife related to construction could extend over a long period of time.

In the spring and summer months of construction, nesting and rearing activities would be precluded for many birds, including migratory birds that would have occurred in the project area in the absence of project activities. Some birds could attempt to nest within the study area, but nesting may fail due to increased disturbance. Since no rare or unique habitat types (e.g. prairies, bogs, old growth forest, and estuaries) would be affected during construction, temporary disturbances would be expected to only have a minimal impact to wintering migratory bird (MBTA) populations in the study area. They would be displaced from the project area and could return after construction is completed.

Table 3.4-3: Wildlife Habitat Impacts of Projects and Options (acres)

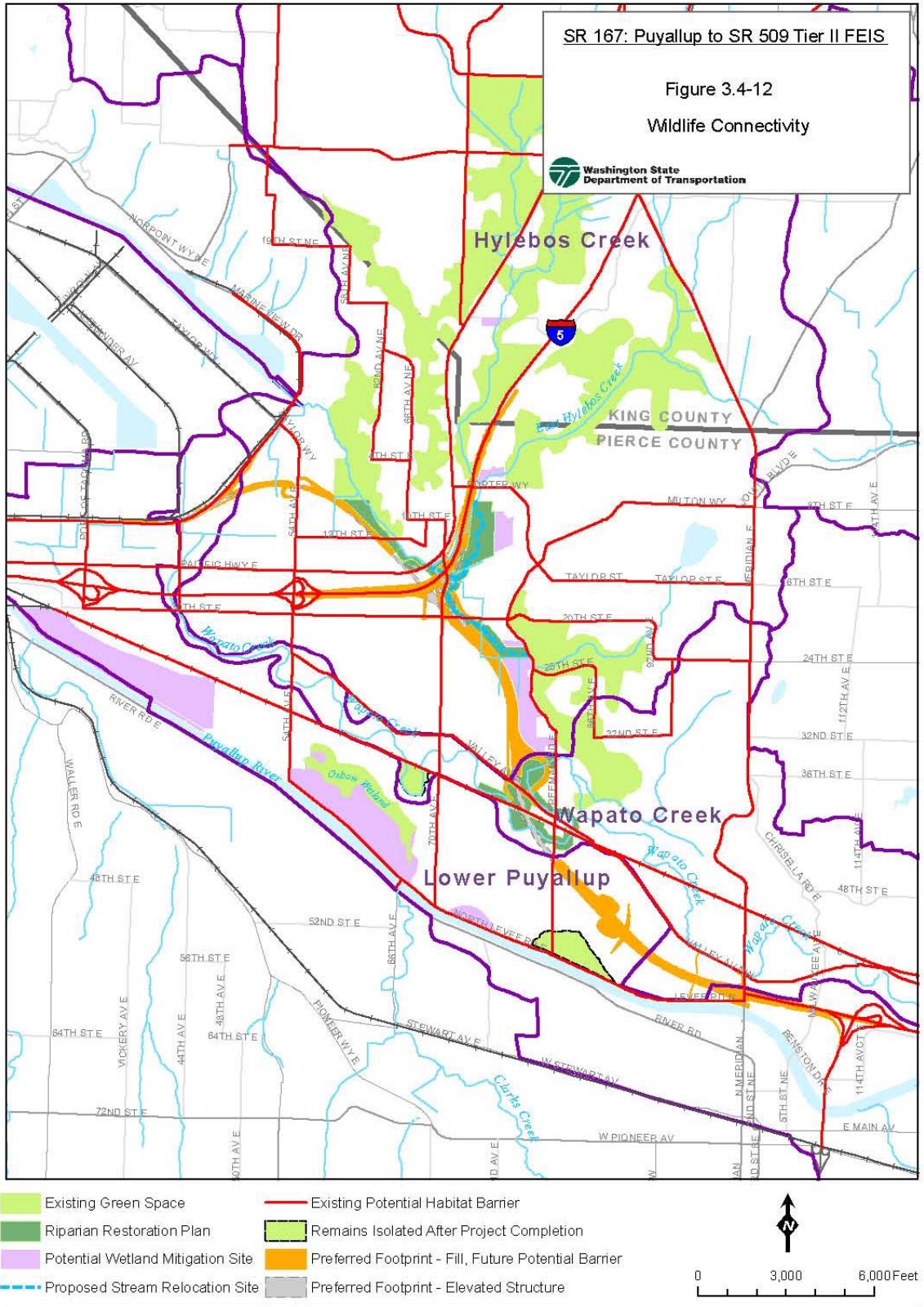
Project/Option		Developed	Agricultural	Grass/Shrub	Forest
MAINLINE SEGMENT					
SR 509	Fill	40.8	2.3	9.18	1.91
	Shading	5.53		1.23	0.04
	Total	46.33	2.3	10.41	1.95
I-5	Fill	93.29	38.34	14.33	5.79
	Shading	5.75	1.59	5.57	
	Total	99.04	39.93	19.9	5.79
Valley Avenue	Fill	8.39	20.43	6.85	0.97
	Shading	1.8	11.46	0.38	
	Total	10.19	31.89	7.23	0.97
SR 161	Fill	26.98	41.64	24.74	8.93
	Shading	0.74		0.12	
	Total	27.72	41.64	24.86	8.93
Mainline Total		183.28	115.76	62.4	17.64
INTERCHANGE					
54th Avenue					
Loop Ramp	Fill	4.38		1.62	
	Shading				
	Total	4.38	0	1.62	0
Half Diamond	Fill	1.25	0.8	1.07	
	Shading	0.01		0.01	
	Total	1.26	0.8	1.08	0
Valley Avenue					
Freeman Road	Fill	7.23	12.79	3.31	0.19
	Shading	0.71	0.22		
	Total	7.94	13.01	3.31	0.19
Valley Ave.	Fill	1.69	15.69	3.22	0
	Shading		0.02	0.4	0
	Total	1.69	15.71	3.62	0
Valley Ave. Realignment	Fill	6.7	6.44	5.32	
	Shading	0.13	0.66		
	Total	6.83	7.1	5.32	0
SR 161					
Urban	Fill	6.13		0.7	0.14
	Shading	0.95			
	Total	7.08	0	0.7	0.14
Low Diamond	Fill	5.17	0.01	0.38	0.93
	Shading	0.98			
	Total	6.15	0.01	0.38	0.93
Medium Diamond	Fill	5.4	0.01	0.38	0.93
	Shading	0.98			
	Total	6.38	0.01	0.38	0.93
Total (minimum)		192.38	122.86	67.17	17.78
Total (maximum)		202.68	132.28	70.04	18.76

Table 3.4-4: Temporary Habitat Impact (acres)

Project/Option		Developed	Agriculture	Grass/Shrub	Forest
MAINLINE SEGMENT					
SR 509	temporary	25.88	1.54	7.49	1.43
I-5	temporary	29.21	13.49	13.26	1.04
Valley Avenue	temporary	4.09	16.15	4.85	0.4
SR 161	temporary	14.93	11.69	2.22	0.77
Mainline Total		74.11	42.87	27.82	3.64
INTERCHANGE					
54th Avenue East					
Loop Ramp	temporary	5.42	0	1.67	0
Half Diamond	temporary	1.69	0.69	1	0
Valley Avenue					
Freeman Road	temporary	5.63	8.09	4.34	0.14
Valley Ave.	temporary	1.09	6.97	2.06	0.13
Valley Ave. Realignment	temporary	5.86	7.44	4.85	0.35
SR 161					
Urban	temporary	5.04	0.11	1.97	0.76
Low Diamond	temporary	11.49	0.99	2.1	1.16
Medium Diamond	temporary	11.87	0.99	2.11	1.16
Total (minimum)		81.93	49.95	32.85	4.53
Total (maximum)		97.23	52.64	36.45	5.15

The riparian restoration proposal (RRP) (described in Section 3.2, Water Resources) has the potential for both positive and negative impacts to wildlife species. The most notable positive benefit of the proposal would be the protection and restoration of a fairly large contiguous block of land (189 acres) in an urbanized setting. The restoration of the property would benefit small and moderate sized mammals and bird species that require less fragmented habitat than currently exists in this vicinity. Undersized culverts removals or replacements will improve impeded corridors. The proposal will have minor potential to benefit larger mammals that require very large home ranges to support them. The RRP would link fragmented upland habitats that extend well beyond the project limits (Figure 3.4-12).

During construction of the proposal, the impacts to wildlife during the removal of the fill encroachments, structures, road, etc. include mortality of wildlife unable to relocate to alternative habitats. Wildlife that are able to move to alternative habitats would increase the competition for resources in those areas, which could result in some wildlife loss.



The full potential of the area as restored wildlife habitat would take a number of years to be realized. Long-term benefits for wildlife are described in Section 3.4.4. It would take some time for wildlife to “discover” the habitat and take a number of years until the plantings have matured and the creek has stabilized enough for the area to support certain species. Some species, typically the more urban adapted ones or highly mobile species such as birds, would relocate to the area soon after construction. Other species with limited mobility or small home ranges may take many years to colonize the area provided suitable habitat is achieved.

Hylebos Basin. Approximately 86.5 acres of vegetation will be cleared and grubbed and up to 70.7 acres of temporary vegetation impact will occur in the basin. Approximately 21.7 acres of permanent and 9.4 acres of temporary wetland impact will occur in the Hylebos basin. Approximately 116 acres of riparian habitat will be established by the RRP. Due to the isolated and degraded conditions of most of these wetlands, they offer only low to moderate habitat value for wildlife. Four potential wetland mitigation sites occur in the basin and ample opportunity to replace lost function and values exists in these sites.

Approximately 0.50 acre of Hylebos Creek channel and 0.14 acre of Surprise Lake Drain channel will be filled as a result of the proposed relocations. Portions of the Hylebos Creek channel that will be impacted by the project currently support western pearlshell mussels, river otter, raccoon, weasel, common merganser, mallards, and northwestern salamanders (DEA 2004). Sediment generated during construction could smother freshwater mussels in Hylebos Creek. If present, freshwater mussels in the segment of Hylebos Creek proposed for filling will be relocated prior to commencement of work. The Temporary Erosion and Sediment Control (TESC) plan will be designed to manage and prevent erosion and to keep sediment from leaving the construction site or entering streams. TESC Best Management Practices (BMPs) are expected to minimize sedimentation impacts to aquatic organisms throughout the duration of project construction.

The corridor intersects two forested wildlife habitat areas in the Hylebos basin, consisting of a plantation cottonwood stand in the middle of an agricultural area and a small deciduous forest located just east of 54th Avenue East, which is surrounded by development. The plantation cottonwood stand is providing limited habitat connectivity, as it is isolated in an agricultural field. Removal of vegetation will displace wildlife using these already fragmented habitats.

Lower Puyallup Basin. The project will impact a small deciduous forest located north of the Puyallup River near the terminus of the corridor. This forest is completely isolated from similar habitat patches, primarily surrounded by development and a small pocket of agricultural land. Removal of vegetation will displace wildlife using this already fragmented habitat. Approximately 7.4 acres of wetland impact will occur in the Lower Puyallup basin.

Potential wetland mitigation opportunities in the basin are all adjacent to the Puyallup River. Therefore, hydrologic linkage could be established, but each potential site is isolated from the other, limiting the potential for substantial improvement to habitat connectivity.

Wapato Basin. Approximately 2.7 acres of wetland impact will occur in the Wapato basin. Wildlife habitat in the Wapato basin will primarily be impacted by the Valley Avenue Interchange and proposed RRP occurring in the vicinity of the interchange. The RRP will develop approximately 73 acres of riparian habitat.

The majority of impacted habitat at the Valley Avenue Interchange consists of agricultural fields, which have limited habitat connectivity value for the surrounding forested and riparian habitats. The best opportunity for habitat connectivity in the area is to provide habitat linkage in the riparian corridors, wetlands, and forested habitats. Such linkage would potentially benefit salmon, amphibians, some bat species, forest/riparian birds, and mammals.

The Valley Avenue option would result in the most direct habitat impacts—3.22 acres of grassland/shrub and 15.69 acres of agriculture. However, the Valley Avenue option would span Wapato Creek with a bridge at the Valley Avenue off-ramp. This placement is possible because the roadway is elevated on fill. This would allow for wildlife passage beneath the off-ramp within the creek corridor. Small mammals, amphibians, and reptiles are expected to cross under bridges as they move between habitat (Singleton and Lehmkuhl 2000). Installation of the bridge will improve access to downstream RRP areas. However, access out of the interchange area would be limited by the next downstream culverted crossing of Wapato Creek. Species expected to utilize the bridge crossing to access this RRP habitat would likely include aquatic-oriented small mammals such as river otter and raccoons, birds, amphibians, reptiles, and aquatic invertebrates.

The Freeman Road option will result in less direct habitat impacts, compared to the Valley Avenue option. Approximately 3.31 acres of grassland/shrub and 12.79 acres of agriculture habitat will be permanently impacted. However, the road widening work at Freeman Road and Valley Avenue will contribute to habitat fragmentation between the forested slope to the east and the RRP areas associated with the Freeman Road option. This is due to the potential impediment to wildlife passage imposed by roads that are wider than two lanes and the position of Freeman Road relative to the forested slope and the Wapato RRP. The Freeman Road Option would create a barrier between the potential Freeman Road Mitigation Site and the Wapato RRP due to the road widening and off ramp location.

The Valley Avenue Realignment option will result in the least amount of direct habitat impacts, 5.32 acres of grassland/shrub and 6.44 acres of agriculture habitat. However, the realigned Valley Avenue would essentially divide the RRP area on the east side of SR 167, decreasing the effectiveness of habitat corridor establishment.

Fisheries

Potential reductions in water quality associated with project construction are expected to have impacts on fish in the project area if TESC, stormwater water quality treatment, and flow control BMPs are not sufficiently implemented to minimize such impact. These potential impacts could extend over many years due to the large scale of the project. Wapato Creek, Hylebos Creek, the Puyallup

River, and Surprise Lake Drain are located in the immediate vicinity of the corridor, and the potential exists for construction activities to increase runoff and sedimentation to these waterways. Reductions in water quality due to project construction would be temporary and would not permanently reduce fish spawning and rearing habitat. The project will be constructed in stages, sometimes with concurrent work on more than one stage. Due to this approach, in- or over-water work in a particular basin would not be expected to occur for the construction life of the project. This work would be coordinated to minimize “cumulative” impacts of fisheries resources to the greatest extent possible.

Potential in-water and over-water work associated with the project could result in additional habitat impacts and harm and disturbance to fish species should they be present during construction. New culverts and bridges will result in fill placement within the floodplain and permanent vegetation removal at the crossing locations.

New stream crossings will be designed to pass the 100-year storm event at a minimum. When practicable, these structures will support natural stream processes by minimizing channel constriction and riprap placement.

The potential also exists for increases in chemical pollutants from construction materials and roadway runoff to lower water quality. A Stormwater Pollution Prevention Plan will be fully implemented before, during, and after construction, therefore reducing the likelihood of pollutants to reach any water body within the project area.

FHWA and WSDOT are proposing to infiltrate, where possible, in the road fill. This method can provide both water quality and flow control treatment (SCA 2001). Additional potential water quality treatment and flow control methods include constructed wetlands, vegetated roof systems, biofiltration swales, underground detention systems, riparian restoration, and limited use of sand and compost filters. Water quality runoff treatment and flow control will be consistent with the 2004 WSDOT *Highway Runoff Manual* (WSDOT 2004). Long-term benefits for fish habitat will result from the proposed RRP and wetland mitigation (described further in Section 3.4.4).

The timing of various activities will be determined during final design. Restoring the riparian areas adjacent to Hylebos Creek will be pursued as one of the early components to be constructed on this project. The timing of the stream relocations will be carefully planned to minimize impacts to fish and other aquatic organisms and to avoid relocating streams to locations that could be disturbed by construction. It is estimated that the RRP will take a minimum of five years to stabilize.

Hylebos Basin. In- and over-water work will be necessary during bridge widenings, replacements, and removals on Hylebos Creek. New bridges will likely be designed to avoid direct substrate displacement. Two bridges at I-5 will be widened and two others at this interchange would be replaced. An undersized culvert at 12th Street will be replaced with a bridge. Two temporary crossings over Hylebos Creek may be necessary for equipment access and temporary work trestles may be necessary for the I-5 and SR 99 bridge replacements. Hylebos

Creek will experience temporary impacts should pile driving below the ordinary high water mark (OHWM) be necessary for the work trestles. Potential salmon spawning habitat should be avoided during this work.

Approximately 86.5 acres of vegetation will be cleared and grubbed (permanently impacted) and up to 70.7 acres of temporary vegetation impact will occur from equipment access and operation, staging, and RRP establishment in the basin. There will be 21.7 acres of permanent and 9.4 acres of temporary wetland impact in the basin. The wetlands can provide beneficial water quality function, such as sediment, nutrient, and toxicant removal and flood storage. They do not provide rearing or over-wintering habitat for juvenile salmonids, but riparian wetlands may provide limited refuge to juvenile salmonids during high flow events.

There will be direct impacts associated with filling approximately 0.50 acre of Hylebos Creek channel and 2.50 acres of stream buffer; and 0.14 acre of Surprise Lake Drain. Filling in of these stream segments will not result in impacts to salmonid spawning habitat. The impacted segment of Surprise Lake Drain currently serves as a drainage ditch and the Hylebos Creek segment is highly degraded with little riparian habitat and a silt-dominated substrate.

In addition to the direct habitat impacts, impacts could occur to individual fish in these areas. Construction of a temporary diversion channel is proposed for the segment of Hylebos Creek from Highway 99 to Porter Way. The temporary diversion channel will be constructed in the dry and may include some LWD and other habitat structure placement. Due to the anticipated timing of construction, the new Hylebos Creek segment may not receive flow for a period of time, therefore the temporary diversion channel may be utilized for two to three years, depending on project staging. Every practicable method for minimizing streambank erosion in the temporary channel will be employed. Although channel construction will likely be timed to avoid adult salmon and steelhead spawning migrations and juvenile outmigrations, coho and steelhead juveniles will be the most susceptible to effects from these activities since they could be in the project area at all times of the year. Salmonid life histories and migration periods will be closely considered when planning the timing of in-water work. Potential impacts to individual fish during and immediately following construction include

- Exposure to increased sediment and turbidity due to the clearing and grading of vegetation and resultant exposure of soils and the in-water work;
- Exposure to increased sediment and turbidity due to the diversion of Hylebos Creek into a temporarily constructed channel;
- Exposure as a result of pollutant loading due to the operation of heavy equipment adjacent to Hylebos Creek and from increased stormwater runoff resulting from new impervious surface following construction;
- Exposure to dewatering, fish exclusion, and fish handling for the in-water work;
- Exposure to temperatures, or low dissolved oxygen;

- Exposure to elevated sound pressure waves should in-water pile driving be necessary for work trestle installation;
- Exposure to lights as a result of construction activities.

Elevated turbidity levels can cause stress by impairing the salmonid's ability to locate predators, find prey, or defend territories, or by creating uncomfortable conditions for gill functioning. The presence of suspended sediments can inflict gill trauma. Increased turbidity can also cause increased respiration, resulting in the acidification of metals (if present), intensifying the toxicity to fish. Sedimentation as a stressor can also result in displacement of invertebrates. Juvenile salmonids have indicated a sensitivity to total suspended solids during the smolt transformation process. Elevated sediment and turbidity levels can result in stress affecting growth rate, susceptibility to predation, competition, and susceptibility to disease (Bash et al. 2001). High turbidity levels may also affect social behavior by altering the aggressive interactions between fish that relate to the establishment of territory. Elevated sediment and turbidity levels can affect the benthic community by filling interstitial spaces such as cobble, gravel, sand as well as silt and covering substrates where the benthic organisms live. Sedimentation is not expected to have detrimental effects on fish habitat in the basin. Salmon and steelhead spawning habitat occurs upstream of the project area and the existing substrate down-stream of the project area is dominated by silt and sand. Diverting flow into the new Hylebos Creek and Surprise Lake Drain channels will result in an initial flush of suspended material, temporarily increasing turbidity and sedimentation. Additional pulses of sediment could occur following the first rain events after the diversion and until the channel stabilizes, which could take up to five years. A temporary diversion channel may be in place for up to two years, prior to directing flow to the new Hylebos channel. The diversion channel would experience similar sediment pulses throughout its use.

Lower Puyallup Basin. Most notable potential impact to fisheries resources in this basin are associated with new, temporary, and modified bridges. The existing steel bridge over the Puyallup River (northbound SR 161) will be removed and replaced. The existing concrete bridge (southbound SR 161) will be widened. Demolition of the steel bridge on SR 161 crossing the Puyallup River has the potential to cause adverse impacts to fisheries resources due to debris entering the water, especially due to the presence of lead-based paint. However, full containment during demolition activities will be provided. Some piers may be placed beneath the OHWM of the river to support the widened bridge. Construction of a new Puyallup River bridge also has the potential for adverse impacts, as it is likely that some piers will be placed beneath the OHWM of the river for the new bridge. Pier placement below the OHWM may displace cobble/gravel substrate habitat, potentially used by spawning salmon. Such use is undocumented and would likely not include Large numbers of fish. Additionally, a temporary traffic detour bridge and work trestles will result in pile placement below the OHWM of the Puyallup River. Pile support for the temporary bridges may be left in place for two construction seasons, resulting in potential temporary spawning habitat impacts for two years. Temporary substrate impacts would result from these activities and potential salmon spawning habitat may be impacted until the piles are removed and the substrate is

restored. Bull trout spawning habitat does not occur in or downstream of the project area and would not be affected by the project.

In-water work will be timed to avoid adult salmon, bull trout, and steelhead migration, juvenile outmigration, and alevin emergence. Juvenile coho salmon and foraging bull trout would be exposed to sedimentation and turbidity from in-water work. Adult salmon, bull trout, and steelhead would also be exposed to increased sediment and turbidity due to the approximately 100.4 acres of permanent and 8.5 acres of temporary vegetation impact. Additionally, juvenile coho salmon and foraging bull trout would be exposed to the sound pressure waves generated from in-water pile driving for temporary detour and work trestles during the replacement and widening of the Puyallup River bridges. Such exposure could result in injury, increased predation on coho juveniles, and mortality. Seasonal restrictions will be applied to work conducted within or below the OHWM as required by the Hydraulics Project Approval (HPA) issued by the WDFW and as agreed upon by the Services to minimize potential impacts to listed species. At this location, the anticipated allowed in-water work window is July 15 to August 31.

The Lower Puyallup River and Commencement Bay are not expected to realize measurable improvements to aquatic habitat from the RRP. However, bull trout prey species that utilize Hylebos and Wapato Creeks and Surprise Lake Drain will benefit from the RRP and as a result, bull trout foraging opportunities in these areas and within Commencement Bay, are expected to improve over time.

Wapato Basin. The number of crossing structures (culverts and bridges) associated with Wapato Creek in the Valley Avenue vicinity depends on the option selected. The impacts of the new and/or modified structures can vary depending on the design. Generally, higher and wider structures have less impact on fisheries resources in the creek as well as upon the riparian zone and associated wildlife linkage corridors.

Numbers of new and/or proposed structures at Wapato Creek are shown in Table 3.4-5.

Table 3.4-5: Crossing Structures Associated with Wapato Creek

Option	New Crossings	Modify Existing	Remove Crossing	Total Crossings
No Build	0	0	0	0
Freeman Road	1	3	6	10
Valley Avenue	3	2	6	11
Valley Avenue Realign	2	2	7	11
Mainline Crossing Near Alexander	1	0	0	0

Due to the work associated with the crossing structures, the Freeman Road option would result in a maximum of 0.72 acre of permanent and 2.31 acres of temporary impact to the Wapato Creek riparian habitat. The Valley Avenue option would result in a maximum of 0.57 acre of permanent and 2.62 acres of temporary impact to Wapato Creek aquatic priority habitat (streambed and

riparian buffer). The Valley Avenue Realignment would result in a maximum of 0.34 acre of permanent and 2.01 acres of temporary impact to Wapato Creek aquatic priority habitat.

While the Valley Avenue option has the most overall temporary riparian impact. The Freeman Road option has the most permanent riparian impact because the Valley Avenue option will span Wapato Creek with a bridge at the off-ramp. The Valley Avenue option results in the least amount of new impervious surface (4.4 acres) compared to the Freeman Road (7.9 acres) and Valley Avenue Realignment (9.1 acres) options.

Coho salmon and cutthroat trout juveniles are the species and life stages most likely to be in the project area during in-water work. Dewatering may be required at all or some of the crossing structure locations. Due to existing habitat conditions, fish abundance in lower Wapato Creek is relatively low. Impacts to individual fish related to in-water work associated with culverts and bridges are similar to those described for Hylebos Creek. Impacts to wildlife and fish are summarized in Table 3.4-6 and Table 3.4-7.

No Build Alternative – Vegetation

No project-related construction effects on vegetation are expected to occur under this option. Impacts to vegetation are currently occurring, and are expected to continue to occur, as non-project related urban developments occur in the project area. Additionally, Surprise Lake Drain and Hylebos Creek would not be relocated and the RRP would not be implemented. Thus, the long-term habitat improvements associated with the RRP would not occur under the No Build Alternative.

Build Alternative (Preferred) – Vegetation

The removal of up to 221.1 acres of vegetation during construction (excluding vegetation in developed areas [landscaping, etc.]) would be expected to cause temporary increases in soil exposure and soil erosion. Removal of vegetation also would result in a reduction of plant species diversity and increased dispersal of invasive species. Clearing and grading during construction would remove vegetation from wetland areas in agricultural fields and open spaces. Removal of vegetation lining the ditches and channelized waterways intersected by the corridor would cause a temporary increase in soil erosion potential and a decrease in bank stability. Most of the impacted vegetation in the vicinity of the proposed corridor is in agricultural fields and residential/commercial/industrial areas. Proposed riparian restoration would develop approximately 189 acres of native riparian buffer, partially offsetting the permanent vegetative impacts. Native riparian plantings will replace areas largely dominated by invasive weed species which offer diminished habitat value for fish and wildlife. Native vegetation will improve shelter and food sources for wildlife species and will offer long-term benefits to fish habitat such as shading and LWD sources. Additionally, approximately 94.2 acres of vegetation would be temporarily impacted during construction, primarily from equipment access and staging; and from the staging of materials. Temporarily impacted areas will be reseeded and/or replanted with appropriate native seed mixes/species to the greatest extent possible.

Table 3.4-6: Primary Salmonid Effects Summary for all Affected Locations

Action Component	Where	Exposure				Stressor	Response to Stressor	Conservation Measures	Resulting Effects of the Action
		When	Length of time	Frequency	Life History Form				
Up to 397.6 acres of clearing and grading	Wapato RM 1-3, Hylebos RM 2-4, Puyallup RM 3.2-5, wetlands	April-October during years of construction	Approx. 12-13 years for entire project	Stormwater runoff	Juvenile, adult. Low potential for eggs/fry	Sedimentation, erosion, and turbidity, stormwater quantity	Avoidance, habitat degrade, reduced feeding oppor., delayed migration, gill trauma, decreased feeding efficiency, physio stress, filling of pools, interstitial spacing.	TESC, SPCC, RRP after stabilized	Complete and successful implementation of the conservation measure will minimize sediment inputs and stormwater quantity, implementation of HRM.
Approx. 57 acres of effective impervious surface attributed to the SR 167 corridor	WapatoRM 1-3, Hylebos RM 2-4, Puyallup RM 3.2-5, wetlands	Following construction for as long as the impervious surface is present	Indefinite	Stormwater runoff	Juvenile, adult, low potential for eggs/fry	Contaminants in runoff, sedimentation, erosion, and turbidity, stormwater quantity	Habitat degrade, increased stress, impaired swimming, schooling interruption, temperature increase, delayed spawning, fecundity and abundance.	SPCC, RRP after stabilized (116 acres of protection and NIS removed), Infiltration where possible	Complete and successful implementation of the conservation measure and successful establishment of restored riparian areas will minimize contaminant inputs and stormwater quantity, implementation of HRM.
In-water pile driving	SR 161 Puyallup River Bridge, Potentially Hylebos Creek at I-5 and SR 99	As required by HPA	Depends on size of structures	During traffic detour and work trestle construction	Juvenile, adult, low potential for eggs/fry	Sound waves (acoustic pressure, particle velocity, energy flux)	Stress resulting in increased predation, temp. and/or perm. Hearing loss, damage to eggs if within 20 m, avoidance, migration disruption, barotraumas (organ rupture), rectified diffusion, lack of predation response avoidance	Utilize vibratory hammer whenever possible, time work outside of peak outmigration/migration, other impact min. meas.	Complete and successful implementation of conservation measures will minimize effects on fish, consideration of all reasonable measures to reduce noise
In-water pier placement	SR 161 Puyallup River Bridge (new and widened bridges)	As required by HPA	Life of structures	Initial pier placement, short-term habitat modification downstream	Juvenile, adult, low potential for eggs/fry	Potential direct spawning habitat displacement for coho and Chinook salmon	Habitat degrade, decreased spawning success and abundance	Locate piers (if possible) to avoid potential spawning habitat	Spawning habitat impacts will be minimized by selective pier placement
De-watering activities	Wapato RM 1-3, Hylebos RM 2-4, SR 161 Puyallup River Bridge	As required by HPA	Duration of in-water work (unknown at this time)	1 location at Puyallup R. Bridge, 8 locations Hylebos Creek, 11 locations Wapato Creek	Juvenile, adult, low potential for eggs/fry	Fish Handling and stranding	Elevated stress levels, death, physical trauma	Time work to avoid peak juvenile outmigration and adult migration, follow fish handling protocols	Complete and successful implementation of conservation measures will minimize effects of dewatering activities on fish

Table 3.4-6: Primary Salmonid Effects Summary for all Affected Locations (Continued)

Action Component	Where	Exposure					Response to Stressor	Conservation Measures	Resulting Effects of the Action
		When	Length of time	Frequency	Life History Form	Stressor			
New channel creation: 4,010 feet at Hylebos Creek, Surprise Lake Drain	Hylebos Creek, Surprise Lake Drain	As required by HPA	5 years until stabilized	Stormwater runoff	Juvenile, adult.	Sediment	Avoidance, habitat degrade, reduced feeding oppor., delayed migration, gill trauma, decreased feeding efficiency, physio stress, filling of pools, reduced interstitial space	TESC Plan	Complete and successful implementation of the conservation measure will minimize sediment inputs.
In-water work associated with culvert/bridge replace, remove, install, equipment operation in/over water	Wapato RM 1-3, Hylebos RM 2-4, Puyallup RM 3.2-5, wetlands	As required by HPA	Likely 1 or 2 construction seasons at each crossing	1 location at Puyallup R. Bridge, 8 locations Hylebos Creek, 11 locations Wapato Creek	Juvenile, adult, low potential for eggs/fry	Sediment, contaminants, disturbance	Avoidance, habitat degrade, reduced feeding oppor., delayed migration, gill trauma, decreased feeding efficiency, physio stress, filling of pools, reduced interstitial space	TESC, SPCC, timing to avoid peak outmigration/migration periods, dewatering where appropriate	Complete and successful implementation of the conservation measure will minimize sediment/pollutant inputs.
Removal of steel bridge with lead-based paint	Puyallup River at Puyallup River Bridge	As required by HPA	1 construct. season	One-time removal	Juvenile, adult, low potential for eggs/fry	Contaminants (lead-based paint)	Stress, migration interruption, impaired swimming	SPCC, Full containment	Complete and Successful implementation of the conservation measure will minimize pollutant inputs.

Table 3.4-7: Primary Wildlife Effects Summary for all Project Locations

Action Component	Where	Exposure					Response to Stressor	Conservation Measures	Resulting Effects of the Action
		When	Length of time	Frequency	Species Affected	Stressor			
395.8 acres of clearing and grading	Wapato RM 1-3, Hylebos RM 2-4, Puyallup RM 3.2-5, wetlands	April - October during years of construction	Approx. 12-13 years for entire project	Stormwater runoff	All species utilizing affected habitats	Sedimentation, erosion, and turbidity, and increased volume of stormwater runoff	Habitat degrade, reduced survival	TESC, SPCC, RRP after stabilized	Complete and successful implementation of the conservation measure and the HRM will minimize sediment inputs.
220.9 Acres of new impervious surface	Wapato RM 1-3, Hylebos RM 2-4, Puyallup RM 3.2-5, wetlands	Following Construction for as long as the impervious surface is present	Indefinite	Stormwater runoff	All species utilizing affected habitats	Sedimentation, erosion, turbidity, contaminants in runoff and increased volume of stormwater runoff	Habitat degrade, reduced survival, impaired growth	SPCC, RRP after stabilization, Infiltration where possible	Complete and successful implementation of the conservation measures and HRM and successful establishment of restored riparian areas will minimize contaminant inputs.
Pile driving	SR 161 Puyallup River Bridge, SR 99 and I-5 Hylebos Bridges, soldier pile retaining walls	As required by HPA and timing restrictions if appropriate for eagles	Depends on size of structures	During traffic detour and work trestle construction, during soldier pile retaining wall construction	all species utilizing affected habitats (Habitats exposed to noise/vibration impacts)	Noise above ambient levels	Temporary avoidance, reproduction and foraging disruption	Utilize vibratory hammer whenever possible, time work outside of sensitive periods if concentration or nesting locations within 1 mile of activity	Consideration of all reasonable measures to reduce noise will minimize effects on wildlife
New major highway construction	Project Footprint (Lower Puyallup, Wapato, Hylebos subbasins)	Estimated 12-13 years of construction	Indefinite	During approx. 12-13 years construction and life of highway	All species utilizing affected habitats	Noise, barrier to movement, lights and air quality, increased stormwater quality/quantity impacts	Reduced genetic exchange, population isolation, reduced foraging success	Repl. culverts w/ bridges where practicable, RRP	The RRP will perm. protect wildlife corridor along streams and wetlands, linking forested areas
Channel segment filling	Hylebos Creek and Surprise Lake Drain	As required by HPA	1 month	One-time perm. impact	All species utilizing affected habitats	Habitat loss	Decreased abundance and diversity, foraging opportunities, and habitat loss	New and enhanced habitat developed from the RRP, if present, mussel relocation	Implement cms for relocating mussels, establishment of RRP will increase habitat complexity, connectivity, and area

The “Carson” chestnut tree is located between the off-ramp at the existing terminus of SR 167 and the proposed continuation of SR 167. This tree is considered to be the oldest and largest chestnut tree in Washington. All options at the SR 161/SR 167 interchange were designed to avoid this historic tree. Efforts to minimize additional detrimental impacts to the tree will be made during design and construction.

3.4.4 Impacts of Operation

No Build Alternative

No direct, project-related operational effects on wildlife, wildlife habitat, migratory birds, fisheries, fish habitat, or vegetation would occur under this option. Impacts are expected to occur as non-project related urban development pressure continues in the project area. Impacts on species and habitat include loss of habitat due to conversion of rural and open space lands to urban lands, displacement of wildlife in development areas, impacts to fish due to work in and near water bodies, changes in aquatic habitat quality due to increased runoff from new impervious surface, and degradation of habitat due to increased human and automobile traffic. Impacts on vegetation include loss due to conversion of rural and open space lands to urban lands and degradation of vegetated areas due to introduction and spread of invasive species. This option would not include the RRP and associated multiple habitat benefits.

Build Alternative (Preferred)

Operational impacts of the proposed project on wildlife and migratory bird species could include displacement, disturbance mortality, road avoidance, movement impairment, increased animal-vehicle collisions, light and glare impacts, and noise disturbance. Impacts on fish could potentially include disturbance mortality, avoidance, and changes in aquatic habitat from water quality degradation, stormwater runoff, and altered hydrology. Noxious weed species proliferation could also increase.

Wildlife and Wildlife Habitat

Vehicle-wildlife collisions can contribute to population impacts on a species. Juvenile birds are very susceptible to collision with vehicles immediately after fledging due to a reduced capacity for flight. In addition to the direct loss of wildlife including migratory birds, due to vehicle-animal collisions, automobiles contribute to air, water, noise, light, and soil pollution. The potential for these sources of pollution to impact wildlife varies with distance from the road and the amount and density of vegetation adjacent to the road.

Increased noise and activity during project operation would be expected to displace some birds, including migratory birds, and mammals that currently use the forested habitats adjacent to the corridor. Wildlife leaving habitats disturbed by project operation would move to similar habitat elsewhere, causing increased pressure for food and nest sites in the new habitat. A reduction in the project area’s wildlife population levels may result. Impacts to wintering bald eagles would not be anticipated since any eagles potentially using the stretch of Puyallup River adjacent to the road likely would be accustomed to noise and

human activities. Because the distance of existing nests from the proposed project footprint is greater than 1 mile, seasonal maintenance restrictions are not anticipated (USFWS 1986).

The effect of roads as barriers to wildlife is well documented, especially for small animals such as squirrels and mice and slow-moving animals like amphibians and reptiles. Many amphibians are particularly vulnerable because their annual life cycles require migration between habitat with different ecological properties. For medium sized animals such as raccoons, the presence of the road does not necessarily inhibit crossing, but the level of traffic and number of lanes has a direct effect upon the success of those animals crossing the road. A highway wider than two lanes can inhibit some carnivore species movement (Claar et al. 2003). The impacts of roads are substantial factors affecting the long-term persistence of wildlife populations (Jackson 2000).

Primary wildlife habitat in the immediate vicinity of the proposed corridor is limited to larger blocks of abandoned agricultural lands and shrub lands, the limited undisturbed riparian corridors along Wapato and Hylebos Creeks, and upper Surprise Lake Drain; and to a certain extent, vegetation communities in developed areas. The project vicinity currently has a high density of roads and existing habitat consists of fragmented patches across the landscape (Figure 3.4-12). Effects from roads that bisect habitat can extend out up to 0.5 mile, depending on habitat type. If this concept of road effects was applied to the existing landscape, very little existing habitat is not currently affected due to the presence of numerous roads. The agricultural and grassland habitats in the valley floor are zoned for industrial, commercial, and residential development. Long-term habitat connectivity has the greatest chance of being maintained in the riparian corridors. Steep slopes, existing restoration areas, and the future RRP will provide long-term viability in most of the forested areas mapped in Figure 3.4-12.

Existing connectivity between forested habitats occurs largely in the upper reaches of West and East Hylebos Creeks and Surprise Lake Drain. Connectivity is severely restricted in the valley floor due to urban and residential development, agricultural activity, and major road corridors like I-5, Valley Avenue, SR 99, and 54th Avenue East (Figure 3.4-12). Some east-west connectivity, especially for aquatic-oriented species such as river otters, amphibians, birds and small mammals such as raccoons, still exists along the Wapato and Hylebos Creek corridors and various agricultural drainage ditches in the valley.

The project will contribute to the existing fragmented nature of grassland/shrub and agricultural habitat and could continue to fragment riparian habitat. Opportunities for low-cost wildlife crossings will be considered, such as amphibian and reptile tunnels at appropriate areas throughout the alignment. Maintaining streambed conditions within oversized culverts could facilitate use by salamanders, frogs, small mammals, and aquatic invertebrates at stream crossings (Jackson and Griffin 2000). The culverts installed for the project at stream crossings will comply with the project HPAs and will, at minimum, be designed to pass the 100-year storm event. Where viable, culverts and clear-spanning structures will be considered for enhancement or facilitation of wildlife mobility.

Following project completion, there will be new major highway segments, which could be migration barriers to wildlife. However, due to the location of existing forest habitat fragments, SR 167 would have little effect on forest habitat that is currently linked (Figure 3.4-12). It could inhibit travel between different habitat types, primarily forest and agriculture. This would have the greatest impact on species that utilize both habitat types (foxes, skunks, and opossum). However, there is also the potential for tremendous improvement to habitat corridors. The RRP would result in corridor linkage from the upper to the lower stream reaches of Hylebos and Wapato Creeks and Surprise Lake Drain. Also, potential wetland mitigation areas could provide additional linkage between the RRP areas.

The RRP will result in 189 acres of improved wildlife and fish habitat within the project area, it will establish wildlife linkages between fragmented upland habitats, and will protect a substantial amount of adjacent wetlands by creating wetland buffers. Figure 3.4-12 shows existing forest habitat fragments, highway barriers, and potential linkage areas following project construction, including RRP and potential wetland mitigation sites. The RRP for the preferred options will link multiple fragmented habitats together resulting in over 1,000 acres of contiguous habitat.

Operation of the project would have the potential to affect water quality in wetlands and stream courses adjacent to the corridor (see Sections 3.2, Water Resources, and 3.3, Wetlands). Water quality degradation and increased human activity associated with the project may affect wildlife that use these water resources. Degradation of water quality in the wetlands may result in reduced diversity and an increase of tolerant species.

No habitats that are potentially used as primary resources by listed, threatened, and endangered wildlife species would be affected by the proposed project.

Coordination with USFWS will continue as the project is prepared for bid and construction in conformance to the requirements of the ESA. FHWA and WSDOT will ensure that the BA conclusions are not affected by any change in ESA species designation or any change in the use of the action area by threatened or endangered species.

Hylebos Sub-Basin. The project will result in new highway, generally running in a southeast to northwest direction through the basin. The new roadway will be constructed on fill through the majority of this segment and could inhibit wildlife passage along much of its length. However, the remaining forested habitat in the basin is all located on the north and east side of the proposed highway and is associated with steep slopes and the riparian corridors of East and West Hylebos Creeks and Surprise Lake Drain (Figure 3.4-12).

Exposure to sediment flushes prior to stabilization of the new channel could result in mortality or harm to freshwater mussels that are present in Hylebos Creek. Following channel stabilization and riparian establishment, habitat conditions should improve as LWD is added to the system, additional shade is provided, and additional channel area is available for colonization. It may be necessary to relocate mussels during channel filling and new channel creation. Relocated mussels may be at risk due to sedimentation and flushing downstream.

Monitoring may be necessary to maximize survival. The relocation of mussels and potential subsequent monitoring will occur as specified in the project HPA.

The substantial potential for improvement to wildlife mobility and habitat connectivity in the basin lies in reestablishing riparian corridors, forested buffer areas, and wetlands. The RRP combined with potential wetland mitigation in the Hylebos basin could, over time, establish additional forest and wetland habitat and better linkage between existing forest fragments in the upper stream reaches and restored habitat in the lower reaches (Figure 3.4-12). The RRP is expected to restore and protect 116 acres of riparian habitat in the basin. The proposed restoration will also link with approximately 860 acres of habitat along West Hylebos Creek and 260 acres of habitat along East Hylebos Creek. The restoration of the Surprise Lake Drain channel will link with approximately 220 acres of habitat and Wapato Creek restoration will provide additional opportunities for habitat linkage.

The proposal would increase the ability of wildlife to travel in a north-south direction along Hylebos Creek. The project would still contribute to impeding east-west travel for species utilizing agricultural areas due to the SR 167 extension being placed on fill instead of bridge structure.

Wapato Sub-Basin. There are some differences in the effects to habitat and habitat connectivity per interchange option. The RRP will not improve connectivity between upper Wapato Creek and the lower reaches but connectivity between the Wapato RRP and potential wetland mitigation in the Hylebos sub-basin will improve. The RRP will develop approximately 73 acres of riparian habitat.

Modification and fragmentation of habitat could alter species composition in the study area. Species that utilize flooded pasturelands and agricultural lands would be displaced and/or forced to compete for reduced resources elsewhere, while species better adapted to urbanized landscapes such as crows, rock doves, starlings, and house finches would become increasingly abundant.

Fisheries

Operation of the project would have the potential to affect water quality in fish bearing waters in and adjacent to the corridor. Water quality degradation associated with the project will be minimized by the proposed stormwater quality and flow treatments. Hydrologic modeling has indicated that flooding impacts from impervious surfaces are more than compensated for by the RRP and new stream channel designs. Large base flow alterations due to increased evaporation in the summer and lower discharge to streams are not expected because base flows in the project area are primarily influenced by upstream sources. Project impacts on base flows and flooding are described in greater detail in the *Water Resources Discipline Report* (2005).

Maintenance activities such as removing trees located directly adjacent to bridges reduces the value of the riparian community adjacent to the creeks. However, establishment of forested riparian buffers and improvements to 63 acres of wetlands are expected to increase infiltration and contaminant filtration, and provide shading to maintain cooler water temperatures. Reconverting developed

areas back to wetlands and forested areas will reduce surface runoff and increase aquifer recharge.

Water quality treatment will be provided at a level sufficient for compliance with the 2001 Ecology Stormwater Technical Manual. Pollutant loading in the study area, especially metals, is expected to increase in the future. Less than 1 percent of the increase in metals is attributed to the project. This increase from impervious surfaces associated with the project is likely over-estimated because it does not take into account potential water quality improvement due to filtration effects of the RRP. Therefore, impervious surface created by the project is not expected to result in degradation of water quality.

Hylebos Sub-Basin. Exposure to sediment flushes prior to the stabilization of the new channel could result in acute, chronic or sublethal effects to fish present within or downstream of the affected segment. However, The RRP would address many of the limiting factors of the Lower Hylebos Creek's ecosystem, and restore many of those natural ecosystem functions. Some of those limiting factors include substrate fines, pool quantity and quality, refugia and side channel habitat, increased flow resulting in erosion and sedimentation, lack of riparian forests, and LWD in the channels, reduced macroinvertebrate diversity, juvenile salmon rearing areas and increases in water temperature.

As the riparian forest matures, many of the trees are expected to fall into the stream providing substrate and habitat for aquatic macro invertebrates, cover for fish, and will add complexity to the channel morphology by allowing the opportunity for a series of riffles and pools to develop within reaches. Pool quality will improve with the cover provided by restored riparian habitat. Channel meandering and the removal of fill and impervious surface will improve floodplain connectivity which will likely result in backwater areas for juvenile fish to utilize during high flows. As Hylebos Creek salmon populations increase, a co-dependent nutrient cycle would develop between the salmon and the riparian ecosystem. After spawning the salmon die, releasing marine derived nutrients. These nutrients are recycled into the ecosystem through consumption and decomposition helping to support a diverse riparian habitat. The RRP will reduce streambank erosion by rehabilitating streambanks with native riparian vegetation.

The RRP would restore the lower reach of Surprise Lake Drain, which offers an excellent opportunity for off-channel rearing habitat. This is because Surprise Lake Drain is from a spring fed source of water, which remains relatively stable during summer months. Additional overwintering habitat would be provided by preserving 600 linear feet of Hylebos Creek channel. Hydrology for the remnant channel would be provided by adjacent hillside springs and outflow from stormwater treatment facilities. The relocation of Hylebos Creek will result in approximately 4,010 linear feet of channel, an increase of 1,000 linear feet.

The new stream banks will be revegetated with native vegetation to provide future shading and bank stabilization. LWD will be placed to increase bank stability, allow for the development of pools for refugia, provide favorable substrate for invertebrate colonization, and shade. An undersized bridge and bank armoring will be removed at the 8th Street East crossing. This crossing is adjacent to the south end of the City of Fife's Milgard restoration site,

complementing other restoration efforts in the system. It also links to approximately 110 acres of upland, forested habitat along the bluff. An additional undersized bridge will be removed at the 62nd Avenue East crossing, just upstream of the 8th Street East crossing.

Approximately 1,000 linear feet (0.14 acre) of the 3-foot-wide Surprise Lake Drain will be filled as a result of highway placement. The fill would occur in two locations, the first about 700 feet downstream of Freeman Road and the other just upstream of 20th Street East. A new channel will be created with a depressed floodplain corridor to the north of the SR 167 extension to convey the Surprise Lake Drain from Freeman Road to a new confluence with the relocated Hylebos Creek to the east of I-5. Similar to Hylebos Creek, the new stream banks will be revegetated and the channel will have meanders, increasing capacity and length.

Although proposed as a stormwater facility, RRP will restore many of the riparian ecosystem functions that were lost or impaired as a result of human encroachment and urbanization. The RRP will protect a substantial amount of wetlands by creating wetland buffers and will allow for more natural floodplain processes to occur within a channel migration zone. Fill materials that were placed in the floodplain will be removed in some areas to improve floodplain capacity and fish habitat within channel migration zone.

Wapato Sub-Basin. Restoration of the Wapato riparian zone over the long-term would increase shading, foraging habitat, and reduce stream bank erosion. The RRP would restore approximately 9,000 linear feet of Wapato Creek and would convert approximately 73 acres of developed land back to riparian habitat. The RRP would reestablish riparian buffers, averaging 200 feet wide on each side of the stream. The project will remove six crossings and replace up to three crossings at the Valley Avenue interchange to meet current WDFW fish passage criteria, which will potentially aid in the recovery of the species. With consideration of site-specific design constraints and practicability, sizing and location of stream crossings will complement the functions of the RRP by supporting channel-forming processes, floodplain functions, and habitat connectivity in the RRP.

Three potential wetland mitigation sites were identified adjacent to the Lower Puyallup River. Should one or more of these sites be utilized, the opportunity to re-establish floodplain connectivity, off-channel habitats, and channel migration exists. Such improvements would directly benefit salmon, bull trout, and steelhead.

Coordination with USFWS and NOAA Fisheries would continue as the project is prepared for bid and construction in conformance to the requirements of the ESA.

No Build Alternative – Vegetation

No direct, project-related operational effects on vegetation would occur under this alternative. Impacts to vegetation are expected to occur as non-project related urban development pressure continues in the project area. Impacts on these resources include loss of vegetation due to conversion of rural and open

space lands to urban lands and degradation of vegetated habitat due to fragmentation resulting in an increase of invasive species. Additionally, Surprise Lake Drain and Hylebos Creek would not be relocated and the RRP would not be implemented. Thus, the long-term habitat improvements associated with the RRP would not occur under the No Build Alternative.

Build Alternative (Preferred) – Vegetation

Increases in sediment, nutrient, and petroleum-based chemical pollution associated with operation of the project would be expected to adversely affect diversity in some roadside wetlands and vegetation communities. In areas immediately adjacent to the roadway, dust and other particulates could reduce plant vigor. However, establishment of riparian buffers, improvements to 63 acres of wetlands, and development of an undetermined amount of wetlands from streambank stability and improved stream morphology in riparian areas are expected to offset these impacts. Reverting developed areas back to wetlands and forested areas will improve floodwater storage and potentially provide enhanced water quality treatment. Water quality treatment will be provided at a level sufficient for compliance with the 2004 WSDOT *Highway Runoff Manual* (WSDOT 2004).

3.4.5 Screening Criteria Analysis

This section provides more detail on the screening criteria introduced in Chapter 2.

Endangered Species Act (ESA)

The Biological Studies prepared for the TIER II EIS identified eight species of plants and animals that potentially qualify for protection under the Endangered Species Act (ESA). The environmental screening criteria measure applied in the Tier II EIS is based on the likelihood that the project would affect ESA protected species.

Table 3.4-8 shows protected species and critical habitat that may occur in the study area.

Table 3.4-8: Listings for ESA Species and Critical Habitat within the Action Area

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened
Marsh Sandwort	<i>Arenaria paludicola</i>	Endangered
Golden Paintbrush	<i>Castilleja levisecta</i>	Threatened
Water Howellia	<i>Howellia aquatilis</i>	Threatened
Chinook Salmon	<i>O. tshawytscha</i>	Threatened
Chinook Salmon Critical Habitat		Proposed
Bull Trout	<i>Salvelinus confluentus</i>	Threatened
Bull Trout Critical Habitat		Proposed

Aquatic Priority Habitat and Life

This criterion rates impact using the area of stream/creek plus buffer (riparian) habitat likely to be affected by the project and options and the number of priority species potentially using the impacted area. Riparian zone was estimated as a 50-foot buffer along any impacted stream bank. This presents a worst-case scenario, as no actual riparian zone in the study area is that wide.

The weighted impacts (in acres) for the Valley Avenue Interchange were 2.85 acres for this criterion. The weighted impacts for the Freeman Road and Valley Avenue Realignment options were 3.60 and 1.70, respectively (Table 3.4-9). As described in Chapter 2.0, although the Valley Avenue Interchange option has slightly more impacts in this criterion, it results in the least amount of new impervious surface. Although the Valley Avenue Realignment option has the least amount of aquatic priority habitat impacts, it has the most wetland impacts. The overall scoring of each alternative was very similar.

Wildlife Habitat

The relative impact of the project options on wildlife habitat depends upon the amount of habitat affected, and whether or not it requires mitigation. Table 3.4-9 shows the weighted wildlife habitat impacts for intersection options. As described in Chapter 2.0, although the Valley Avenue Interchange option results in the highest amount of wildlife habitat impacts, the habitat is primarily agricultural and provides limited habitat connectivity value for the surrounding forested and riparian habitats (Figure 3.4-13). The Freeman Road option would create a barrier between future RRP areas at Valley Avenue and Surprise Lake Drain.

Table 3.4-9: Environmental Screening Scores for Habitat (Weighted Impacts [acres])

Interchange/ Option	Aquatic Priority Habitat and Life	Wildlife Habitat
54th Avenue		
Loop Ramp	0	3.24
Half Diamond	0	3.76
Valley Avenue		
Freeman Road	3.60	33
Valley Avenue	2.85	38.6
Valley Avenue Realignment	1.70	25
SR 161		
Urban	0	1.68
Low Diamond	0	2.64
Medium Diamond	0	2.64

3.4.6 Regulations and Permit Requirements

Current laws affecting fish and wildlife include NEPA, the ESA, the Federal Fish and Wildlife Coordination Act, the Magnuson-Stevens Act, the State Environmental Policy Act, MBTA, HPA, the Salmon Recovery Planning Act,

and the Salmon Recovery Funding Act. Terms and conditions from the ESA Biological Opinion will be incorporated as Tier II commitments in the Record of Decision. Other legislation would be addressed in the process of complying with wetland and water resources regulations (see Sections 3.2, Water Resources, and 3.3, Wetlands). All pertinent laws will be considered and complied with during further design and construction.

3.4.7 Indirect Impacts

Color aerial photos taken in June 2002 by the USGS were used to interpret the extent of recent development within the project area (TerraServer 2004). The geographic boundary considered when addressing indirect impacts for the project includes the area up to 0.5 mile from the ROW boundaries of the intersection options.

Indirect impacts including development and associated impacts to wildlife, fish, T&E species, and their habitats are assumed to be the result from new direct local access provided by the proposed project. Indirect impacts are discussed for each basin and interchange below.

Hylebos Sub-Basin

- **SR 509 / SR 167 Connection.** Indirect impacts to wildlife, fish, and T&E species within the vicinity of the proposed SR 509 / SR 167 connection are not expected. The area within 0.5 mile of the proposed connection is generally developed.
- **54th Avenue East Partial Interchange.** The 54th Avenue East interchange is expected to provide direct local access that could promote development and result in some indirect impacts to wildlife, fish, and T&E species. Within 0.5 mile of the interchange are some wetlands mapped by WSDOT (1998) and the Hylebos Creek floodplain. However, much of this area is already developed, has direct local access from I-5, and the land use is predominantly industrial. As part of the proposed project, 8th Street East, east of SR 167, would be closed, thus limiting local access somewhat in this case.
- **Interstate 5 Interchange.** Indirect impacts to wildlife, fish, and T&E species within the vicinity of the proposed I-5 interchange are not expected because no direct local access will result. Approximately 29 acres along the Surprise Lake Drain (a tributary to Hylebos Creek) just north along Freeman Road would also be acquired in FHWA and WSDOT's proposed 116-acre Hylebos Creek Riparian Restoration Area. The effect of restoring undeveloped uplands and wetlands to riparian habitat should result in a net environmental benefit that would not result from the No Build Alternative.

Potential Connectivity Barriers
Valley Avenue Interchange



Wapato and Lower Puyallup Basins

- **Valley Avenue Interchange.** The Valley Avenue interchange is expected to provide direct local access that could promote development and result in some indirect impacts to wildlife, fish, and T&E species. Wetlands mapped in the area are generally associated with Wapato Creek, which is protected under Fife's Critical Areas Ordinance. Indirect effects to isolated wetland habitat in the area could result if not for the fact that FHWA and WSDOT are proposing to acquire 73 acres in the vicinity of Valley Avenue and Freeman Road as part of the Wapato Creek Riparian Restoration Area.
- **SR 161 / SR 167 Interchange.** Indirect impacts to wildlife, fish, and T&E species within the vicinity of the proposed SR 161 / SR 167 interchange are not expected. The area within 0.25 mile of the proposed interchange is generally developed.

The proposed project, by substantially improving travel and accessibility, may serve to accelerate planned development along the proposed corridor, especially in the vicinity of new freeway interchanges. Some indirect impacts to wildlife, fish, and T&E species related to development in the vicinity of the proposed interchanges could likely result. The Build Alternative may speed up the rate of development in the area. Based on historic trends, additional development is likely to result in loss of upland, riparian, and wetland habitat.

The magnitude of indirect impacts to species and habitat is unknown. Increased impacts from noise and light are expected for habitat in close proximity to the proposed roadway. Increased light and noise can affect wildlife behavior and species composition. However, wildlife currently using habitat in the project area would appear to have become tolerant of disturbance.

Under the Build Alternative, market forces, economic conditions, the availability of suitable land and adequate utilities and public services, would continue to be major factors in determining the rate of growth and development. Through the growth management process, local and regional jurisdictions have planned for future growth within the study area by defining the location and allowable intensity (density) of growth and development within, and adjacent to the project area. The Build Alternative would likely accelerate the planned transition of the North Fife area from residential/agricultural to industrial/commercial use and the Fife/Puyallup valley from agricultural/vacant to mixed commercial-residential and industrial.

The indirect effect of the Build Alternative may be considerably less than the indirect effect associated with commercial, industrial, and residential development under the No Build Alternative because the environmental mitigation would likely be more extensive and more successful than under the No Build Alternative. Unlike the No Build Alternative, the Build Alternative would provide substantial high quality wetland, stream, and riparian restoration from existing habitats that are substantially disturbed. The scope and scale of habitat proposed to be restored or enhanced at one or more of the potential wetland mitigation sites will be a substantial benefit to wildlife in the area. The realignment and associated benefits from riparian restoration at Hylebos Creek,

Wapato Creek, and Surprise Lake Drain may not otherwise occur. Finally, WSDOT owns, maintains, monitors, and ensures success of their mitigation sites, which according to Johnson et al. (2002) has not been the case for private developers.

The RRP would convert a substantial area of agricultural lands, zoned for industrial and commercial development, into riparian areas and wetlands, which would be protected from development. The wetland mitigation, stream mitigation, and riparian restoration offer opportunities to connect to other habitat restoration projects occurring in the Puyallup River valley. The establishment of a large, contiguous block of riparian restoration area that links to adjacent habitat and restored areas such as the Milgard site will likely increase the overall effectiveness of mitigation efforts in the basins and encourage future restoration efforts in the vicinity.

3.4.8 Cumulative Impacts

The environmental conditions and direct impacts on wildlife, fish and T&E Species from this project are identified in the previous sections. The geographic boundary for impact analysis generally includes the habitat adjacent to the project footprint within the Urban Growth Area for Pierce County. However, areas outside of the Urban Growth Area which drain to the lower Puyallup River, Hylebos Creek, and Wapato Creek likely contribute to the cumulative impacts on water quality and quantity in these systems. Cumulative impacts to water quality are described in greater detail in the *Water Quality Discipline Report* (2005). The temporal analysis spans from 1996, when quantitative data could be obtained, to expected changes resulting from planned development through 2030.

Cumulative Impacts Evaluation

Trends

Land use in the Puget Sound lowlands has resulted in the conversion of over 50 percent of the area from natural vegetation to other types of groundcover (concrete, asphalt, and non-native vegetation) (WDNR 2003). Much of the remaining habitat has experienced qualitative changes to habitat such as soil compaction, hydrologic changes, and non-native weed proliferation. Spatial pattern shifts have reduced habitat patch sizes and increased the distance between patches. This fragmentation isolates remnant species and decreases the chances of long-term survival (WDNR 2003). Approximately 50 percent of wetlands along major rivers in the Puget Sound lowlands have been lost due to development and other land use activities (Ecology 1997). It was estimated that 100 percent of the Puyallup River's historical wetlands have been lost due to commercial and residential development. Commencement Bay, once a highly productive estuarine environment, has lost in excess of 98 percent of its historical intertidal and subtidal habitat (Kerwin 1999).

The analysis area has experienced substantial change from historic conditions (pre-European settlement). Broad scale removal of LWD, riparian clearing, culverting streams, channelization and diking for flood control, forest clearing and wetland draining for agriculture; impervious surface creation associated with

transportation corridors and commercial, industrial, and residential development; and the introduction of non-native species, are primary factors resulting in wildlife, fish, and T&E species habitat removal and degradation in the study area. These actions have also reduced the range, viability, and/or health of populations and species. As previously described in Section 2, wetlands, streams, and other habitats in the study area are generally considered degraded or not properly functioning.

Several organizations are involved with planning and implementing habitat restoration projects in the project study area. These organizations include local governments, the Puyallup River Watershed Council, and the Pierce County Conservation District, and citizen groups such as the FOHW. These organizations are responding to the declining conditions in the basin. In 1991, King County completed a Hylebos Creek basin plan that described actions that could be taken to control flooding and restore habitat. The City of Federal Way has constructed four regional stormwater detention ponds and implemented project to stabilize the stream channel and replant native vegetation. These projects have solved much of the flooding problems in the West Branch and improved water quality.

In the East Branch of Hylebos Creek, King County has strengthened slopes that were eroding into the creek, constructed stormwater control facilities, improve fish passage, and replanted native vegetation. FOHW is also facilitating the restoration of the Hylebos through projects that restore LWD, native plants, weed control, and bank stabilization. FHWA and WSDOT continue to coordinate with the FOHW as plans for mitigation of the project impacts are developed.

Pierce County developed a biodiversity plan that identifies a network comprised of core biodiversity management areas (BMAs) and BMA connecting corridors. The intent of the plan is to better incorporate a biodiversity planning methodology into their long-range open space plans and land use regulations.

To avoid and minimize impacts to wildlife, fish, and T&E Species from the SR 167 and other future development, Pierce County also developed a Habitat Protection and Regulatory Package. The regulations contain a new critical fish and wildlife chapter which adds additional species and habitat types to be regulated, a new habitat assessment process, and standards for development within critical fish and wildlife habitat areas. The required buffers for riparian areas were changed to a fish and non-fish system. Required buffer distances along riparian areas, lakes, ponds, and Puget Sound marine waters have generally been increased based upon best available science on the functions and values of elements within these environments. Incorporated areas of Pierce County (cities of Fife, Milton, Puyallup, Edgewood, and Tacoma) have critical areas ordinances in place that provide protection to wetlands, streams, and other sensitive areas. FOHW recently developed the Hylebos Creek Conservation Initiative that identifies areas for acquisition and/or restoration to connect stream and streamside habitats throughout the Hylebos Basin. Completion of the initiative would result in a 740-acre riparian reserve of protected stream and wetland habitat including more than 10 miles of Hylebos Creek. The RRP for Hylebos Creek associated with the Build Alternative is a key element for restoring stream and wetland habitats.

Some of the wetland and riparian restoration projects currently planned in the vicinity of the proposed SR 167 Extension Project include:

Hylebos Basin

- **Lower Hylebos Nature Park (Jordan Site).** The City of Fife in cooperation with the Commencement Bay Natural Resources Trustees is developing a 15.3-acre stream and wetland restoration project adjacent to Hylebos Creek.
- **Spring Valley Ranch.** As mitigation for the I-5 HOV-lane construction project from Port of Tacoma Road to the King-Pierce County Line, WSDOT acquired in late 2004 a 27-acre site along the West Branch of Hylebos Creek. FHWA and WSDOT are working with project partners to develop a restoration plan for this site.

Lower Puyallup Basin

- **Frank Albert Site.** The Puyallup Tribe of Indians in cooperation with the Commencement Bay Natural Resources Trustees are developing a 20-acre intertidal freshwater off-channel wetland next to the Puyallup River.
- **Gog-Le-Hi-Te Expansion.** The Puyallup Tribe of Indians is developing plans to expand the existing Gog-Le-Hi-Te site by approximately 9 acres. The site is connected to the Puyallup River.

Vegetation

A variety of plant communities occur within and adjacent to the project boundary and were previously described. Because this area is zoned as urban industrial, many of the plant communities will be displaced or converted. The specific acreage that will be converted is not known at this time as the actual footprint and landscaping of planned development is not consistently available. In addition, road projects and development related to the Port of Tacoma expansion will result in the conversion of vegetative communities. The remaining isolated patches of native vegetation will be subject to noxious weed invasion. The RRP will result in long-term protection of 189 acres of riparian and wetland habitat in the study area. Native riparian plantings will replace some areas largely dominated by invasive weed species, which offer diminished habitat value for fish and wildlife. Native vegetation will improve shelter and food sources for wildlife species and will offer long-term benefits to fish habitat as the tree plantings mature. Proposed wetland mitigation can result in additional restoration and protection of wetland habitat (Port of Tacoma 2004).

Wildlife and Fish

Habitat in the immediate vicinity of the proposed corridor is primarily large blocks of abandoned agricultural lands and shrub lands, with limited riparian corridors along Wapato and Hylebos Creeks and some vegetative communities within developed areas. The continued impact to wildlife could include disturbance mortality, road avoidance, movement impairment, increased animal-vehicle collisions, light and glare impacts, and noise disturbance. Impacts on fish

could include disturbance mortality, avoidance, and water quality degradation from stormwater runoff.

In addition to the operational impacts, construction impacts to fish and wildlife could include loss of connectivity between habitat locations, changes in wetlands and other aquatic habitat from water quality degradation, and altered hydrology including increased stormwater volumes, and altered hydrology. Noxious weed species invasions could also increase in the project area. While specific site impacts are difficult to quantify at this level of detail, information on land use change is presented to provide a comparison of impacts.

Both operational and construction changes would result in a higher likelihood of moving fish and wildlife species from their current habitat to other functional habitat which may be occupied by the same or other species. This would increase competition for forage species, nesting/breeding sites, and migration corridors. Increasing densities in a given location can result in reduction in species populations through easier spread of disease, injury caused by aggressive behavior, or forcing animals into marginal habitat. Animals forced into marginal habitat experience lower productivity, higher levels of disease, and increased, sometimes deleterious, intra-and inter-species competitive interactions due to limited resource availability.

The ability to incorporate effective stormwater water quality treatment and flow control measures in densely developed or rapidly developing areas is hampered by the limited available undeveloped land to use for potential mitigation or restoration areas. Restoring degraded riparian areas can result in substantially improved hydrologic conditions; however, the RRP is not expected to completely offset impacts of other development that is likely to occur within the study area within the 2030 timeframe (PSRC 2001). Even with implementation of standard water quality treatment and flow control measures for all new development, increases in summer stream temperatures and toxicants are likely to result in further degradation of water resources if it is not combined with other measures such as riparian restoration. This is expected to be a substantial adverse cumulative effect on salmonids and the Western pearlshell mussel. Metals contamination in sediments tends to increase once impervious surface in an urbanized watershed approaches 40 percent (Horner and May 1997). When impervious surface exceeds 50 percent pollutant concentrations tend to rise rapidly with substantial deleterious impacts to biota. Thus it is expected that at the point this threshold is met in WRIA 10, the cumulative impacts to biota will be substantial.

In natural watersheds where forest cover persists and forest duff provides adequate storage of precipitation, a subsurface-flow hydrologic regime is dominant (Horner and May 1997). Development typically removes this absorbent layer and canopy layer, compacts the underlying soil, and exposed underlying till, resulting in lost interception storage and evapo-transpiration potential (Horner and May 1997). Urbanization also affects watershed drainage in the winter by increasing impervious surface which in turn reduces the ability of stormwater runoff to infiltrate into the soils thereby increasing runoff volumes such that erosion and sedimentation impact natural stream morphology (typically first-order or ephemeral). Increased road crossings, channelization of streams,

and stormwater outfalls further contribute to water quantity and quality impacts (Horner and May 1997).

Despite the effort to manage biodiversity and minimize impacts to sensitive areas, it can be expected that there will be some decline in ecological function in the study area due to the conversion of existing forested, agricultural, and vacant land to urban development (commercial, industrial, transportation). The continued loss of ecological function will be offset to some extent through compensatory mitigation. The effectiveness of mitigation could be maximized through a coordinated effort to restore wetland and riparian habitat in the study area. Most federal, state, and local regulations advocate the maintenance of much of the existing ecological function in the study area through impact avoidance, minimization, and mitigation. However, movement towards historic conditions will best occur through coordinated, large-scale restoration planning and implementation.

The incremental effect to wildlife, fish, and T&E species from this project along with other land use effects and transportation improvement projects in the region (i.e., Canyon Road extension project and Valley Avenue reconstruction project) would increase the rate of build out for high-density uses within the project area. The conversion to higher intensity land uses is consistent with and supports the policy framework for future development as identified in the comprehensive plans and development regulations adopted by valley jurisdictions (Fife and Puyallup).

Most of the land to be used for stream and wetland mitigation and riparian restoration is being farmed within urbanizing areas. The majority of which is in the city limits of the city of Fife. Both the cities of Fife and Puyallup have determined that the highest and best use of the property located within the project area is commercial or industrial use and has zoned the land as such. The jurisdictions feel that these designations are a large part of its growth, tax base, and allure for development, which will contribute more to the economy than the current farming use. The urbanization of the surrounding area, particularly within the city limits of Fife has made it hard for farmers economically farm in this area. Even under the No Build Alternative it is expected that the impacted farmland and its associated wetlands would convert to long-term commercial/industrial uses.

Riparian conditions are strongly influenced by the surrounding level of development (Horner and May 1997). Wide riparian buffers do not typically occur in urbanized watersheds. However, the riparian buffers greatly influence the environmental conditions in stream ecosystems. Wide, continuous, riparian buffers and wetlands, if maintained, appear to substantially mitigate some of the adverse effects of development. Instream LWD, which provides habitat for salmonids and juvenile freshwater mussels and flow mitigation, cannot be maintained if an intact riparian buffer is not in place. Critical Areas regulations provide some measure of protection to riparian buffers. However, in many locations within the study area, the riparian buffer is so degraded, it provides minimal function (LWD input, flow control, shade, etc.). Increased development in the study area could further fragment riparian areas, primarily by adding new stream crossing structures or by replacing existing structures with wider ones,

resulting in riparian encroachment. Development will also potentially reduce available restoration areas where floodplain connectivity and forested riparian habitat could be reestablished. Development could also provide restoration opportunities through mitigation and partnership building such as Watershed Planning.

The RRP would result in the restoration and preservation of approximately 189 acres of riparian and wetland habitat. Forested buffers would be established along 4.4 miles of streams within the project area. Approximately 63 acres of existing wetlands would be improved and an undetermined amount of wetlands would be established due to streambank stability and restored hydrology in riparian areas. The restored areas would provide linkage to over 1,450 acres of surrounding riparian and upland habitats. Restoring this large, contiguous area and reconnecting habitats is highly unlikely without a sizeable capital improvement project such as SR 167. This project would provide the resources to achieve broad-reaching restoration goals.

Mitigation for unavoidable impacts to wetlands will consist of wetland creation, restoration, and/or enhancement on one or more potential wetland mitigation sites. These sites were selected due to their location in the watershed, ability to replace lost functions and values, and ability to provide habitat connectivity, among other reasons. Increased channel capacities in Surprise Lake Drain and Hylebos Creek, removal of floodplain fill and existing development, and restoration of riparian hydrology, will improve floodplain storage. Wetland and riparian restoration is expected to provide some level of contaminant filtration, stormwater infiltration, aquifer recharge, and hyporheic flow. The restoration and mitigation areas will exhibit long-term improved habitat conditions for fish and wildlife (described in previous sections), providing refuge as surrounding areas continue to develop.

Increased pressure for growth along major transportation corridors with the Urban Growth Area should relieve pressure and minimize adverse impacts on the rural areas that contain the most functional fish and wildlife habitat.

Threatened and Endangered Species

Land use changes have impacted the biological processes necessary for the natural production of salmon and trout in the Puyallup River Basin. Existing habitat conditions for the Puyallup River, Hylebos Creek, Wapato Creek and Surprise Lake Drain and the species that likely use this habitat are described in Section 3.2, Water Resources.

The Puyallup and White Rivers are the only source population of Bull Trout in lower Puget Sound. Based on information gathered at the Corps of Engineers fish trap on the White River near Buckley, the average for the years from 1987 to 2002 is 27 fish. Historically, 693 bull trout were trapped by the Washington Department of Fisheries on the bypass leading from the screens to the White River in 1953. Total abundance for this subpopulation is believed to be less than 5,000 individuals or 500 adults. Based on research by Rieman and Allendorf (2001) it appears that these low numbers are likely threatening the genetic variation of the lower Puyallup subpopulations, which can lead to inbreeding. This research concluded that an average of 1,000 adults spawning annually

would be necessary to maintain genetic variation indefinitely. Inbreeding of small populations can lead to an accelerating decline toward extinction (Soulé and Mills 1998).

Development in the study area is expected to continue to degrade foraging, migration, and wintering habitat for bull trout prey species. The loss of prey may negatively impede bull trout recovery. However, the primary factors limiting the species recovery in the Puget Sound region are habitat degradation and habitat access. Bull trout spawning habitat occurs upstream of the study area and is not expected to experience cumulative impacts from the project. Bull trout migration will not be interfered with, other than potential temporary disruption associated with any in-water work in the Puyallup River.

Some project actions are likely to result in habitat improvement. While no fish passage barriers were identified within the proposed alignment for the build alternative, all impacted culverts will be replaced with structures designed in accordance with Fish Passage Design at Road Culverts. This will provide for a more natural stream environment. The RRP is expected to provide infiltration potential for roadway-generated stormwater runoff. Infiltration represents Ecology's preferred method of flow control. Restored riparian vegetation and wetlands is expected to filter pollutants from stormwater runoff. On-going and planned restoration efforts on Hylebos Creek are expected to increase suitable over-winter habitat and rearing habitat for bull trout prey (juvenile salmonids). Chinook salmon will experience similar cumulative impacts as non-listed fish species. The RRP and proposed wetland mitigation are expected to provide long-term improved habitat conditions for Chinook salmon.

Low numbers of wintering bald eagles currently use portions of the study area for foraging. Increased development leads to increased levels of disturbance, which could affect potential foraging areas. Bald eagle foraging primarily occurs along the Puyallup River and occasional use along Hylebos Creek during salmon spawning is possible. Due to the prevalence of developed conditions within the study area, increases in noise and disturbance are not expected to have an impact on foraging eagles. On-going and planned restoration efforts on Hylebos Creek, including proposed riparian restoration associated with the project, are expected to improve riparian corridors, eventually provided suitable bald eagle perch trees and potentially suitable nest trees. The proposed riparian restoration plan will also improve floodplain connectivity and allow farmed wetlands to return to a more natural state. Such improvements could attract higher numbers of waterfowl, bald eagle prey, to the study area. Riparian restoration will also provide future perching trees and foraging habitat for bald eagles. Habitat improvements are expected to benefit bald eagle prey species including waterfowl and salmonids.

In summary, the most notable cumulative effects on wildlife, fish, and T&E species include increases in summer stream temperatures and toxicants, conversion of existing habitats (forested, agricultural, vacant land), hastened build out of high-density uses, further fragmentation of riparian and other habitat areas, and a reduction in available mitigation and restoration areas. The RRP will restore and protect a large area of riparian and wetland habitat, connect over 1,450 acres of riparian and upland habitat, and improve stream habitat conditions

in Hylebos and Wapato Creeks and Surprise Lake Drain. However, the RRP is not expected to completely offset cumulative impacts. The degree of cumulative impact minimization is largely dependant on successful coordination of large-scale restoration planning and implementation and the availability of mitigation and restoration sites in the future.

3.4.9 Determination of Effects on Threatened and Endangered Species

The preceding discussion and analysis contains a considerable amount of information describing impacts, both direct and cumulative, to both T&E and non-T&E species. The U.S. Fish and Wildlife Service and NOAA Fisheries primary concern are T&E species. The following discussion focuses on T&E species and the potential effect on them attributed to the project.

Table 3.4-10 shows Threatened and Endangered Species and critical habitat that may be affected in the study area as well as a preliminary determination of effects. As can be seen, only Chinook salmon, Bull Trout, and their respective habitat is potentially or likely to be adversely affected. The other species of plants (Marsh Sandwort, Golden Paintbrush, and Water Howellia) and the Bald Eagle will not be effected. The reasons why these species are either affected or not affected are given following Table 3.4.10.

Table 3.4-10: Determination of Effects on Threatened and Endangered Species

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	EFFECT DETERMINATION
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	NLTAA
Marsh Sandwort	<i>Arenaria paludicola</i>	Endangered	NE
Golden Paintbrush	<i>Castilleja levisecta</i>	Threatened	NE
Water Howellia	<i>Howellia aquatilis</i>	Threatened	NE
Chinook Salmon	<i>O. tshawytscha</i>	Threatened	LTAA
Chinook Salmon Critical Habitat		Proposed	LTAA
Bull Trout	<i>Salvelinus confluentus</i>	Threatened	LTAA
Bull Trout Critical Habitat		Proposed	LTAA

NE = No Effect

LTAA = Likely to Adversely Affect

NLTAA = Not Likely To Adversely Affect

Note: The above table and following information was summarized from the project Biological Assessment (BA) dated September 2005 and subsequent consultation with U.S. Fish and Wildlife Service and NOAA Fisheries. Some of the data in this FEIS may differ from what was reported in the BA because of the subsequent consultation.

T&E Plants

Marsh sandwort, although historically documented in Pierce County, is assumed extirpated from the State of Washington. Therefore the project will have “no effect” (NE) on marsh sandwort.

Currently, populations of golden paintbrush are not documented in Pierce County. The golden paintbrush typically exists in native prairie habitat. Pockets of native prairie habitat exist south of the project area in Pierce County. However, none of these areas are within 10 miles of the project area, therefore, native prairie habitat will not be impacted by the proposed project and the project will have “no effect” (NE) on golden paintbrush.

Water howellia occurs within Pierce County at Fort Lewis, in ephemeral ponds associated with Oregon ash (*Fraxinus latifolia*) trees. Ephemeral ponds suitable for water howellia will not be impacted by the project, therefore the project will have “no effect” (NE) on water howellia.

T&E Mammals

No known Threatened and Endangered (T&E) species of mammals are known to exist in the project area.

T&E Birds

Bald Eagle

The proposed project may affect, but is **not likely to adversely affect (NLTA)** bald eagles. This project **may affect** bald eagles because foraging bald eagles occur along Hylebos Creek and the Lower Puyallup River within the project area.

This project is not likely to adversely affect bald eagles because:

- no nesting or roosting habitat will be impacted;
- only low numbers of wintering eagles occur in the project area;
- the project will likely improve foraging areas within the project area along Hylebos Creek with the RRP;
- suitable foraging areas with lower disturbance levels are available in the project vicinity;
- the nearest nest is approximately 1.6 miles from the project area;
- impacts to prey habitat will be minimized.

Due to riparian habitat improvements related to the RRP, the project will have a beneficial effect on bald eagles by increasing available perching and nesting habitat in the long-term, and by improving in-stream habitat for salmonids (potential bald eagle prey).

T&E Fish

Review of existing literature and data, results from the field investigation, and interviews with experts indicate that rearing Puget Sound Chinook salmon may be present in the action area throughout the year. Migrating anadromous bull trout may also occur in the action area throughout the year.

Chinook Salmon

The proposed project may affect, and is **likely to adversely affect (LTAA)** Chinook salmon. This determination is based on the following:

- Pier placement may occur in potentially suitable spawning habitat.
- Juvenile Chinook salmon potentially occur in the Puyallup River throughout the year and fish handling may be necessary.
- In-water work, including pile driving and potential dewatering, is proposed in the Puyallup River and Hylebos Creek, which may result in harm and behavioral disruption to the species.

Chinook Salmon Critical Habitat

The project is **likely to adversely affect (LTAA)** Chinook salmon critical habitat because:

- the project could possibly affect some critical habitat Primary Constituent Elements (PCE).

Bull Trout

The proposed project may affect, and is **likely to adversely affect (LTAA)** bull trout. This determination is based on the following:

- Migrating anadromous bull trout potentially occur in the Puyallup River throughout the year and fish handling may be necessary.
- In-water work, including pile driving and potential dewatering, is proposed in the Puyallup River that may result in harm and behavioral disruption to the species.

Bull Trout Proposed Critical Habitat

The project is **likely to adversely affect (LTAA)**, bull trout critical habitat because:

- the project could possibly affect some critical habitat PCEs.

Summary of Determination of Effects

In summary, the preliminary effect determination is that the proposed SR 167 project is not expected to jeopardize the continued existence of any federal or state threatened or endangered species, and will not result in the destruction or adverse modification of critical habitats. This determination is based on the information contained in the Biological Assessment (BA) and close and consistent coordination with both U.S. Fish and Wildlife Service and National Marine Fisheries Service (collectively referred to as the Services). FHWA and WSDOT submitted the BA to the Services in September 2005. Since the BA submittal, FHWA and WSDOT have worked collaboratively with the Services,

providing several supporting documents to assist with the development of the Biological Opinion (BO). This process is nearing completion.

During the Consultation process, several issues of concern were resolved to the Services' satisfaction. These included indirect and cumulative impacts, stormwater pollutant loading, and in-water pile driving. The Services initially indicated that the indirect and cumulative impacts needed further clarification. Working with the Services, WSDOT and FHWA resolved this issue to the Services' satisfaction. A collaborative process was also used to address stormwater issues, particularly the development of performance standards for the treatment of stormwater. Pollutant loadings and concentrations at certain levels can harm or injure fish. This has been an issue on most projects, and has been resolved at the statewide program level through an agreed to Interim Stormwater Guidance document. A third issue requiring considerable attention was the effect of pile-driving on the Chinook and Bull Trout. Sound pressure, at certain threshold levels, can harm and injure these species. Conservation measures such as the use of bubble curtains to attenuate sound pressure will be used.

Consultation is nearing completion and a limited number of outstanding issues remain. However, none of the outstanding issues are expected to cause changes to the preferred alternative. For example, an issue involving an underground arsenic plume from the nearby B&L Woodwaste site is still under discussion with the Services. This waste site is not within the project area, nor is the clean-up of the arsenic contamination WSDOT's responsibility. However, WSDOT is currently working with Ecology and the Services to develop a plan to avoid and/or minimize any impacts to T&E species within the project corridor that could be attributed to arsenic contamination from the B&L Woodwaste site.

The project includes performance standards and multiple measures that will minimize adverse effects to Chinook salmon, bull trout, and their critical habitats. However, adverse effects are still anticipated. Take, in the form of harm and harassment, may occur to individual Chinook salmon and bull trout. Therefore, the project "may affect and will likely adversely affect" Puget Sound Chinook salmon and Coastal/Puget Sound bull trout. The project impacts are expected to affect low numbers of individual Chinook salmon and bull trout, and will not impact the sub-populations as a whole. Therefore, the survival and recovery of the entire listed species in the wild will not be jeopardized by this project. Likewise, the project impacts will affect small portions, but multiple Primary Constituent Elements of designated Chinook salmon and bull trout critical habitat. Therefore, the project "may affect and will likely adversely affect" Puget Sound Chinook salmon and Coastal/Puget Sound bull trout critical habitat. However, it will not destroy the conservation value of the entire critical habitat units. Therefore, the project will not destroy or adversely modify Chinook salmon and bull trout critical habitat.

The formal and final determination of effects will be made with the issuance of the Biological Opinions. It is expected that the final Biological Opinion will be completed by the Services before the project Record of Decision is issued.

3.4.10 **Mitigating Measures**

Mitigation involves avoiding impacts, then minimizing impacts, and finally compensating for unavoidable impacts. The development of the Tier I EIS and the selection of the current corridor was the first step in the avoidance of impacts. The selected corridor has the least impacts. As the project within the corridor develops, individual design actions will be taken to further avoid and minimize impacts to various resources including habitats and species. It is not possible to avoid all impacts and still meet the purpose and needs of the project.

Some habitats, such as wetlands, are easily quantified with regard to direct impacts and are regulated at local, state, and federal levels. Most jurisdictions have defined compensation ratios for wetlands whereas other habitats are not regulated as such.

Section 7 consultation was initiated with the Services. The commitments to the necessary performance measures and terms and conditions of the Biological Opinion will be included in the Tier II Record of Decision. During design WSDOT and FHWA will continue to use all practicable means to minimize impacts to habitats. These efforts may include, but not be limited to using retaining walls (to prevent fill from entering aquatic habitats), using structures to avoid impacts, and refining the alignment by making additional minor shifts to avoid or minimize impact to wetlands or other important habitats.

As noted, wetlands are generally more strictly regulated than other wildlife habitat types. To mitigate unavoidable wetland impacts, creating wetlands is proposed on at least one of ten potential sites identified. There will be no net loss of wetland function or area from the proposed project. Through the project design, impacts to wetlands and streams was avoided or minimized to the greatest extent possible. The alignment was shifted away from Hylebos Creek north of I-5. The alignment necessitates the relocation of a reach of Hylebos Creek and Surprise Lake Drain. FHWA and WSDOT are proposing to mitigate for these impacts by designing a more natural, meandering channel for the relocated streams. The proposed relocations of Hylebos Creek and Surprise Lake Drain are described as part of the RRP in Section 3.4.

Based on the size and scope of the proposed project, there will be some unavoidable loss of plants and animals due to site preparation, roadway construction, and operation. Measures can be incorporated into the design of the proposal related to landscaping, soil retention, site rehabilitation and habitat restoration that will help minimize the impacts to wildlife and wildlife habitat.

The project will contribute to the existing fragmented nature of grassland/shrub and agricultural habitat and could continue to fragment riparian habitat. Due to the location of existing forested habitat fragments, the project would have little effect on forest habitat that is currently linked. The RRP would result in corridor linkage from upper to lower reaches of Hylebos and Wapato Creeks and Surprise Lake Drain. Potential wetland mitigation sites would provide additional linkage between the RRP areas. The addition of low-cost wildlife crossings and the use of oversized culverts, will be considered at appropriate locations.

Preservation of vegetation will decrease the impacts of project construction, and existing native plants and trees will be preserved provided roadway clear zone and sight distance requirements are met. Trees and shrubs, when present adjacent to the alignment, will be preserved wherever possible for esthetic value. Vegetation buffers will also offer wildlife physical protection from human disturbance. Landscaping with native species will mitigate habitat losses in the alignment right of way as vegetation matures.

Vegetated areas adjacent to streams (riparian corridors) are of relatively greater importance to wildlife than equivalent areas of vegetation not associated with water. Riparian sites in the project area are of particular importance to wildlife because surrounding lands are typically urban or agricultural parcels with little valuable wildlife habitat. Riparian areas should be protected from disturbance during project construction and operation through implementation with BMPs and compliance with buffer requirements established by the appropriate jurisdictions. Potential impacts to streams crossed by the corridor should be avoided by constructing bridges over the streams and adjacent riparian wetlands and placing bridge supports in upland areas wherever practicable. Replacement of existing undersized culverts with culverts or bridges sized to sustain ecological processes where feasible would have a positive benefit to both fish and wildlife.

Pollution to wetlands and stream courses associated with road runoff will be minimized through the use of vegetated biofiltration swales, wet ponds, constructed wetlands, and other BMPs. The emergent plant species typically used in vegetated swales aid in sediment and chemical pollutant retention. The project design will include drainage features that incorporate best available technology as a part of best management practices and implement appropriate stormwater treatment for water quality and quantity as established in the 2004 WSDOT *Highway Runoff Manual* (WSDOT 2004) to minimize impact to wildlife and fisheries.

The MBTA specifies that nesting migratory birds must not be directly impacted from project-related activities. Direct impacts could result if nesting migratory birds were present in the project area during construction. Construction activities will be reviewed to ensure compliance with Federal, State and local wildlife regulations, including MBTA.

In order to ensure the protection of T&E and MBTA species, a biologist knowledgeable in the species of plants and wildlife protected by ESA and the MBTA would survey proposed work areas prior to construction. If any protected species are found, WSDOT would consult with NOAA Fisheries, USFWS, and WDFW as to the best methods to protect and/or relocate them. Monitoring would continue throughout the construction phase to maintain compliance. Also, mitigation designed to offset wetland impacts would benefit migratory birds. Approximately 50 acres of new wetlands would be developed as a result of the proposed project.

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3.5 Air Quality

One of the purposes of the proposed State Route (SR) 167 project is to maintain or improve air quality in the corridor to ensure compliance with the current State Implementation Plan (SIP) and all requirements of the federal Clean Air Act (see Section 1.1.1). The Tier I Environmental Impact Statement (EIS) covered the air quality standards and the requirement for the project to conform to these standards, but did not conduct any detailed studies. By agreement with U.S. Environmental Protection Agency (EPA) and the Puget Sound Clean Air Agency (PSCAA), the Washington State Department of Transportation (WSDOT) and Puget Sound Regional Council (PSRC) conducted a project level conformity analysis during the Tier II NEPA process. In addition, the Tier II studies would provide more accurate data on the existing air quality problem areas, or “hot spots,” within the study area. These generally coincide with locations where traffic is not free flowing.

This section includes the project-level conformity analysis called for in the Tier I FEIS and an analysis of air quality problem areas. For the conformity analysis, the discussion is not specific to the mainline or the intersection options. This type of analysis is made on a regional basis. For this reason, the environmental screening criterion on air quality cannot distinguish amongst the options. The “hot spot” analysis examines three specific locations associated with the project. Both the conformity and “hot spot” analyses are under Section 3.5.4. In addition, this section includes a general discussion of the impacts of transportation related “air toxic emissions.”

3.5.1 Studies Performed and Coordination Conducted

This section incorporates information from the *SR 167 Air Quality Discipline Report* (Parsons 2001). WSDOT coordinated with the PSRC in conducting the project level conformity analysis. The potential substantial air quality impacts for this project relate to carbon monoxide (CO), ozone, and particulate matter. Predictions of existing and future (year 2030) localized air pollution concentrations in the project vicinity for this and most other roadway air quality studies are made for CO only. Most other pollutants must be monitored and dealt with regionally.

Concentrations of CO were predicted for existing conditions (year 2000) and forecast scenario years 2015, 2030 No Build, and 2030 Build Alternative using the Mobile and CAL3QHC models. The intersections modeled include the intersections most affected as a result of the proposed project.

Ozone concentrations were not modeled at a project level because ozone is a secondary pollutant that is generated by a complex series of chemical reactions. Conformity analysis for ozone is done at a regional level by the PSRC.

Particulate emissions during construction were estimated from the EPA AP-42 emission values. EPA has yet to recommend any models or procedures to accurately model particulate concentrations along individual roadways. Particulate emissions are best controlled by mitigation measures during

construction. A fugitive dust plan will be prepared to mitigate construction impacts.

3.5.2 Affected Environment

The EPA, Washington State Department of Ecology (Ecology), and PSCAA regulate air quality in the study area. Under the Clean Air Act, EPA has established the National Ambient Air Quality Standards (NAAQS), which specify maximum concentrations for CO, particulate matter less than 10 micrometers in size (PM₁₀), particulate matter less than 2.5 micrometers in size (PM_{2.5}), ozone, sulfur dioxide, lead, and nitrogen dioxide (Table 3.5-1). The eight-hour CO standard of nine parts per million (ppm) is the standard most likely to be exceeded as the result of transportation projects (Parsons 2001). All projects funded by the Federal Highway Administration (FHWA) must demonstrate conformity with the NAAQS prior to receiving federal approval.

Table 3.5-1: Summary of Ambient Air Quality Standards

Pollutant	National Primary Standard	Washington State Standard	PSCAA Regional Standard
Carbon Monoxide (CO)			
1-Hour Average (not to be exceeded more than once per year)	35 ppm	35 ppm	35 ppm
8-Hour Average (not to be exceeded more than once per year)	9 ppm	9 ppm	9 ppm
PM₁₀			
Annual Arithmetic Mean	50 µg/m ³	50 µg/m ³	50 µg/m ³
24-Hour Average Concentration (not to be exceeded more than once per year)	150 µg/m ³	150 µg/m ³	150 µg/m ³
PM_{2.5}			
Annual Arithmetic Mean	15 µg/m ³		
24-Hour Average Concentration (not to be exceeded more than once per year)*	65 µg/m ³		
Total Suspended Particulates			
Annual Arithmetic Mean		60 µg/m ³	60 µg/m ³
24-Hour Average Concentration (not to be exceeded more than once per year)		150 µg/m ³	150 µg/m ³
Ozone			
1-Hour Average (not to be exceeded more than once per year)	0.12 ppm	0.12 ppm	0.12 ppm
8-Hour Average (not to be exceeded more than once per year)	0.08 ppm		

Notes: ppm=parts per million

µg/m³ =micrograms per cubic meter

* The PM_{2.5} standard has not yet been implemented by EPA.

Sources: PSCAA Regulation 1 (1994)

40 CFR Part 50 (1997) WAC chapters: 173-470, 173-474, 173-175 (1987)

EPA has mapped all areas of the United States where the air quality standards are either met or not met. Nonattainment areas are geographical regions where air pollutant concentrations exceed the NAAQS for a pollutant. Maintenance areas are regions that previously had air quality problems, but currently comply with the NAAQS. The proposed SR 167 project lies within the former one-hour ozone area and current CO maintenance area. It borders the Tacoma Tideflats nonattainment area for PM₁₀, but the study area is in attainment for PM₁₀.

Ozone and CO emissions in the Puget Sound Region are currently managed under the provisions of Air Quality Maintenance Plans (AQMPs). The plans were developed by PSCAA and Ecology and approved by the EPA in 1996 and updated in 2004. Since the revocation of the one-hour ozone standard in 2005, the ozone maintenance plan is currently undergoing revision with the Puget Sound Clean Air Agency. Regional conformity evaluations are no longer required in former one-hour ozone areas. Regionally significant transportation projects in the Puget Sound Air Quality Maintenance areas must conform to the CO AQMP. The SR 167 extension meets the definition of a regionally significant transportation project (40 CFR 93).

The evaluation of existing air quality is based on data collected and published by Ecology and PSCAA from air quality monitoring stations located throughout the Puget Sound Region. When a monitoring station records a pollutant concentration above the standards listed in Table 3.5-1, it is called an “exceedance.” There have been no exceedances of the NAAQS for CO at the nearest monitoring station in downtown Tacoma since 1991. There were two exceedances of the ozone standard at the nearest monitoring station in Enumclaw in 1998 and one possible exceedance in Enumclaw in May 2006. Ozone concentrations are likely to be lower in the study area than at this monitoring station due to prevailing weather conditions. Emissions of ozone precursors from transportation sources in the study area contribute to ozone concentrations measured at the Enumclaw station. There have not been any exceedances of the PM₁₀ standard at Tacoma since 1990 nor at Kent since the 1980’s. These are the two nearest monitoring stations. Measurement of the PM_{2.5} standard has recently begun in Tacoma, but no data on exceedances are currently available.

In addition to the NAAQS, EPA has also established a list of 33 urban air toxic emissions that pose the greatest potential health threat. EPA controls a total of 188 Air Toxic emissions, out of which 21 are mobile source air toxic (MSAT) pollutants. Air toxic pollutants, also known as hazardous air pollutants, are those pollutants that cause or may cause cancer or other serious health effects or adverse environmental and ecological effects. Most air toxic emissions originate from human-made sources, including road mobile sources (e.g., cars, trucks, buses), non-road mobile sources (e.g., airplanes, lawnmowers, etc.), and stationary sources (e.g., factories, refineries, power-plants), as well as indoor sources (e.g., building materials). Some air toxic emissions are also released from natural sources such as volcanic eruptions and forest fires. Section 3.5.5 discusses MSATs.

3.5.3 Impacts of Construction

No Build Alternative

Under the No Build Alternative, construction impacts would only occur from other planned projects. Completion of SR 509 and the regional HOV lane projects represent the only major changes to the regional highway system with the No Build Alternative. Several changes to the surface street system are planned by local jurisdictions: widening Pacific Highway (SR 99), 54th Avenue East and Valley Avenue within the city of Fife; widening Valley Avenue between North Meridian and 82nd Avenue East; and the completion of Canyon Road which has yet to be funded.

Build Alternative (Preferred)

For the Build Alternative, construction impacts will not differ depending on which interchange options are selected. There are no unique features within the project construction zone that would increase or decrease construction related air quality impacts. The following analyses of construction impacts are not broken into mainline and interchange options of the Preferred Build Alternative.

PM₁₀ emissions will be associated with demolition, land clearing, ground excavation, cut-and-fill operations, and construction of the roadway and the interchanges. Construction emissions will be greatest during the earthwork phase because most emissions will be associated with the movement of dirt on the site.

PM₁₀ emissions will vary from day to day, depending on level of activity, specific operations, and weather conditions. PM₁₀ emissions will depend on soil moisture, silt content of soil, wind speed, and amount and type of equipment operating. Larger dust particles will settle near the source, while fine particles will be dispersed over greater distances from the construction site.

The quantity of particulate emissions will be proportional to the area of the construction operations and the level of activity. Based upon field measurements of suspended dust emissions from construction projects, an approximate emission factor for construction operations will be 1.2 tons per acre of construction per month of activity (EPA 1999). Emissions will be reduced if less of the site is disturbed or mitigation is performed.

PM₁₀ from construction activities will be noticeable if uncontrolled. Mud and particulates from trucks also will be noticeable if construction trucks will be routed through residential neighborhoods. Construction will require mitigation measures to comply with PSCAA's regulations that require the control of dust during construction and preventing deposition of mud on paved streets (PSCAA Rule 1, Article 6).

In addition to particulate emissions, heavy trucks and construction equipment powered by gasoline and diesel engines will generate CO and ozone precursors in exhaust emissions. If construction traffic were to reduce the speed of other vehicles in the area, emissions from traffic will increase slightly while those vehicles are delayed. These emissions will be temporary, limited to the immediate area surrounding the construction site. They will contribute a small

amount compared with automobile traffic in the project area because construction traffic will be a very small fraction of the total traffic in the area.

Localized concentrations of air toxic emissions along SR 167 will likely occur; however, as pointed out in section 3.5.4, the specific localized impacts cannot be identified. These impacts will be temporary.

Certain receptors, such as schools, are considered particularly sensitive to changes in air quality. The closest school is a considerable distance (0.4 mile) from the Build Alternative alignment (see figure 3.10-1). However, there are other sensitive receptors, such as the Puyallup Recreation Center within 500 feet of the alignment and residences adjacent to the alignment.

Some phases of construction, particularly paving operations using asphalt, will result in short-term odors. Odors might be detectable to some people near the project site, and will be diluted as distance from the site increases.

3.5.4 Impacts of Operation

The air quality impacts of operation for both the No Build and Preferred Build Alternatives are directly related to traffic volumes. The volumes for both the existing (2000) and design years are discussed in detail in Section 3.14. This section (Impacts of Operation) discusses the conformity and hot spot analyses for both the No Build and Build Alternatives. It also includes a general discussion of the impacts of air toxic emissions.

Conformity Analysis

Conformity is demonstrated by showing that the project would not cause or contribute to any new violation of any NAAQS, nor increase the frequency or severity of any existing violation of any NAAQS, nor delay timely attainment of the NAAQS. In accordance with 40 CFR Part 93, the criteria listed in Table 3.5-2 must be met when determining project conformity. A brief summary of the project's conformity to the SIP is discussed with each criterion.

The Build Alternative is included in the PSRC's Master Transportation Plan (MTP) and Transportation Improvement Plan (TIP), which have been demonstrated to conform to the SIP; therefore, it meets the regional conformity requirements. The Build Alternative also meets the local hot-spot conformity requirements. The Build Alternative meets all requirements of 40 CFR Part 93 and WAC 173-420 and conforms to the SIP.

Hot -Spot Analysis

Project hot spot analysis was done only for CO for four reasons:

- Total CO emissions from automobiles are greater than the emissions for all other pollutants combined;
- Motor vehicles are the greatest source of CO emissions, accounting for more than 90 percent of total CO emissions in urban areas;

- The complex reactive natures of some of the other pollutants cannot be accurately modeled;
- CO emissions from motor vehicles may be high enough to affect individuals in the immediate area while most other pollutants are not.

Table 3.5-2: Project Conformity Criteria and Responses

CRITERION	CONFORMITY RESPONSE
<i>The conformity determination must be based on the latest planning assumptions.</i>	The project hot-spot analysis was completed using the latest version (February 2001) of the Puget Sound Region MOBILE 5b emission files used by PSRC at the time. The Build Alternative is included in the PSRC's current MTP and TIP, which were also modeled for conformity to the SIP using the latest planning assumptions.
<i>The conformity determination must be based on the latest emission estimation model available.</i>	Emissions to determine conformity to the MTP and TIP were calculated using MOBILE 5b, the emission model used to model conformity to the current Puget Sound Air Quality Maintenance Plans at the time of the air quality evaluation in 2001.
<i>The Metropolitan Planning Organization (MPO) must make the conformity determination according to the consultation procedures of this rule and the implementation plan revision required by Section 51.396.</i>	The Build Alternative is included in the PSRC's MTP and TIP.
<i>There must be a current conforming plan and a current conforming TIP at the time of project approval.</i>	There is a current conforming MTP (Destination 2030 adopted May 2001) and TIP (August 2001).
<i>The project must come from a conforming transportation plan and program.</i>	The Build Alternative is included in the PSRC's MTP and TIP.
<i>The FHWA project must not cause or contribute to any new localized CO or PM₁₀ violation in CO and PM₁₀ nonattainment or maintenance areas.</i>	The study area is in a CO maintenance area. The Build Alternative would not create any new regional violations or contribute to the frequency or severity of any existing violations of the NAAQS. Under the Build Alternative, CO violations in the project area would be reduced in 2030. The project area is in conformity for PM ₁₀ .
<i>The FHWA project must comply with PM₁₀ control measures in the applicable implementation plan.</i>	The area is in conformity for PM ₁₀ , so no implementation plan is required.

Within the SR 167 study area, the analysis examined three groups of intersections with the worst level of service and highest traffic volumes.

- 54th Avenue East and SR 99, I-5, and 20th Street East
- North Meridian and Valley Avenue, SR 167, and N. Levee Road East
- Valley Avenue and SR 167

Predicted CO concentrations under the Build and No Build Alternatives would be somewhat lower than existing conditions at most locations in both 2015 and 2030 because of reductions in vehicle emissions as newer vehicles replace older more polluting vehicles. No exceedances of the one-hour average NAAQS for CO of 35 ppm were predicted at any location under the No Build Alternative in either 2000 or 2030 (Table 3.5-3). Exceedances of the eight-hour average NAAQS for CO of 9 ppm were predicted at several locations for Existing Conditions in 2000, but none predicted for 2030.

Table 3.5-3: Maximum One-Hour Average CO Concentrations

Scenario	54th and 99th	54th and I-5	54th and 20th	Meridian and Valley	Meridian and SR 167	Meridian and Levee	Valley and SR 167
2000 Existing	14.8	13	13.7	17.4	12.2	11.4	N/A
2015 Build	7.2	6.1	7	7.3	8.5	6.9	5.8
2015 No Build	12.0	10.5	10.4	11.6	10.2	9.0	N/A
2030 Build	6.9	6.1	6.5	7.5	8	7.5	5.3
2030 No Build	9.4	10.3	11.1	10	8.6	8.6	N/A

Note: Values are in ppm. The one-hour NAAQS for CO is 35 ppm.

The predicted maximum eight-hour CO concentration from vehicle emissions under the No Build Alternative was 7.8 ppm for the year 2030. For the Build Alternative, the predicted maximum eight-hour CO concentration from vehicle emissions ranged between 4.3 and 6.0 ppm for the year 2015 and between 4.3 and 5.6 ppm for the year 2030 (Table 3.5-4).

Table 3.5-4: Maximum Eight-Hour Average CO Concentrations

Scenario	54th and 99th	54th and I-5	54th and 20th	Meridian and Valley	Meridian and SR 167	Meridian and Levee	Valley and SR 167
2000 Existing	10.4	9.1	9.6	12.2	8.5	8	N/A
2015 Build	5	4.3	4.9	5.1	6	4.8	5
2015 No Build	9.3	8.3	8.2	9.0	8.0	7.2	N/A
2030 Build	4.8	4.3	4.6	5.3	5.6	5.3	6.6
2030 No Build	6.6	7.2	7.8	7	6	6	N/A

Note: Values are in ppm. The one-hour NAAQS for CO is 35 ppm.

3.5.5 Cumulative Impacts

Cumulative impacts to air quality are not discussed because the proposed transportation project is not likely to contribute, either positively, negatively, nor is it likely to alter the magnitude of other foreseeable impacts.

3.5.6 Mobile Source Air Toxic (MSAT) Emissions

Detailed quantitative analysis for MSAT emissions is required when the Annual Average Daily Traffic (AADT) is projected to be in the range of 140,000 vehicles per day (vpd) or greater by the design year. (FHWA Guidance Feb. 2006

page 5). By the SR 167 Extension project design year (2030), there is forecasted to be approximately 100,000 vpd traveling the project corridor, well below the 140,000 vpd required to conduct further detailed studies. Based on this criteria and other information provided in the FHWA MSAT Guidance, no detailed quantitative analysis was conducted for this project. The FHWA Guidance on MSAT Emissions is described below.

FHWA MSAT Guidance

MSATs are a subset of the 188 air toxics defined by the Clean Air Act. MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxic pollutants are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline (EPA 2000).

EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs (EPA 1994). More recently EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17229, March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act, and the rule preamble provides information regarding the effects and control of MSATs. EPA listed 21 compounds emitted from motor vehicles that are known or suspected to cause cancer or other serious health effects. Between 1990 and 2020 EPA projects these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 67 to 76 percent, and will reduce on-highway diesel PM emissions by 90 percent. These reductions are due to the impacts of national mobile source control programs, including the reformulated gasoline program, a new cap on the toxics content of gasoline, the national low emission vehicle standards, the Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and the heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. These are net emission reductions, that is, the reductions that will be experienced even after growth in vehicle miles traveled (VMT) is taken into account.

EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at <http://www.epa.gov/iris>. The following toxicity information for the six prioritized MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- Under the proposed revised Carcinogen Risk Assessment Guidelines (EPA 1996), **benzene** is characterized as a known human carcinogen.
- Under the Draft Revised Guidelines for Carcinogen Risk Assessment (EPA 1999), the potential carcinogenicity of **acrolein** cannot be

determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.

- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- Under EPA's 1999 Guidelines for Carcinogen Risk Assessment (EPA 1999), **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- Under EPA's revised draft 1999 Guidelines for Carcinogen Risk Assessment (EPA 1999), **diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.

The PSCAA recently issued a study that indicated that diesel exhaust accounts for up to 85 percent of the Seattle Tacoma areas cancer risk from air pollution. The majority of cancer risk estimated in the study is due to diesel soot. The study is based on conclusions drawn from State of California risk estimate calculations. The agency's goal is to make use of ultra low sulfur fuel and reduction of diesel emissions widespread in this region by 2006 and 2007. This goal has largely been accomplished, and per US EPA regulations, ultra low sulfur diesel is mandated for all on-road vehicles by September 2006. Off-road vehicles, equipment, locomotives, and applicable marine vessels are required to use low sulfur diesel by 2007. Off-road vehicles and equipment are required to use ultra low sulfur diesel by 2010, and locomotives and applicable marine vessels are required to use it by 2012.

PSCAA is encouraging businesses to retrofit trucks and buses with soot traps and oxidation catalysts in the exhaust system. The agency says using ultra low sulfur fuel and retrofitting exhaust systems could be expected to reduce diesel pollution by 90 percent or more. Efforts to reduce construction equipment idling can also help cut down on emissions. PSCAA is recommending a voluntary program in the state of Washington, whereas California is responding to mandatory low-sulfur diesel fuel use and engine retrofits under certain circumstances. The use of ultra low sulfur diesel fuel at the time of construction will be considered for this project depending upon sufficient availability and comparable cost with other diesel.

In February 2006, the Federal Highway Administration issued an interim national policy which provides guidance for how to address MSATs for transportation projects in a broad way. To date, National Ambient Air Quality Standards for MSATs have not been developed. The lack of NAAQS make the study of MSAT concentrations, exposures, and health impacts difficult and uncertain. Thus, accurate and reliable estimates of actual human health or environmental impacts

from transportation projects and MSATs are not scientifically possible at this time. EPA has also not established toxicity factors for diesel particulate matter, although one study asserts that this pollutant accounts for a large portion of MSAT health risk in certain situations, using a toxicity factor that is unique to California.

The EPA has not yet determined how best to evaluate the impact of future roads and intersections on the ambient concentrations of urban air toxic emissions. There are no standards for MSATs and there are no tools to determine the significance of localized concentrations or of increases or decreases in emissions. Without the necessary standards and tools, the localized impacts of this project cannot be analyzed in any meaningful way. With the information currently available, the only localized conclusions are that (1) there are likely to be localized concentrations of air toxics along the new alignment of SR 167 that are similar to those experienced by existing residences at similar distances from other similar corridors, and (2) regardless of the alternative chosen, emissions in the project area will decrease over time due to EPA's national control programs.

Project Level MSAT Discussion

The analysis of air toxic emissions is an emerging field. The U.S. Department of Transportation and EPA are currently working to develop and evaluate the technical tools necessary to perform air toxic emission analysis, including improvements to emissions models and air quality dispersion models. Limitations with the existing modeling tools preclude performing the same level of analysis that is typically performed for other pollutants, such as CO. FHWA's ongoing work in air toxic pollutants includes a research program to determine and quantify the contribution of mobile sources to air toxic emissions, the establishment of policies for addressing air toxics in environmental reports, and the assessment of scientific literature on health impacts associated with motor vehicle toxic emissions.

Even though reliable quantitative methods do not exist to accurately estimate the health impacts of MSATs, it is possible to qualitatively assess future MSAT emissions under the project alternatives and quantitatively evaluate broad level emissions for the build and no build scenarios expressed in total weight of emissions only. For each alternative in this FEIS, the amount of MSATs emitted is proportional to the daily traffic volumes or Average Daily Traffic Volume (ADT), assuming that other variables such as fleet mix are the same for each alternative. Based on the changing emission rates from 2006 vehicles to the cleaner vehicles in 2030, the project area is likely to experience a reduction of over 50 percent in MSATs in the future. Although, when comparing the emissions from the 2030 ADT from no build to build, using 2030 emission factors, the Build Alternative will emit about four tons more of the six priority MSATs spread over the extended project affect area than the No Build Alternative (an approximate 14 percent increase).

Reasons for the substantial decrease in emissions from 2006 to 2030 are a result of EPA's national control programs that are projected to reduce MSAT emissions by 67 to 90 percent. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control

measures. However, the magnitude of the EPA projected reductions are so great (even after accounting for VMT growth) that they demonstrate why MSAT emissions in the study area are anticipated to be lower in the future compared to today.

Because of the specific characteristics of the project alternative, under the build scenario there may be localized areas where ADT would increase, and other areas where ADT would decrease. Therefore it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new roadway sections that would be built. However, as discussed above, the magnitude and the duration of these potential increases cannot be accurately quantified because research is still being conducted on health effects and modeling techniques. Further, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In summary, under the Build Alternative in the design year it is expected there would be higher MSAT emissions in the larger study area, relative to the No Build Alternative, due to changes in ADT, but those higher levels are not as high as they could be and due to EPA's MSAT reduction programs over the next 20 years. There could be slightly elevated but unquantifiable increases in MSATs to residents and others in a few localized areas where ADT increase, which may be important particularly to any members of sensitive populations. However, there will likely be decreases in MSAT emissions in locations where ADT are reduced. In general, MSAT levels are likely to decrease over time due to nationally mandated cleaner vehicles and fuels.

Unavailable Information for Project Specific MSAT Impact Analysis

The science and modeling of project localized MSAT impacts has not developed to the point where there is certainty or scientific community acceptance. According to the recently released FHWA MSAT interim MSAT policy, only broad level project related calculations are appropriate, as described above. When this is the case, 40 CFR 1502.22(b) requires FHWA and WSDOT to address four provisions: (1) A statement that such information is incomplete or unavailable; (2) A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) A summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment; and (4) The agency evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. These provisions are addressed as follows:

1. Localized/detailed MSAT analysis is an emerging field and the science has not been fully developed and is therefore unavailable. FHWA and WSDOT are aware that MSAT releases to the environment may cause some level of pollution. What is not scientifically definable is an accurate level of human health or environmental impacts that will result from the construction of new transportation facilities or modification of existing facilities. Project-level MSAT risk assessment involves four major steps: emissions modeling, dispersion modeling in order to estimate ambient

concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is currently encumbered by technical shortcomings that prevent a formal determination of the MSAT impacts of this project. The emissions model (MOBILE6.2) is based on limited data raising concerns over the accuracy of the final estimates. Further the particulate emissions rates from MOBILE6.2 are not sensitive to vehicle speed, which is an important determinant of emissions rates (this is a shortcoming for diesel particulate matter, but not the remaining priority MSATs) or acceleration. Given uncertainties in the emissions estimation process, subsequent calculated concentrations would be equally uncertain. But beyond this, the available dispersion models have not been successfully validated for estimating ambient concentrations of particulate matter or reactive organic MSATs. Available exposure models are not well designed to simulate roadside environments. Finally, the toxicity value of at least one of the priority MSATs, that of diesel particulate matter, has not been nationally established, which would prevent the determination of health impacts of this pollutant even if the other necessary tools were available. Thus, current scientific techniques, tools, and data make it impossible to accurately estimate actual human health or environmental impacts from MSATs that would result from a transportation project.

2. Without this project specific MSATs analysis, it is impossible to quantitatively evaluate the air toxic impacts at the project level. Therefore, this unavailable or incomplete information is very relevant to understanding the “significant adverse impacts on the human environment,” since the significance of the likely MSAT levels cannot be assessed.
3. Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with negative health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate negative health outcomes when exposed to large doses. There have been other studies and papers that suggest MSATs have health impacts. However, noting that unresolved issues still remain, the Health Effects Institute, a non-profit organization jointly funded by EPA and industry, has undertaken a major series of studies to determine whether MSAT hot spots exist and what the health implications are if they do. The final summary of these studies is not expected to be completed for several more years.

Recent studies have been reported to show that close proximity to roadways is related to negative health outcomes – particularly respiratory problems¹. Yet these studies are often not specific to MSATs. Instead

¹ South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality); NEPA's Uncertainty in the

they have encompassed the full spectrum of both criteria pollutants and other pollutants. Thus it is impossible to determine whether MSATs are responsible for the health outcomes or the criteria pollutants or a combination of both.

There is also considerable literature on the uncertainties associated with the emissions modeling process. The most significant of these is an assessment conducted by the National Research Council of the National Academy of Sciences, entitled *Modeling Mobile-Source Emissions* (2000). This review noted numerous problems associated with then current models, including the predecessor to the current MOBILE 6.2 model. The review found that, “significant resources will be needed to improve mobile source emissions modeling.” The improvements cited include model evaluation and validation, and uncertainty analysis to raise confidence in the model’s output. While the release of MOBILE 6.2 represents an improvement over its predecessor, the MSAT emission factors have not been fully validated due to limits on dispersion modeling and monitoring data. The MOBILE 6.2 model is currently being updated and its results will not be evaluated and validated for several years.

4. Even though there is no accepted model or accepted science for determining the impacts of project specific MSATs, as noted above, EPA predicts that its national control programs will result in meaningful future reductions in MSAT emissions, as measured on both a per vehicle mile and total fleet basis. FHWA and WSDOT believe that these projections are credible, because the control programs are required by statute and regulation. Also, since the Build Alternative results in reduced ADT in the project area relative to the No Build Alternative, FHWA and WSDOT are confident that MSAT emissions will also be lower in many locations within the project area in the design year under those scenarios. As this project involves new alignments, there could be slightly elevated but unquantifiable increases in MSATs to residents and others in a few localized areas where ADT increases, which may be important particularly to any members of sensitive populations. However, there will likely be decreases in MSAT emissions in locations where ADT are reduced. Because MSAT emissions on a per ADT basis are expected to decline due to EPA’s control program, and because the Build Alternative would result in a nearly equal reduction in ADT relative to the No Build Alternative, FHWA and WSDOT do not believe that there will be significant adverse impacts on the human environment.

3.5.7 Mitigation Measures

Construction

Particulate emissions (in the form of fugitive dust during construction activities) are regulated by PSCAA. The operator of a source of fugitive dust shall take

Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

reasonable precautions to prevent fugitive dust from becoming airborne and shall maintain and operate the source to minimize emissions. Construction impacts will be minimized by incorporating mitigation measures per the WSDOT standard specifications into the construction specifications for the project. A Fugitive Dust Plan will be prepared by the contractor prior to construction to comply with PSCAA regulations. This plan will include mitigation measures to control PM₁₀, deposition of particulate matter, emissions of CO and ozone precursors, as well as other MSATs during construction. Specific mitigation measures include:

- Spraying exposed soil with water or other dust palliatives;
- Covering all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck);
- Removing particulate matter deposited on paved, public roads;
- Minimizing delays to traffic during peak travel times;
- Placing quarry spall aprons where trucks enter public roads;
- Graveling or paving haul roads;
- Planting of vegetative cover as soon as possible after grading;
- Minimizing unnecessary idling of on-site diesel construction equipment;
- Locating diesel engines, motors, or equipment as far away as possible from existing residential areas;
- Locating staging areas away from school buildings and playgrounds;
- Utilizing efficient street sweeping equipment at site access points and all adjacent streets used by haul trucks;
- Minimizing hours of operation near sensitive receptor areas and rerouting the diesel truck traffic away from sensitive receptor areas;
- Coordinating construction activities with the Puyallup Recreation Center and other sensitive receptor locations.

Other construction phase emission reduction measures may also be considered on a case-by-case basis, including:

- Educating vehicle operators to shut off equipment when not in active use to reduce idling;
- Developing streamlined staging/work zone areas to minimize construction equipment back-ups and idling;
- Using cleaner fuels as appropriate.

Operation

Because no exceedances of the NAAQS are predicted, no design or operational changes will be required. There may be marginal increases in air toxic emissions under the Build scenario compared to the no build scenario on a broad scale, with some locations experiencing higher emissions and some locations experiencing lower emissions, depending on the changes in ADT. If EPA develops standards for MSATs and tools are developed to determine impacts of localized concentrations of air toxic emissions, additional efforts will be identified to mitigate for above-standard air toxic emissions impacts.

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3.6 Noise

This section presents the results of a project level noise analysis. The Tier I EIS and Record of Decision required such a study be completed during the Tier II NEPA process.

Construction and operation of the proposed SR 167 present potential noise impacts. In general, an increase in volume, speed, or vehicle size increases traffic noise levels. The majority of traffic noise comes from the engine, exhaust, and tires. Other conditions affecting noise include defective mufflers, steep grades, terrain, distance from the roadway, and shielding by barriers and buildings.

Construction noise impacts are described based on maximum noise levels for construction equipment, published by the U.S. Environmental Protection Agency (EPA). Traffic noises are predicted at specific noise-sensitive locations (receptors), and based on projected future traffic operations using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM). FHWA noise abatement criteria (NAC) are used to evaluate noise impacts. Projects must also comply with local noise ordinances.

3.6.1 Studies Performed and Coordination Conducted

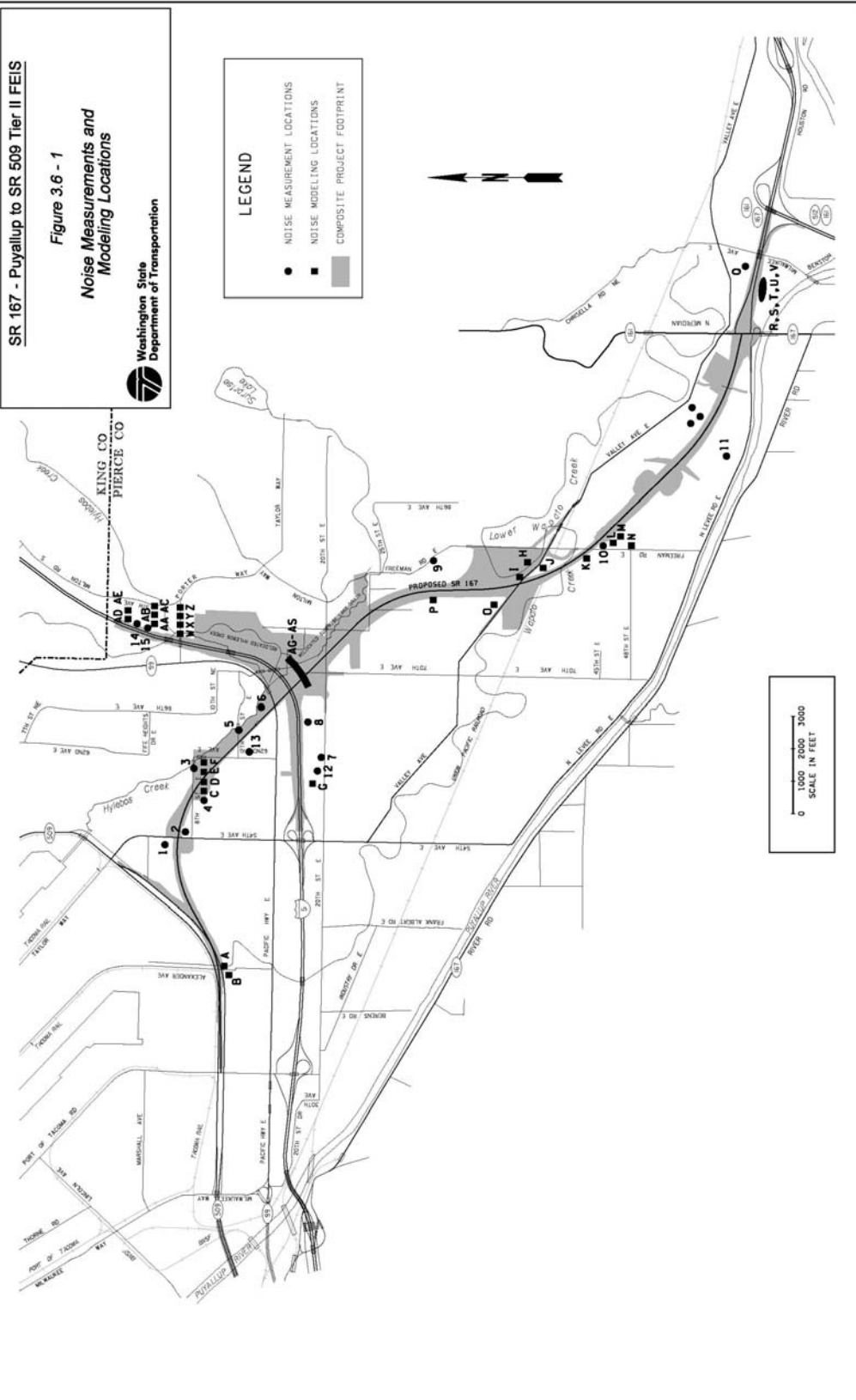
This section incorporates information compiled in the *Noise Discipline Report* for the SR 167 Tier II EIS (Parsons Brinkerhoff 2001, WSDOT 2004, and WSDOT 2006). Ambient noise levels were measured at 13 sites representing 36 residences along the proposed corridor to describe the existing noise environment, identify major noise sources in the project area, and calibrate the noise model. After the existing conditions were assessed, an additional 16 sites were added to the model to represent another 27 residences. In total, 29 sites were modeled for the DEIS, representing 63 residences along the proposed SR 167 corridor.

Supplemental noise studies were conducted in response to comments on the DEIS (WSDOT 2004) and to evaluate the SR 167 Interchange with I-5 (WSDOT 2006). Six more sites were modeled, yielding 60 total sites modeled, representing 137 residences (Figure 3.6-1). Ten noise walls were re-evaluated for the FEIS. In addition, two noise wall locations near the SR 161 Interchange and four noise wall locations near the I-5 Interchange were also evaluated for this FEIS.

Additional noise modeling was also conducted at the Puyallup Recreation Center (WSDOT 2005). Two additional locations were modeled based on the likelihood that people would tend to congregate there.

Figure 3.6 - 1

Noise Measurements and Modeling Locations



3.6.2 Affected Environment

Environmental noise is composed of many frequencies, each occurring simultaneously at its own sound pressure level. The range of magnitude, from the faintest to the loudest sound the ear can hear, is so large that sound pressure is expressed on a logarithmic scale in units called decibels (dB). The commonly used frequency weighting for environmental noise is A-weighting (dBA), which simulates how an average person hears sound. Some typical noise levels are shown in Table 3.6-1. A widely used descriptor for environmental noise is the equivalent sound level (L_{eq}). The L_{eq} can be considered a measure of the average noise level during a specified period of time. L_{eq} measured over a 1-hour period is the hourly L_{eq} [$L_{eq}(h)$]. The maximum sound level (L_{max}) is the greatest short-duration sound level that occurs during a single event. L_{max} is related to impacts on speech interference and sleep disruption.

Table 3.6-1: Typical Noise Levels

Transportation Sources (distance from source)	Noise Level (dBA)	Other Sources	Description
	130		Painfully loud
Jet takeoff (200 feet)	120		
Car horn (3 feet)			Maximum vocal
	110		Effort
	100	Shout (.5 feet)	
			Very annoying
Heavy truck (50 feet)	90	Jack hammer (50 feet)	Loss of hearing with
		Home shop tools (3 feet)	prolonged exposure
Train on a structure (50 feet)	85	Backhoe (50 feet)	
City bus (50 feet)	80	Bulldozer (50 feet)	Annoying
		Vacuum cleaner (3 feet)	
Train (50 feet)	75	Blender (3 feet)	
City bus at stop (50 feet)			
Freeway traffic (50 feet)	70	Lawn mower (50 feet)	
		Large office	
Train in station (50 feet)	65	Washing machine (3 feet)	Intrusive
	60	TV (10 feet)	
Light traffic (50 feet)		Talking (10 feet)	
Light traffic (100 feet)	50		Quiet
		Refrigerator (3 feet)	
	40	Library	
	30	Soft whisper (15 feet)	Very quiet

Sources: USDOT/FTA 1995; EPA 1971; EPA 1974

Existing noise levels were measured in the field at 15 locations (Figure 3.6-1). Fifteen-minute noise measurements were taken at each location during one or more periods of the day. The measured noise levels were used to validate the existing conditions traffic noise model, as described in the Methodology section of the *Noise Discipline Report*. Noise levels at the 15 measured sites were modeled using TNM. Forty-five additional sites were added to the TNM model, to represent the additional residences not represented by the 15 previously measured sites. Traffic noise was the dominant noise source in the project area.

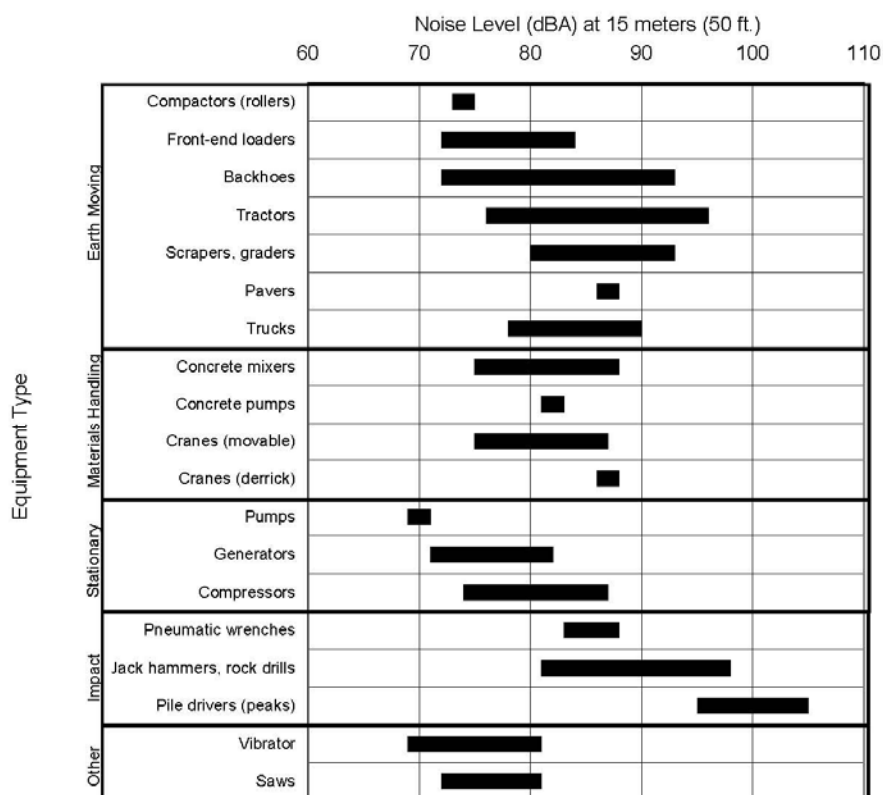
3.6.3 Impacts of Construction

Construction activities will pose a temporary impact over the duration of the construction period. Construction is usually carried out in several steps, each with different types of equipment, and with various noise characteristics. Roadway construction will involve bridge construction, clearing, cut-and-fill activities, removing old roadways, importing fill, paving, and other related activities.

The most common noise source at construction sites will be internal combustion engines. Engine-powered equipment includes earth-moving equipment, material-handling equipment, and stationary equipment. Mobile equipment operates in a cyclic fashion, while stationary equipment (such as generators and compressors) operates at sound levels fairly constant over time. Because trucks will be present during most phases and will not be confined to the project site, noise from trucks could affect more receptors. Other noise sources will include impact equipment and tools such as pile drivers. Impact tools like pile drivers and jack hammers generate very loud noises in short bursts. They are typically pneumatically powered, hydraulic, or electric. Construction noise will be intermittent over an approximate 10-year period. Noise levels will depend on the type, amount, and location of construction activities. The type of construction methods will establish the maximum noise levels of construction equipment used. The amount of construction activity will quantify how often construction noise will occur throughout the day. The location of construction equipment relative to adjacent properties will determine any effects of distance in reducing construction noise levels.

Maximum noise levels from construction equipment ranges from 69 to 106 dBA at 50 feet for pumps to pile-drivers respectively, as shown in the Table 3.6-2. Construction noise at residences farther away will decrease at a rate of 6 dBA per doubling of distance from the source. The number of occurrences of the L_{\max} noise peaks will increase during construction, particularly during pile-driving activities. Because various pieces of equipment will be turned off, idling, or operating at less than full power at any given time, and because construction machinery is typically used to complete short-term tasks at any given location, average L_{eq} noise levels during the day will be less than the maximum noise levels.

Table 3.6-2: Typical Construction Equipment Noise Level (dBA) at 50 feet



Source: EPA, 1971 and WSDOT, 1991.

Pierce County limits noise levels at property lines of neighboring properties (Table 3.6-3). The Pierce County noise code is adopted from the Washington State Department of Ecology standards (WAC Chapter 173-60) and applies within Pierce County and the City of Tacoma. The other local jurisdictions do not have their own noise standards. Since the entire project is in Pierce County, the Pierce County noise code will apply to the entire project. Maximum permissible noise levels depend on the land use district of both the noise source and the receiving property.

Table 3.6-3: Pierce County Maximum Permissible Sound Levels (dBA)

Noise Source	Receiving Property			
	Residential		Commercial	Industrial
	Day ¹	Night ²		
Residential	55	45	57	60
Commercial	57	47	60	65
Industrial	60	50	65	70

Notes: ¹ Construction noise is exempt during daytime hours

² The maximum permissible noise levels are reduced by 10 dBA for residential receiving properties between 10 p.m. and 7 a.m.

Source: Pierce County Code.

Construction noise is exempt from local property line regulations during daytime hours. Nighttime work will have to meet the property line standards or will require a nighttime noise variance from Pierce County. The contractor awarded the work will be encouraged to perform noise-generating activities in the daytime except when it is essential to carry out such activities in the night. Construction workers will also be subject to construction noise while working on the site.

The Pierce County standard does not include noise from traffic, aircraft, and railway operations in public right of way. Therefore, the standards do not apply to operational noise from SR 167.

3.6.4 Impacts of Operation

Once construction is complete, the proposed SR 167 will begin generating noise from traffic using the facilities. The noise impacts of operation are estimated through the modeling of existing and future conditions. The future conditions are the build out year of 2030. The noise model is not sensitive enough to distinguish the noise levels of the mainline from those of the different interchange options. Therefore, the analysis of impacts examines the mainline only. The traffic volumes on the interchanges are expected to be substantially below those of the mainline and therefore the noise impacts are likely to also be lower.

Applicable noise regulations and guidelines provide a basis for evaluating potential noise impacts. For federally funded highway projects, traffic noise impacts occur when predicted $L_{eq}(h)$ noise levels (1) approach or exceed the NAC established by FHWA, or (2) substantially exceed existing noise levels (USDOT, 1982). The FHWA NAC specify exterior $L_{eq}(h)$ noise levels for various land activity categories (Table 3.6-4). Typically, noise impacts are modeled only for categories A and B because these represent the sensitive receptor sites. This procedure is consistent with WSDOT Noise Abatement Policy and Procedures 1997, which has been approved by FHWA.

WSDOT considers a noise impact to occur if predicted $L_{eq}(h)$ noise levels approach within 1 dBA of the NAC. Although the term “substantially exceed” is not defined, WSDOT considers an increase of 10 dBA or more to be a substantial increase above existing noise levels.

Table 3.6-4: FHWA Noise Abatement Criteria

Activity Category	L _{eq} (h) (dBA)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where preserving these qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: U.S. Department of Transportation, 1982.

Tables 3.6-5 and 3.6-6 illustrate the results of the noise modeling for existing (2000) and future conditions (2030). The predicted levels were based on PM peak-hour traffic conditions. Existing peak-hour traffic volumes for 2000 and forecast traffic volumes for 2030 were modeled at the posted speed limit. The 60 modeled sites include those closest to the I-5 and proposed SR 167 alignments, as well as other local noise-sensitive sites that could be affected by either increases or decreases in traffic noise as a result of this project.

Table 3.6-5: Revised Noise Modeling Results at Measured Sites

Measured Sites	Residences Represented	Existing 2000 (L _{eq})	No-Build 2030 (L _{eq})	Build 2030 (L _{eq})
1	2	63	65	69
2	3	63	66	70
3	4	55	57	64
4	3	54	56	62
5	2	58	60	67
6	10	63	64	69
7	Future Development (20th Street East and 70th Avenue East)	69	71	75
8	1	71	73	74
9	2	58	61	63
10	2	55	58	72
11	15 (Puyallup Rec Ctr.)	52	52	70
12	Future Development (20th Street East and 70th Avenue East)	65	67	72
13	2	60	61	67
14*	1	79	81	81
15*	1	80	81	81

Highlighted numbers approach or exceed the FHWA NAC of 67 dBA for Category B land activities.

Note: See Figure 3.6-1 for noise measurement and modeling locations

* New measured sites not in DEIS.

Table 3.6-6: Revised Noise Modeling Results at Modeled Sites

Modeled Sites	Residences Represented	Existing 2000 (L_{eq})	No-Build 2030 (L_{eq})	Build 2030 (L_{eq})
A	1	61	64	66
B	2	59	61	63
C	3	54	56	62
D	2	55	57	63
E	2	55	56	62
F	1	55	57	63
G	Future Development (20th Street East and 70th Avenue East)	63	66	71
H	2	62	64	70
I	2	59	62	73
J	3	60	62	69
K	3	55	59	72
L	1	61	65	65
M	1	59	63	63
N	2	61	64	63
O	Future Development Tribal Lands	55	58	65
P	Future Development Tribal Lands	51	51	69
Q*	4	68	70	72
R*	2	71	74	74
S*	7	70	72	71
T*	4	70	74	74
U*	1	67	70	71
V*	3	65	74	74
W*	1	71	73	73
X*	1	70	72	72
Y*	1	67	69	69
Z*	1	67	69	69
AA*	1	72	74	73
AB*	1	68	69	78
AC*	1	70	71	77
AD*	1	79	78	78
AE*	1	75	73	73
AF**	1	75	77	77
AG*	2	63	65	65
AH*	1	60	62	62
AI*	3	67	69	69
AJ*	6	57	61	67
AK*	2	62	67	67
AL*	2	57	65	66
AM*	2	57	66	66
AN*	2	57	67	67
AO*	2	58	67	68
AP*	2	57	69	69

Modeled Sites	Residences Represented	Existing 2000 (L _{eq})	No-Build 2030 (L _{eq})	Build 2030 (L _{eq})
AQ*	3	64	68	69
AR*	3	62	69	69
AS*	3	65	71	71

Highlighted numbers approach or exceed the FHWA NAC of 67 dBA for Category B land activities.

Note: See Figure 3.6-1 for noise measurement and modeling locations

* New modeled receivers not in DEIS.

No Build Alternative

Under the No Build Alternative, noise levels are projected to increase by 2 to 4 dBA at most receptors in the study area (Table 3.6-5), as a result of increased traffic in the future. Some receptors near I-5 are predicted to have increases of 9 to 12 dBA, while noise is predicted to decrease at others. Actual maximum noise-level increases may be less than the predicted increase, as congestion increases in the peak hour and slows traffic. A 1 to 2 dBA increase is not perceptible to most individuals. Under the No Build Alternative, noise levels would approach or exceed the FHWA noise abatement criteria at 32 out of 60 modeled sites.

Build Alternative

Under the Build Alternative, noise levels were predicted to increase in the SR 167 study area from 2 to 18 dBA, relative to existing modeled noise levels (Table 3.6-6). The greatest increase in noise levels under the Build Alternative will be at receptor 11, near the Puyallup Recreation Center along the portion of Valley Road approaching North Meridian. This increase will result from traffic traveling on the new portion of SR 167. However, additional modeling (WSDOT 2005) indicated that noise will remain below FHWA criteria where people are likely to congregate. Noise levels at 45 out of 60 sites will approach or exceed the FHWA criteria under the Build Alternative in 2030.

3.6.5 Cumulative Impacts

Cumulative effects to noise are not typically studied. Noise naturally decreases exponentially with distance from the source, and often is further attenuated by topography, vegetation, and man-made structures. Thus, the proposed transportation project is not likely to alter substantially the magnitude of other foreseeable impacts.

3.6.6 Mitigating Measures

Noise mitigation or abatement is usually necessary only where frequent human use occurs and where a lower noise level would have benefits (USDOT 1982). Noise can be controlled at three locations: (1) at the source, such as with mufflers and quieter engines; (2) along the noise path, with barriers; and (3) at the receptor, with insulation.

Mitigation of Construction Impacts

Daytime construction noise within permitted hours of operation is not regulated by either local ordinance or the NAC. Only nighttime construction work is regulated by local ordinances. WSDOT contract documents require contractors to adhere to a variety of standard specifications aimed at reducing and minimizing day and nighttime construction noise impacts. To reduce construction noise impacts at nearby receptors, the following mitigation measures could be incorporated into construction plans and special provisions:

- Erecting noise berms and barriers as early as possible to provide noise shielding
- Limiting construction activities to between 7 a.m. and 10 p.m., to reduce construction noise level during nighttime hours in residential areas
- Equipping construction equipment engines with adequate mufflers, intake silencers, and engine enclosures. This could reduce their noise by 5 to 10 dBA (EPA 1971)
- Turning off construction equipment during prolonged periods of nonuse, to eliminate noise from construction equipment during those periods
- Requiring contractors to maintain all equipment and train their equipment operators, to minimize noise levels and increase operating efficiency
- Locating stationary equipment away from receiving properties to decrease noise from this equipment in relation to the increased distance
- Constructing temporary noise barriers or curtains around stationary equipment that must be located close to residences, to decrease noise levels at nearby sensitive receptors
- Discussing noise issues at the pre-construction stage and develop community involvement to identify haul roads and sensitive noise receptors
- Establishing the complaint mechanism during construction of the project

WSDOT's contract specifications require the contractor to notify the community about construction activities that will cause noise.

Mitigation of Operational Impacts

A variety of mitigation methods can serve as effective traffic noise impact reducers. For example, noise impacts from the project's long-term operation can be minimized by the following methods: implementing traffic management measures, acquiring land as buffer zones, realigning the roadway, and constructing noise barriers or berms. These mitigation measures were evaluated for their potential to reduce noise impacts from the proposed action, and the results of the evaluation are summarized below. The final determination of noise barrier or berm size and placement, and the implementation of other mitigation methods will take place during detailed project design, after an opportunity for public involvement and approval at the local, state, and federal levels.

Traffic Management Measures

Traffic Management Measures reduce noise by reducing traffic. However, it takes a 50 percent reduction in traffic to decrease traffic noise by 3 dBA. Traffic management measures include time restrictions, traffic control devices, signing to prohibit certain vehicle types (e.g., motorcycles and heavy trucks), modified speed limits, and exclusive lane designations. Restriction of vehicle types and lower speed limits on the proposed SR 167 could increase congestion on SR 167 and other roadways, and produce results contrary to the purpose of this project. For example, restricting trucks on SR 167 would shift traffic to other facilities, increasing congestion on the other roadways and reducing freight reliability. A transportation system management plan combined with increased transit facilities that encourage carpooling and public transit use, would reduce vehicle trips. It is unlikely that such a plan could reduce traffic by 50 percent.

Land Acquisition for Noise Buffers or Barriers

The proposed SR 167 is bordered by residential and commercial properties, including single- and multi-family units (see Section 3.11 for zoning information). Land acquisition for noise buffers or barriers would require relocating residents and would be unreasonably expensive for noise mitigation purposes.

Realigning the Roadway

Noise reduction could occur by realigning the proposed SR 167 both horizontally and vertically. The horizontal alignment has been determined by design criteria for a highway of this nature. In those locations where a change in horizontal alignment might provide some noise reduction to receptors, the alignment is constrained by other design criteria. The vertical alignment was established largely to provide adequate clearances over roads, highways, and railroad tracks. The elevated alignment results in slightly lower noise levels than a comparable at-grade alignment at the same location because the higher roadway shoulder and safety barrier provide some additional noise reduction compared to their at-grade equivalents.

Noise Barriers

Noise barriers include noise walls and berms. The effectiveness of a noise barrier is determined by its height and length and by the project site's topography. To be effective, the barrier must block the "line of sight" between the highest point of a noise source (e.g., a truck exhaust stack) and the highest part of a receiver. A barrier must be long enough to prevent sounds from passing around its ends, have no openings such as driveway connections, and be dense enough so that noise would not be transmitted through it (USDOT 1973).

WSDOT evaluates noise barriers for feasibility and reasonableness. The determination of engineering feasibility includes whether barriers could be built in a location to achieve a noise reduction of at least 7 dBA at the closest receptors. The determination of reasonableness includes the number of sensitive receptors benefited by at least 3 dBA, the cost-effectiveness of the barriers, and concerns such as the desires of nearby residents, aesthetics, and safety. WSDOT has established a reasonableness criterion for the maximum allowed wall surface

area per household. Noise walls that exceed the maximum allowed wall surface area are deemed not reasonable.

At the 45 locations where future noise levels approached or exceeded the NAC, 16 noise wall configurations were evaluated (Figure 3.6-2). Six of the 16 noise barriers were found to be feasible and one of the noise barriers was determined to be reasonable at this time. Table 3.6-7 shows a summary and basis of not-feasible walls. They could not achieve a noise reduction of at least 7 dBA at the closest receptors in accordance with WSDOT Noise Abatement Policy and Procedures 1997.

Table 3.6-7: Revised Summary and Basis of Not-Feasible Noise Walls

Wall	Height (ft)	Length Required (ft)	Area (ft ²)	Benefited Receptors	Residence # Represented	Maximum reduction in dBA
1	16	1,100	17,600	A,B	3	5
2	12	1,100	13,200	1	2	2
3	12	1,100	13,200	2	3	4
5	12	2,400	28,800	7,8	4	1
6	12	2,400	28,800	G,12	4	3
8	12	1,500	18,000	H	2	3
11	20	841	16,820	Q	4	4
13	20	373	7,460	W,X,Y,Z	4	6
15	20	373	7,460	15,AD,AF,AG	5	6
16	30	925	27,760	AG-AS	33	4

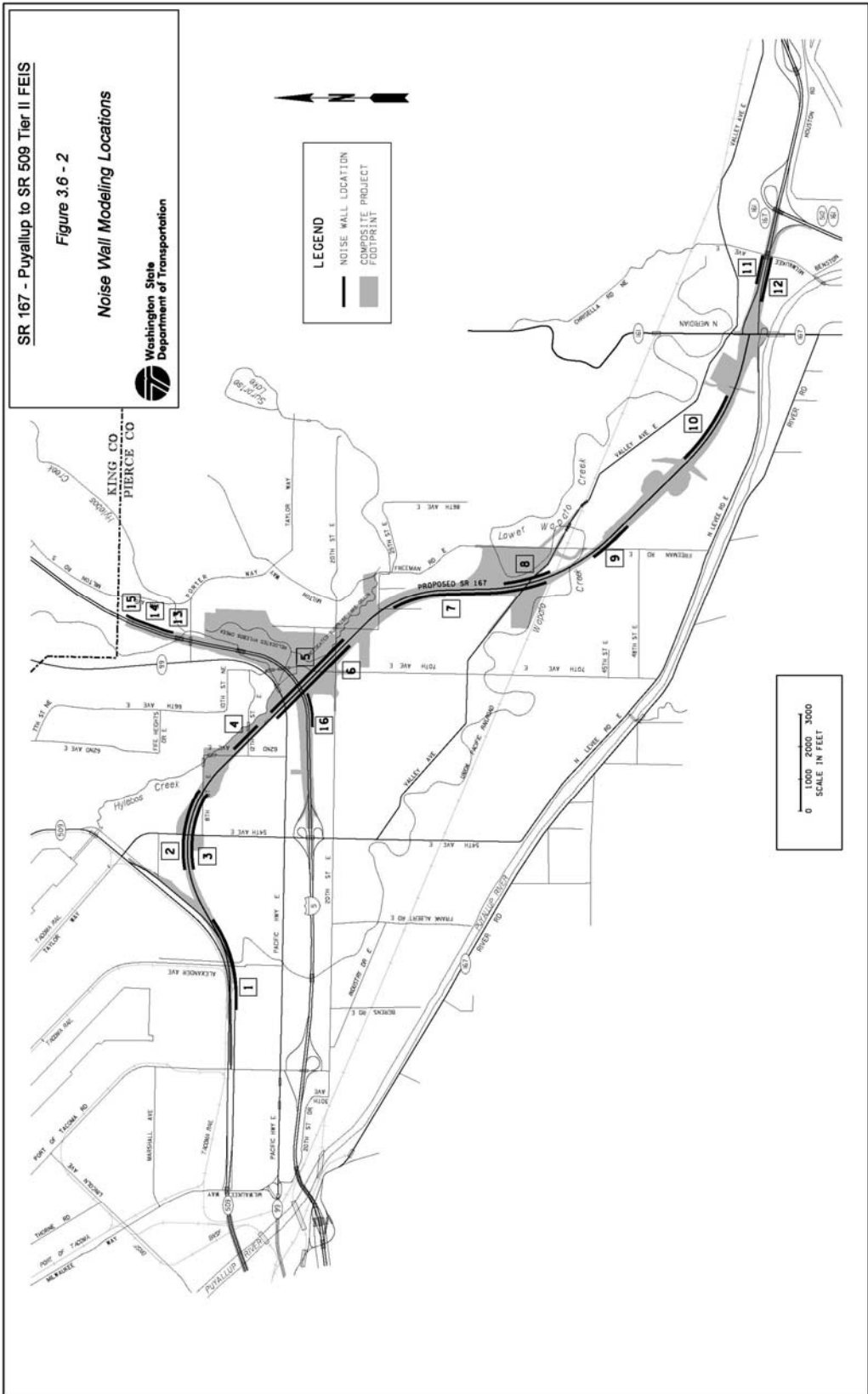
Note: Receptors 5 and 6 and W through AS receive largely I-5 traffic noise

Table 3.6-8 shows a summary of feasible and not-reasonable walls per WSDOT Noise Abatement Policy and Procedures 1997.

Table 3.6-8: Revised Summary of Feasible and Not-Reasonable Noise Walls

Wall	Height (ft)	Length Required (ft)	Area (ft ²)	Benefited Receptors	Residence # Represented	Allowed Area (ft ²)
4	14-16	802	11,544	5	4	3,080
7	10	2,950	29,500	I,O,P	2	2,342
9	15	1,200	18,000	10,K	5	5,067
10	10	2,400	24,000	11	15 (Puyallup Recreation Center)	14,595
14	18	600	10,800	14,AA,AB,AC	4	4,344

The first feasible noise wall (#4) was found feasible because it was possible to obtain a 7-dBA reduction in noise for the four residences represented by site 5, which is northwest of the I-5 interchange. A wall of 14-foot average height (16-foot maximum) and 802 feet long (11,544 square feet) would provide a reduction of 7-dBA. A wall of this size is not reasonable because it exceeds the 2,218 square feet allowed, based on the number of residences and their future decibel levels. This area currently receives most of its noise from local traffic, I-5 and SR 99 traffic.



The second feasible noise wall (# 7) would reduce noise levels by 3 to 7 dBA at receptors I, O and P west of the Valley Avenue interchange. This noise wall was found to be feasible but not reasonable at this time. A 10-foot-high wall, extending for 2,950 feet, would provide a 3- to 7-dBA reduction within the Tribal Trust lands that border the SR 167 alignment to the west. Because the land is currently undeveloped, a reasonableness calculation could not be completed. If this land is developed, the barrier found feasible for this area could be evaluated for reasonableness. To be reasonable, the proposed barrier would have to protect the residential equivalency of 25 units. The one existing noise sensitive receptor (I) has two residences that would benefit from the evaluated wall.

The third feasible noise wall (# 9) was found feasible because it was possible to obtain a 7-dBA reduction for the residents in the area. A 15-foot-high wall, 1,200 feet long, would provide a 7-dBA reduction. This wall was found to be not reasonable because the necessary wall area of 18,000 square feet exceeds the allowed area of 5,067 square feet. To be reasonable, the proposed barrier would have to protect the residential equivalency of 18 units.

The fourth feasible noise wall (# 10) would reduce noise levels by 7 dBA at receptor 11, the Puyallup Recreation Center. This noise wall was found to be feasible because a 10-foot-high wall, 2,400 feet long, would provide a 7-dBA reduction for the Recreation Center. This wall was found to be not reasonable because the necessary wall area of 24,000 square feet exceeds the allowed area of 14,595 square feet for the residential equivalency of 15 homes calculated using average attendance for activities at the Puyallup Recreation Center.

The fifth feasible noise wall (#14) would reduce noise levels by 7 dBA at one of the four residences that would benefit. An 18-foot-high wall, 600 feet long would be required. A wall of this size (10,800 square feet) is not reasonable because it exceeds the 4,344 square feet allowed for the number of residences and future decibel levels at this location.

Feasible, Reasonable Noise Barrier

A noise barrier in Area 12, along the south shoulder of SR 167 between stations 410 and 424 west of Milwaukee Avenue East, was analyzed since the DEIS and found to be feasible and reasonable. It is feasible because a 14,400-square foot wall (10 feet high and 1,400 feet long) would reduce noise levels by 6 to 9 dBA at receptors R, S, T, U, and V. It is reasonable because 16,401 square feet is the allowed wall area based on the residences represented and future decibel levels. Because it is both feasible and reasonable, a noise barrier will be included in the final design of the preferred Urban Interchange option for this area, which receives most of its noise from traffic on SR 167, SR 512, and SR 161.

FHWA and WSDOT remain committed to providing a noise barrier between the Tribal Trust property with residences along 48th Avenue East and the proposed SR 167 when warranted. Because the project is on an elevated structure through this area, landscaping may not be possible. Technical guidance to the Puyallup Tribe of Indians on the placement of businesses in order to effectively use the noise barrier will be provided at the time of development of the Tribal parcels. WSDOT will also retrofit houses on Tribal Trust land near Valley Avenue with storm windows as mitigation to minimize noise impacts.

3.7 Energy

Potential impacts from the proposed SR 167 highway extension improvements would primarily affect petroleum fuel resources. During construction, various types of petroleum would be consumed in the manufacturing of construction supplies and materials and in the operation of construction equipment. Following construction, individual vehicles using the new freeway would consume energy resources. Annual maintenance activities would also consume energy.

The Tier 1 NEPA process estimated that once built the proposed SR 167 highway extension would reduce fuel consumption by approximately five percent relative to the No Build Alternative. Reduced fuel consumption would be expected to benefit air quality in the project area.

The current conditions of SR 167 affect energy consumption, especially during peak hour traffic conditions. Primary factors increasing energy consumption include increased traffic volumes, decreased vehicle speed and increased number of stops during heavy traffic periods. Vehicles use more fuel under these conditions than under free-flow conditions at moderate speeds. The new route would be shorter to the Port of Tacoma and destinations to the north reducing travel distances for some vehicles. All of these factors result in greater fuel efficiency and offer potential long-term benefits compared to the No Build Alternative.

3.7.1 Studies Performed and Coordination Conducted

This section incorporates information compiled in the *Energy Discipline Report* for the SR 167 Tier II EIS (Washington State Department of Transportation [WSDOT] 2001). WSDOT evaluated two procedures for calculating fuel consumption. One procedure is quantitative and is based on the Federal Highway Administration (FHWA) publication *Procedure for Estimating Highway User Costs, Fuel Consumption and Air Pollution* (FHWA 1980). This procedure uses uniform speeds, stopping, speed reductions and idling of vehicles to compute fuel consumption. The FHWA procedure has not been updated in over 20 years and its energy use predictions are no more accurate than using a qualitative procedure. The procedure does not accurately account for the improved fuel efficiency of modern cars and trucks. For these reasons, WSDOT decided to use a qualitative analysis in the discipline report for this project.

Fuel efficiency is mainly dependent on type and efficiency of vehicle, miles traveled, average speed, and number of slowdowns and stops. The study assumes that the type and efficiency of vehicles using SR 167 would be similar for the Build and No Build Alternatives. Vehicle miles traveled were obtained from the WSDOT Highway and Video Logs and a field review. For the existing situation, average speed, number of slowdowns and stops were calculated from reports of commuters and the WSDOT Highway and Video Logs.

The following assumptions were used to predict future energy use in the project area.

- Population, business and traffic will continue to increase.
- Light rail and other public transportation will not be capable of substantially reducing traffic volumes in the study area under the No Build or Build Alternatives.
- Fuel will continue to be available and be relatively affordable.
- Truck traffic ratios will remain constant under either alternative.
- The vehicle fleet will be equally fuel efficient under either alternative.
- Most truck traffic would choose to use a limited access freeway if available.
- Some commuter traffic would be diverted from local streets to the proposed freeway.

3.7.2 Affected Environment

The existing SR 167 (River Road) provides a major transportation link between Puyallup, I-5, SR 509, and the Port of Tacoma. It is a four-lane urban facility with numerous intersections and driveways. There are supplemental left and right turn lanes at some intersections. Local residents use the highway for work, shopping, social, and recreation purposes. The highway also functions as a major transportation arterial for freight.

West of 70th Avenue East, the existing non-freeway segment of SR 167 has an average daily traffic volume (ADT) of about 36,000 vehicles per day in both directions. Between 70th Avenue East and North Meridian, the current ADT is 31,500. Traffic flows reasonably well on SR 167 during non-peak traffic periods. The average traffic speed on the facility is about 28 miles per hour (mph). Traffic moves slowest on the North Meridian segment of the route.

Valley Avenue is another major transportation link from the west terminus of the existing SR 167 freeway. Valley Avenue connects to I-5 about two miles north of its interchange with SR 167 and provides a route from Puyallup to the Port of Tacoma and points north. The current ADT on Valley Avenue ranges from 11,780 west of 70th Avenue East to 15,200 between 70th Avenue East and the North Meridian intersection.

Traffic congestion occurs on weekdays during peak hour traffic on state and local roads in the project area. Currently, peak hour traffic occurs from about 7:15 a.m. to 8:45 a.m. and 4:15 p.m. to 5:45 p.m. Major bottlenecks on existing SR 167 occur at North Meridian, Pioneer Avenue, 66th Avenue East (Clark's Creek Bridge), and the I-5 interchange. During peak hour conditions, the average speed on the facility is 19 mph. Stop and go traffic during peak hour traffic increases fuel consumption, compared to free-flow conditions at moderate speeds.

Peak hour traffic currently averages about 1,700 vehicles in both directions. Trucks comprise about 25 percent of the vehicle mix. Most of the major congestion occurs at intersections during peak hour traffic. Some intersections are operating at level of service F which is unstable flow or stop and go conditions and there are substantial traffic backups that tend to increase traffic accidents. Commuters often use the local street network to bypass congested areas.

3.7.3 Impacts of Construction

No Build Alternative

Under this alternative the project would not be built. The local jurisdictions would continue with improvements to existing roads to improve traffic conditions. At the same time, the area is expected to grow pursuant to state and local plans. More traffic is forecasted as a consequence. The improvements in the transportation system are not likely to overcome the impacts of increased volumes with respect to energy consumption.

WSDOT would continue to improve the existing facilities including SR 167, SR 99, SR 509, and I-5. These improvements would result in fuel consumption during construction but would likely result in less energy used because the scope of the construction activity is substantially less. Once completed, these projects would be expected to reduce fuel consumption by improving traffic flow.

Build Alternative (Preferred)

Since the 1980s, there have been several empirical reviews of the energy required for highway construction projects. These studies found that construction costs are directly related to the amount of energy used. Predictions of energy use based on construction costs are almost as accurate as using complicated quantitative formulae. The analysis used here does not break out the costs of the different interchange options from the mainline. Instead, the analysis used the highest cost combination of alternatives.

The total proposed project cost in year 2000 dollars is anticipated to be about \$2.1 to 2.4 billion. Right-of-way and preliminary engineering costs do not generate energy impacts. Construction costs to build the facility are estimated at \$1.4 billion in 2004 dollars. These costs relate to the substantial amount of energy used to manufacture, transport, and place roadway materials into a finished product.

The Build Alternative will involve a greater amount of construction energy than the No Build Alternative. However, construction energy use will be spread over several years because the project is proposed to be built in stages. Construction of the proposed SR 167 project and design features (interchange configurations, ramp options, etc.) will not result in a measurable impact on regional or local fuel availability.

3.7.4 Impacts of Operation

No Build Alternative

Traffic congestion will continue to increase every year. By 2030, ADT is predicted to substantially increase. On the existing non-freeway segment of SR 167 west of 70th Avenue East, the ADT is expected to increase from 36,000 to 58,000 vehicles per day in both directions. Valley Avenue ADT is predicted to increase to 22,000 vehicles at the west end and 36,000 vehicles at the North Meridian intersection. Local roads will experience similar traffic increases.

Peak hour traffic would increase by 147 percent to about 4,200 vehicles. Peak hour traffic conditions will double in the length of time they occur. Peak hour conditions will run from about 6:15 a.m. to 9:15 a.m. and 3:30 p.m. to 6:30 p.m. Based on these predictions, more than 20,000 vehicles would be traveling on the existing SR 167 during the peak hour period. Similar peak hour traffic increases are expected on Valley Avenue and other local roads.

Traffic would barely move during the peak hour periods. Average traffic speeds are anticipated to decline to about 10 mph. Much of the slow down would be due to waiting at traffic signals at 66th Avenue East (Clark's Creek Bridge), Pioneer Avenue, and North Meridian. The whole regional road network would be overwhelmed as commuters struggle to find ways around the traffic bottlenecks.

Standard fuel usage tables show that an average car or truck will use substantially more fuel at 10 mph (2030 predicted peak hour traffic speed) than at 19 mph (estimated 2000 peak hour average speed). The additional stops and slowdowns will further increase fuel consumption. Also, the existing SR 167 (River Road) is 0.8 mile (12.9 percent) longer than the proposed freeway and has traffic signals.

Based on the above predictions, operational energy consumption in 2030 would be greater during peak hour traffic than that predicted for the Build Alternative.

Build Alternative (Preferred)

The operational impacts to energy resources depend on fuel consumption. The differences between the intersection alternatives on fuel consumption are insignificant and therefore the analysis considers the mainline and the intersections together.

The proposed SR 167 freeway will draw vehicles from many sources. Some commuters driving between I-5 and Puyallup will choose to use the new freeway for destinations north of downtown Tacoma. Traffic levels on River Road (existing SR 167), N. Levee Road East and West Pioneer Avenue will continue to increase, but not as dramatically as under the No Build Alternative. Peak hour traffic on River Road ("existing" SR 167) in 2030 is predicted to be about 2,800 under the Build Alternative (Table 3.7-1). Most people using the local roads will drive less than 2 miles before reaching either the proposed SR 167 or a local destination.

Table 3.7-1: Number of Vehicles in 2015 for Proposed Project

Proposed Freeway Segment	2015 Predicted ADT	2015 Predicted Peak Hour Traffic	2015 Predicted Peak Hour HOV
North Meridian to Proposed Valley Ave. I/C	52,000	4,300	400
Proposed Valley Ave. I/C to I-5	70,000	5,500	500
I-5 to SR 509	42,500	4,150	0

Much of the truck traffic on Valley Avenue will also use the proposed freeway except for local deliveries. Some truck traffic from SR 18 may also choose SR 167 to access the Port of Tacoma and destinations to the south. Trucks may comprise as much as 25 percent of the traffic on the proposed freeway.

The new freeway is scheduled for completion in 2015. At that time, about 500 vehicles are expected to use HOV lanes during peak hour traffic conditions.

By 2030, if traffic growth continues as predicted, traffic congestion may occur during peak hour traffic (Table 3.7-2). The level of congestion and energy efficiency will be better than the No Build Alternative because there will be no traffic signals, fewer slowdowns, and higher traffic speed.

Roadway segments accessing the Valley Avenue interchange will see increased volumes of traffic especially truck traffic. There will be a localized increase in traffic congestion and fuel use. Traffic using SR 512 to access I-5 from SR 167 may shift to SR 167. Truck traffic heading to eastern Washington from the Port of Tacoma may also shift from SR 18 to SR 167 to avoid the steep grades on SR 18.

Most surface streets will flow better than under the No Build Alternative because many vehicles will be diverted to the proposed freeway. There may be more congestion near freeway ramps. Regionally, there will be a modest energy savings for vehicles traveling on local streets.

The new facility will feature HOV lanes from I-5 to SR 161 that will make carpooling and taking the bus more attractive than it is presently. Between Valley Avenue and I-5 about 1,170 vehicles are predicted to use the HOV lanes during peak hour traffic conditions in 2030 (Table 3.7-2). Two park and ride lots will also be constructed in association with the new freeway. The HOV lanes, park and ride lots, and transit service will combine to reduce energy consumption relative to the No Build Alternative.

Table 3.7-2: Number of Vehicles in 2030 for the Proposed Project

Proposed Freeway Segment	2030 Predicted ADT	2030 Predicted Peak Hour Traffic	2030 Predicted Peak Hour HOV
North Meridian to Proposed Valley Ave. I/C	120,000	5,320	1,010
Proposed Valley Ave. I/C to I-5	100,000	6,850	1,170
I-5 to SR 509	42,000	5,300	0

Indirect and Cumulative Impacts

A substantial amount of energy would be used to construct the new freeway; however, construction of the proposed project would not result in a measurable impact on regional or local fuel availability. In 2015, when the facility first opens, the operational energy savings of the Build Alternative on a per day basis would begin to occur. After this time, the energy used to construct the new freeway would begin to be recouped. Countering these energy savings would be the energy costs of maintenance. These are not expected to be substantial.

By 2030, traffic will have increased but the freeway would still flow better than under the No Build Alternative. The HOV lanes would be fully operational. Operational energy savings of the Build Alternative on a per day basis would continue to increase consistent with federal energy requirements.

New lighting would be installed, but there would be no measurable impact on the amount of electricity or natural gas used in the region.

Construction of the proposed project would consume energy resources from manufacturing construction materials, transporting construction workers, and operating construction equipment. If the No Build Alternative were adopted, vehicles would consume more fuel because of the circuitous route and severe traffic congestion.

3.7.5 Cumulative Impacts

Cumulative impacts to energy are not discussed because the proposed transportation project is not likely to contribute, either positively, negatively, nor is it likely to alter the magnitude of other foreseeable impacts.

3.7.6 Mitigation Measures

The energy impacts of the proposed project are predicted to be less than the No Build Alternative and therefore no mitigation is required or necessary.

3.8 Hazardous Materials

Environmental and construction risks related to the potential contamination on properties affected by the project are an important consideration for highway design, land acquisition, and construction. Assessing the potential for these risks provides important information for design engineers to anticipate conditions and to address hazardous materials for project planning decisions.

During the Tier I NEPA process, an evaluation of the project area was conducted. The evaluation was based on a historical background review and a 1991 site assessment. During 1998, an agency file review and a site reconnaissance, including a limited windshield survey, updated the previously compiled data.

The Tier II NEPA process includes a more detailed assessment of the project area for hazardous materials. Prior to any property acquisition, hazardous materials site assessments and site characterization studies would be conducted for each proposed property acquisition. During the Tier II EIS process, the environmental screening criteria related to hazardous materials will be applied to the interchange options to assist in selecting the options with the lowest environmental impact.

3.8.1 Studies Performed and Coordination Conducted

This section incorporates information compiled in the *Hazardous Materials Discipline Report* for the SR 167 Tier II EIS (Washington Department of Transportation [WSDOT] 2001), and a subsequent initial site assessment of an off-site area between the Union Pacific Railroad (UPRR) tracks and North Levee Road East where wetland mitigation could occur (WSDOT 2004). The study area includes properties both within and outside of the proposed right-of-way (ROW) that have a potential to affect acquisition decisions and construction activities. The search radius consisted of all potentially hazardous materials sites within a one-mile radius of the proposed project footprint. The purpose of the study was to identify and assess the potential for encountering environmental contaminants on properties that could increase construction costs or represent an environmental liability to WSDOT.

Identification of potentially contaminated properties that may affect ROW plans was accomplished by performing the following sequential tasks:

- Identify available local, state, and federal databases to identify potential contamination sources that could impact the project site.
- Review publicly available records at local environmental agencies, as necessary, to obtain supplemental information regarding present and past environmental conditions and incidents at the project site and properties within the study area that, if contaminated, could impact the site.
- Interpret the history of the project site using available aerial photographs and other historic information sources.
- Interview persons knowledgeable of the project site and specific sites of concern.

- Review available geologic literature and topographic maps to determine surface drainage paths as well as groundwater depth and flow direction below the study area.
- Conduct windshield surveys of sites within the project footprint to observe site features and potential contamination sources which may impact the project site.
- Screen all sites based on their location relative to prospective ROW construction areas as well as on additional site-specific environmental data available in regulatory agency files. The initial screening process focused the study on conditions that represent a potential to substantially affect the project, including highway design, ROW acquisition, or construction.
- Summarize environmental conditions at the primary known or suspected contaminated sites within the expanded ROW area.

3.8.2 Affected Environment

In total, 189 sites were included in the initial site screening process and supplemental 2004 assessment. Of the 189 sites, 159 sites were eliminated from further consideration because they were either (1) located downgradient of or too far away from the planned ROW, and/or (2) there were no environmental concerns that may affect planned ROW expansion.

The remaining 31 sites received in-depth analysis (Figure 3.8-1). Following investigation, the sites were labeled “substantially contaminated” or “reasonably predictable.” Substantially contaminated sites are typically large or have large volumes of contaminated materials, have a long history of industrial or commercial land use, and the contaminants are persistent, difficult or expensive to manage (Table 3.8-1).

Table 3.8-1: Substantially Contaminated Properties

Map ID Number	Site	Address	Rationale	Relationship to footprint
1	Commencement Bay/Nearshore, Tideflats Superfund	Commencement Bay/Nearshore, Tideflats	Project areas contain heavy industry such as aluminum processing, chemical, pulp and paper, and primary smelting contamination	Footprint is within site, but not intercepting any cleanup Project Areas
2	Olympic Pipe Line	Follows I-5 closely from Puyallup River to SR 18	Jet fuel, diesel, gasoline running through the pipe line 24 hours/day	Within
3	B&L Woodwaste	Milton Way	Arsenic contamination/other wastes	Adjacent
4	United States Gypsum Company	SR 99/I-5	Arsenic contamination/other wastes	Within

Reasonably predictable sites are sites where recognized environmental conditions are known based on existing data or can be predicted based on site observations, previous experience in similar situations, or by using best professional judgment (Table 3.8-2). These sites are typically small, the contaminants are relatively non-toxic, localized, and abatement/remediation activities are routine (e.g., asbestos abatement or petroleum hydrocarbon-contaminated soil remediation).

Table 3.8-2: Reasonably Predictable Properties

Map ID Number	Site	Address	Rationale	Relationship to footprint
5	Rick Sexton Drums	6716 Pacific Hwy East	Age of building; possible asbestos/lead contamination; items on site	Within
6	Commercial Sales Inc.	6411 Pacific Hwy East	Miscellaneous parts, tanks, and equipment on site	Outside
7	Coast Engine & Equipment	4012 SR 509, S. Frontage	Monthly generator of numerous wastes; train cleaning on site	Adjacent
8	Firwood Gym	4312 Freeman Rd.	Miscellaneous storage of abandoned items on site; possible asbestos/lead contamination	Adjacent
9	Valley Avenue Residences	Intersection of Valley Avenue and 78th Ave E.	Greenhouses with miscellaneous chemicals on site	Within
10	Jesse Engineering	5225 7th St. E.	Various chemical containers outside; spill visible; machine manufacturer	Within
11	Firwood Grocery	8124 Valley Ave.	Petroleum contamination; suspected Under-ground Storage Tanks (UST); possible Asbestos Containing Material and Lead Based Paint	Within Freeman Road option at the Valley Ave interchange
12	SR 167/20E Steel Bridge	North Meridian in Puyallup	Lead based paint on the structure	Within
13	All State Industrial and Marine	5112 85th Ave E., Building A	Miscellaneous unidentified containers stored on site; Above-ground Storage Tank	Outside
14	Specialized Transport Service	5112 85th Ave E., Building C	Surficial staining; maintenance activities occurring on site	Outside
15	Vitamilk Dairy - Fife	6527 Pacific Highway	Two USTs previously on site, possible asbestos within improvement	Within
16	Richard Johnson property	6708 Pacific Highway	Two USTs may remain on site	Within
17	Milgard Tempering	910 54th Avenue East	Previous violation as small quantity generator	Within both 54th Avenue East interchange options
18	S&J Trucking	7823 Valley Avenue	Transporter of hazardous waste	Within
19	Don Olson Construction	4407 Freeman Road	Soil contamination due to leaking UST	Within
20	Portac, Inc.	4215 East West Road (SR 509)	Previous UST site, small quantity generator	Adjacent
21	North American Crane and Equipment Co.	405 Porter Way	Large quantity generator; indication of crane maintenance activities on site	Within
22	Arco 5898	102 Valley Ave NE	USTs on site immediately adjacent to project footprint	Adjacent

Map ID Number	Site	Address	Rationale	Relationship to footprint
23	BP (Tosco) #11073	5405 Pacific Highway E	Groundwater contamination	Outside
24	CAC Inc. 97135	5319 20th St. E	Contaminated groundwater and soil previously on site	Outside
25	Tosco #03139-30137	2002 54th Ave E	Contaminated groundwater and soil on site	Outside
26	Unocal 4836	2001 54th Ave E	Contaminated groundwater and soil migrated off site	Outside
27	Auto Warehousing Co.	3715 East-West Rd.	Contaminated groundwater and soil due to leaking underground storage tank	Adjacent
28	H&H Diesel	407 Porter Way	Contaminated groundwater and soil due to leaking underground storage tank	Within
29	Texaco Station	5501 20th Street E	Contaminated groundwater and soil due to leaking underground storage tank	Outside
30	UPRR - Fife Switching Yard	3330 20th Street East	Several diesel spills have occurred on the property, records indicate residual contamination still exists.	Adjacent to potential wetland mitigation site
31	SR 99 Property	6912 Pacific Hwy. East	Contaminated soil on site	Within

3.8.3 Impacts of Construction

No Build Alternative

The No Build Alternative would not construct the project and therefore would not impact the hazardous materials locations identified in the study area. However, the local jurisdictions would continue to improve the transportation network in the vicinity. Planned and programmed projects are listed in Section 3.14.3. The types of projects include intersection improvements, road widening, parking facilities, and non-motorized transportation improvements. All of these projects have the potential to encounter hazardous materials during construction. The types of impacts are similar to those discussed below under the Build Alternative.

WSDOT would also continue with improvements to its facilities including I-5, SR 99, SR 509, SR 161, SR 512, and SR 167. The types of improvements include additional HOV lanes, interchange upgrades, park and ride lots, collector distributor lanes, transportation demand management systems, and bridge replacements. These improvements would require additional ROW and new construction in existing ROW that may contain hazardous materials.

Build Alternative (Preferred)

There are multiple buildings that will be demolished during the construction of the preferred alternative and/or widening of existing I-5 ROW. Prior to acquisition, WSDOT will conduct site assessments on each property for potential contamination. It is possible that some of the structures to be acquired by WSDOT may contain Asbestos Containing Materials (ACM) and Lead Based Paint (LBP). Property acquisition will generally be limited to those parcels that

fall within the project footprint, including new interchanges and potential lane widening along I-5.

If WSDOT acquires a property where unknown contamination exists, the agency could incur the costs for characterization, treatment and disposal of any contaminated media or hazardous materials that are on the property.

If an Underground Storage Tank (UST) is encountered during excavation activities, WSDOT will assume cleanup for the appropriate decommissioning and removal of suspected USTs on site. WSDOT may also acquire cleanup for any contaminated materials resulting from a leaking UST in the ROW.

Accidental hazardous materials spills may occur due to construction activities throughout the project footprint. Construction sites involve various activities, equipment, and materials that can result in a release of hazardous materials into the environment. Traffic detours and lane closures can increase the risk of accidents that cause spills of hazardous materials or substances into the environment. The four areas where spilled hazardous materials have the highest adverse affect on water resources within the project footprint include areas near surface waters, stormwater catch basins, the critical aquifer recharge area, and wellhead protection zones. Releases of relatively small amounts of chemicals to the ground can result in rapid migration to the underlying water table estimated to be between 2 to 15 feet below ground surface throughout the project footprint.

Construction could also impact worker safety and public health. A common worker health and safety issue that arises on construction projects is encountering contaminated environmental media (i.e., soil, groundwater, surface water, dust, and vapors). Worker exposures can occur during excavation and management of contaminated environmental media. In most cases, this can be anticipated based on known or probable areas of contamination. Inhalation and ingestion of LBP and ACM during bridge removal, building activities, and excavation of lead contaminated soils can pose serious risks to workers' health and safety. Another possible concern for the Puyallup River/North Meridian (SR 161) steel bridge is bird guano that poses an inhalation risk to workers. Histoplasmosis is an infectious disease caused by inhaling spores of a fungus called *Histoplasma capsulatum* that is found in bird droppings.

Mainline

The northwest portion of the project footprint is within the Commencement Bay Superfund site. However, WSDOT does not anticipate any hazardous materials impacts related to the listed Commencement Bay Project Areas because the project is within site source control areas only.

The portion of the project footprint that extends from I-5 to SR 509 is the area with the highest potential for containing unknown pockets of contamination. If a property with unknown/known contamination is acquired, construction could be delayed until the contaminated media is characterized and disposed of properly.

Both the B&L Woodwaste and United States Gypsum Company (USG) Highway 99 properties contain known arsenic contaminated media. If WSDOT acquires either B&L Woodwaste or the USG Highway 99 site, the agency could be

responsible for part of the cleanup of the contaminated media on-site. The arsenic contaminated media that exists within the project footprint includes groundwater, soil sediments and surface water. WSDOT may also assume ongoing groundwater monitoring activities at the USG Highway 99 site.

Some sites that have known soil and/or groundwater contamination are not within the current project footprint. The known contamination on these sites could migrate into the project footprint affecting construction activities. Migration of contaminants is more likely to occur with groundwater than with soil due to the ability of water to carry the contaminants. B&L Woodwaste, Firwood Grocery, Auto Warehousing Co., and H&H Diesel, all properties with known soil and/or groundwater contamination, are adjacent to the project footprint .

The intersection of 54th Avenue East and 20th Street East contains four gasoline stations that each pose soil and groundwater contamination issues. While the soil and groundwater appears to be remediated on some of the sites, there is a potential for contamination from one or more of those properties to have migrated beyond the perimeters of the site. Groundwater flow in this particular intersection is documented as north to northwest, so it is possible that any contamination that migrated off-site entered WSDOT ROW along I-5. Typically, clean-up of groundwater contamination that has migrated into the SR 167 project footprint from off-site or adjacent sources would be the responsibility of those property owners, as long as WSDOT does not also assume ownership of the source of the contamination.

Magnetometer readings and the presence of a chimney suggest a potential for an abandoned UST at the Firwood Grocery property.

I-5 Interchange

The specific sites of interest for this interchange include the following: USG Company Highway 99 site, Surprise Lake Drain (groundwater from B&L Woodwaste), H&H Diesel, Rick Sexton Drums, Vitamilk Dairy - Fife, and Richard Johnson property.

The construction of the I-5 on-ramp and off-ramp at 54th Avenue East could be delayed due to possible groundwater contamination. There are five gasoline stations adjacent to the intersection that have known petroleum contaminated groundwater and soil. It has been documented that some of the contamination has migrated off site. Due to the groundwater flow in this area, it is possible that groundwater contamination migrated into the project footprint. Possible groundwater contamination could cause a delay in construction only if excavations reached the water table and dewatering became necessary.

WSDOT also does not anticipate any clean-up associated with the Olympic Pipe Line that is within the project footprint at the proposed I-5 Interchange. However, if the contractor were to rupture the pipeline during construction activities, the cleanup costs could be extensive. Any product that escaped during a rupture in the pipeline could drain into Hylebos Creek. Hylebos Creek drains to Hylebos Waterway, which is a listed water body within the Commencement Bay/Nearshore Tideflats Superfund site. A rupture in the pipeline could result in

WSDOT paying for an appropriate cleanup of the impacted area, damage costs to Olympic Pipe Line, and multiple fines for environmental damage.

Hylebos Creek Relocation and Riparian Restoration Proposal

The Hylebos Creek Relocation may involve three sites listed in Tables 3.8-1 or 3.8-2. The relocation site is adjacent to H&H Diesel, B&L Woodwaste, and North American Crane and Equipment Company (NACEC). While the Hylebos Creek Relocation will not directly affect the B&L Woodwaste property, it will be within 250 feet of the known extent of the arsenic plume that originates from the site. A recent assessment indicates that at a predicted 25 feet per year migration rate, the arsenic plume will likely reach the relocated Hylebos Creek in 10 to 20 years (Tetra Tech 2004a). The assessment indicated the creek relocation may:

- Lower wetland water levels, resulting in an increased hydrologic gradient from the B&L site to the plume;
- Alter the groundwater flow regime in the area of the plume; and
- Result in adverse impacts from contaminated soils due to movement of creek and potential future meander changes.

The Hylebos Creek Relocation intersects both H&H Diesel and NACEC properties. Site records for H&H Diesel do not indicate that either existing soil or groundwater contamination have migrated past the east boundary of the shop on site. Based on a hydrology study of the site (Robinson & Noble 1999) the groundwater flow might be influenced by site conditions or activities that occur on the property. Although it does not seem likely due to the location of contamination and irregular groundwater flow on-site, it is possible that contaminated soil and groundwater could be encountered during excavation activities adjacent to the H&H Diesel property.

A windshield survey indicated a likelihood that machine and maintenance activities occur on the NACEC site. Although there are no violations listed for the property, it is possible that soil and/or groundwater contamination exists on-site due to the large quantity hazardous waste generator status of the company. Therefore, it is possible that contaminated materials could be encountered during excavation activities adjacent to the NACEC property.

The riparian restoration, which will restore floodplains along the lower Hylebos and Surprise Lake Creeks, will require the acquisition and removal of human made structures and replacement with riparian vegetation. The review of this area for hazardous material did not identify any additional properties that could potentially cause any impacts. However, some of the properties required may contain ACM and LBP.

Interchange Options

This section provides the results of a comparative analysis of the impacts associated with each individual interchange option. For each interchange option, it is possible that improvements that are demolished for the project may contain ACM/LBP. It is possible that improvements not identified within the following

discussion may require a proper ACM/LBP survey and possible abatement prior to construction activities.

54th Avenue East Partial Interchange

The Preferred Loop Ramp Interchange Option requires the acquisition of multiple commercial/industrial properties not otherwise included in the mainline. Although the properties that will be acquired for this option are not known contaminated properties, there remains a potential for encountering unknown contamination due to the historical and current uses of the sites in this immediate area.

The Half Diamond Interchange does not impact any known contaminated sites and requires the acquisition of only a few residential properties. The acquisition of a small number of properties creates a relatively low risk for encountering unknown contamination during the construction of this interchange option.

Valley Avenue Interchange

The Freeman Road option impacts the contaminated property of Firwood Grocery located in the southwest corner of the Freeman Road/Valley Avenue Interchange. The site contains petroleum contaminated groundwater and soil, and WSDOT would incur costs for cleanup of the site as well as characterization and disposal of the contaminated media encountered during construction.

Also, several semi-trucks are parked on property located in the northwest corner of the same interchange. While not a listed site, there is a possibility of encountering unknown contamination on this property due to the storage of the semi-trucks and possible maintenance activities on site.

The Preferred Valley Avenue option and the Valley Avenue Realignment option do not affect any known contaminated properties or require that a large number of improvements be acquired by WSDOT. The fact that a small number of improvements will be acquired decreases the possibility of encountering unknown contamination during construction.

SR 161/SR 167 Interchange

The only hazardous material site concern included in all three SR 161 interchange options is the SR Puyallup River/North Meridian steel bridge. The steel bridge is covered with lead based paint, and the structure would be removed in each of the three interchange options. Since the bridge would be removed and the possibility of encountering unknowns in the immediate area is relatively the same for each option, the three options do not appear to substantially differ from each other based upon current hazardous materials issues.

Lead contaminated paint chips and debris could be generated during the demolition or retrofit of the existing bridge. Such debris could enter the Puyallup River resulting in an impact. Although the details involved in bridge removal are not yet defined, performance standards are being developed for this project element that will focus on avoidance and minimization. One of the preliminary performance standards identified is that during bridge removal, no material or debris will enter the water, another is that during the Puyallup River bridge

removal, containment will be achieved by the work trestles and the temporary detour. Additional performance measures may be identified in the ESA Biological Opinion for the project.

Mitigation Areas

The Conceptual Mitigation Plan (Section 3.3.5) includes several areas where mitigation could be designed for unavoidable impacts to wetlands. One of these is off-site, between the UPRR tracks and North Levee Road East, and west of Frank Albert Road East. The 2004 supplemental hazardous materials assessment identified the adjacent UPRR-Fife Switching Yard as a reasonably predictable property for contamination (Site 30, Table 3.8-2, Figure 3.8-1).

Most potential mitigation areas do not have adjacent properties that are reasonably predictable as contaminated. Those that do would have additional site investigation if they are selected for detailed mitigation design. New mitigation areas that become apparent during final design would have initial assessments or additional site investigations before being selected for detailed mitigation design.

3.8.4 Impacts of Operation

No Build Alternative

As traffic volumes increase on the local street system, the risk of accidents will be higher as will the possibility of hazardous materials spills. Because most of the truck traffic currently operates along the existing SR 167 on River Road, the risk of contaminating the Puyallup River from an accidental spill is higher under the No Build Alternative.

The No Build Alternative would also generate more untreated stormwater compared to the Build Alternative. The untreated stormwater would carry contaminants from road runoff that would pollute local streams, rivers, and wetlands to a greater degree than the Build Alternative. To the extent that this stormwater infiltrates into the groundwater, it would present a potential threat to drinking wells.

Build Alternative (Preferred)

Construction of the project will improve traffic operations along the entire project corridor. This will ultimately serve to reduce the risk of accidents, including those involving hazardous substances, and decrease the amount of harmful substances that enter soil and water resources within the project footprint.

Impacts of hazardous materials and waste from normal operations of SR 167 will primarily be associated with runoff of contaminants entrained in stormwater. Contaminants likely to be in stormwater runoff include fuel, lubricants, heavy metals compounds from tires, and automobile engine coolants such as ethylene glycol. Stormwater and water quality treatment facilities will be designed to collect and retain pollutants from traffic operations. Additional operational impacts may include herbicides used as part of the WSDOT roadside vegetation management program. Because operational impacts related to hazardous waste

and water are primarily associated with stormwater quality, these issues are addressed in more specific detail within the Water Resources Section (see Section 3.2).

3.8.5 Cumulative Impacts

Cumulative impacts to hazardous materials and waste are not discussed because the proposed transportation project is not likely to contribute, either positively, negatively, nor is it likely to alter the magnitude of other foreseeable impacts.

3.8.6 Mitigating Measures

Cleanup is the proposed mitigation for any hazardous waste site that might be found in the SR 167 ROW.

More thorough investigations such as soil and groundwater contamination, and possible asbestos for some specific sites, may be needed in order to confirm suspected environmental conditions in work areas and properties to be acquired. These sites include: USG Highway 99 Site, Rick Sexton Drums, Firwood Gym, Valley Avenue Residences, Jesse Engineering, Vitamilk Dairy-Fife, Richard Johnson Property, S&J Trucking, H&H Diesel, North American Crane and Equipment Company, Don Olson Construction, and B&L Woodwaste.

Some contamination from the existing B&L Woodwaste arsenic plume has migrated outside of the B&L property. Potential engineering solutions were evaluated to avoid impacts associated with the B&L Woodwaste arsenic plume in groundwater near the Hylebos Creek Relocation (Tetra Tech 2004b). Five mitigation strategies were identified as feasible remedial options based on existing information about site characteristics.

- Pump and Treat with Source Remediation – use extraction and injection wells to hydraulically contain the contaminated plume and pump the groundwater for above-ground treatment.
- Permeable Reactive Barriers – in-situ treatment with walls containing reactive media that are installed in the subsurface across the path of the contaminated groundwater to intercept the plume.
- Phytoremediation – use plants with deep roots and high evapotranspiration rates to degrade, extract, contain, or immobilize subsurface contaminants.
- Pump and Treat for Hydraulic Containment – differs from the source remediation option in that above-ground treatment is limited to relatively minor incidental volumes of groundwater extracted from the plume.
- Physical Hydraulic Containment – use slurry walls or sheet piles in the subsurface to stop groundwater flow and offsite migration of contamination.

FHWA and WSDOT will determine the appropriate strategy during final design, in collaboration with the U.S. Environmental Protection Agency and the Washington State Department of Ecology (Ecology). Additional measures may include designing the relocated channel so it meanders away from the arsenic

plume and installing monitoring well(s) between the new channel and the plume to monitor migration of the plume toward the relocated creek.

It is recommended that sampling occurs at the I-5/54th Avenue East Interchange and the southeast corner of the I-5/Porter Way overcrossing. The sampling should be conducted due to potential for petroleum contamination groundwater. In addition, pre-construction investigation and testing is needed to determine the location and quantity of asbestos containing materials and lead based paint so that these wastes can be properly handled prior to demolition.

Three types of environmental media may require special consideration during construction: soil, groundwater, and surface water. Known areas of contaminated soil, groundwater, and surface water may be encountered within areas of planned construction. There is also a high likelihood that ACM and LBP may be encountered at acquisition properties. Off-site treatment and off- and on-site disposal are typical remediation options for each of the three environmental media, as well as construction debris and other possible impacts, as discussed in the Discipline Report (WSDOT 2004).

Pre-construction soil characterization would allow WSDOT to appropriately address soil management and disposal requirements in a special construction bid specification. The specification may require a contaminated media contingency plan. The purpose of this plan is to identify procedures and chains of responsibility to effectively manage contaminated soil as it is encountered during construction so that construction delays can be kept to a minimum.

Mitigation measures to minimize potential impacts to surface water resources include erosion and spill prevention controls. The plans will specify control methods, emergency response, notification, and chain of command. A Spill Prevention Control and Countermeasure (SPCC) Plan is required to be developed for the project.

Erosion controls address the procedures, equipment, and materials necessary to avoid erosion during excavation and stockpiling work. Contractors will be required to address the diversion of stormwater, use of storm sewer inlet catch basins and soil berms, and the covering of soil stockpiles to prevent erosion. The WSDOT *Highway Runoff Manual* (WSDOT 2004) provides specific guidance erosion controls.

When final design of the project footprint is completed, it may be possible that portions of the construction project will require dewatering. It may be impractical to treat the volumes of water at staging areas within the project footprint. Depending on local conditions, it may also be infeasible to discharge to the sanitary or stormwater sewer system. For this reason, regardless of underlying groundwater quality, alternative construction techniques that minimize or avoid dewatering (e.g., sheet piling, cased piers, driven piling, spread footings) will be evaluated.

In the event that construction dewatering flows cannot be minimized sufficiently and disposed of within the city sewer system, on-site treatment and short-term disposal in local surface water drainage may become necessary. The general

National Pollutant Discharge Elimination System construction permit for the entire SR 167 project should address the specific requirements of groundwater disposal off-site.

A SPCC plan would be designed to mitigate impacts to soil, surface water, and groundwater. This plan will address procedures, equipment, and materials used in the event of a spill and shall be supplied by contractors. To ensure worker and public health and safety, proper employee training, contaminated media contingency planning, and secondary containment for hazardous materials should be required of the contractor.

FHWA and WSDOT anticipate that building demolitions will primarily generate non-hazardous construction debris with the exception of ACM and LBP. Such structures will be sampled and analyzed to determine the appropriate disposal facility. Mitigation of ACM includes removal and disposal prior to demolition.

Underground utilities will be identified during the design phase of the project and of any excavation activities. Coordination with Olympic Pipeline will occur in order to ensure construction activities minimize impacts to the pipeline. USTs will also be addressed during project planning. A magnetometer survey should be conducted prior to construction if a UST is suspected on site, and all removal and site assessment activities will follow Ecology's Underground Storage Tank Statute and Regulations (Chapter 90-76 RCW, Chapter 173-360 WAC).

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3.9 Visual Quality

This section evaluates the visual impact of the proposed SR 167 project. The visual character of a project area consists of the built and natural environment as perceived by residents, area workers, and those traveling through the area on the freeway or other roads. The Tier I EIS evaluated visual impacts in a general manner. The Tier II analysis provides an in-depth examination based on Federal Highway Administration (FHWA) visual impact methods.

3.9.1 Studies Performed and Coordination Conducted

This section incorporates studies documented in the *SR 167 Tier II EIS Visual Quality Discipline Report* (Washington State Department of Transportation [WSDOT] 2001). Visual quality assessments were conducted in accordance with the FHWA Visual Impact Assessment for Highway Projects (FHWA 1988).

Objective descriptions are used to quantify the visual impacts. Three criteria used to perform an appraisal of the landscape visual quality include vividness, intactness and unity. Each of the three criteria is independent and each is intended to evaluate one aspect of visual quality. For each criterion, the evaluator assigns a rating from 10 to 0 for very high to very low, respectively. Definitions of these terms are as follows:

Vividness: The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern. These elements include the landform, water, vegetation and manmade development.

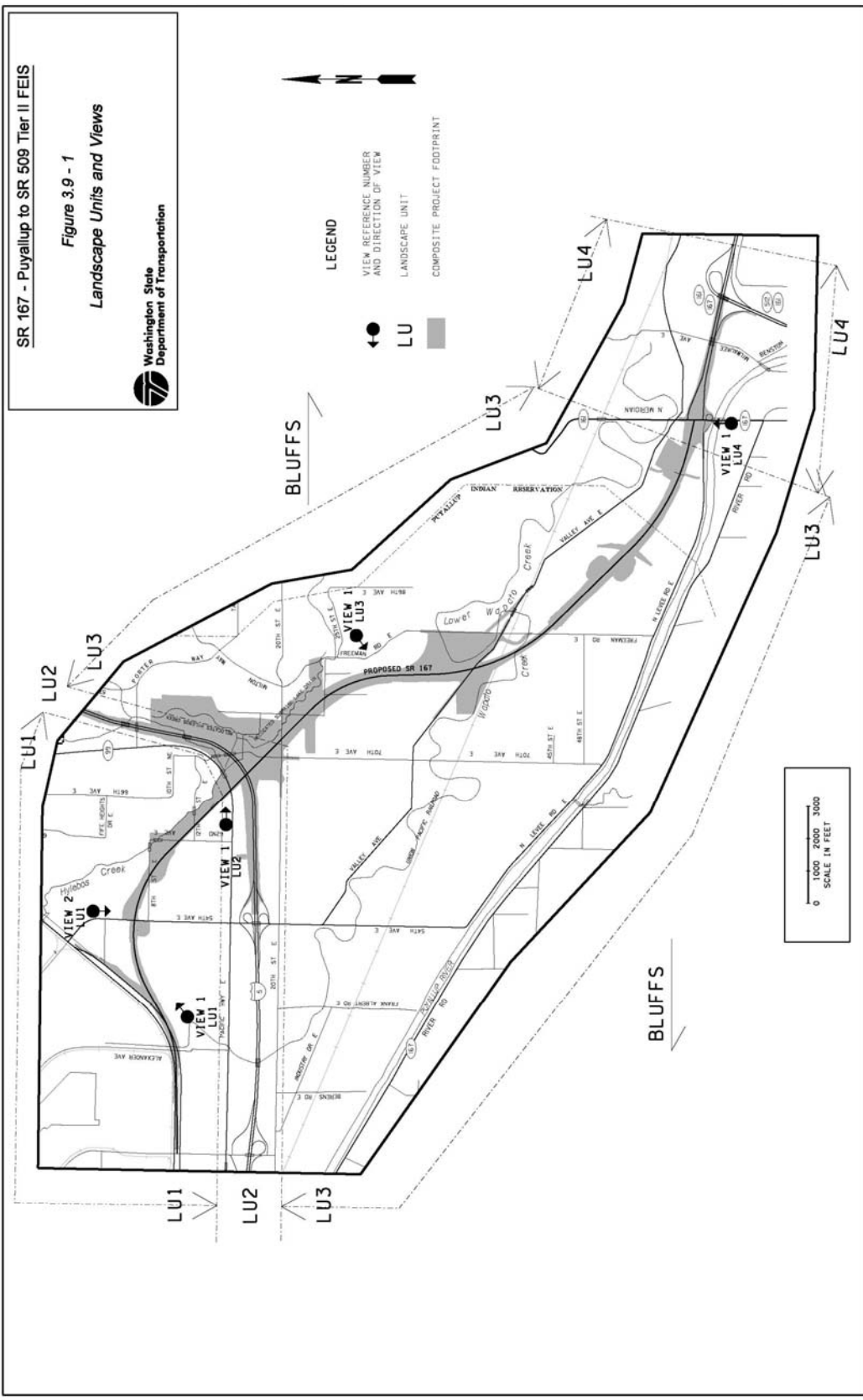
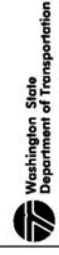
Intactness: The integrity of visual order in the natural and man-built landscape and the extent to which the landscape is free from visual encroaching features.

Unity: The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

The study area was divided into four Landscape Units (LUs), which are shown in Figure 3.9-1. The LUs are based on viewshed areas that have similar characteristics. The following are the geographic areas used:

- Landscape Unit 1 - SR 509 to Pacific Hwy. E. (SR 99)
- Landscape Unit 2 - I-5 vicinity
- Landscape Unit 3 - south and west of I-5 to just west of North Meridian (SR 161)
- Landscape Unit 4 - vicinity of North Meridian to end of study area at SR 512

Figure 3.9 - 1
Landscape Units and Views



Views within each of the LUs were selected to examine the visual conditions of the project corridor and to assess the visual quality of the roadway. Several throughout the study area were analyzed to assess the change in visual quality between current and proposed conditions. Five of the key views are included in the document. The locations were chosen to show the general visual quality of a given LU and also to take a look at potential changes based on the proposed project. Other criteria that were used for selecting a key view location include: visibility of the project area from the viewpoint, frequency of the public viewing, and the similarity of the view to a larger section of the project.

3.9.2 Affected Environment

The following paragraphs describe the four LUs.

Landscape Unit 1 – (SR 509 to SR 99)

Landscape Unit 1 includes commercial and industrial areas that are primarily Port of Tacoma related. There are one- and two-story warehousing buildings, rail facilities and large automotive storage facilities. Overhead lighting and power lines are dispersed throughout the area. The area where the proposed SR 167 would connect with SR 509 is mainly undeveloped or sparsely developed. A large open field is located in the vicinity of 4th Street East and east of 54th Avenue East. The majority of the vegetation is scotch broom and grasses. Views of the bluffs to the north are dominant due to the limited amount of large trees. Views of the downtown Tacoma area are available throughout this LU.

Landscape Unit 1 includes the residential area located above Pacific Avenue known as Fife Heights Ridge. From this location on the bluff, views of the port, downtown Tacoma and the valley are present from varying locations. The area appears to be in transition from farmlands to commercial development. There are small groves of trees scattered throughout the area. The bluffs are well vegetated with plant species indigenous to the area.

Landscape Unit 2 – (I-5 Vicinity)

Landscape Unit 2 encompasses the commercial areas along Pacific Highway East and I-5 between the 54th/I-5 interchange and the King County Line. Just north of the proposed SR 167/I-5 Interchange and west of SR 99 is the transitional area between commercial establishments and rural residential areas. The area is bordered along the northwest side by a bluff. The bluff will remain vegetated with a mixture of conifers and deciduous trees and shrubs as it is not suitable for building. Along Pacific Avenue, the majority of the plant material is ornamental varieties used for commercial landscapes. Power poles, telephone lines and billboard signs are dominant.

I-5 is a dominant component of this LU. Views of the freeway are available, at least in part, in this area. Views from the freeway include the bluffs, relocated Hylebos Creek to the east, the Cascade Mountains to the southeast, Mt. Rainier and the Puyallup Valley, and commercial businesses. Advertisement signs, overhead power lines and lights are also dominant in the viewshed.

The I-5 corridor consists of numerous commercial buildings, business signs, luminaries for the highway, directional and informational highway signs and the bluffs in the distance. The area is disjointed, and has little vividness, intactness, or unity.

Landscape Unit 3 – (I-5 to SR 161)

Landscape Unit 3 is located on the south side of I-5, and it has some commercial and industrial complexes but is still primarily rural farm area. The majority of the area is flat agricultural land bounded by bluffs on the east and west sides. Individual homes, small clusters of housing developments, farm buildings and warehouses are scattered throughout the area. Most elements in this LU are unobtrusive although large structures such as two-story barns are part of the viewshed. Groves of trees are sparsely located throughout the valley. The densest stands of trees are northeast of the intersection of North Levee Road and Freeman Road. Wet or muddy areas occur between 70th Avenue East and 54th Avenue East, and west of 54th Avenue East and in wooded areas adjacent to the Union Pacific Railroad yard. Heavily vegetated bluffs occur on the east and west borders of the study area. Mount Rainier can be seen in the distance. Views of I-5 are limited. Two lane rural roads crisscross the valley floor. Overhead power poles and luminaries are limited in this area.

Views from the east bluffs (Milton) include the valley, the bluffs to the west and I-5. These views are somewhat limited by existing vegetation along the bluffs. Residences on the west bluff have views across the valley towards Milton and Mt. Rainier.

The Puyallup River and Wapato Creek are present in this LU, but are not dominant factors. The Puyallup River is located within a levee system; Wapato Creek's small size limits its dominance. The Union Pacific Railroad also is not a dominant element, even though it runs down the middle of the valley.

The Puyallup Recreation Center is located in this LU. It consists of several buildings and baseball fields. The facility is bordered by farmland with views of the valley to the northwest, bluffs to the west and large commercial buildings to the south. In the vicinity of the Milwaukee Avenue and the existing SR 167 interchange the area is highly developed with commercial and retail businesses. Advertisement signs, overhead power lines and luminaries are present.

Landscape Unit 4 – (SR 161 to SR 512)

Landscape Unit 4 is in the vicinity of the existing SR 167/SR 512 Interchange. Views of the Puyallup River are limited to the bridge crossing area. Despite the proximity of the Puyallup River, views of the water are limited because of the containment levee. Vegetation and buildings block most other views of the river.

In the vicinity of Milwaukee Avenue and the existing SR 167 Interchange, the area is highly developed with commercial and retail businesses. Advertisement signs, overhead power lines and luminaries are present.

The SR 167/SR 512 Interchange is a large scale and dominating entity. The locally significant Carson chestnut tree is located just inside the interchange. This large tree is a focal point when heading eastbound on SR 167.

3.9.3 Impacts of Operation

Visual impact analysis is done on the landscape with and without the facility. For this reason, only the impacts of operation are considered. The visual impacts of construction are considered temporary in nature and include elements such as night construction lights, bridge scaffolding, construction signs, detour roads and miscellaneous construction vehicles.

Cumulative impacts to visual quality are not discussed because the proposed transportation project is not likely to contribute, either positively, negatively, nor is it likely to alter the magnitude of other foreseeable impacts.

No Build Alternative

The visual impacts of adding a slightly to substantially elevated freeway to the existing landscape would be avoided. Changes in visual character would reflect changes in land use, primarily, conversion of farmland and undeveloped areas to commercial/industrial facilities. Local jurisdictions and WSDOT would continue making improvements to their respective facilities. These improvements may include park-and-ride lots, intersection signalization, lane widening, and non-motorized travel improvements. The visual impact of these improvements would incrementally alter the views within the study area.

Build Alternative (Preferred)

Table 3.9-1 summarizes visual quality ratings for the key views under existing and proposed conditions. Descriptions of existing key views are presented below with subsequent discussions on impacts.

Table 3.9-1: Visual Quality Ratings for Key Views under Existing (E) and Proposed (P) Conditions

View	Vividness	Intactness	Unity	Average
	E/P	E/P	E/P	E/P
1, LU1	5/4	6/4	7/4	6/4
2, LU1	4/4	4/3	4/3	4/3.3
1, LU2	5/4	5/3	4/3	7/3.3
1, LU3	7/5	8/5	8/6	7.7/5.3
1, LU4	4/3	3/3	3/3	3.3/3

Ranking: 10 very high – 0 very low

Landscape Unit 1 – (SR 509 to SR 99)

Mainline

The proposed alignment will be built on a raised embankment throughout most of this LU. This new visual line element will be dominant and will lessen the overall vividness in the unit. However, due to the amount of existing manmade elements, including structures and other roads, this LU already ranks low in intactness.

Visual unity in those areas where the mainline traverses agricultural land will be negatively impacted. In urban/industrial areas, the mainline will also create negative impacts due to its visual dominance on raised embankments over buildings, roadways and power lines.

The proposed roadway will create a dominant feature in the viewshed and block views across the valley floor to the bluffs in the distance for a few residences. The area just to the north of the proposed roadway is proposed for a large riparian restoration site. This will require the removal of most of the manmade structures between the roadway and Hylebos Creek, including a portion of 8th Street East and 62nd Avenue East, creating a substantial open space in the area. The removal of the existing structures will open views of the roadway for those residences located on the bluffs to the west.

54th Avenue East Partial Interchange

Preferred Loop Ramp Option.

The southbound off ramp and northbound on ramp both are elevated to match the mainline at one end and terminate at existing street grade at the other end. The northbound loop ramp is a relatively compact alignment but the raised embankment will still visually dominate the surrounding area negatively impacting vividness and intactness. The southbound off ramp, at least for the raised embankment portion, will create a dominant linear visual element that will also negatively impact vividness and intactness.

Half Diamond Option.

The southbound off ramp and northbound on ramp both are elevated to match the mainline at one end and terminate at existing street grade at the other end. The southbound diamond off ramp is the same as in the loop ramp option. The visual impact for the southbound ramp is also the same. The northbound diamond on ramp is much more linear in form than in the loop ramp option. The longer ramp would create a very dominant feature. The ramp would be located in a relatively open area where the raised linear embankment would negatively impact vividness, intactness and unity.

Figure 3.9-2 shows the vicinity of Alexander Avenue and SR 509, looking north east. The new interchange connection between SR 509 and SR 167 will be elevated in this area, and the views from the current SR 509 will change. Bridge structures and embankment structures will dominate the viewshed from SR 509, lowering the overall intactness. From the houses on the bluffs to the east, the viewshed will change, but the new road will not be a dominant structure, due to the viewing distance. Locations on the elevated roadway will provide views of Commencement Bay, the bluffs, the Port of Tacoma area, and Mt. Rainier.



EXISTING VIEW



CONCEPTUAL VIEW OF ROADWAY



**Washington State
Department of Transportation**

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.9-2

View 1, LU1: Vicinity of Alexander Road and State Route 167/509 Interchange

Gx1136

Figure 3.9-3 depicts the vicinity of 54th Avenue East and 4th Street East, looking south. The roadway will be on fill material up to 54th Avenue East where it becomes a bridge structure. The area currently is disjointed with manmade elements including commercial buildings, residential houses, power lines, signs, luminaries, etc. The new roadway, due to its mass and height, will stand out as a key element. The roadway will be out of human scale for the residential houses that are not removed as part of the project. The roadway embankment will block views, although limited, to the north and south. However, it will provide an element of continuity within the viewshed. The roadway will have a negative impact on the viewshed.

The lines of this structure somewhat follow the lines of the existing background hills, which lend to an increased sense of unity to the viewshed, but detracts from the existing vividness and intactness. Lighting from the structure and from headlights will alter the viewshed at night. There would be a negative visual impact to the viewshed.

Landscape Unit 2 – (I-5 Vicinity)

Mainline

The proposed alignment will be built on a structure and raised embankment throughout this LU. This new visual line element will be dominant and will lessen the overall vividness in the unit. However, because of the amount of existing manmade elements, including structures and I-5, this LU already ranks low in intactness.

The Hylebos creek located east of Interstate 5 and north of proposed State Route 167 is currently mostly open area. The use of this area for relocation of Hylebos creek will not add additional manmade elements to the view shed. Limited views of the relocated Hylebos Creek will be possible from several of the elevated structures at the interchange.

Interstate 5 Interchange

The proposed ramps and structures will create substantial negative visual impacts in the area. The three levels of new elevated roadway will block views from nearby hillside homes. These new structures lower vividness, intactness and unity due to their mass and scale.

Views from I-5 itself will be negatively impacted as well. The relatively flat open spaces currently allow motorists panoramic views both northbound and southbound. These vistas will be curtailed by the new structures. Where existing I-5 motorists had felt sunshine and seen open sky, they now will experience a shaded, concrete canopy over the interstate through the proposed I-5 interchange.



54TH AVENUE EAST

EXISTING VIEW



PROPOSED ROADWAY

CONCEPTUAL VIEW OF ROADWAY

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.9-3

View 2, LU1: Corner of 54th Avenue East and 4th Street, Looking South



Gx1136

Figure 3.9-4 shows vicinity of Pacific Highway East (SR 99) and 70th Avenue East, looking east. The view from this location lacks continuity, unity, memorability, and has manmade elements encroaching into the views of the valley and bluffs. The extensive bridge structures associated with the SR 167 and I-5 interchange will be visible from all areas in the vicinity. The structures will be as high as 80 feet crossing over I-5. The greatest impact will be associated with the houses located on the hillside to the north. In some cases, the view of the valley will be lost, due to the interchange structures. Lighting and vehicle headlights will dominate the nightscape views from the hill. The view from I-5 will also be altered. Currently there are views of the valley and hills when in the vicinity of the curve. These views will be greatly altered by the construction of numerous ramps, lowering the views intactness and unity.

Views from the upper levels of the proposed interchange in this area will be dramatic, with views of the valley, the Port of Tacoma, the vegetated hillside and limited views of Mt. Rainier.

Landscape Unit 3 – (I-5 to SR 161)

Mainline

The proposed alignment will be built on a raised embankment throughout this LU. This new visual line element will be dominant and will lessen the overall vividness in the unit. The embanked roadway will be visible from many parts of the relatively flat and open-space viewshed. The roadway will be raised enough to obstruct views of residential and agricultural buildings in the background viewing zone. The associated traffic movement will also contrast sharply with the existing agricultural land use along portions of the mainline alignment. Night time vehicle lights, plus roadway luminaries, will also create negative impacts in this less developed LU.

Valley Avenue Interchange

Freeman Road Option. The northbound off ramp would depart from the raised SR 167 grade and would remain at grade until reaching Valley Avenue. This ramp would have little substantial visual impact, as it would be dominated by the proximity of SR 167. The northbound on ramp, however, would rise in elevation from the Valley Avenue intersection, elevate over the railroad and connect to the elevated SR 167. This ramp would create a long linear visual element. The raised characteristics of this ramp would be pronounced due to its proximity to low-lying Wapato Creek.

The southbound off ramp would descend in elevation from SR 167 to its terminus at Freeman Road. The southbound on ramp would be reversed; gaining in elevation from Freeman road until matching the SR 167 grade. Both ramps therefore would be only partially elevated over their surroundings. Due to the relative flatness of the topography in this LU and the long sweeping road curves, both ramps would have negative visual impacts.



EXISTING VIEW



CONCEPTUAL VIEW OF ROADWAY

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.9-4

**View 1, LU2: Pacific Avenue (SR 99),
Looking East**



Gx1136

Preferred Valley Avenue Option. Both northbound ramps will be the same as in the Freeman Road option.

The southbound off ramp will form a loop, descending until matching elevation with Valley Avenue at a point east, not far from the mainline alignment. The southbound on ramp will share this loop until it deviates to a reverse curve enabling it to match the mainline and gaining elevation along the way.

This option will create negative visual impacts due to the scale of the elevated ramps; however, the large sweep of the loop will be more visually appealing as opposed to the long linear ramp.

Valley Avenue Realignment Option. Both northbound ramps would be the same as in the Freeman Road option.

The southbound off ramp would leave the mainline and cross over the railroad, then descend to match Valley Avenue. The southbound on ramp would start from this intersection and gain elevation to match up with SR 167. Both raised southbound ramps would be long and linear in form. They would also contrast in scale with the flat open space of this LU resulting in negative visual impacts.

The realignment of Valley Avenue would also create negative visual impacts. The new road would be wider and slightly elevated in its new location, contrasting sharply with the relatively flat topography surrounding it.

Figure 3.9-5 shows Freeman Road East (behind the old Firwood Gym) looking west. The highway will become the dominant feature in this view, changing the overall character of the viewshed from rural to roadway. Views of the agricultural fields and bluffs will still be available but they will be subordinate to the manmade elements. Lights and glare associated with a highway at night will be the dominating focal point in the nightscape. The overall intactness and unity of the existing viewshed will be reduced, even though the lines of the roadway do provide a sense of continuity along the valley floor.

Two new truck weigh stations will be located west of the Puyallup Recreation Center. While the associated buildings most likely will be relatively small in scale, the increased commercial truck activity will create visual focal points. The additional lights from vehicles and roadway/parking lot lighting will negatively alter the nightscape as well.



EXISTING VIEW



CONCEPTUAL VIEW OF ROADWAY



**Washington State
Department of Transportation**

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.9-5

View 1, LU3: Freeman Road East (Behind Old Firwood Gym), Looking Southwest

GX1136

Landscape Unit 4 – (SR 161 to SR 512)

Mainline

The proposed alignment will be built on a raised embankment throughout this LU. This new visual line element will be dominant and will lessen the overall vividness in the unit. However, due to the amount of existing manmade elements, including structures and other roads, this LU already ranks low in intactness. Visual unity will be negatively impacted as the addition of the wide, raised roadway with interchange ramps will substantially alter the compositional visual pattern.

SR 161/167 Interchange

Preferred Urban Option. The northbound off ramp will descend from SR 167 until it meets grade at the SR 161 interchange. The northbound on ramp will ascend in elevation until connecting into SR 167. These new ramps will add dominant manmade elements into the viewshed, resulting in negative visual impacts.

The southbound off ramp will depart from SR 167 at grade and match into SR 161. The southbound on ramp will leave SR 161 at grade then gain elevation to match into the elevated SR 167. These new ramps will add dominant manmade elements into the viewshed, resulting in negative visual impacts.

At North Meridian, the existing steel Puyallup River Bridge will be replaced with a clear span bridge. This will enhance and open up views of the river from the bridge creating a positive visual impact. The adjacent existing concrete bridge will be widened.

Low Diamond Option. The northbound off ramp would descend from SR 167 until it meets grade at North Levee Road. The northbound on ramp would begin at grade at SR 161 and elevate to match SR 167 grade. Both ramps would create new linear forms in the LU. While they would be subordinate to the visually dominating mainline, the ramps would contribute to a net negative visual impact by further altering the visual unity.

The southbound off ramp would depart from SR 167 and connect to SR 161 while maintaining a relatively constant elevation. The southbound on ramp would take off from the SR 161 intersection and match up with SR 167. This ramp would also maintain a relatively constant elevation. The two southbound ramps would not be as visually dominant as the mainline, or the northbound ramps, due to their constant elevation.

The Puyallup River Bridge would be as above.

Medium Diamond Option. This option would be very similar in visual impacts to the Low Diamond option. The difference in the northbound on ramp alignment is not enough to alter the negative visual impacts.

The Puyallup River Bridge would be as above.

Figure 3.9-6 shows vicinity of North Meridian and North Levee Road East looking north. Milwaukee Avenue East and the existing SR 167 would change with the addition of structures and ramps. The viewshed would substantially change with the addition of the bridge structures and ramps under all the interchange options. Views of the bluffs would be blocked. The overall change in quality of viewshed would be minimal, due to the existing SR 167 ramps/freeway and the numerous manmade elements in the urban business complex area of North Meridian.

3.9.4 Mitigating Measures

The mitigation measures are used to help offset the negative visual impacts that will be caused by the proposed facility. Landscape related mitigative measures will use the Roadside Classification Plan (WSDOT 1996) as a guideline for roadside restoration. Possible mitigation measures include:

- Using architectural elements to blend the roadway structures with the surrounding areas. This includes texture, color and style of the manmade elements.
- Minimizing the use of luminaries to lessen the impact from glare. Low level lighting is preferred.
- Using wall, fencing, or vegetation to screen car movement on the roadway and headlight glare, where possible.
- Using trees and other vegetation adjacent to bridge structures to bring the structure down to a human scale, visually tie the structure to the surrounding areas, and soften and screen the structures within the viewshed. Trees and other vegetation must meet roadway clear-zone and sight distance requirements.
- Vegetating under structures with shrubs, where adequate sunlight and moisture are available, to fill the visual void typically associated with the barren ground.
- Vegetating embankments to soften and blend the roadway within the viewshed, as well as provide a sense of continuity associated with the roadway. Grasses are not recommended to vegetate embankment areas. During the summer months, grasses typically turn brown and this brown strip in the viewshed would, in turn, become a dominant visual element along the corridor. The intent is to blend the road with the surrounding area, not draw attention to it.
- Provide a visual screen, either vegetative or architectural, for houses that have unobstructed views of the roadway and where no other mitigation measure will offset the encroachment of car movement and headlight glare. This would be done on a case-by-case scenario.
- Design retention ponds with undulating and relatively flat side slopes to blend into the surrounding area. Use trees, shrubs, and herbaceous plants to soften the structure and give a sense of a natural element.



EXISTING VIEW



CONCEPTUAL VIEW OF ROADWAY

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.9-6

**View 1, LU4: North Meridian,
Looking North**



Gx1136

3.10 Public Services and Utilities

This section examines the impacts of the project on public services and utilities in the study area. These services include education, medical, fire, police, and recreation, while the utilities include electrical, energy, communications, water, sewer, stormwater, and solid waste. The Tier I FEIS examined the impacts of the proposed corridor on these public services and utilities. The Tier II NEPA process builds upon this earlier analysis with additional detail on the affected services and utilities.

3.10.1 Studies Performed and Coordination Conducted

This section incorporates information from the *Land Use/Farmland/Social-Economic Discipline Report* (Washington State Department of Transportation [WSDOT] 2004) and from utility location maps provided by utilities throughout the study area. The SR 167 Tier I FEIS was also used as a reference to ensure continuity. When needed, information was verified with personal communications. For the analysis of parks and recreation areas, Pierce County and the Cities of Fife, Milton, Puyallup, and Tacoma were contacted regarding existing and planned park sites within or adjacent to the proposed corridor.

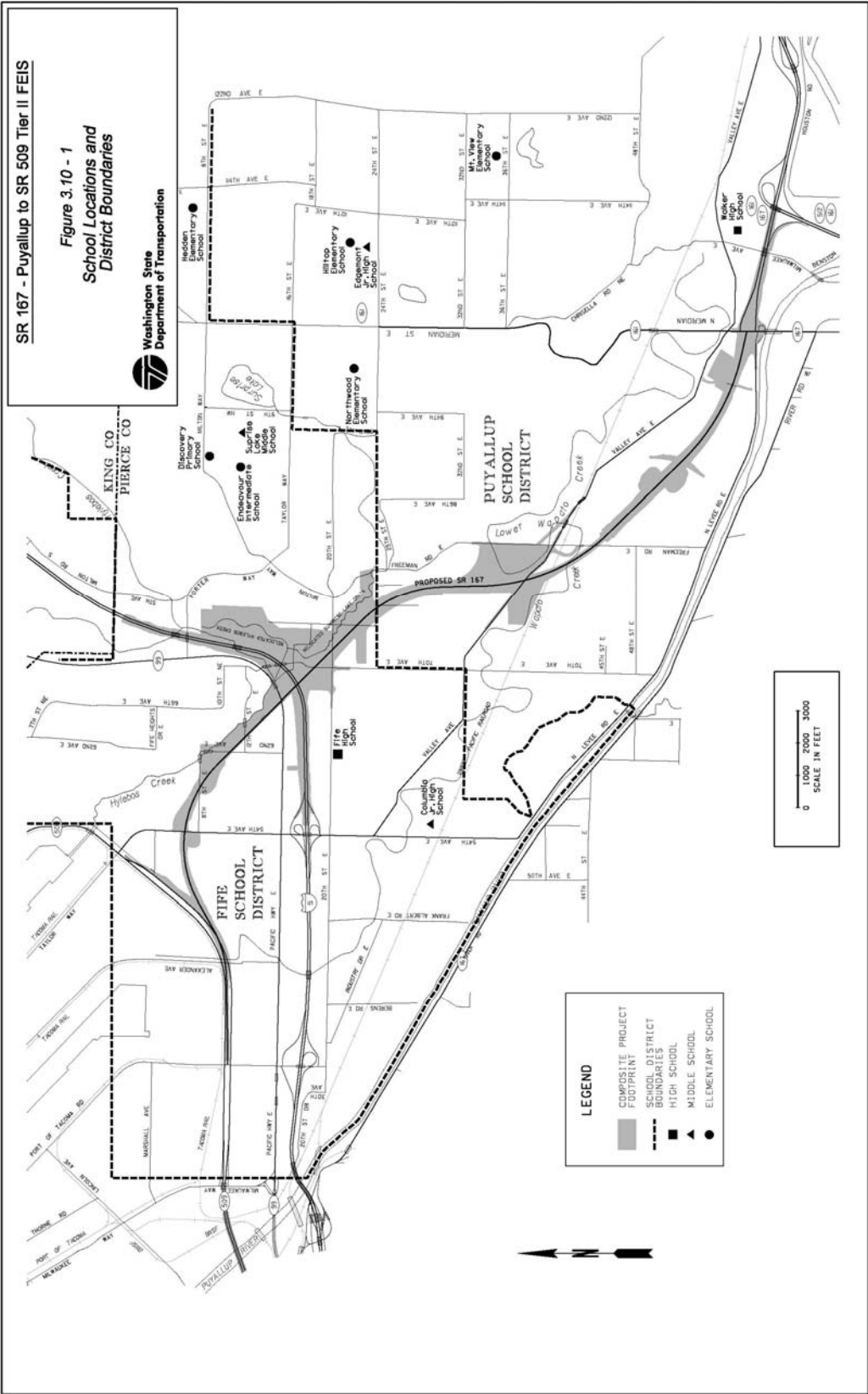
3.10.2 Affected Environment

Educational Facilities and Attendance Boundaries

Fife School District

The Fife School District serves both the Cities of Fife and Milton. Attendance boundaries for the Fife School District cover 10 square miles and extend as far south as Levee Road, to the north as far as Fife Heights, to Hedden Elementary School east of North Meridian, and as far west as the Tacoma city limits. With the opening of Columbia Junior High School in September 2003, the district has six schools in the study area with a total enrollment of 3,200 students (Figure 3.10-1).

Twelve buses travel 20 routes to provide both morning and afternoon transportation to the elementary, middle and high schools. The primary school bus routes through the Fife valley are 54th Avenue East, N. Levee Road East, 70th Avenue East, and 20th Street East. The majority of school bus trips occur on 20th Street East, as this street is the most widely used corridor connecting the eastern and western halves of the district (Jenkins 2001).



Puyallup School District

The Puyallup School District serves the Cities of Puyallup and Edgewood while sharing most of its northern boundary with the Fife School District. The district's southern boundary extends as far south as 191st Street East, as far west as Canyon Road, and as far east as the Puyallup city limits. The district has five schools located within the study area and the primary bus routes include Valley Avenue, Freeman Road East, 24th Street East, and North Meridian (Hammond 2001).

Government and Social Institutions

The only government facility located in the study area is the Fife City Hall at 5411-23rd Street East. Two social institutions are located in the study area.

1. The Fife Senior/Community Center, located at 2111-54th Avenue East, is a Red Cross meal location three times a week and provides a variety of services to the community. These services include classes, health screening, seminars and social functions. The Fife Senior/Community Center also rents out to individuals creating a revenue source for the center.
2. FISH Food Banks of Pierce County operates a food bank at 2003 54th Avenue East.

Medical Services

The Port of Tacoma Medical Clinic located on the Port of Tacoma Road and the Fife Medical Clinic located on 54th Avenue East are urgent care facilities for the study area. They provide emergency services for the port industrial area and Fife. St. Josephs Hospital in Tacoma and Good Samaritan Hospital in Puyallup are the major medical facilities that service the study area. Powers Ambulance Service provides most of the ambulance service in the study area with Shepard Ambulance Service providing occasional backup.

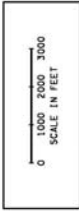
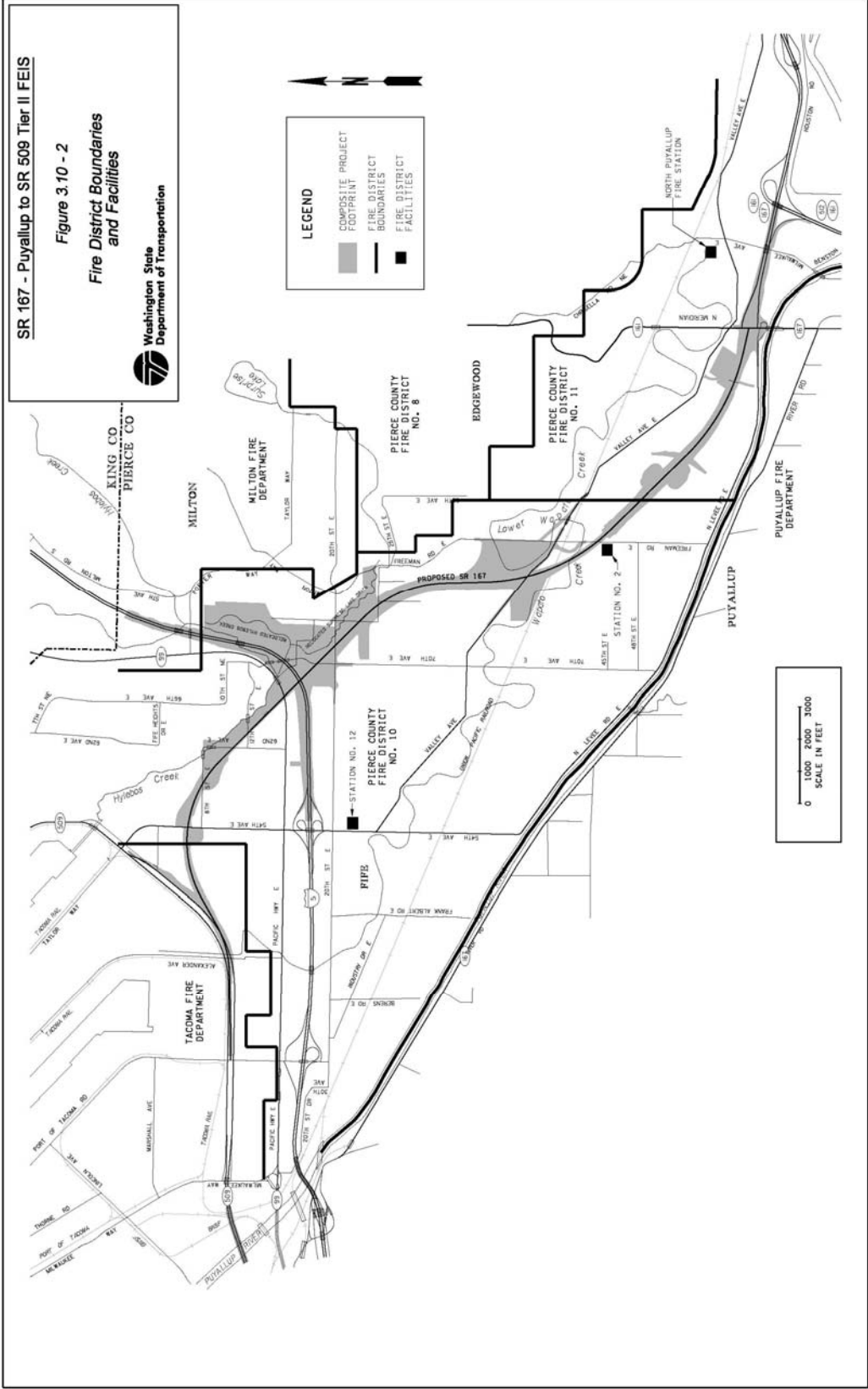
Fire and Police

Firefighting/Emergency Services

Most of the study area is within Pierce County's Fire District No. 10 (Figure 3.10-2). Since 1995, the Tacoma Fire Department has provided fire suppression and emergency medical services under the terms of a service agreement between Fire District No. 10 and the City of Tacoma. Within the study area, the Tacoma Fire Department maintains station No. 12 located at the intersection of 20th Street East and 54th Avenue East. Station No. 2, located in the southeast section of the study area near the 4200 block of Freeman Road East, is currently not active and has been leased to the Fife Police Department. The average response time for calls within the service area is four to six minutes (Fitzgerald 2001).

For calls involving the project area, other units are supplied from nearby stations. Pierce County Districts Nos. 8 and 11 provide limited fire suppression and emergency medical response services to the study area. District No. 8 mainly serves the community of Edgewood but occasionally provides response elsewhere, particularly along the northern sections of Valley and Freeman Roads.

Figure 3.10 - 2
Fire District Boundaries
and Facilities



The City of Milton provides police and fire service within their municipal limits. They have reciprocal inter-local agreements to provide service to unincorporated Pierce County and surrounding jurisdictions when needed.

Police

The major portion of the study area is served by the Fife Police Department. The department maintains coverage for the entire area bounded by the Fife city limits. On average, the department has four to six officers patrolling citywide. Within the Fife valley, Valley Avenue from 70th Avenue East to Freeman Road is patrolled an average of six times a day. The average response time for calls within the service area is five minutes or less (Blackburn 2001).

The Puyallup Police Department serves a small segment of the southern section of the study area. Because this section of Puyallup is relatively small and undeveloped, police patrol is light in comparison to the remainder of the city. The Milton Police department serves the City of Milton and has established an unofficial response time of three minutes for emergency calls. A small segment of the project area falls under the jurisdiction of the Pierce County Sheriff's Department's East Precinct. The Pierce County Sheriff's Department serves unincorporated Pierce County. Due to the undeveloped nature of the area, patrols are light.

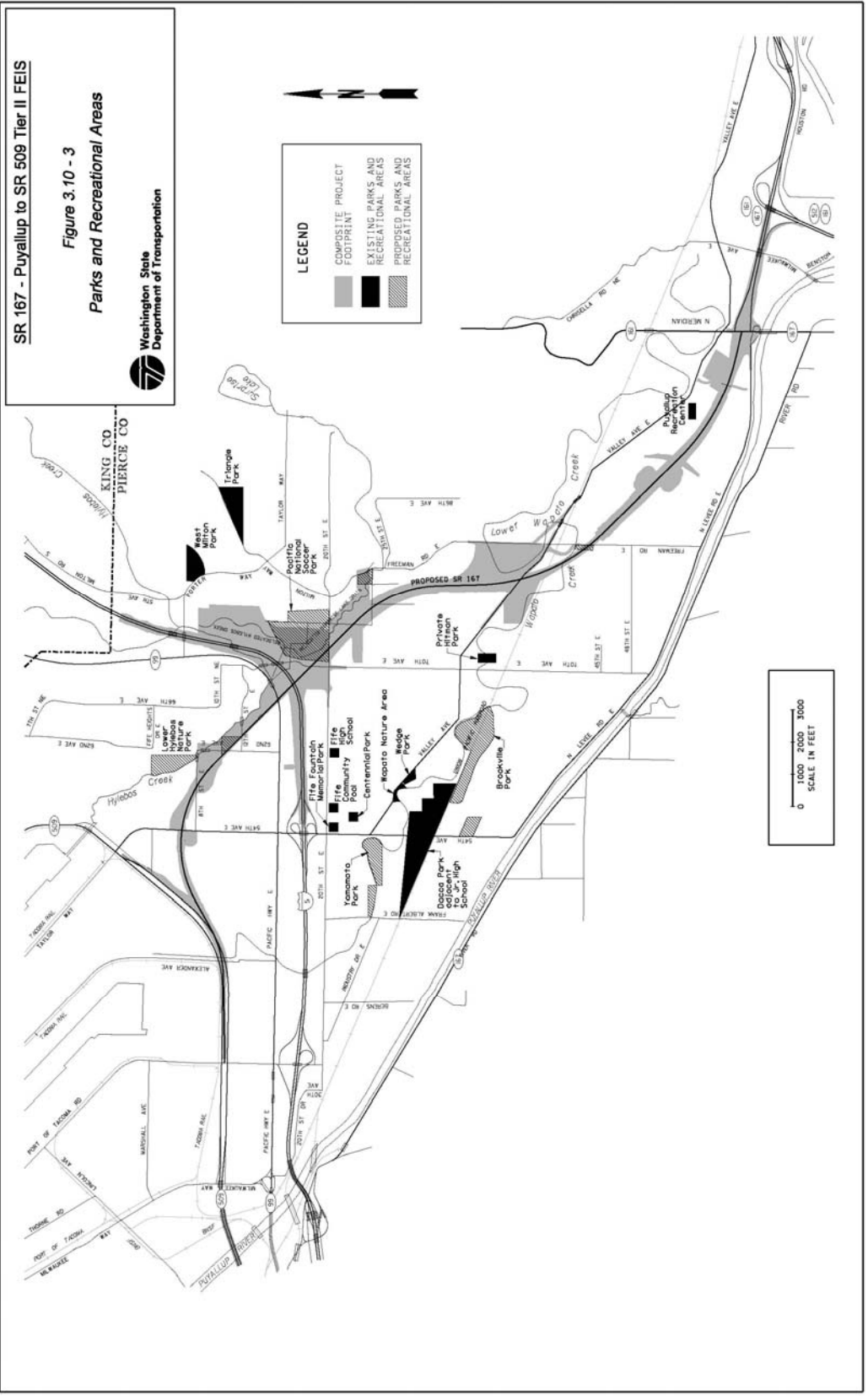
Recreation

Figure 3.10-3 illustrates the location of existing and proposed park and recreation facilities in the study area. These facilities and their uses are discussed below. The City of Fife maintains a community swimming pool located at 20th Street East and 54th Avenue East. Fife High School provides recreational opportunities for community residents during after-school hours and in the summer. In 2003, the City of Fife purchased 54 acres in the vicinity of the I-5 interchange for the purpose of developing a soccer park. The City of Milton Interurban Trail is located in the same area. WSDOT and the Federal Highway Administration (FHWA) will make every effort to minimize impacts to these properties. Fife has constructed Dacca Park, a sports park adjacent to Columbia Junior High School, on purchased farmland located at 54th Avenue East north of the Union Pacific Railroad (UPRR) tracks. Hitman Park is a private park with two softball fields located on 70th Avenue East between Valley Avenue and the UPRR tracks. Both parks are outside the project area.

The City of Puyallup operates a recreation center at 808 Valley Avenue Northwest. The center is situated on the south side of Valley Avenue adjacent to the proposed project corridor. There is no plan to further expand the facility at this time (Dannenberg 2001).

Other recreational facilities can be found at several schools within the Puyallup School District including ball fields, playgrounds, gymnasiums, and outdoor tracks.

Figure 3.10 - 3
Parks and Recreational Areas



Utilities

Electric Utilities

There are three electrical service providers for the study area. The City of Milton provides electric service within most of its municipal limits. Tacoma Power provides service north of I-5 and south of I-5 west of 70th Avenue East. Puget Sound Energy (PSE) provides service for the remaining area. Figure 3.10-4 shows the distribution of major electrical lines affected by the project.

Natural Gas and other Fuels

There are three separate companies that provide natural gas and other fuel types within the project area. McChord Pipeline Co. has a 6-inch gas line that parallels the east side of the Port of Tacoma Road (Figure 3.10-5). This gas line was located in the year 2000 for WSDOT's Port of Tacoma Road project. It is located approximately 30 feet below grade and it is not anticipated that this gas line would be disturbed for this project. Olympic Pipeline Co. maintains a 14-inch high pressure petroleum gas line within the area of the proposed SR 167 and I-5 interchange.

PSE serves most of the study area through intermediate- and high-pressure natural gas lines. PSE also has a 12-inch natural gas supply line that parallels 20th Street East and serves the Port of Tacoma and the City of Tacoma.

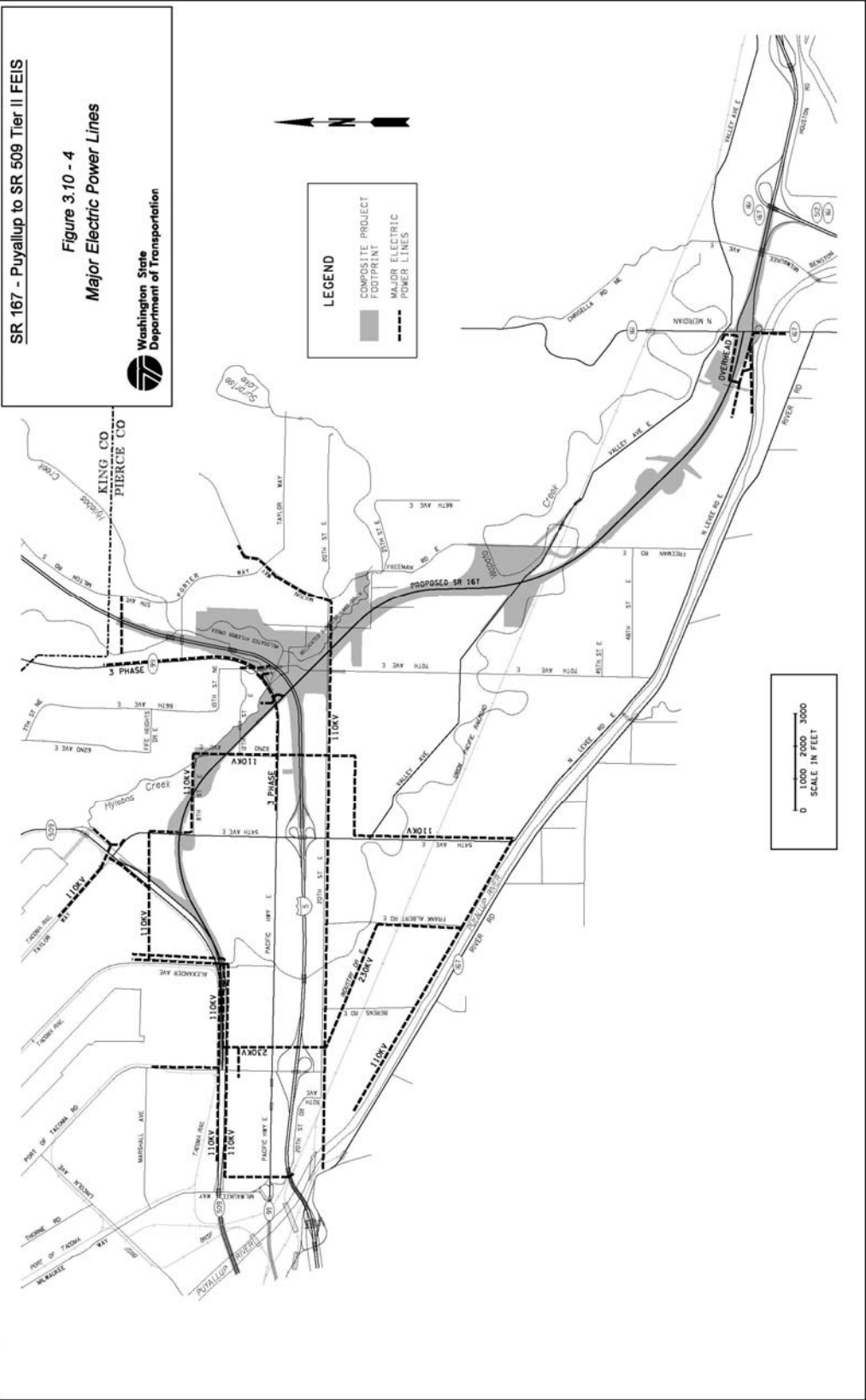
Telecommunications

QWEST provides wire line telecommunications service throughout the project area. These facilities are overhead and buried communication lines. There are buried conduits that carry feeder cables that were identified in the Tier I FEIS (Figure 3.10-6).

AT&T has a buried fiber optic line along SR 509; however, this line appears to be outside the project boundaries. At the intersection of 54th Avenue East/SR 509 and Alexander Avenue/SR 509 there are fiber optic lines owned by Tacoma Power and operated by Click! Network.

At the time of the field survey in early 2003, there were three cellular towers within the study area. Two towers were located just south of the 70th Avenue East/20th Street East intersection and the third tower was at the 45th Street East/70th Avenue East intersection.

Figure 3.10 - 4
Major Electric Power Lines



SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.10 - 5
Major Gas/Oil Lines

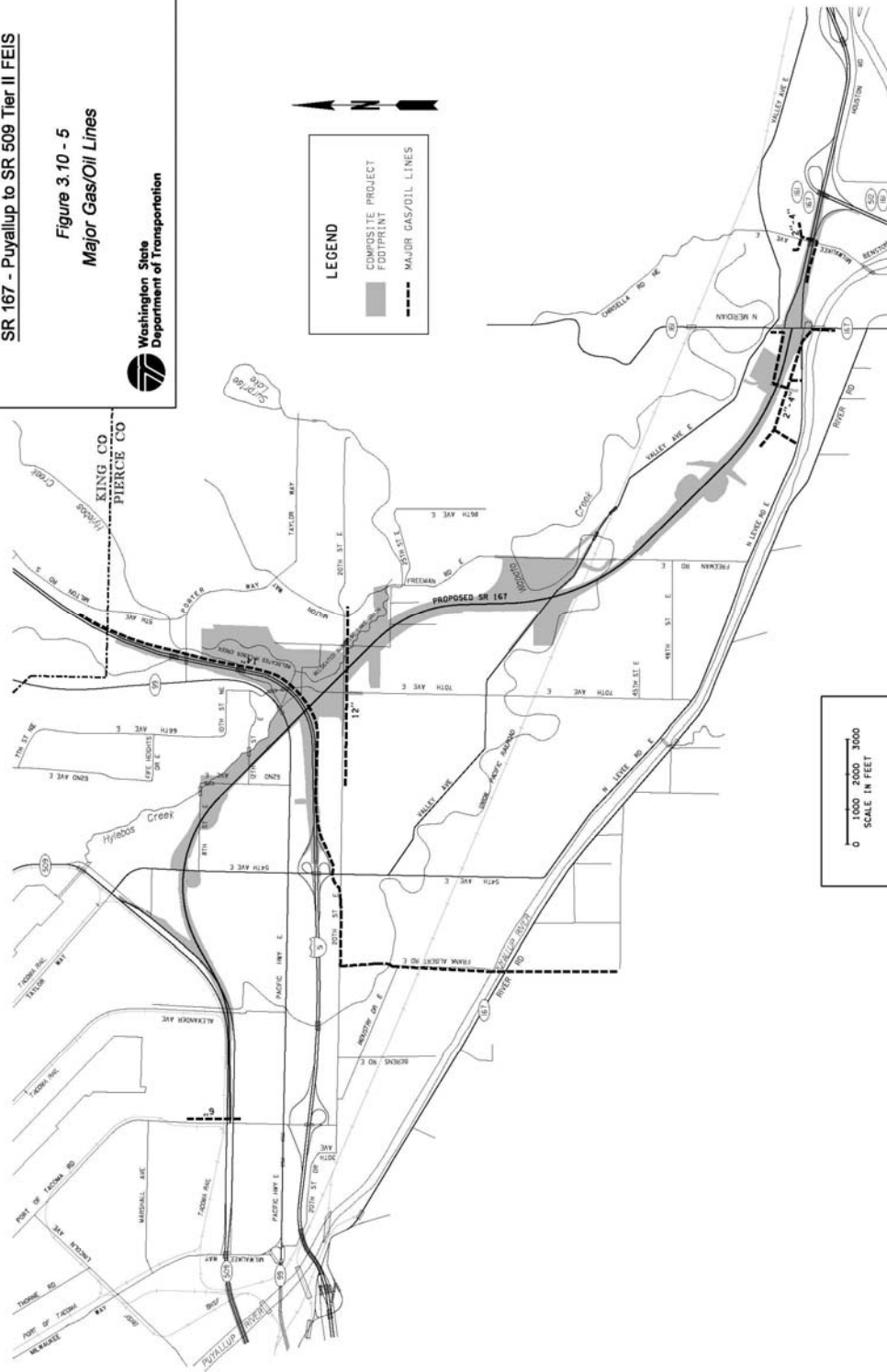
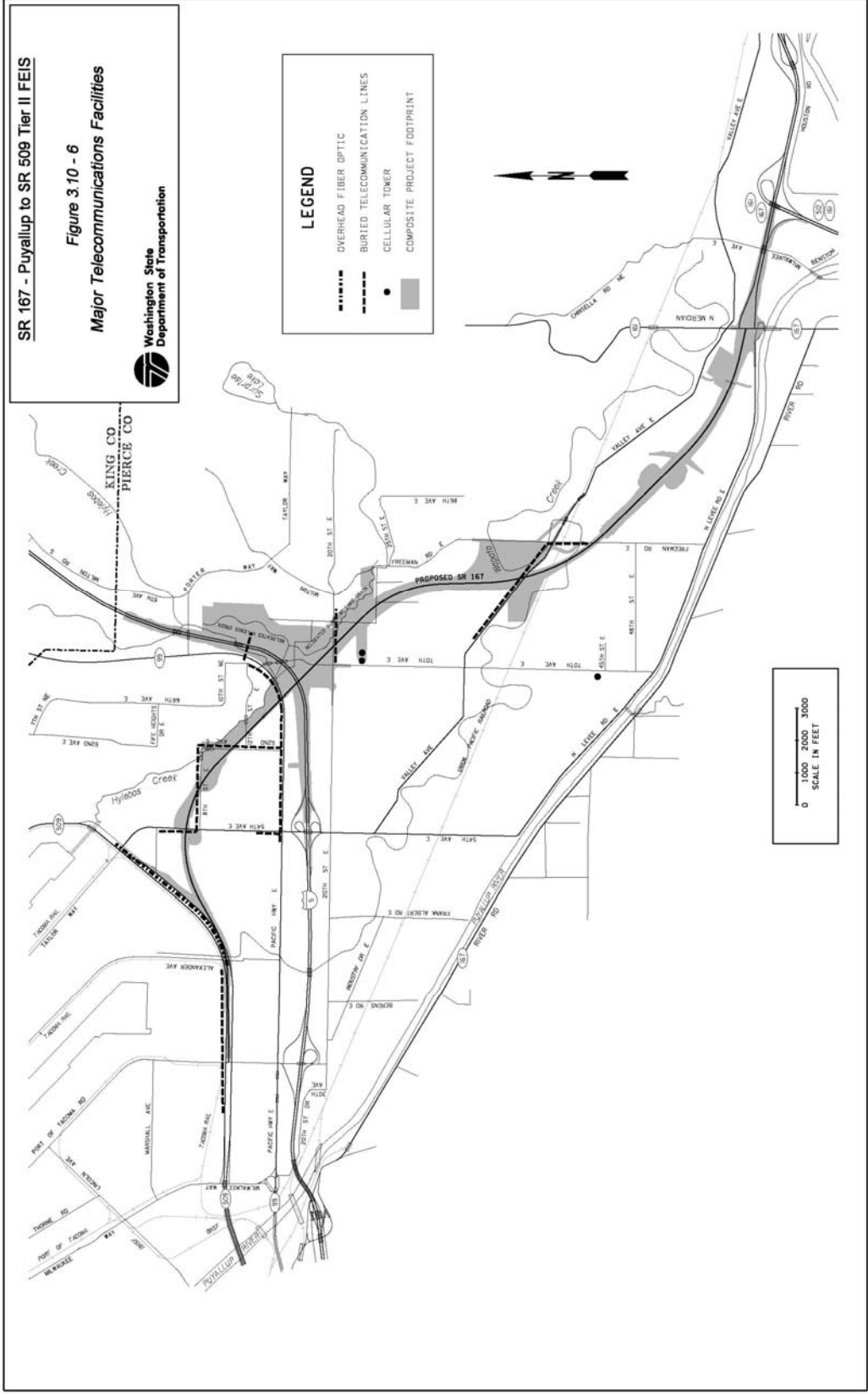


Figure 3.10 - 6
Major Telecommunications Facilities



LEGEND

- OVERHEAD FIBER OPTIC
- BURIED TELECOMMUNICATION LINES
- CELLULAR TOWER
- COMPOSITE PROJECT FOOTPRINT



Water

There are four different water service providers for the project area. Tacoma Water services the beginning of the project, the City of Milton services the proposed SR 167 and I-5 interchange area, and the City of Puyallup services the area of the proposed SR 161 and SR 167 interchange. The City of Fife is also a water provider. Figure 3.10-7 illustrates the major water lines in the study area.

The remainder of the project area is serviced by private wells. Many of these are community wells classified as Group A or B by the Washington State Department of Health. These are shown on Figure 3.2-5 in the Water Resources section and are discussed in more detail there.

Sewer

Four separate municipalities provide sewer service within the proposed project area. They are Tacoma Public Works, Pierce County Public Works, the City of Fife, and the City of Puyallup. Figure 3.10-8 shows the locations of the major sewer lines. The majority of the private homes in the valley have their own septic systems.

Stormwater

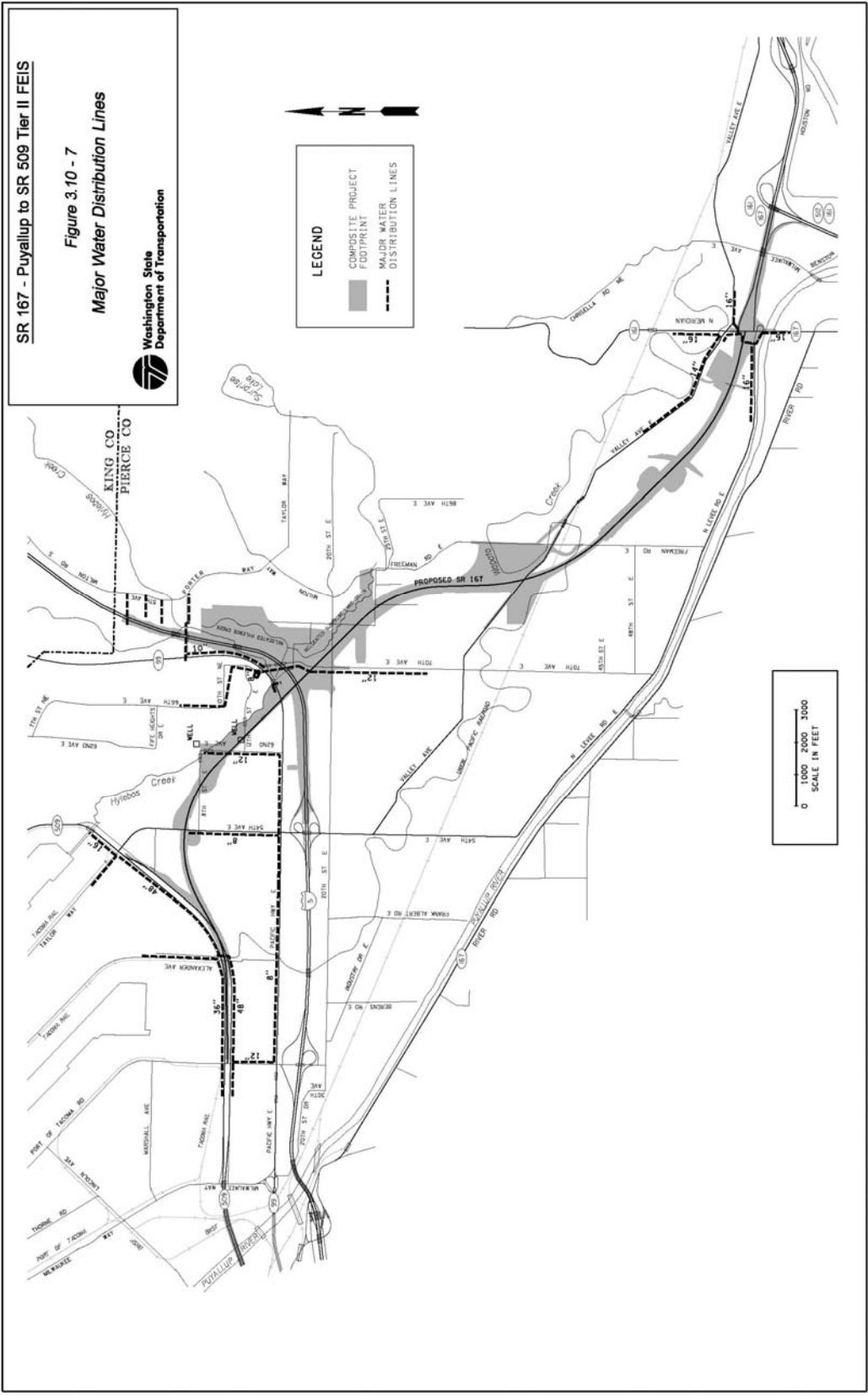
There are three stormwater systems that may be impacted by this proposed project. Two of these systems are near the Port of Tacoma along SR 509 and the other is near the proposed interchange of SR 167 and SR 161. The major features of each system are shown in Figure 3.10-9.

Tacoma Public Works owns and operates a system that runs parallel to the North Frontage Road of SR 509. It ranges in size from a 24-inch to 36-inch pipe. Another system is near the 54th Avenue East and SR 509 intersection. This system ranges in size from 12-inch to 30-inch pipe. Tacoma Public Works recently acquired these systems and is in the process of mapping, locating and inventorying the systems.

The stormwater system near the proposed SR 167/SR 161 interchange is owned by the City of Puyallup.

Solid Waste

Murray's Disposal Company collects and disposes of the solid waste within the study area. The company operates a solid waste transfer station outside the project area near 70th Avenue East and N. Levee Road. There are between 30 and 40 truck trips daily to this transfer station. From the transfer station refuse is then transported to a local landfill.



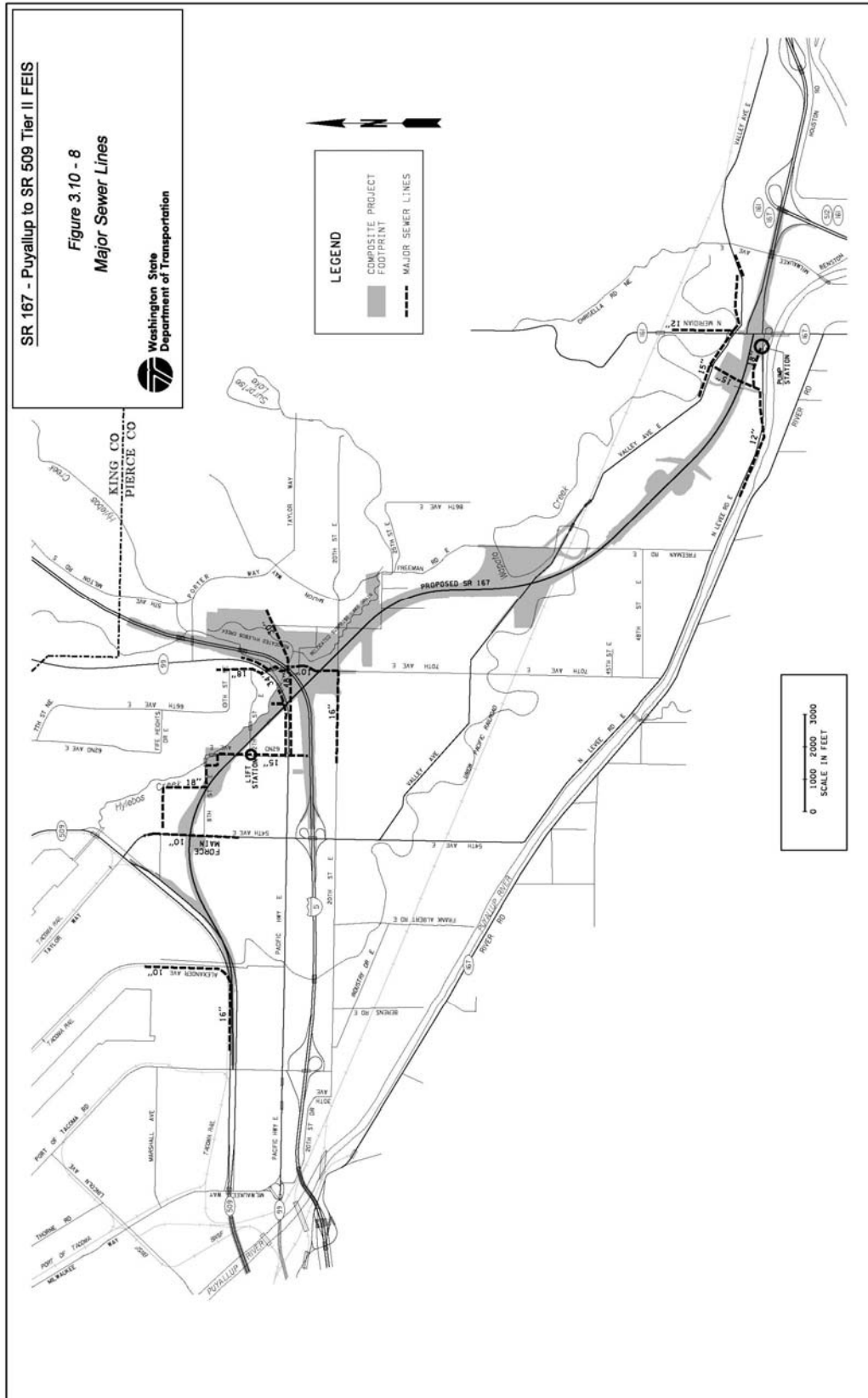
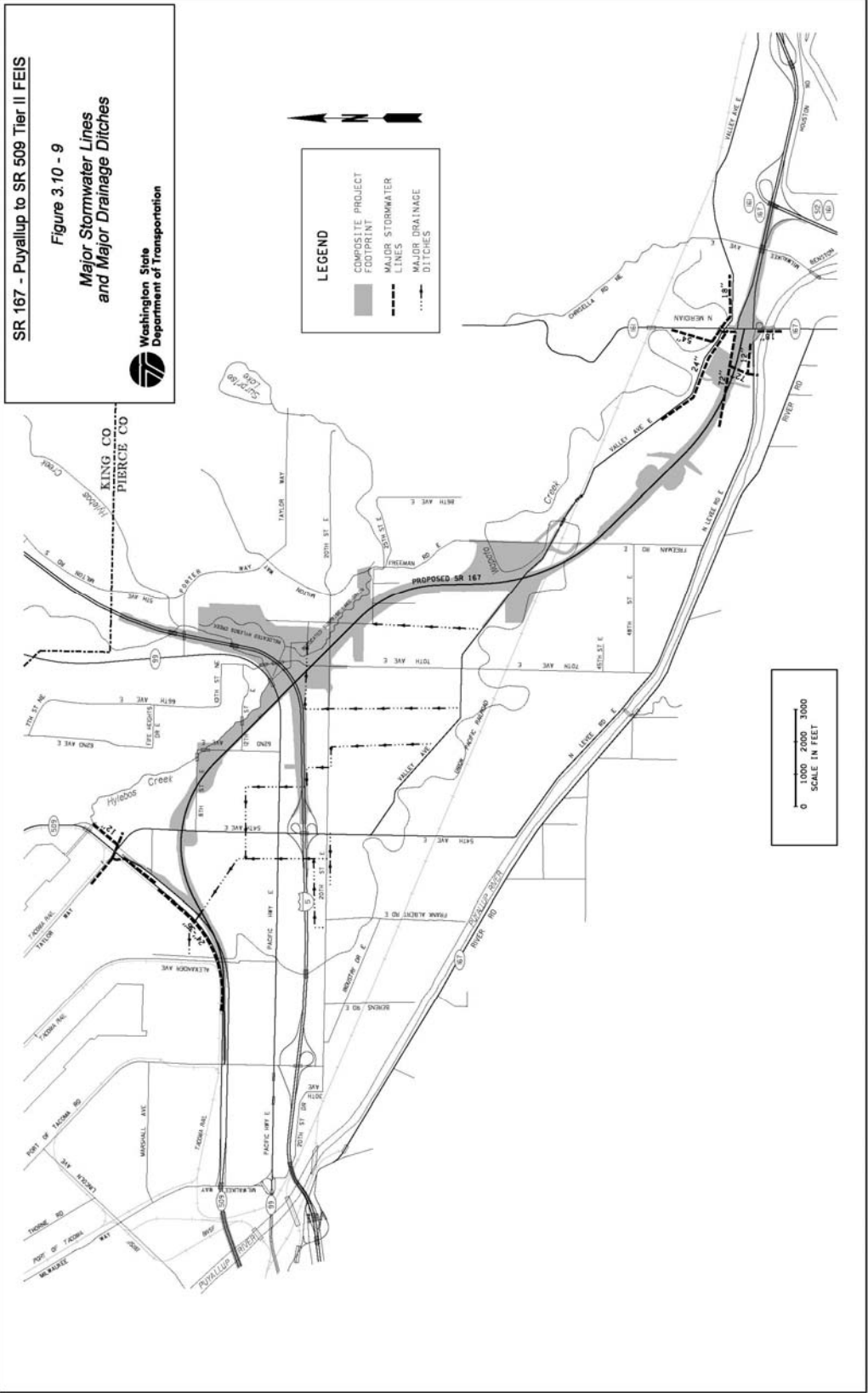


Figure 3.10 - 9
Major Stormwater Lines
and Major Drainage Ditches



3.10.3 Impacts of Construction

No Build Alternative

The No Build Alternative would have substantially fewer construction impacts than the Build Alternative. The cities and county would continue to make improvements to the transportation network. These improvements would likely impact some utilities and public services, but the location and extent of these impacts are unknown at this time.

While the project would not be constructed, WSDOT would continue making improvements to the existing facilities. These include SR 167 (River Road), SR 161, SR 99, SR 509, and I-5. These improvements could include capacity additions, HOV lanes, intersection improvements, and park and ride facilities. Individually, these projects are likely to have fewer impacts on public services and utilities compared to the Build Alternative.

Build Alternative (Preferred)

The analysis of construction impacts is broken into the different project segments proceeding from SR 509 to the SR 167/SR 161 interchange for each of the service areas.

Public Services (Education, Government, Social, Medical, Fire, Police, and Recreation)

There are no public facilities such as hospitals, schools, and police departments located within the project corridor or separated from the community they serve by the project. Access to these facilities and their services will not be halted by construction, but use of alternate routes may be necessary during periods of construction. Rerouting and disruptions in access could temporarily impact emergency service responders such as ambulance, police, and fire protection, especially when traveling through construction areas.

There are no existing recreational facilities that will be permanently impacted from the construction of the project. Some existing facilities will be temporarily impacted due to traffic control and road closures. Once the project is completed, traffic patterns will re-establish themselves based on the revised road system.

Two planned recreational facilities, the Pacific National Soccer Park in Fife and the Interurban Trail, will likely be permanently impacted by the project. FHWA and WSDOT have and will continue to coordinate with the City of Fife, Pierce County and the City of Milton in order to minimize impacts. Section 3.15 and Chapter 5 provide additional discussions of these facilities.

The City of Milton police and fire departments, and Tacoma Fire Station No. 12, located near the construction zone of the I-5 interchange, could experience unavoidable delays in response times for calls requiring travel through the construction area. Temporary detours and time delays during construction may necessitate changes in established routes for the duration of construction. No change in fire district service areas will occur as a result of the project and no additional facilities or services will be warranted.

Both the police and school buses use 20th Street East heavily. The route serves as the most widely used bus corridor, connecting the eastern and western halves of the school district. Temporary detours and time delays during construction will necessitate changes in established routes for the duration of construction. No change in school district service areas will occur as a result of the project and no additional facilities or services will be warranted.

Utilities

WSDOT will determine the locations of utilities within the construction zone during the design phase. Before construction begins, utility impacts will be closely evaluated and a determination made on whether or not to relocate the utility facilities. The number of relocations will depend on the final design of the mainline and each interchange.

Electric Utilities

Mainline

The 230-kV power line that crosses the proposed project between Alexander Avenue and Port of Tacoma Road should not be impacted by the proposed construction (see Figure 3.10-4). The 110-kV line that crosses the proposed alignment between Alexander Avenue and 54th Avenue East and then turns east following 8th Street East will be impacted during construction. The alignment in this area is designed to be on structure and these lines may need to be moved for clearance.

I-5 Interchange

At the I-5 interchange, Tacoma Power has facilities along the north side of SR 99 and along 70th Avenue East that may be impacted by the proposed interchange. These power lines will potentially need to be relocated to avoid structures and new alignments.

54th Avenue East Interchange

The Half-Diamond design option would necessitate the relocation of one large transmission tower, possibly two, depending on the final design. Two transmission towers will need to be relocated if the 54th Avenue East Preferred Loop Option is built.

Valley Avenue Interchange

There were no major power facilities located in this area. There may be smaller, low-voltage residential lines that may be impacted. These lines will be evaluated during the design phase of this project and it will be determined which ones may need to be relocated.

SR 161/SR 167 Interchange

The three options have the same impacts on electric power utilities. The power is carried on overhead power poles located along the edge of the impacts for these design options. These lines will need to be evaluated during the design phase to determine if relocation of the facilities is necessary. There is one line that crosses over the proposed alignment and will need to be relocated or buried.

Natural Gas and Other Fuels

Mainline

There is one identified gas line in the SR 509 area. McChord Pipeline Company owns a line that runs parallel to the east side of Port of Tacoma Road. It is unlikely that there would be any impacts to this gas line because of its depth (see Figure 3.10-5).

I-5 Interchange

At the I-5 interchange, the Olympic Pipeline Company owns a major gas line that runs parallel to the northbound lanes of I-5. This high-pressure gas line will be impacted by the proposed interchange. The relocation of 70th Avenue East and 20th Street East will have major impacts to the line as well. Close coordination with Olympic Pipeline during the design phase will minimize such impacts as pier locations for structures. However, the gas line may need to be relocated prior to the beginning of construction to avoid damage.

The PSE natural gas line that parallels 20th Street East may be impacted by the construction of the I-5 interchange. During design, this gas line will be located. It may need to be relocated due to structure locations. The final design will determine the extent of impacts to this line.

54th Avenue East Interchange

There are no identified gas lines or other fuels in this area.

Valley Avenue Interchange

There are no identified gas lines in this area.

SR 161/SR 167 Interchange

There are some small gas lines within the interchange area that will be impacted. Coordination with PSE during the design phase will determine if these lines will need relocation or if during construction new lines should be buried underneath the proposed roadway. All design options will have the same impacts to the gas facilities in this area.

Telecommunications

Mainline

The small buried conduits throughout the project corridor owned by QWEST may be impacted. These conduits may need to be relocated prior to construction. Final design will determine the impact to these facilities.

The improvements to the mainline of I-5 may impact a buried communication line that crosses underneath it near Hylebos Creek. The depth of the cable and its condition will determine if this line needs to be relocated or replaced. If it is in good condition and has enough cover, there may be no impacts of construction to this cable. Another buried cable located in the 20th Street East vicinity will need to be relocated to avoid the new configuration of the pair of roundabouts.

WSDOT conducted a field survey in 2003 and found that three cellular towers are located in the study area. There will be no impacts to any of these cellular towers.

54th Avenue East Interchange

The Half-Diamond Option would have more impacts along 8th Street East than along 54th Avenue East. During the design phase of the project, the telecommunication lines would be surveyed to find their exact location. This would determine the extent of impacts. If the line is located on the west side of 54th Avenue East and the north side of 8th Street East, there may be no impacts. However, if the line is on the opposite side of the road, some relocations or temporary lines may need to be constructed until the project is finished with construction.

The Preferred Loop Option at this location will impact the communication line along 54th Avenue East regardless of which side of the street the conduit is on. Relocation or temporary services may be necessary to maintain service.

Valley Avenue Interchange

All design options for the Valley Avenue interchange would impact the existing buried telecommunications line that travels parallel to Valley Avenue. This line will need to be relocated since Valley Avenue would be widened from two lanes to five in this location.

SR 161/SR 167 Interchange

No telecommunication lines are identified in this area.

Water

Mainline

Along SR 509 between the Port of Tacoma Road and Taylor Way, a large water system exists (see Figure 3.10-7). This system may be impacted close to where the proposed SR 167 would begin. Tacoma Water will be involved early on in the design process so that impacts to their water system can be minimized. It is unlikely that these water lines will need to be relocated. If the pipe is not structurally strong enough to have more fill or asphalt on top of it, a cap may be designed to place over it for protection.

The fill over 62nd Avenue East north of SR 99 may impact the 12-inch line and one of Fife's city wells. The final design will determine the extent of impacts. It may be necessary to relocate the water line.

I-5 Interchange

There is a water system in the vicinity of the proposed SR 167 and I-5 interchange. Impacts to this system will be minimal because most of the roadway improvements will be on structure. During the design phase of this project, the system will be evaluated and, if plausible, structure piers will be placed to avoid impacting this facility. If the system will be impacted by

additional fill or if it is located within the proposed right-of-way, it may need to be relocated.

54th Avenue East Interchange

The eight-inch line along 54th Avenue East may need to be relocated under the Preferred Loop Option. The Half Diamond Option would not impact known water lines.

Valley Avenue Interchange

There are no identified water systems in this area.

SR 161/SR 167 Interchange

The water system in this area may need to be relocated depending on the final design configuration. The placement of bridge approaches may determine whether this system would need to be relocated or capped. The part of the system that is not encompassed by the structure may need to be moved if the Low Diamond or Medium Diamond option is chosen to accommodate the on ramps to northbound SR 167 in the final design.

Sewer

Mainline

Near SR 509, Tacoma Public Works maintains a sewer line that parallels the North Frontage Road and turns north on Alexander Avenue (see Figure 3.10-8). It is not anticipated that this sewer line will be impacted by construction of this project.

A 15-inch sewer line crosses the proposed mainline at 62nd Avenue East. The mainline is on fill in this area. The final design will determine the extent of impacts.

I-5 Interchange

At the I-5 interchange, Tacoma Public Works maintains a major 48-inch sewer line. WSDOT will coordinate closely with Tacoma Public Works to determine how to relocate this sewer line or find another plausible solution in lieu of relocation, if the sewer line is directly impacted.

The City of Fife has an existing gravity sewer system in the vicinity of 70th Avenue East and 20th Street East.

54th Avenue East Interchange

The City of Fife has one existing 10-inch sewer line located in 54th Avenue East. WSDOT will coordinate closely with the City of Fife to determine how to relocate this sewer line or find another plausible solution in lieu of relocation, if it is impacted.

Valley Avenue Interchange

There are no identified sewer lines in this area.

SR 161/SR 167 Interchange

Just west of the SR 161/167 interchange, there is a 15-inch sewer line that crosses underneath the mainline. This sewer line will need to be protected from the additional fill material that would be placed on it. This may be in the form of a cap or a reinforced sanitary sewer pipe.

The 15-inch sewer line connects with an 18-inch sewer line that travels to a lift station just west of the N. Levee Road intersection with SR 161. This sewer line and lift station would be impacted by any of the interchange design options. It may be necessary to relocate the lift station outside of the fill and therefore realign the 18-inch sewer line that comes into the system. The sewer line will need to be replaced with a reinforced pipe if fill heights warrant it. This may interrupt sewer service for customers until these construction-related impacts are finished.

Stormwater

Mainline

Along SR 509, a stormwater system runs parallel to the North Frontage Road. It is unlikely that this system will be impacted by the project, however final design will determine if any impacts will occur.

I-5 Interchange

No stormwater systems are identified in the I-5 interchange area.

54th Avenue East Interchange

No stormwater systems are identified in this area. The city of Fife has an existing sewer system located in 54th Avenue East.

Valley Avenue Interchange

No stormwater systems are identified in this area.

SR 161/SR 167 Interchange

There is a large stormwater system located in the interchange area. A 72-inch-diameter pipe network is located along the mainline just west of the interchange. This stormwater system will need to be redesigned to adjust for the changes that the project would create. If it is determined that these pipes may stay in place, they will have to have some sort of pipe protection. Replacing the pipes with a reinforced concrete stormwater pipe is an option as well as capping the existing pipes with concrete. If possible, the 72-inch outfall should remain in place and not be disturbed. All of the design options for this location would impact this stormwater system.

Solid Waste

Mainline and Intersection Options

Travel times for solid waste trucks will likely increase during construction throughout the project area. This service will not be halted by construction, but use of alternate routes may be necessary during periods of construction.

Temporary detours and time delays during construction will necessitate changes in established routes for the duration of construction.

3.10.4 Impacts of Operation

No Build Alternative

Public services in the project area would continue to suffer from the operation impacts of the current transportation system under the No Build Alternative. Emergency service response times would increase because of the increased traffic congestion. The local jurisdictions would continue to make improvements to the transportation network, but travel times would likely continue to increase.

WSDOT would continue to make improvements to the existing facilities including SR 167 (River Road), SR 509, SR 99, I-5, and SR 161. But these improvements would not improve traffic congestion nor reduce safety issues to the same degree as the Build Alternative.

No foreseeable impacts of operation are expected to the utilities under the No Build Alternative.

Build Alternative (Preferred)

Public Services (Education, Government, Social, Medical, Fire, Police, and Recreation)

Mainline and Intersection Options

Once construction is complete, school buses, police, fire, and emergency vehicles will be provided with an additional route option in providing services. With heavy industrial traffic removed from local arterials, historically congested streets will no longer impede emergency vehicles. As a result, access will improve and travel times will decrease in the project area. Emergency service response times to residential areas will improve. No change in service area will occur as a result of the project. No additional facilities or services will be warranted. No existing recreational facilities will be impacted by the new highway alignment. FHWA and WSDOT will make every effort to minimize impacts to any proposed recreational facilities. For additional information on recreational facilities see the *Section 4(f) Evaluation* in Chapter 5 of this Final EIS.

Utilities

Mainline and Intersection Options

Upon completion of construction, there will be no operational impacts to utilities. All substantial impacts will be taken care of during the construction phase of the project. All relocations of services will be finished and temporary service facilities will be removed before completion of construction.

Once construction is complete, disposal trucks will be provided with an additional route option in providing solid waste services. No change in service area will occur as a result of the project. No additional facilities or services will be warranted.

3.10.5 Cumulative Impacts

Cumulative impacts to public services and utilities are not discussed because the proposed transportation project is not likely to contribute, either positively, negatively, nor is it likely to alter the magnitude of other foreseeable impacts.

3.10.6 Mitigating Measures

Public Services

Impacts to fire, emergency, and police services during construction will be limited to temporary disruptions of service routes within the construction zone. Service providers affected by construction will be notified in advance of the construction period. Police, fire and emergency response, school districts and solid waste providers will be notified of construction schedules, access restrictions and possible detour routes prior to access modification.

To the extent possible, the scheduling of road closures and detour routes will be coordinated with police, fire, and emergency services, school districts and businesses dependent on delivery routes in the active construction area to minimize delay times. Traffic control requirements during construction will conform to state and local regulations. Restricting lane closures and construction activities that impact traffic during peak commuter hours and peak holiday travel periods can help to ease backups and time delays. Maintaining an open communication process will keep local residents informed of development phases, areas of construction, and possible travel alternatives.

Utilities

Impacts to utilities will be determined during the design phase of the project and any relocation should take place prior to construction.

3.11 Land Use, Socioeconomics, and Environmental Justice

This section discusses the impacts of the SR 167 Extension Project on land use, socioeconomic, and environmental justice factors in the study area. These topics are covered under separate subheadings. The Land Use section includes an analysis of the project's impacts of converting parcels from their current use to a transportation use, on access to existing land uses, and on the impacts to Puyallup Tribal lands.

The Tier I EIS contains an extensive analysis of the project's consistency with local, state, and federal planning efforts. The Tier I EIS analysis found the project was consistent with local, state, and federal plans. The only further analysis done for Tier II was to confirm that the planning policies of the responsible agencies have not substantially changed since the Tier I EIS was published in 1999.

The Socioeconomics section includes a discussion on community cohesion, which is also a topic in the subsequent section on Environmental Justice (EJ).

Studies Performed and Coordination Conducted

This section incorporates information compiled in the *SR 167 Tier II EIS Land Use/Farmland/Social-Economic/Environmental Justice Discipline Report* (WSDOT 2004). The discipline report reviewed city, county, and regional plans that were examined during the Tier I process to ensure that current efforts support, and are in compliance with, established plans and policies. No substantial changes were found to have occurred since the Tier I analysis. A summary and discussion of each document and how it relates to the SR 167 Extension project is in the Tier I EIS, Section 4.12.1.

Zoning designations in the study area were obtained from the following sources: City of Fife zoning map (2000); Pierce County map of zones designated "general" and plat maps with zoning overlays (2000); City of Puyallup zoning map (2000); City of Milton zoning map (2002); and City of Tacoma zoning map (2000). This information was supplemented and updated as necessary.

The information on Puyallup Tribal Trust lands came from maps in the Tier I FEIS and parcel data in the Pierce County Tax Assessor's database.

For the population projections, U.S. Census Data for 2000 was used as well as population and housing estimates for 2000 prepared by the State of Washington, Office of Financial Management. These estimates are done yearly for all cities and counties in the State of Washington. The study area encompasses Forecast Analysis Zones (FAZs) as defined by the Puget Sound Regional Council (PSRC) model and refined by Pierce County to reflect county data on land use and Census Tracts in those FAZs. The population forecasts were done to the design year of 2030.

Census data were used to develop a profile of residents in the study area. Whenever possible, Census 2000 data were used to present the most current data available on population, minority status, and housing data. Data from FAZs were

used, except for minority characteristics and income levels, where Census information was necessary. Field investigations, telephone contact, personal visits to affected residential and business sites, and aerial photographs were used for some observations and discussions related to social/economic issues. Field interviews were held with business owners, employers, landowners and farmers, and property managers of multi-family apartments to verify and supplement data.

3.11.1 Land Use

Zoning and Existing Land Uses

Figure 3.11-1 shows the jurisdictional boundaries for the different cities and Pierce County in the study area. Figure 3.11-2 shows the generalized zoning for each jurisdiction.

City of Tacoma

The northern terminus of the proposed project will connect with SR 509 near Alexander Avenue. The project study area includes a small portion of land in the Port of Tacoma (118.3 acres) that falls within the Tacoma city limits. This area is west of the Fife city limits and 54th Avenue East. The land is primarily undeveloped and city zoning for this area is M-2 (Heavy Industrial).

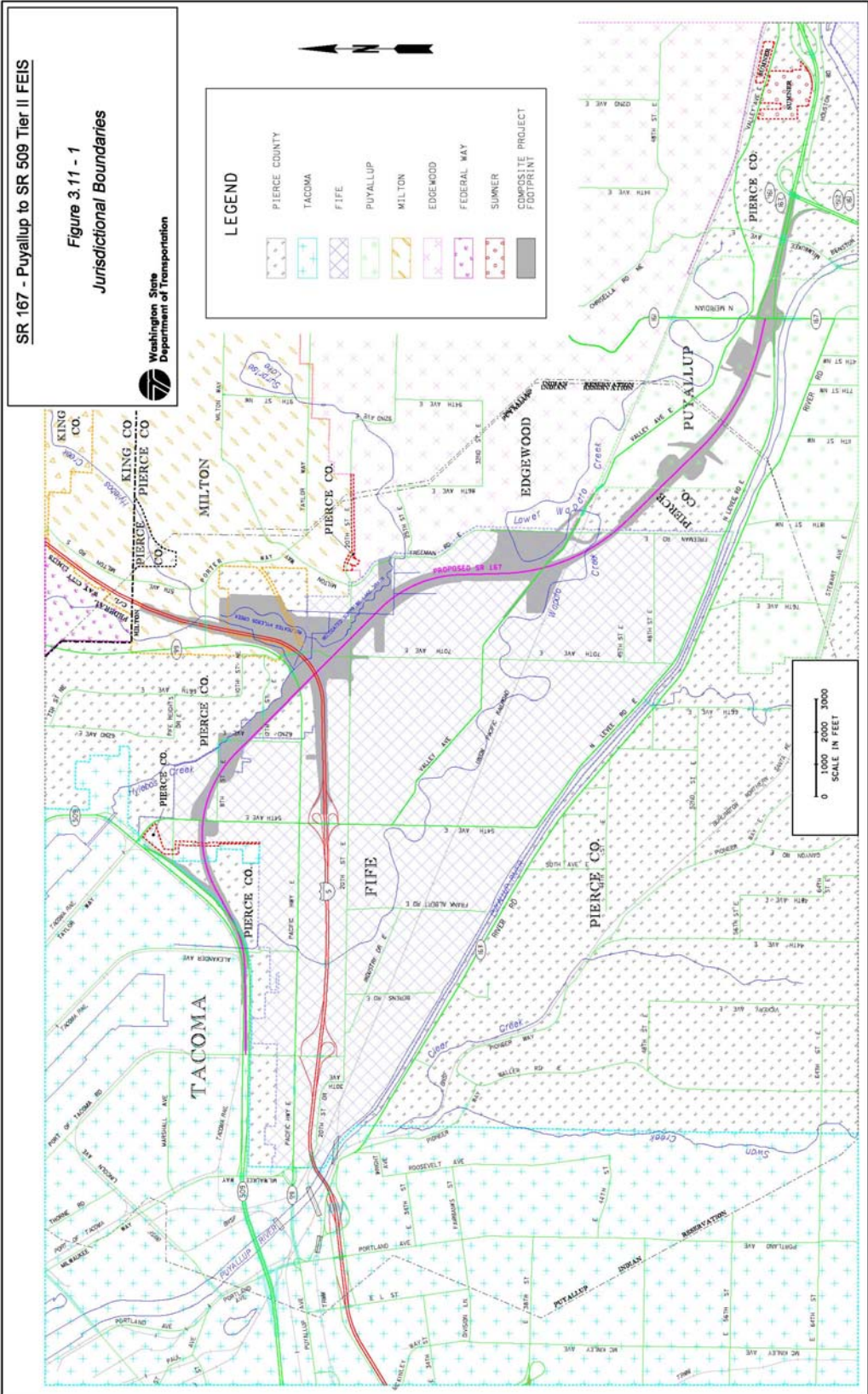
Port of Tacoma

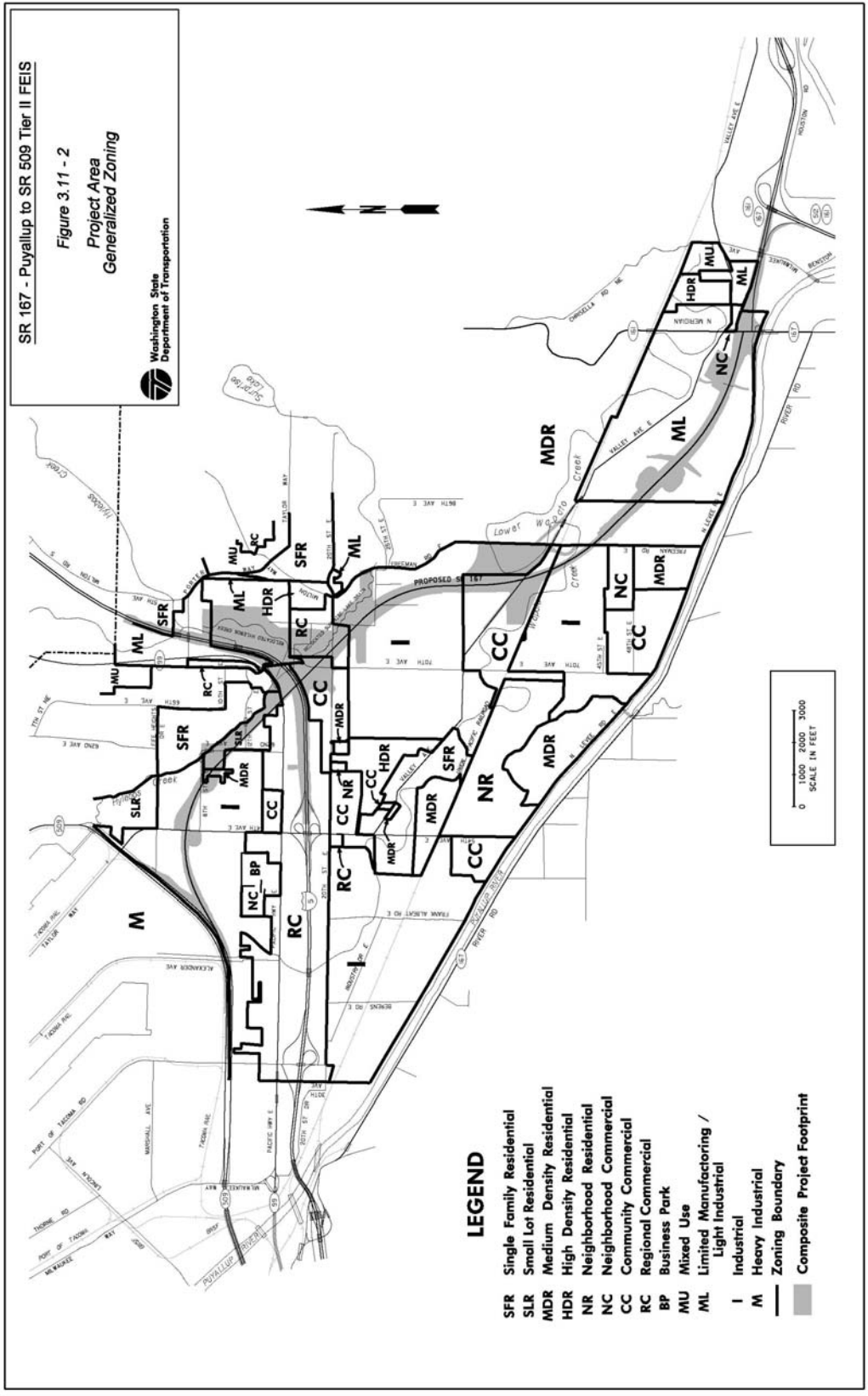
The Port of Tacoma land within the study area is subject to the zoning jurisdiction of the City of Tacoma. The bulk of the Port of Tacoma land is located outside of the study area. The land that is adjacent to SR 509 and in proximity to the proposed SR 167 corridor includes vacant land, log storage, auto import storage, and warehouse/packaging. Current City of Tacoma zoning is M-3 and M-2 (Heavy Industrial).

City of Fife

Between 1997 and 1999, the City of Fife annexed areas of unincorporated Pierce County within the city of Fife Urban Growth Area. These annexations doubled the city of Fife size from 1,935 acres in 1990 to 3,320 in 2001. The annexed areas included neighborhoods identified in the Tier I EIS as East Fife, 20th Street East, and Fife Valley. Based on these annexations, the bulk of the study area is currently within the Fife city limits.

Zoning in Fife along the proposed corridor is primarily industrial and commercial. The commercial zones (NC: Neighborhood Commercial; CC: Community Commercial; and RC: Regional Commercial) primarily border the I-5 corridor. Residential zoning (SFR: Single-Family; MDR and HDR: Multi-Family; NR: Neighborhood Residential) is concentrated south and west of the project corridor.





Existing land uses adjacent to the proposed alignment are primarily industrial/commercial, agricultural, and vacant/undeveloped. The sections along SR 99 north along 54th Avenue East are intensively developed with retail/business, commercial, and industrial/manufacturing uses. The portion of the annexed land located between 4th Street East and 12th Street East and east of 54th Avenue East consists of single-family dwellings and vacant land. Recently, industrial and commercial development has been occurring within this area including Sound Analytical Services, Odom Corporation, Fife Landing North, and Rusforth Construction Office Building. This area is zoned as industrial (I) and commercial (RC and CC).

South and east of the I-5 interchange, the existing land use is predominantly agricultural and vacant/undeveloped characterized by ownership of large parcels. There are relatively few roads and residences, except for a cluster of single-family homes in the far southeast corner of the area. Within the last decade, the area has become more industrialized with manufacturing and warehouse/distribution facilities replacing farmland. Development has especially been prevalent along 70th Avenue East between 20th Street East and Valley Avenue. Fife has zoned this area for industrial and commercial use.

City of Puyallup

The project study area includes only the northern section of the city of Puyallup east of Freeman Road and west of the current terminus of SR 167 at SR 161. Puyallup zoning is ML (Limited Manufacturing) in the section adjacent to the Puyallup River and consists of light industrial facilities and warehouses. The rest of the North Puyallup area is zoned CG (General Commercial), which permits multi-family housing development of 10 to 20 units per acre. A city recreation center located in the North Puyallup area on Valley Avenue sits adjacent to the proposed corridor alignment.

City of Milton

The extreme northwest section of the project study area west and south of Porter Way along I-5 includes a small portion of the city of Milton. Existing land use in this area is primarily single-family residential, commercial, and vacant land. The area is zoned B (Business) and M-1 (Light Manufacturing).

City of Edgewood

Current land use in the city of Edgewood adjacent to the study area in the vicinity of Valley Avenue and Freeman Road is primarily residential. Zoning in this area is Single-Family (low and moderate) and Mixed-Residential (low and moderate).

Pierce County

Adjacent to the cities of Fife and Tacoma east of 54th Avenue East, a small portion of unincorporated Pierce County lies within the study area. This includes land bound by 62nd Avenue East on the west, I-5 to the south and Hylebos Creek on the northeast. This area consists mainly of single-family residential and vacant land with commercial land use along both sides of Pacific Highway. This is an older neighborhood of small lots that is between Hylebos Creek and 62nd Avenue East. Zoning is designated as Moderate Density Single Family and

Mixed Use District by Pierce County. Located directly north of the bluffs above Hylebos Creek is Fife Heights, a largely residential community with a rural character.

Puyallup Tribal Trust Lands

Puyallup Tribal Trust lands within the study area are shown on Figure 3.11-3. In 1989, the Puyallup Tribe reached an agreement with a number of jurisdictions. This agreement settled land claims made by the Tribe. In return for relinquishing its claim on port industrial land, the Tribe received an estimated 899 acres of land. The bulk of the land received is located along the Blair and Hylebos waterways.

Two other properties near the study area were received by the Tribe as a result of the settlement, both of which are located south of the Union Pacific Railroad (UPRR) line between Frank Albert Road and 54th Avenue East. These two adjacent parcels consist of 57 and 22 acres, respectively. Two other small Tribal trust parcels are located along the north side of the Puyallup River east of 54th Avenue East.

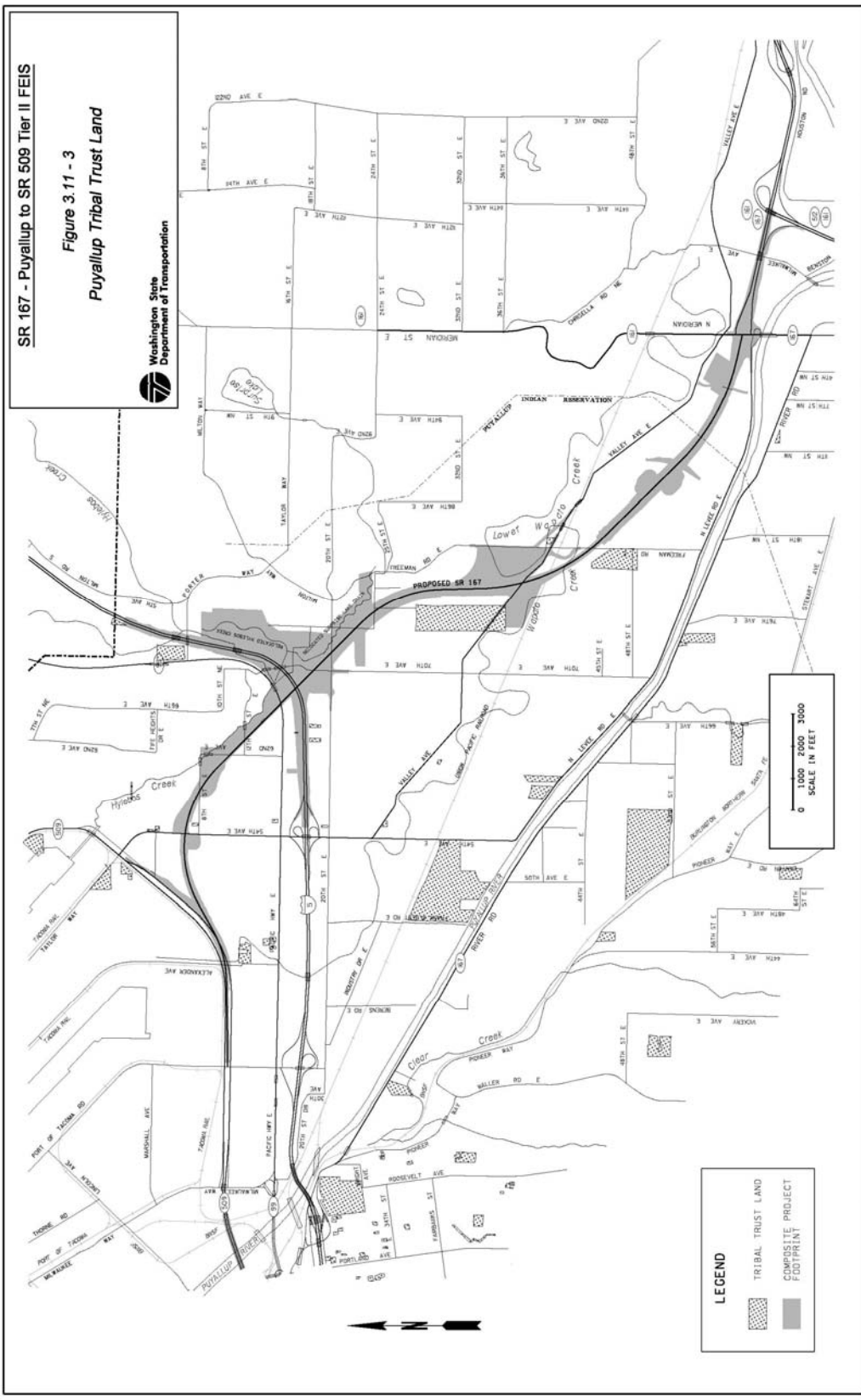
Tribal trust lands in the study area are located north and south of Valley Avenue between 70th Avenue East and 82nd Avenue East, as well as in the Port of Tacoma/Fife area north of I-5. Trust land located within the vicinity of the proposed alignment includes eight parcels of land (41 acres) west of the proposed project ROW (ROW) and east of 70th Avenue East, two parcels (15 acres) southwest of the proposed ROW at the intersection of Freeman Road and 48th Street, and one parcel south of the proposed ROW on 8th Street East at 54th Avenue East (0.34 acre).

Impacts of Construction

This section discusses the potential land use impacts of the project related to construction of the project improvements. The impacts are from the conversion of land from one use to another. Other impacts to land use include temporary disruption of business or loss of access due to detours. These are discussed in more detail under Section 3.13 (disruption) and Section 3.14 (loss of access).

No Build Alternative

No direct conversion of existing land uses from the project would occur under the No Build Alternative. Under this alternative, current land use development trends would continue to occur. These trends would follow existing land use plans, zoning designations, and regulations adopted pursuant to the Growth Management Act (GMA) by the affected jurisdictions that directly surround the proposed SR 167 highway extension. The cities and Pierce County would continue with various improvements to the existing road system. It is not expected that these improvements would result in conversion of substantial acreages of land from their current uses to transportation uses. Some of the larger proposed projects are listed in the Transportation section (Section 3.14).



WSDOT would continue to make improvements to I-5, SR 99, SR 161, SR 509, and existing SR 167 within the study area. These improvements could include some additional ROW for park and ride lots, express lanes, intersection improvements, and capacity additions. The acreages converted from current land uses would be substantially smaller than the build alternative.

Build Alternative

Mainline

Permanent impacts under this alternative would primarily involve the long-term conversion of existing land uses to transportation-related uses. Approximately 286 to 306 acres of new ROW for the proposed alignment will be directly converted to transportation-related uses (Table 3.11-1). The final acreage purchased by WSDOT for ROW will be higher because the remainder of some parcels would be rendered unusable. The decision to purchase the remainder of a parcel will be made on a case-by-case basis and cannot be determined at this time.

Table 3.11-1: Right-of-Way Acquisition (Acres)

	Residential	Commercial /Industrial	Agricultural	Vacant	General/ Public	Total
Mainline & I-5 Interchange						
SR 509 to I-5	2.7	2	0.8	13.4	0.2	19.1
I-5 Interchange	19.8	16	11.2	9.2	1.2	57.4
I-5 to Valley Avenue	4.7	0	22.7	49.2	4.1	80.7
Valley Avenue to SR 161	5.8	0	11.7	4.4	0.3	22.2
Subtotal	33	18	46.4	76.2	5.8	179.4
Interchange Options						
54th Ave E Interchange						
Loop Ramp	0.5	8.5	0.3	2.4	0.4	12.1
Half Diamond Ramp	1.8	8.4	3.4	1	0.4	15
Valley Ave Interchange						
Valley Ave	7.5	12.7	32.8	6.9	0	59.9
Valley Realignment	11.5	14	15	2.9	0.8	44.2
Freeman Road	8.3	14.5	17.8	10.2	0	50.8
SR 161/167 Interchange						
Urban	1.3	2.2	29.1	15.7	3	51.3
Diamond Medium	1.3	1	29.1	15	3.9	50.3
Diamond Low	1.3	1	29.1	15	3.9	50.3
Total Mainline plus Interchange Options	42.3-47.6	40.1-43.2	90.8-111.7	95.1-104.5	9.2-10.9	286-305.6

Existing vacant and agricultural uses would be affected the most, with 95 to 105 acres vacant/undeveloped land and 91 to 112 acres agricultural converted, depending on the final approved design. Other uses converted will include 42 to 48 acres residential, 40 to 43 acres of commercial/industrial land, and 9 to 11 acres general/public. The latter includes public property and general use such as city facilities, churches, educational, and recreational activities. Table 3.11-1 illustrates the breakdown by segment.

A number of residential units and businesses will be displaced as a result of ROW acquisition. The bulk of the displacements occur within the Fife city limits. The residences are mostly older single-family residential units, the

majority of which are located in the North Fife area and in the vicinity of the I-5 interchange near 70th Avenue East. Most of the affected businesses are located in the vicinity of the I-5 interchange. The majority of the manufacturing/industrial businesses affected by the proposed alignment are located north of I-5, primarily in the vicinity of the northern limit of the project (54th Avenue East).

Most of the land acquired for ROW that is identified as agricultural and vacant in Table 3.11-1 is located within the city of Fife and is zoned predominately for industrial and commercial usage. Much of the current use of this land has been for farming and will be converted to transportation-related usage.

Impacts to the city of Fife from the loss of these properties will result in the loss of tax revenues. Nearly half of the city of Fife land carries industrial/commercial zoning. It is anticipated that these impacts will be short-term. It is expected that the lost economic revenue would be recovered as the remaining vacant property is developed or as the remaining land from displaced users is redeveloped. The city of Fife's close proximity to the Port of Tacoma, the sixth largest port in the United States, makes it appealing to port-related warehouses and manufactures. As such, the properties immediately adjacent to SR 167 are expected to increase in value due to the freeway availability as well as to the proximity of the port. Displacements, disruptions, and relocations are discussed more fully in Section 3.13.

Puyallup Tribal Trust Lands

Twelve Tribal parcels are currently located within the proposed project ROW and will be affected by acquisition. Seven of the twelve parcels are identified as Tribal Trust land. The others are owned by individual Tribal members. Figure 3.11-3 shows the Tribal Trust parcels, but some of the parcels are adjacent to each other and show up as a solid block. Four of the Trust parcels fall within the proposed I-5 interchange footprint. Two are located along north side of I-5, while two are located on the south side. The relocation of Hylebos Creek riparian buffer zone will impact the two southern parcels.

After issuance of the Tier I ROD, the Puyallup Tribe of Indians purchased two parcels (one and five acres, respectively) in the vicinity of 12th Street East that will be impacted by the alignment. The Puyallup Tribe recently purchased (March 2004) three more parcels just south of the UPRR rail line and west of Freeman Road, which will be impacted by the alignment and riparian restoration. None of these five parcels are designated as Trust land.

Interchange Options

Table 3.11-1 compares the amount and types of existing land uses that could be converted to transportation-related uses for each of the interchange options. (Note: The acreage of agricultural land is from the Assessor's database and does not equal farmland as defined in the Farm Protection Policy Act. Please see Section 3.12.2 for more detail on the definition of farmland.) At the 54th Avenue East partial interchange, the Preferred Loop Option has the least impact on land use. At Valley Avenue, the Valley Avenue Realignment Option has the least impact. All the options at the SR 161 interchange have similar impacts.

Puyallup Tribal Trust Lands

All three Valley Avenue interchange options would affect Tribal Trust properties. Along Valley Avenue, three Tribal Trust properties might experience disruptive impacts to existing access and parking, but would not result in displacement nor would the current property utilization be altered. The three interchange options affect these three Tribal Trust properties to the same degree: 0.34, 0.06, and 0.60 acre of each respective parcel. With the loss of only these small amounts of land, the access and parking could be modified and reorganized within the existing parcel.

The environmental screening criteria include one for impacts to Tribal Trust lands. Table 3.11-2 summarizes the number of parcels impacted at each interchange.

Table 3.11-2: Impacts on Tribal Trust Lands (For Screening Criteria)

Interchange Options	Number of Tribal Trust Parcels Impacted
54th Ave E Interchange Options	
Loop Ramp	3
Half Diamond Ramp	3
Valley Ave Interchange Options *	
Valley Ave	3
Valley Realignment	3
Freeman Rd	3
SR 161/167 Interchange Options	
Urban	0
Diamond Medium	0
Diamond Low	0

*Three additional tribally owned properties will be impacted by the SR 167 mainline near Valley Avenue interchange.

Riparian Restoration Proposal Impacts

The Riparian Restoration Proposal would restore floodplains along the lower Hylebos, relocated Hylebos and Wapato Creeks, and Surprise Lake Drain. The plan will require the acquisition and removal of human made structures and replacement with riparian vegetation.

Table 3.11-3 summarizes the amount of existing land that will be directly converted under the Riparian Restoration Proposal. Existing vacant, agricultural, and residential uses will be affected the most, with 51 acres vacant/undeveloped land, 59 to 71 acres agricultural, and 56 to 67 acres residential being converted. A number of residential units and businesses displacements are anticipated as a result of ROW and mitigation acquisition. Coordination with the Puyallup Tribe concerning ROW acquisition was previously described in subsection 1.4.3 on page 1-33. See Section 3.13 for a detailed discussion of potential displacements and for a detailed list of potential parcels and existing land uses that would be directly affected.

Impacts under the Riparian Restoration Proposal will primarily involve the long-term conversion of existing land uses to transportation-related uses, as well as

riparian restoration. Depending on the interchange option selected, a total of approximately 214 to 237 acres of additional land will be converted to accommodate the plan. This converted land is in addition to that identified in Table 3.11-1. The total amount of land converted for this project under the Build Alternative, including the Riparian Restoration Proposal, could range from 650 to 693 acres.

Table 3.11-3: Riparian Restoration Proposal Land Acquisition (Acres)

	Residential	Commercial/ Industrial	Agricultural	Vacant	General/ Public	Total
Mainline and I-5 Interchange						
SR 509 to I-5	22.3	3.1	10.7	7.2	2.7	46
I-5 Interchange	3.1	6.1	20.1	24.4	26.8	80.5
I-5 to Valley Avenue	3.4	0	11.4	11.3	1.1	27.2
Subtotal	28.8	9.2	42.2	42.9	30.6	153.7
Interchange Options						
54th Ave E Interchange						
Loop Ramp	0	9.5	0.9	3.3	0.01	13.7
Half Diamond Ramp	0.9	8.7	4.2	3.1	0.2	17.1
Valley Ave Interchange						
Valley Ave	19.1	7.4	15.5	4.5	0	46.5
Valley Realignment	22.5	7.4	22.5	4.6	0	56.9
Freeman Road	29.7	7.5	24.6	4.5	0	66.4
Total Mainline plus Interchange Options						
	47.9-59.4	25.3-26.2	58.6-71.0	50.5-50.8	30.6-30.8	213.9-237.2

To accommodate the Riparian Restoration Proposal between 54th Avenue East and I-5 the mainline roadway will be constructed at ground level rather than on structure. More ROW will be required to construct the mainline roadway and 54th Avenue East interchange ramps at ground level, and to add bicycle/pedestrian facilities described in Chapter 3.15. Most of the land converted by the 54th Street Interchange Option is for the new roadway, while 75 percent of the land converted along the Mainline north of I-5 would be for riparian restoration.

Under the three Valley Avenue Interchange Options (Valley, Valley Realignment, and Freeman Road), 47 to 66 acres of additional land would be required to implement the Riparian Restoration Proposal on properties already being impacted. Similarly, at the I-5 interchange, additional impacts would occur within the alignment footprint and not result in additional land conversion. However, the Hylebos Creek relocation and the Surprise Lake Drain relocation portions of the restoration plan account for the bulk of the acreage to be converted at the I-5 interchange.

Consistency with Plans and Policies

No Build Alternative

The No Build Alternative would be inconsistent with local and regional plans and policies, which support the extension of SR 167 to the Port of Tacoma area. These include policies contained in adopted plans by PSRC, Pierce County, and the cities of Fife and Puyallup.

Build Alternative (Preferred)

The proposed SR 167 corridor is consistent and in compliance with federal and state policies. The preferred alternative is also consistent with the local and regional land use plans affecting the study area. The proposed corridor would support planned growth of the area as envisioned by the local and regional jurisdictions. The extension of SR 167 to SR 509 has been promoted by both the City of Fife and the City of Puyallup in their respective comprehensive plans. By reducing traffic congestion on local streets and arterials being used to transport freight, the project would also support the City of Fife policy to buffer residential areas from excessive traffic, especially commercial traffic. The project is also consistent with Pierce County's Comprehensive and Transportation Plans and is considered a priority project.

The PSRC VISION 2020 Plan (1995 update) recommends the extension of SR 167 as an improvement and also identifies it as a major regionally significant project for the Puget Sound in its Six-Year Action Strategy (1999). In the PSRC Destination 2030 (2001a) the proposed SR 167 corridor is identified and given support as a regional project. The Port of Tacoma strongly endorses a new SR 167 corridor that would connect with SR 509, as a critical transportation infrastructure need. The proposed corridor would provide a direct high-speed connection to the Port, assist in improving traffic movement, reduce congestion, and provide greater accessibility of port facilities to meet the needs of growing containerized cargo and other freight traffic (Chilcote 2000). These conclusions support the Purpose and Need statement for the project.

Indirect Impacts

Considerable population growth has occurred in the study area and Pierce County, and is forecast to continue through 2030. Over the last 10 years Pierce County population increased 19.51 percent from 586,203 to 700,600. During the same period the cities of Fife and Puyallup have grown at a more rapid rate (31.9 percent and 29.6 percent respectively). Future growth estimates for Pierce County show a similar growth rate to that experienced in the past through 2020 (OFM 2000).

Year 2030 growth projections for the state as a whole show a 15 percent increase in population per decade. According to the Forecast Analysis Zone data, provided by Puget Sound Regional Council and updated by Pierce County, Fife (FAZ 2000) is expected to grow by 2,617 persons for a total population of 8,986 persons in the year 2030. FAZ 1200 in the central portion of the study area is expected to grow to 7,173 in the year 2030, while North Puyallup (FAZ 1130) is forecasted to reach 3,884 persons. Based on Pierce County capacity analysis for the year 2030, it is anticipated that FAZ 2000 would achieve a 97.8 percent build

out of capacity of household dwelling units, while FAZ 1130 would reach 73.9 percent and FAZ 1200 a 100 percent capacity build out (Phelps 2001).

No Build Alternative

Under the No Build Alternative, development in the project area would occur according to land use plans, zoning designations, and regulations adopted pursuant to the GMA by the City of Fife and the City of Puyallup. As population densities increase in Fife and Puyallup due to urbanization, the conversion of low-intensity land use such as agricultural and undeveloped land to higher intensity use would continue to occur as designated by local jurisdictions.

Without the planned facility, it is anticipated that under a No Build scenario traffic congestion would continue to increase. This would result in more congestion-related delays in freight transport, and increased incompatible heavy truck use on residential surface streets. The anticipated growth as noted above would need to be matched with actions to maintain adequate transportation levels of service.

Build Alternative (Preferred)

The geographic boundary considered when addressing indirect impacts for the project includes the area up to a quarter mile from the ROW boundaries of the interchange options.

The proposed project is compatible and would support planned and anticipated urban growth in the cities of Fife and Puyallup areas according to adopted local and regional plans (City of Fife, City of Puyallup, City of Milton, City of Edgewood, Pierce County, and PSRC) by reducing congestion and travel time, especially in the city of Fife. A similar level of growth is expected to occur in the region with or without the Build Alternative.

The proposed project would not be expected to induce unplanned regional growth; however, it may have some influence on development within the study area. Although a similar overall level of growth and development would be expected by the year 2030 compared to the No Build alternative, the proposed project could alter the rate, timing, and location of development within the corridor area as planned by local and regional jurisdictions. In conjunction with market forces and economic conditions, especially fueled by the Port of Tacoma's anticipated growth and expansion development, regional growth is expected to occur and has been occurring within this immediate area.

The proposed project, by substantially improving travel and accessibility, may serve to accelerate planned development along the proposed corridor, especially in the vicinity of new freeway interchanges.

Under the Build Alternative, market forces, economic conditions, the availability of suitable land, and adequate utilities and public services would continue to be major factors in determining the rate of growth and development. Through the growth management process, local and regional jurisdictions have planned for future growth within the study area by defining the location and allowable intensity (density) of growth and development within, and adjacent to the study

area. The Build Alternative would speed up the planned transition of the North Fife area from residential/agricultural to industrial/commercial use and the Fife/Puyallup Valley from agricultural/vacant to mixed commercial-residential and industrial.

Cumulative Impacts

The geographic boundary for this subject includes the portion of Pierce County surrounding the project. The temporal boundary stretches back to include occupancy by the Puyallup Tribe prior to the 1800's and forward to 2030.

Historically, the Puyallup Tribe lived in villages, from the foothills of what is now known as Mount Rainier to the shores of Puget Sound. According to history of the Puyallup Tribe, they have lived in the area for thousands of years. Currently, the Puyallup Tribe offers programs serving an estimated 32,000 Indian people in the area.

The Puyallup River Basin was one of the earliest areas settled in the Puget Sound area. Arriving Euro-American immigrants prized this basin for its deep-water embayment, large tracts of pristine old growth forests, fertile river valley soils, and abundant runs of salmon. Homesteads and settlements began appearing as early as 1850, and the new arrivals initiated a series of actions to modify the landscape to fit their needs. The dredging and filling of the estuary, started in the late 1800's, was largely completed by 1930. Two hydroelectric dams were completed shortly after 1900. An extensive system of levees, dikes, and revetments were started in the early 1900's, and continue to be maintained today. In 1906 the White River was diverted into the Puyallup River Basin, almost doubling the flows in the lower Puyallup River.

According to Washington State Extension Services, the Puyallup River Valley is the most arable land in the state. Anecdotal information collected indicates that the area has been farmed for at least three generations. Several farmers interviewed said that the shift to a more urbanized community began approximately 10 to 15 years ago.

Today, most of the population in Pierce County can be found in the western central third of the county along the I-5 corridor. This is because much of the eastern portion of the county is sparsely populated and much of it is in federal land ownership (U.S. Forest Service and National Park Service) or owned by private timber companies. The western portion of the county is where growth is occurring. This pattern is consistent with the planned growth identified in the comprehensive plan. The corridor includes approximately 216 acres of agricultural lands and 441 acres of developed property.

No Build Alternative

The project would not result in the conversion of land use, and therefore would not contribute to the incremental land use changes in the region.

The No Build Alternative could have a greater cumulative impact on community cohesion and social interaction due to worsening traffic conditions and their associated accessibility and noise impacts. As communities within the project

corridor reach build-out in the coming years, increases in traffic could compound congested conditions thereby discouraging local travel and social interactions in and between neighborhoods.

Build Alternative (Preferred)

Under the Build Alternative approximately 286 to 306 acres would be directly converted to transportation-related uses. This incremental effect, along with other land use effects and transportation improvement projects in the region (i.e. Canyon Road extension project and Valley Avenue reconstruction project), would contribute to and hasten the build out of high-density uses within the project area. The conversion to higher intensity land uses is consistent with and supports the policy framework for future development as identified in the comprehensive plans and development regulations adopted by valley jurisdictions (cities of Fife and Puyallup).

Since the completion and operation of the proposed project would not create additional physical barriers to social interaction, no substantial cumulative impact is anticipated. Substantial cumulative impacts would occur if a combination of environmental effects (i.e. traffic, displacements, noise, and visual impairments) have more than a moderate impact on community cohesion. Since the majority of the project in the northern segment of the corridor falls within the existing I-5 corridor, no negative cumulative effect on movement within or between neighborhoods is anticipated.

Noise and visual impacts would be confined to edges of neighborhoods in close proximity to the existing transportation corridor. In the central and southern portions of the project area, the new alignment traverses vacant and agricultural properties. Although some agricultural properties will be purchased to satisfy ROW needs, the movement and interaction of community members between neighborhoods and markets would not be impacted.

3.11.2 Socioeconomics

Regional Characteristics

In Pierce County, population increased 19.5 percent between 1990 and 2000 (586,203 to 700,820). This percentage increase reflects the increasing growth rate of Washington State since 1990 (21.1 percent). Along with increasing population, there has been a shift in population growth patterns within the county. During the 1980s, the unincorporated areas of Pierce County experienced a faster rate of growth than the incorporated areas: 24.7 percent versus 15.6 percent. The 1990s saw a reversal in that trend with unincorporated areas of the county actually declining in population. Since 1990 unincorporated Pierce County experienced a 5.9 percent decline in population, while the incorporated areas experienced a 56.7 percent increase (Census 2000).

Pierce County population projections for the year 2020 show a total population of 916,848 persons, an increase of 216,028 persons or 31 percent over 2000 population (OFM 2000). This growth rate averages just over 15 percent per decade, a slower growth rate than that experienced during the 1990-2000 decade.

Housing in Pierce County increased from 228,842 units in 1990 to 283,192 units in 2000, an overall increase of almost 24 percent. Approximately 75 percent of the housing growth is in single-family units (211,470) and the remaining 25 percent consists of multi-family dwellings (71,730) (PSRC 2000). There is little unoccupied housing within the county. According to Census 2000, Pierce County has a 94 percent occupancy rate, leaving 6 percent of the total housing units vacant. Homeowner vacancy rates are much lower than rental vacancy rates: approximately 2 percent and 6 percent respectively. The majority of housing units in the county (65 percent) are owner-occupied. The rest (35 percent) are renter-occupied housing units. The county's average household size is 2.6 persons. Occupancy trends in the county have remained stable over the past 20 years. Increases in the countywide housing market appear to be meeting the demands of the increasing population.

In 1999, Pierce County had an estimated labor force of 335,300 persons of which 320,100 persons were employed. According to the Washington State Department of Employment Security, Pierce County has historically experienced low unemployment rates. Since peaking at 12.4 percent in 1982, county rates have bounced between 8 percent and 6 percent. Between 1997 and 2000, unemployment rates stabilized at 4.5 percent paralleling those for Washington State.

Community Characteristics

Physical Environment

The project area north of I-5 is primarily commercial and industrial. Port of Tacoma Road is lined with commercial and industrial businesses. Over the past decade 54th Avenue East has been converted from a residential street to one of commercial uses. Some single-family homes are interspersed with warehouses and commercial businesses; others have been converted to small owner-operated businesses. There are no schools, community services, or churches in this area.

The area west of 54th Avenue East, between 4th and 12th Streets East, is a rural residential neighborhood of single-family homes along the streets, with small agricultural fields and pasture behind the homes. The neighborhood is referred to as the North Fife Triangle. A manufactured home park with 17 single-family units (Hylebos Creek Estates) is located in this neighborhood. There are no schools or churches in this area. Recently, industrial and commercial development has been encroaching into the neighborhood. Developments that have been completed or are under construction include Sound Analytical Services, Odom Corporation, Fife Landing North, and Rusforth Construction.

Along 57th Avenue East, just north of SR 99, a small residential pocket of ten single-family homes is located. East and west of this neighborhood along SR 99 commercial businesses occur, and a steep slope constrains the northern limit of this neighborhood.

The project area south of I-5 is primarily agricultural, with neighborhoods located in the vicinity of 54th Avenue East, between Valley Avenue and the UPRR line. Fife High School and Fife Elementary School are located at the northwest corner of the neighborhood, on 23rd Street East, and the Early

Childhood Center for preschool and kindergarten students is located on 70th Avenue East, north of Valley Avenue. Another small residential neighborhood occurs southwest of the intersection of 20th Street East and 62nd Avenue East.

Although much of this area retains an agricultural character, an emerging trend within the study area is the rapid conversion of agricultural lands to commercial uses. During annexation of the area between 1997 and 1999, the City of Fife changed the zoning of the lands within the Fife Valley area from agricultural to commercial. Industrial, manufacturing, warehousing and distribution facilities are replacing once active farmland. Development is especially evident in construction of new commercial complexes on former farmland along 20th Street East, and along 70th Avenue East between Valley Avenue and 20th Street East.

Population

From 1990 to 2000, the city of Fife has grown at a very rapid rate (32 percent). Part of Fife's growth is due to annexations of Pierce County. The city of Puyallup has also experienced a rapid growth rate (29.5 percent), but slightly less than that of Fife. Although the city of Milton also showed an increase in population growth for the same time period (12.6 percent), the rate of growth was much less than that of Fife, Puyallup, and the county.

The Census Tracts that encompass the primary SR 167 study area are 709, 707.03, 707.04, and 705 (Figure 3.11-4). Census Tract 709 includes the city of Fife, the North Fife area, and a portion of the Port of Tacoma. Census Tracts 707.03 and 707.04 (1990 Census equivalent – 707.02) encompass the Fife Valley area north of Valley Avenue and the cities of Milton and Edgewood. Tract 705 encompasses the southern portion of Fife Valley and the northern Puyallup area. From 1990 to 2000 the population of tract 709 increased by 13 percent, from 5,595 persons to 6,369. Tract 705 experienced the greatest population growth (28 percent) increasing from 3,202 persons to 4,106. Combined, tracts 707.03 and 707.04 experienced the slowest rate of growth at 7 percent, increasing from 7,008 persons in 1990 to 7,487 in 2000.

To project population growth, Census Tracts are grouped into FAZs. FAZ boundaries follow Census Tract boundaries and thereby facilitate the use of Census data to build future projections. The PSRC maintains Census and FAZ data for Pierce County. According to FAZ data provided by PSRC, FAZ 2000 (Tract 709) is expected to grow to 9,880 persons by the year 2030. FAZ 1200 (Tracts 707.01, 707.03, and 707.04) is projected to grow from its current population of 14,238 to 22,891 by the year 2030. FAZ 1130 (Tract 705) forecasts negative growth from its current population of 4,106 persons to 3,894 persons in the year 2030.

Over the past decade, the percentage of minority population has grown at a slightly higher rate along with overall population growth. The city of Fife experienced a 16.8 percent increase in minority population. Census Tracts in the northern portion of the project area experienced minority growth rates of 13 percent to 14 percent. The Census Tract in the southern portion of the project corridor experienced a slower minority growth rate of 4.3 percent (Census 2000).

The median age of the population in the cities of Puyallup and Tacoma is 34.1 and 33.9 years of age, respectively, and mirrors the county’s median age of 34.1. While the city of Fife has a slightly younger median age of 29.4, the cities of Milton and Edgewood share a slightly older median age, 37.8 and 39.3 (Census 2000).

Employment

The community within the project corridor is experiencing increasing population growth, with economic growth and employment opportunities continuing to increase in tandem. Table 3.11-4 portrays current employment (2000) and year 2030 projections by industry sector for the FAZ/Census Tracts in the study area. Between 2000 and 2030, growth is estimated in almost all industry sectors. In all FAZs, the wholesale, transportation, communication and utilities sector shows the highest growth rate, indicating employment trends moving away from the retail and service industries.

The service industry accounts for 29 percent of the average annual employment in Pierce County; with government and retail trade industries each accounting for 20 percent of the average annual employment. Agriculture related industry accounted for only 1 percent of the Pierce County economy in 2000, supplying 3,126 jobs.

Table 3.11-4: Current and Projected Employment by Industry Sector

Industry Sector	FAZ 1130*		FAZ 1200*		FAZ 2000*		Pierce County	
	2000	2030	2000	2030	2000	2030	2000	2030
Retail	456	1,807	957	2,040	1,603	2,493	50,045	77,097
Services (Finance, Insurance, Real Estate)	202	1,556	694	1,336	2,707	4,424	89,340	149,315
Government/ Education	46	240	451	632	356	896	74,401	86,001
Wholesale, Transportation, Communications, Utilities	278	1,347	323	822	4,656	7,115	23,917	41,718
Manufacturing	359	1,375	381	763	3,226	2,000	23,992	30,496
Total Employment	1,341	6,325	2,806	5,593	12,995	16,929	261,695	384,627

*FAZ 1130 = North Puyallup (Census Tract equivalent 705) FAZ 1200= Milton/Edgewood (Census Tract equivalent 707.01, 707.03, 707.04)

FAZ 2000 = Fife (Census Tract equivalent 709)

Puget Sound Regional Council 2001b Employment Working Forecasts

A comparison of first quarter trends in the agricultural sector shows agricultural activities in the study area to be consistent with those of the county as a whole. First quarter activity is the standard measurement used to track agricultural activity by Employment Security. First quarter 2001 totals show that 0.4 percent of employment within the project area occurred in the agricultural sector. During that same period, the county experienced a 1.0 percent agricultural employment rate. First quarter 2002 totals for the county agricultural employment rate remained at 1.0 percent. The industry coding system has been revised from Standard Industry Classification to North American Industry Classification System (NAICS). Per the Washington State Employment Security Department, there have been more categories added to NAICS, therefore making yearly comparisons prior to 2001 nearly impossible at the sub-county level (Washington State Employment Security Department 2003).

Housing based on data provided by Census 2000, occupancy and vacancy rates in the city of Puyallup closely mirror those of the county as a whole; 95.6 percent of all units are occupied leaving a 4.4 percent vacancy rate. Fifty-five percent of all housing units are owner-occupied with 45 percent being renter-occupied. The average household size for the city of Puyallup is 2.5.

The city of Fife has a similar occupancy rate. However, only 24.8 percent of all housing units are owner-occupied, while 75.2 percent are renter-occupied. This trend is due, in part, to a younger, non-homeowner group of residents living in the Fife area. The average household size for the city of Fife is 2.2.

The surrounding communities of Milton and Edgewood share similar occupancy and homeowner rates as Puyallup. The average household size for the city of Milton is 2.4 and 2.7 for the city of Edgewood.

Income

The median household income level in the project area (\$40,110), although slightly lower, is not dissimilar from the median household income level in Pierce County (\$45,204). The city of Puyallup maintains a median household income of \$45,204 and the city of Fife is \$31,806. Per capita income for the project area is \$20,415. This average is similar to the county per capita income of \$20,948 while lower than the city of Puyallup (\$22,401) and higher than the city of Fife (\$16,723) (Census 2000).

The project corridor also contains fewer low-income households than the surrounding communities. In the northern and central portions of the corridor (Tracts 709 and 707.02), low-income households make up approximately 7.7 percent of all households. This average is lower than that of the county (10.9 percent) and slightly lower than the cities of Fife (7.9 percent) and Puyallup (7.8 percent). In the southern portion of the corridor, Tract 705, 6.1 percent of all households are identified as low-income.

Table 3.11-5 displays income characteristics in relation to population characteristics for the project corridor. The study area is broken down to include the relevant Census Tracts and Block Groups. Totals are presented for each Block Group and for the study area as a whole. The study area has a higher median household income and a higher per capita income than in surrounding communities. The

percentage of low-income households in the study area is also proportionate to the surrounding communities. The study area maintains a substantially lower percentage of minorities than surrounding communities.

Census Tract 709, Block Group 3 does show a substantially higher percentage of low-income households. It is noted that this Census Tract includes the Puyallup Tribe. Five single-family units that could be displaced or impacted are on parcels of land owned by the Puyallup Tribe tribal members or are in Tribal Trust, and are zoned commercial. At this time the houses are vacant. Another low-income housing displacement, depending on the final alignment would be the 12 low-income rental units (one building) in the Mountain View Apartment complex. Another 10-unit apartment building in this complex, not considered low income, could also be impacted by the project's proposed ROW.

Regional and Local Economy

The study area supports a variety of economic activities ranging from agriculture to heavy industry. Most industrial uses and related shipping and support services are located in the port area and the city of Fife. The Port of Tacoma has a heavy influence on the economy of Pierce County.

The Port of Tacoma is ranked among the top 10 ports in the nation and is second in terms of container volume (Economic Development Board for Tacoma-Pierce County 2001). It has become one of the fastest growing ports in the United States with a 34 percent increase in operating income in 2000. Covering over 2,400 acres, port activities account for more than 22,000 jobs in Pierce County (Port of Tacoma 2001).

In Pierce County, the two fastest growing industry sectors have historically been the services and trade sectors. That trend has been steadily on the incline since 1970. The largest employment sector in the county remains that of services, accounting for 66,747 jobs in 2000. The second largest sector of the economy is that of government, accounting for 50,901 jobs in Pierce County, due largely to the military installations of Fort Lewis and McChord Air Force Base. The retail trade sector proved to be the third largest sector of the Pierce County economy, providing 46,427 jobs in 2000. Several large firms in the greater Seattle area have chosen to expand into the less congested areas of Pierce County. This trend appears to be driven by the firms' attempt to lessen congestion and locate nearer their workforce (Washington State Department of Employment Security 2001).

According to the Tacoma/Pierce County Economic Development Board, the overall economy of Pierce County experienced a 3.7 percent growth rate during 2000 and part of 2001. While growth is not expected to accelerate in 2001, it is an indication of continued strength and adequate capacity for expansion. By the end of 2000, new employment opportunities in the county increased by 2.0 percent. This rate of growth is expected to accelerate in 2001 to a 2.5 percent increase, creating just over 6,000 new jobs countywide (Tacoma-Pierce County Economic Development Board 2001).

Table 3.11-5: Study Area Community Profile

	Total Population	Minority Percent	Hispanic Percent	Median Household Income	Per Capita Income	Low-Income Households Percentage	Mobility, Self-Care Limitations* Percent	Elderly (65+ years) Percent
Pierce County	723,531	22	6	\$47,221	\$20,948	11	6	10
City of Fife	4,760	38	14	\$31,806	\$16,723	10	7	7
City of Puyallup	32,682	12	5	\$47,269	\$22,401	6	8	11
Census Tract-Block Group								
705-1	709	5	2	\$34,148	\$22,251	7	15	33
705-2	2133	11	5	\$36,996	\$19,220	6	10	9
705-3	479	22	11	\$39,375	\$21,263	6	13	17
707.03-1	622	11	5	\$40,588	\$18,091	13	9	7
707.04-2	1500	11	6	\$50,385	\$26,788	5	10	14
709-1	2310	16	5	\$56,429	\$24,751	6	7	10
709-2	1141	26	10	\$35,924	\$18,846	12	5	7
709-3	854	46	9	\$27,039	\$12,114	26	6	3
Project Area	9,748	17	6	\$40,110	\$20,415	9	9	11

2000 US Census: DP-1, General Population and Housing Characteristics; DP-4, Income and Poverty Status

*2000 Census calculation according to US Dept. of Health & Human Services 2005 Poverty Thresholds

Impacts of Construction and Operation

No Build Alternative

Under this alternative, residential communities in the study area north of I-5 would experience no impacts from the proposed project. The current trend in conversion of single-family housing to commercial use along the 54th Avenue East area is expected to continue. Residential communities south of I-5 would continue to experience commercial and industrial development on existing agricultural lands. This planned development may occur at a slower pace than under the Build Alternative. However, the fact that the City of Fife has rezoned the area for commercial development would undoubtedly hasten the conversion from agricultural uses to commercial.

Without the proposed project improvements, users would continue to depend on the existing transportation systems and local roadway improvements. Under the No Build Alternative, trips may actually be reduced or deferred more frequently

to avoid traffic backups and delays caused by congestion. Community cohesion could suffer in areas where individuals feel less able to reach relatives, schools, businesses or services. Worsening traffic conditions, along with their associated noise and accessibility impacts, could serve to discourage interactions in and between neighborhoods.

Build Alternative (Preferred)

The social/economic impacts from the Build Alternative are not broken into mainline and interchange segments because the impacts are qualitative in nature and apply throughout the study area.

Community Cohesion

Permanent impacts are defined as having long lasting effects on community cohesion or social interaction. This type of impact can include isolating portions of a neighborhood, separating adjoining residential areas, and changing the character of a neighborhood.

Construction-generated noise will be intermittent, occurring seasonally during an approximate two-year construction period in any neighborhood. Construction noise impacts will depend on the type, amount, and location of construction activities. The type of construction methods would establish the maximum noise levels of construction equipment used. The amount of construction activity would quantify how often construction noise would occur throughout the day. Section 3.6 notes that maximum noise levels from construction will range from 69 to 106 decibels (dBA) at 50 feet from the source. Noise will decrease as residences are farther away from the source at a rate 6 dBA per doubling of distance. Construction practices could reduce the levels of noises that would affect neighboring communities.

The ability of local residents to travel in and between neighborhoods and adjacent areas will be affected by construction and roadway improvements. Roadway construction will have an impact on transportation and community travel. Movement will be slowed by equipment and construction activities. Construction impacts along the project are likely to include major disruptions in existing travel patterns and traffic back-ups or delays. Construction activities, congestion, noise and dust could interfere with commutes and may be a nuisance to some nearby residences and businesses. Construction disruptions would likely be greatest near proposed interchanges.

The extension of the SR 167 corridor could affect local neighborhoods and the sense of community there for some time. Because improvements involve construction over several years, the early disruptions to neighborhood unity and temporary interference with the quality of life would be associated with disturbances from construction equipment and activities. The project area north of I-5 and in the vicinity of 54th Avenue East has primarily commercial and industrial activities. Within the vicinity of I-5 is a mix of commercial activities and residential areas. South of I-5 the roadway extension will pass through undeveloped vacant land that is in transition from farming areas to commercial activities and through residential areas that are moderately quiet. The intrusion of construction equipment and workers will affect these residents. Over time, the

initial disturbance will lessen, but residential and business areas are not expected to return to present conditions until construction ends.

Completion of the new roadway will likely result in some changes in community unity. From the SR 167/SR 161 interchange to Freeman Road, in the Puyallup area, much of the area surrounding the alignment has been developed commercially or is in the process of being developed from what was once farmland. Very few of the potential displacements would occur in this area. Overall, for Puyallup residents, the highway improvements will probably cause the most disturbances during construction, and afterward will result in enhanced transportation facilities. Physical barriers to social interaction, above the current conditions, are not expected.

Residents east of Freeman Road, primarily in Edgewood, will likely experience the most change in community cohesiveness after construction. Much of the existing community character south of I-5 to Freeman Road has been rural in nature with ever increasing transition to an urban commercial/industrial area. Most of the potential displacements will occur near the proposed Valley Avenue and I-5 interchanges. In some instances, local residences or businesses may be relocated in the same general area. In other cases, development related to the new improvements may replace existing businesses.

At the Valley Avenue interchange, the amount of community change will depend on the interchange option selected. Under the Preferred Valley Avenue, the neighborhoods along Valley Avenue will be most affected by displacements of single-family units as well as changes in traffic flow and access. Under the Valley Realignment Option, cul-de-sacs would be placed at the end of the remaining section of the existing Valley Avenue to maintain access to homes and businesses while relocating Valley Avenue north of its current alignment. This would reduce traffic on the neighborhood streets, move business off the main thoroughfare, while displacing some single- and multi-family housing. Residences along Freeman Road would be most affected by the Freeman Road Interchange Option. The southbound ramps of the highway will touch down on Freeman Road and could change existing travel patterns. The Cherrywood Mobile Home Park is located along Freeman Road. However it is outside the project alignment, and not impacted by the project. One minority-owned business which serves the area neighborhood would be displaced under this option. The Valley Avenue Interchange options could have the potential to act as increased physical barrier to farmed fields; however, the function of the streets (Valley and Freeman) as major arterials will not change from existing conditions.

The I-5 interchange is characterized by commercial and high-density residential uses. Most of the displacements along the I-5 corridor will occur to regional commercial businesses that cater to outside the area (auto and RV dealerships, boat sales, etc.) and do not relate to local neighborhoods. Some residences (both single- and multi-family housing) will require removal within the footprint of the I-5 interchange. The loss of multi-family units (Mountain View Apartments) will represent a loss of affordable housing and will likely include the displacement of some low-income housing. Because the interchange will likely travel through only a corner of the 241-unit Mountain View Apartment complex, only 12 apartment units will be displaced. Interchange development and proposed

improvements to 20th Street East, which is a major link between the Edgewood/Milton communities and Fife/Tacoma communities, are not expected to create physical separation between the communities.

As the project extends from the I-5 corridor towards the Port of Tacoma and SR 509, the area is currently developed at moderate density. Primary land uses are commercial and industrial, along with vacant land in places, most notably along Hylebos Creek. Residential displacements within this area would be the result not only of the project alignment, but also the Riparian Restoration Proposal and stormwater mitigation. The 54th Avenue East Interchange Options and associated highway mainline are not expected to impact movements between the existing neighborhoods of Pierce County, city of Fife and North Tacoma.

The new roadway could result in pockets of development activity centered around interchanges near undeveloped land that has been zoned for commercial/industrial use. The combination of increased traffic and new businesses will continue the current transition to a more urban character as planned in local jurisdictions' comprehensive plans. There will be an overall improvement in traffic conditions because transportation improvements will funnel traffic off of neighborhood arterials and onto highways, improving intra- and inter-neighborhood movement.

Fife is concerned that changes in east-west traffic movements will impact the cohesiveness of their community. However, improvements to 20th Street are not expected to create physical separation or negatively affect cohesion between the communities. Proposed bicycle and pedestrian trails within the area will also enhance the connections between communities. The completed project is generally anticipated to have an overall positive effect on the cohesiveness of the community, providing for the improved movement of people and goods throughout the project area. It is expected that the new highway alignment will greatly facilitate the shipment of goods through the region. Much of the congestion on local arterials is due to truck traffic. The through route provided by the new alignment will offer a better transportation alternative by removing heavy truck use on residential surface streets and the associated congestion-related delays. This will allow for better residential circulation and provide a safer environment for pedestrians. Community cohesiveness will thereby be supported by ease of access to family, friends, businesses, and local services through an efficient and effective transportation system.

Construction of this new alignment will not separate neighborhood residents from any social, public, or government services.

Economic Impacts

Construction within the project corridor will be site-specific and will cause temporary disruptions to businesses. Travel along segments of the project corridor could be slowed due to rerouting and heavier traffic volumes, which may cause some businesses to notice a downturn in their customer base. The vast majority of temporary construction impacts will occur along the I-5 Corridor. Businesses in this section of the project area have primary access located along 54th Avenue East and SR 99. While access to these businesses

will not be directly impacted by construction, added congestion in the area may inconvenience customers with longer wait times due to increased volumes.

Construction activity disruptions resulting in an economic downturn for businesses could be greatest for convenience type businesses such as restaurants, gas stations, and mini-marts. Customers may choose to avoid construction delays and congestion by patronizing convenience type businesses outside of the construction zone. Once construction activities have been completed, it is expected that business patterns would return to previous levels.

In the northern project area, businesses are predominantly industrial or warehouse type businesses providing service outside of their base of operations. While access to facilitate the transportation of goods and services is important for these types of businesses, they are less likely to be economically impacted during construction than convenience type businesses.

Once construction is complete, improved transportation facilities will facilitate existing business and planned growth in the areas served by the project. The new highway alignment in the I-5 vicinity will allow for greater access to/from the Port of Tacoma, allowing industrial traffic to bypass residential areas.

Project construction itself is expected to result in both long- and short-term employment impacts in Pierce County. The employment generated by the project's construction activity has been estimated using an economic multiplier measuring the ratio of employment to construction value. Short-term construction-related employment has been estimated using the 1996 Federal Highway Administration investment/employment ratio; one full-time equivalent job is created for each \$126,582 of highway investment (FHWA 1996).

The new SR 167 alignment proposed project costs are estimated at \$1.2 billion over an estimated ten-year period. In applying the ratio of one job for every \$126,582 of construction activity, over a ten-year period a demand for 948 direct, temporary construction-related jobs per year will result from the construction of the project. Based on an indirect multiplier range of 1.6–2.1, an additional 1520 to 1990 indirect jobs could be expected during each year of the construction phase (Holland 1994). However, construction-related jobs are generally not considered new jobs in the local economy. This estimate of employment is likely to reflect a reallocation of construction labor activity within the greater region and should not be construed as an estimate of new jobs.

The overall effect of construction and job reallocation in the project area will have positive impact on the local economy as well. The project will create temporary jobs for Pierce County and adjoining county residents, and benefit local/regional economies as these earnings are expended for goods and services. The indirect multiplier for construction is 1.74, which means that for every dollar of value added directly by construction, another \$0.74 are added to the local economy indirectly. This project will therefore generate \$2.1 to \$2.2 billion in direct/indirect economic benefits.

Permanent employment impacts will be minimized through the relocation process. Although displacement of some businesses is anticipated, no

employment loss is estimated. In some cases, commercial enterprises operate from more than one location. Displacement may require some of the employees working within the project impact area to be reassigned to neighboring work sites. In the case of single location commercial enterprises, field interviews conducted with business owners and employers indicated that relocation within a reasonable proximity would allow them to retain their current employee base.

Some businesses located within the project area along the I-5/SR 99 corridor depend upon their proximity to the I-5 corridor and high visibility for product display. ROW impacts may create a loss of commercial frontage space resulting in a decrease of parking and display/showroom space.

At the SR 161/SR 167 interchange, one business will lose drive by traffic due to the new configuration under all three options. The loss of traffic will negatively impact this business.

Agricultural employment will decline due to permanent loss of farmland. While these operations employ anywhere from two to ten farmhands, the vast majority of the work is seasonal; the farmhands are not employed year round. It is typical for seasonal farmhands to migrate from one agricultural region to the next depending upon regional weather conditions and the timing of sowing and harvesting crops.

Property Values

It is difficult to estimate possible property value impacts along the project corridor in the Fife Valley area. The annexation by the City of Fife and subsequent zoning change from agricultural to commercial and industrial has already exerted upward pressure on property values. In addition, the city's close proximity to the Port of Tacoma makes it appealing to port related warehouses and manufacturing areas. Nearly half of the city's land carries industrial and commercial zoning.

Short-term impacts on the tax base are associated with the reduction in property tax revenues that result when land needed for ROW requirements is removed from the tax rolls. It is estimated that the vast majority of lost revenue would be recovered as vacant land is developed or as the remaining land from displaced users is redeveloped. During business interviews, most expressed interest in relocation within the local area, particularly along the I-5 corridor (Fife and Milton).

The project corridor is predominantly zoned for commercial purposes to support the City of Fife's planned development of the area. The City of Fife will be most impacted with the loss of these industrial/commercial-zoned properties to ROW. Impacts to the City of Fife from the loss of these properties will result in the loss of tax revenues. Property values are not expected to decline over the long-term as result of the roadway improvements. Residential property values within the study area are equitable and stable compared to local markets. Due to the fact that the new corridor is located on properties zoned for commercial and industrial use, the roadway is unlikely to impact the market negatively. Since freeway proximity and access are important attributes for commercial business, existing

residential and commercial properties will likely increase in value as the potential for commercial development increases.

The proposed project's close proximity to the Port of Tacoma, sixth largest port in the United States, makes it appealing to port related warehouses and manufactures. Commercial property values along the development corridor are expected to increase as new developments and relocations compete for the small amount of available frontage space along the existing highway corridors (I-5 and SR 99). Commercial properties within the project corridor are valued from \$1.75 to \$16 per square foot for vacant commercial land in 2004. Improved commercial properties within the project corridor characteristically bring between \$92,500 to more than \$4,000,000 per site. Properties closest to the I-5 corridor typically demand the highest value.

The City of Milton is impacted by the I-5 Interchange portion of the project while the City of Puyallup is primarily impacted by the SR 161/167 Interchange options. Twenty-one parcels will be impacted within the City of Milton in the vicinity of I-5. Of these 21 parcels only 10 will result in a total displacement, accounting for a loss of up to seven businesses located along I-5 and SR 99. Approximately 15 acres would be impacted, which accounts for 15 percent of approximately 99 acres zoned commercial/industrial (light manufacturing) purposes within the city limits. The impacts would cause approximately \$5 million in assessed property value to be converted from private ownership to public ROW, resulting in a decrease in property tax revenues that accrue on an annual basis to Milton. This amount represents 1.4 percent of the total 2002 assessed value in Milton in Pierce County; it also represents 1.2 percent of the combined total assessed value in Pierce and King Counties for Milton.

The area along SR 99 (Pacific Highway East) is zoned as commercial/industrial; the SR 167/I-5 Interchange option will reduce congestion along SR 99. Improved traffic flow should assist in the development of this area. As a result, the city will likely experience indirect increase in tax revenues to the extent that businesses grow or relocate and new businesses are created.

The impacts that will likely result from SR 161/167 Interchange options will likely occur to primarily large vacant parcels zoned for commercial/industrial purposes as well as a few businesses. These impacts will cause approximately \$3.5 to \$4 million in assessed property value to be converted to public ROW, resulting in a decrease in property taxes that accrue on an annual basis to the City of Puyallup. This amount represents approximately 1 to 2 percent of the total 2002 assessed value in Puyallup.

3.11.3 Environmental Justice

An environmental justice analysis has been conducted for this project in accordance with Title VI of the Civil Rights Act, Executive Order 12898, and associated policies/guidance from the USDOT and FHWA. The full analysis can be found in the Land Use, Socioeconomic and Environmental Justice Discipline Report. The following summarizes the conclusions of the analysis.

Potential impacts associated with the proposed project would be distributed across a wide range of residential, agricultural, and commercial land uses. To assess the potential for disproportionate project effects on minority and low-income populations (hereafter referred to collectively as “environmental justice” populations) within the project, a demographics analysis was conducted of the project area (Table 3.11-6). The potential for disproportionate impact (on environmental justice populations) was then evaluated, based on the respective distribution of these populations in the affected block groups, the project area, and the County. In addition, the project’s public involvement process was reviewed to determine involvement of affected communities/populations in the overall decision-making process.

Minority Population Distribution

According to 2000 Census data, the project area has a 17.2 percent minority population (as compared to 21.8 percent overall for Pierce County); Asians, Native Americans, and Hispanics being the largest minority groups. As can be seen from Table 3.11-6, Census tract block groups 705-3, 709-2, and 709-3 have proportionally higher minority populations than the rest of the project area. The majority of residents living in each of these block groups are located outside the area that would be directly affected by the project (see Figure 3.11-4).

The Fife Valley has traditionally been a farming area, with many Japanese-Americans owning (and farming) land within the project area. Third and fourth generation Japanese-Americans account for most of the Asian population in the project area (approximately 5 percent). However, with the urbanization (zoning and land use changes) of the surrounding area, particularly within the city limits of Fife, it has become more difficult economically for the farmers to continue operations in this area. Consequently, many Japanese-American farmers have recently been retiring from farming and leasing or selling their property.

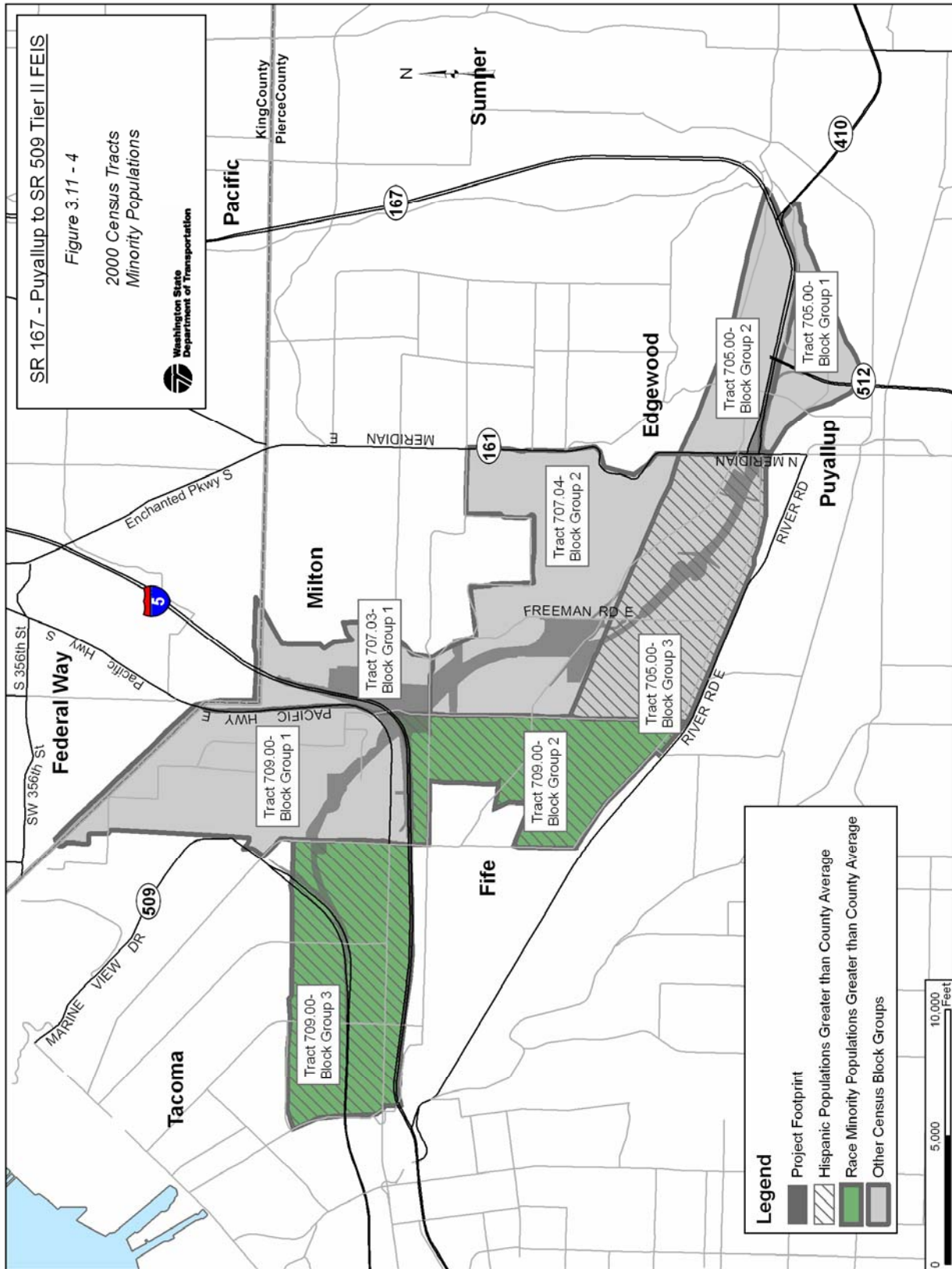
Much of the farmland in the project area today is leased by farmers who employ anywhere from two to ten farmhands (primarily Hispanic) who work on a temporary/seasonal basis. While Hispanics account for approximately 6 percent of the minority population in the project area, they are not necessarily associated with the farming operations.

The proposed project also crosses Puyallup Tribal land, which may account for the 4 percent Native American population reflected by the Census data.

Table 3.11-6: Race/Ethnicity Percentages by Block Groups

	<i>White</i>	<i>Black/ African American</i>	<i>American Indian/ Alaska Native</i>	<i>Asian</i>	<i>Native Hawaiian</i>	<i>Other Races</i>	<i>Total Minority Races</i>	<i>Hispanic or Latino Ethnicity</i>
Pierce County	78.2	8.1	2.7	6.6	1.3	3.1	21.8	6.0
Project Area	82.8	3.9	4.0	5.3	1.0	3.0	17.2	6.1
Affected Census Track- Block Groups								
705-1	94.7	1.3	1.0	1.8	0.4	0.9	5.3	2.1
705-2	89.3	2.0	2.0	4.0	0.5	2.3	10.7	4.6
705-3	78.5	3.1	5.0	4.3	0.2	8.9	21.5	10.6
707.03-1	89.5	1.3	3.9	3.9	0.2	1.3	10.5	4.7
707.04-2	89.1	1.0	3.3	3.6	0.7	2.3	10.9	5.9
709-1	83.9	2.5	3.9	5.8	0.7	3.2	16.1	5.1
709-2	73.8	7.2	6.5	8.1	0.3	4.0	26.2	9.9
709-3	54.5	16.8	8.8	11.2	5.5	3.2	45.5	9.4

Source: U.S. Census Bureau, 2000



Low-Income Population Distribution

Low-income households are defined as having income levels at or below the most current poverty threshold (as established by the U.S. Department of Health & Human Services). Low-income can affect many persons (of all races/ethnicity), including senior citizens and persons with disabilities. According to the 2000 Census, 9 percent of households in the project area are low-income (as compared to 11 percent overall for Pierce County). As can be seen in Table 3.11-7, Block groups 707.03-1, 709-2, and 709-3 have higher percentages of low-income households than the project area (or County).

In addition to the 2000 Census data, local school district data was also used as a means to validate the presence of low-income populations in the project area (as determined by the number of students participating in the Free/Reduced Lunch Program). Information from four schools serving the project vicinity was reviewed. Approximately 22 percent of students participate in the Free Lunch Program, while 6 percent participate in the Reduced Lunch Program. These figures are appreciably higher than those reflected by Census data. This could be due to students being bussed into the school from outside of the Census areas reviewed, or considering the age of the Census data, the school data could be more recent.

Information about the current distribution of low-income residents within the project area was also obtained from the Pierce County Housing Authority (PCHA). According to the agency, there are a couple of developments within the project area that provide low-income (i.e., Section 8) housing. The Hylebos Creek Estates (manufactured homes) and the Mountain View Apartments were identified as providing affordable housing units for Section 8 applicants (28 units total).

Approximately 11 percent of the project area population has been identified as elderly and 9 percent as persons with disabilities. These groups may be low-income as well. While Block Group 705-1 appears to have the highest concentration of elderly population in the project area, this Block Group is located at the Puyallup terminus of the project mostly situated outside of the project alignment.

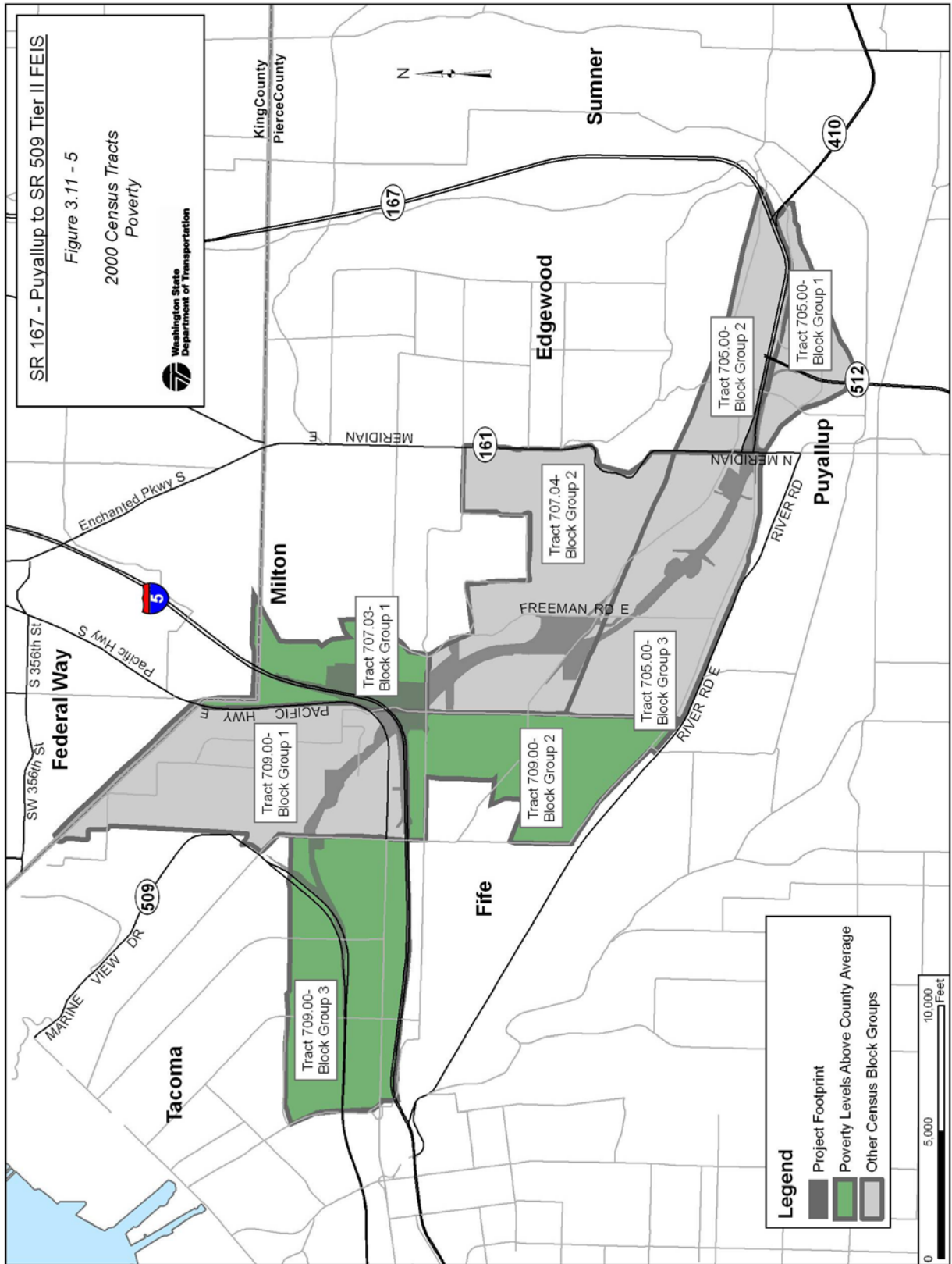
Lastly, a pocket of low-income households have been identified in Block Group 707.03-1 (City of Milton). These households will not be displaced; however, they may experience minor noise effects and visual changes.

Table 3.11-7: Study Area Community Profile (Environmental Justice)

	Total Population	Minority Percent	Hispanic Percent	Median Household Income	Per Capita Income	Low-Income Households Percentage	Mobility, Self-Care Limitations* Percent	Elderly (65+ years) Percent
Pierce County	723,531	22	6	\$47,221	\$20,948	11	6	10
City of Fife	4,760	38	14	\$31,806	\$16,723	10	7	7
City of Puyallup	32,682	12	5	\$47,269	\$22,401	6	8	11
Census Tract-Block Group								
705-1	709	5	2	\$34,148	\$22,251	7	15	33
705-2	2133	11	5	\$36,996	\$19,220	6	10	9
705-3	479	22	11	\$39,375	\$21,263	6	13	17
707.03-1	622	11	5	\$40,588	\$18,091	13	9	7
707.04-2	1500	11	6	\$50,385	\$26,788	5	10	14
709-1	2310	16	5	\$56,429	\$24,751	6	7	10
709-2	1141	26	10	\$35,924	\$18,846	12	5	7
709-3	854	46	9	\$27,039	\$12,114	26	6	3
Project Area	9,748	17	6	\$40,110	\$20,415	9	9	11

2000 US Census: DP-1, General Population and Housing Characteristics; DP-4, Income and Poverty Status

*2000 Census calculation according to US Dept. of Health & Human Services 2005 Poverty Thresholds



Construction Impacts

No-Build Alternative

The No Build Alternative assumes that the proposed project will not be constructed and that no ROW will need to be acquired and developed. However, the cities and county in the project area would continue to make improvements to the transportation network. These improvements would potentially have impacts on environmental justice populations, but the location and extent of these impacts are not known. While the SR 167 project would not be constructed, WSDOT would continue making improvements to existing state facilities. These include SR 167 (River Road), SR 161, SR 99, SR 509, and I-5. These improvements could include capacity additions, HOV lanes, intersection improvements, and park and ride facilities. These projects would potentially have impacts on minority, low-income, and/or disadvantaged populations in the project area. However, the likely locations and characteristics of such impacts are currently unknown.

Build Alternative (Preferred)

Construction of the build alternative will require many years. Construction-related impacts that may affect community cohesion could include additional traffic on surrounding roadways, detours/limited access, congestion, increased dust and exhaust (air quality) from construction vehicles, limited access to residential and business areas, increased response times for emergency vehicles, and increased noise levels in the vicinity of the construction activity. These impacts will be felt by all persons living, doing business, and commuting in and around the proposed corridor.

Construction access disruptions will likely be greatest near proposed interchanges. Over time, the initial disturbance will lessen, but residential and business areas are not expected to return to present conditions until construction ends. Access to Puyallup Tribal businesses located in the Valley Avenue Interchange is within the construction zone. Customers may choose to avoid construction delays and congestion by using other, similar type businesses outside the construction zone. Once construction activities have been completed, it is expected that business patterns will return to previous levels.

Several block groups in the project area have substantially higher proportions of environmental justice populations than the project area as a whole. However, field visits have concluded that the project footprint does not include entire census blocks but only portions of them. It appears that the majority of individuals composing these populations are located in areas away from the proposed project alignment.

Some of these construction-related impacts could affect businesses as well. Once construction is complete, improved transportation facilities will facilitate existing business and planned growth in the areas served by the project. The new highway alignment in the I-5 vicinity will allow for greater access to/from the Port of Tacoma, allowing industrial traffic to bypass residential areas.

Mitigation Measures

For most construction impacts, standard construction mitigation measures would be implemented for dust, traffic management, and visual impacts.

Construction noise from the Build Alternative will occur throughout the construction season over a ten-year period. Construction noise levels will depend on the type, amount, and location of construction activities. Most construction will occur during the daytime. Nighttime construction work is regulated by local ordinances, and WSDOT requires contractors to adhere to a variety of standard specifications aimed at reducing and minimizing nighttime construction noise impacts.

Operational Impacts

No Build Alternative

Under this alternative, neither positive nor adverse operational effects of the proposed project would be experienced in the project area. In keeping with the current trend, conversion of single-family housing to commercial use is expected to continue in the area. In addition, commercial and industrial development on existing agricultural lands would continue. Such conversion of residential and agricultural properties could potentially adversely affect the housing and employment options of environmental justice populations in the project area. This development may occur at a slower rate under the No Build Alternative than under the Build Alternative. However, as the City of Fife has rezoned in the project area to induce commercial development, the land use conversion will undoubtedly continue, and the expected land use changes would ultimately be the same under the No Build or Build Alternatives.

Without the proposed project improvements, Environmental Justice populations will continue to depend on existing transportation systems in the study area. Under the No Build Alternative, trips to and from environmental justice communities (including emergency service trips) may be affected by traffic backups and delays caused by overcrowded travel conditions. Community cohesion could suffer where individuals feel less connected to relatives, schools, businesses, and/or services.

Under the No Build Alternative, WSDOT and local jurisdictions would still continue to make improvements to the existing facilities in the project area. These improvements would potentially adversely affect environmental justice communities, however, the particular locations and characteristics of potential effects are unknown.

Operational Impacts of the Build Alternative (Preferred)

As described previously, the long-term operation of the proposed highway facility could affect community cohesion and social interaction in the project area neighborhoods in a variety of ways. Adverse effects could occur through the loss of affordable single and multi-family housing units in the project alignment, isolation of portions of neighborhoods, separation of currently adjoining residential areas, or changes to the character of neighborhoods. These effects could occur, to varying degrees, throughout areas adjacent to the project

alignment. Completion of the proposed facilities could also potentially result in benefits to community cohesion in some areas, primarily through improved circulation. Potential effects to environmental justice populations that would be associated with specific portions of the proposed facilities are described below.

Project Mainline: Residential displacements within this area would result not only from the alignment of the new right-of-way, but also from the proposed riparian restoration proposal. The Hylebos Creek Estates (Manufactured Home Park) will be directly displaced by land acquisition for both the roadway and riparian restoration requirements. Hylebos Creek Estates residents consist of a combination of retirees and young families. Two identified low-income households reside within the Hylebos Creek Estates (PCHA, 2006).

I-5 Interchange: The proposed improvements in this area would require the removal of residences (single- and multi-family housing) within the footprint of the proposed I-5 Interchange. The loss of multi-family units (Mountain View Apartments) will represent a loss of affordable housing and will likely result in the displacement of low-income residents. However, since the interchange will likely occupy only a corner of the Mountain View Apartment complex, the overall neighborhood connectivity should be maintained.

The project's development of proposed bicycle and pedestrian trails within this area will also potentially enhance connectivity between communities.

Valley Avenue Interchange: Under the Freeman Road Interchange option, the proposed southbound ramps of the highway interchange would touch down on Freeman Road, likely changing existing travel patterns. In addition, residences and businesses would be displaced under this option. One minority-owned business which serves the local neighborhood would be displaced.

At the Valley Avenue Interchange during construction, access and customer parking would be temporarily disrupted at two Tribal businesses; however, after the construction period is over, pre-existing conditions would resume as the access and parking areas would be re-consolidated and modified on-site within the existing business parcel.

The proposed park and ride improvements at the Valley Avenue Interchange would provide additional access to transit services and would likely lead to reductions in the number of vehicles that utilize the local road system.

Farming in the Project Area

As noted earlier, ongoing development continues to reduce the amount of land available for farming in the project area. The proposed project would potentially accelerate this change, though in the long-term the expected conversion of land uses would be same. Such decreases in farming operations would reduce the availability of local seasonal agricultural employment for migrant workers in the project area. However, current farm-owners in the project area often hold land in other parts of the county where seasonal workers from the project area could potentially find employment.

Noise

As discussed in Section 3.6, noise levels in some portions of the project area are expected to increase due to increased traffic traveling on portions of the proposed highway. Land uses in proximity to these affected areas would be primarily commercial and industrial. Changes in noise levels in other areas along the project alignment would not likely result in displacement or other disturbance of environmental justice populations.

The area surrounding the proposed I-5 interchange is presently experiencing elevated noise levels due to the existing I-5 roadway. The construction of the SR 167/ I-5 interchange is not expected to exacerbate existing noisy conditions.

During preparation of Tier I EIS for the proposed project, commitments were made by FHWA and WSDOT to the Puyallup Tribe regarding mitigation for potential visual and noise impacts of the project. Since that time, further evaluation has been conducted, and specific anticipated noise impacts have been identified.

In further evaluation, WSDOT analyzed noise barriers for feasibility and reasonableness. The determination of engineering feasibility includes whether barriers could be built in a location to achieve a noise reduction of at least 7 dBA at the closest receptors. The determination of reasonableness includes the number of sensitive receptors benefited by at least 3 dBA, the cost-effectiveness of the barriers, and concerns such as the desires of nearby residents, aesthetics, and safety. WSDOT has established a reasonableness criterion for the maximum allowed wall surface area per household. Noise walls that exceed the maximum allowed wall surface area are deemed not reasonable.

At the 45 locations where future noise levels approached or exceeded the Noise Abatement Criteria (NAC), 16 noise wall configurations were evaluated. Six of the 16 noise barriers were found to be feasible and one of the noise barriers was determined to also be reasonable. Noise walls that were not-feasible could not achieve a noise reduction of at least 7 dBA at the closest receptors in accordance with WSDOT Noise Abatement Policy and Procedures 1997 and will not be implemented.

The one noise barrier that was determined to be reasonable would protect Tribal properties from increased noise levels due to the proposed project in the vicinity of Milwaukee Avenue East. A noise barrier along the south shoulder of SR 167, to the west of Milwaukee Avenue East, has been added as an element of the project facility design for noise mitigation. (Refer to Section 3.6.5 for further details.)

Displacements and Relocations

Under the Preferred Alternative, property acquisition would be required for the new facility right-of-way and the riparian restoration area. In general, most of the parcels subject to acquisition (particularly along the mainline alignment southeast of I-5) would be large open parcels containing few structures. Development of project facilities under the Build Alternative would likely displace a total of 57 single-family residential units, 12 multi-family apartment

units, 9 manufactured home units, 22-27 businesses, and one farming operation, depending on the interchange options developed. An additional 22 single-family residential units, 8 manufactured homes units, and 5-6 businesses would likely be displaced by implementation of the riparian restoration proposal. Information used to identify these property impacts was compiled from multiple sources and, where necessary, additional information was collected via site visits.

Table 3.11-8: Affected Environmental Justice Populations by Block-Groups

Census Tract-Block Group	Minority Percent	Low-Income Households Percent	Elderly (65+ years) Percent	Combined Study Area EJ Percent (Approximate percent)	Total Number of Households Directly Affected (Roadway & Riparian Restoration)	Estimated Number of EJ Households Directly Affected
705-1	5	7	33	15	3	1
705-2	11	6	9	9	3	1
705-3	22	6	17	15	11	2
707.03-1	11	13	7	10	25	3
707.04-2	11	5	14	13	11	2
709-1	16	6	10	11	33	4
709-2	26	12	7	15	26	4
709-3	46	26	3	25	0	0
Project Area	17	9	11	15	112	17

As can be seen from Table 3.11-8 (above), it is estimated that approximately 17 housing units occupied by environmental justice populations will be directly affected by the project. Of the affected housing units, it has not been field verified if the occupants are all environmental justice populations. Without field verification (personal contact), it is impossible to determine precisely how many environmental justice populations will actually be affected. However, from what can be determined using demographics and discussions with some of the property owners/managers, the number of units estimated to be occupied by EJ populations represents approximately 15 percent of the overall units potentially affected by this project.

Recent information (September 2006) gathered by contacting the managers of the affected facilities indicates that most of the displacements are not EJ impacts. The Mountain View Apartment complex (241-units) is required under the Washington State “Bond Program” to have 20 percent or 49 of the total number of units in the complex to be allocated to low-income (Environmental Justice populations) to qualify for tax incentives. These 49 units are not concentrated in any one location within the 241-unit complex. Nor were disproportionate numbers of minorities known to reside in the Mountain View Apartment complex. It was estimated that around 10 percent of the overall complex could be considered to be minority. It was also estimated by the Mountain View Apartment complex manager that no more than 4 of the 12 units potentially displaced units could be considered Environmental Justice (EJ) displacements.

In addition to residential displacements, the preferred alternative will potentially displace 20 businesses. These businesses are primarily industrial/commercial in nature, many providing service outside of their base of operations.

It is not known how displacement/relocation of these businesses will affect EJ populations. Although displacement of some businesses is anticipated, no employment loss is estimated. In some cases, commercial enterprises operate from more than one location. Displacement may require some of the employees working within the project area to be reassigned to neighboring work sites. In the case of single location commercial enterprises, field interviews conducted with business owners and employers indicated that relocation within a reasonable proximity would allow them to retain their current employee base. None of the businesses appear to serve specific cultural needs of the EJ population.

Agricultural employment will decline due to permanent loss of farmland. While these operations employ anywhere from two to ten farmhands (primarily Hispanic), the vast majority of the work is seasonal. It is typical for seasonal farmhands to migrate from one agricultural region to another depending upon regional weather conditions and the timing of sowing and harvesting crops. These seasonal workers will not be drawn to the area for employment and will likely travel to adjacent agricultural regions to meet the demands for seasonal labor.

Twelve Tribal properties are currently located within the proposed project right-of-way and will be affected by the project. Seven are identified as Tribal Trust lands, the remainder owned by individual Tribal members. WSDOT and FHWA have quarterly meetings with the Puyallup Tribe to coordinate project issues such as property impacts.

Availability of Affordable Replacement Housing & Business Relocation

As of July 2006, the area within zip codes affected by project-related displacements/relocations contained 186 single family dwellings (SFD) available for sale; less than 10 of these SFD were priced at \$200,000 or below. In this area, there were also 83 SFD available for rent; 20 were in the \$550 to \$1,200 per month price range. In addition, there were 47 apartment complexes with vacancies where monthly rents ranged from \$525 to \$1,400 per month. According to information provided by the PCHA and the U.S. Department of

Housing and Urban Development (HUD), payments for affordable housing should not exceed sale and rental residences in the project area. Many of the available houses and apartments can be considered affordable housing and they would be available to replace the housing units displaced by the project. Accordingly, given that relocation assistance would be provided to all qualifying households, there would be only minor impacts expected to affect displaced residents. In addition, based on analysis of population demographics in the project area, the displacement effects of the project would not be expected to adversely impact environmental justice populations. Nevertheless, a few displacement impacts effecting environmental justice populations are anticipated, as described below in relation to areas and/or interchange options along the project alignment.

Most of the project area is converting from rural agricultural land uses to urbanized commercial/industrial land uses. As such, there are substantial commercial and/or industrial properties available to relocate any businesses, including EJ owned within the study area.

Project Mainline: The Hylebos Creek Estates (Manufactured Home park) will be displaced by land acquisition for riparian restoration requirements. Two identified low-income households occur within this facility.

I-5 Interchange: The proposed improvements in this area would likely require displacement of approximately 4 low-income residents (affordable housing units) from the Mountain View Apartments (241-unit complex).

Valley Avenue Interchange: A portion of two minority-owned business properties would be acquired for project development. However, the acquisitions would not result in displacement of either business. Both affected businesses are in tribal ownership.

Valley Avenue Realignment Interchange: As under the Valley Avenue Interchange option, two minority-owned business parcels would be impacted, but the project would not require displacement of either business.

Freeman Road Interchange: As under the Valley Avenue Interchange, two minority-owned businesses would be affected but not displaced. In addition, another minority-owned business (a grocery store) would be displaced.

Golden Rule Motel: In the Tier I EIS, it was reported that the proposed project's likely displacement of the Golden Rule Motel would potentially result in Environmental Justice-related impacts. Since that time, the motel (an eleven-unit structure previously used by migrant workers during the farming season) was purchased as part of the project ROW and demolished. When the Golden Rule Motel was purchased as an early acquisition, it was no longer in operation as a motel and there were no occupants other than the owner. Since the facility was only owner-occupied it was not considered an EJ displacement. The owner was given relocation assistance per the terms of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Mitigation Measures

As right-of-way is acquired, displaced households and businesses would become eligible for relocation assistance under the Uniform Relocation Assistance and Real Property Act of 1970, which should help ease the disruption caused by relocation. Relocation resources are available to all relocated residents and businesses without discrimination.

Based on information contained in the Displacement, Disruption, and Relocation section of this document, there should be adequate housing and commercial space available within the vicinity of the project to accommodate displaced households/businesses.

Project Public Involvement Process

WSDOT has used several different public outreach techniques during the course of the proposed project (see subsection 1.4.1, pages 1-22 through 1-30). These techniques included open houses, presentations to local community groups, tribal consultation, newsletters, newspaper articles, stakeholder interviews, outreach with property owners and residents adjacent to the Build Alternative, and communication via a project website.

No specific outreach efforts to minority or low income communities (EJ populations), other than to the Puyallup Tribe have been attempted. Aside from the Puyallup Tribe no discrete identifiable minority or low income communities have been identified in the project corridor. There has been consistent and continuing outreach to the Puyallup Tribe since the project began, as well as an overall Public Outreach program that has invited everyone involved in the corridor to participate. Several Public Hearings and meetings have been held which were appropriately noticed in the local media. No minority or low income individuals, nor organizations representing them, have come forward to be heard or convey any concerns about the SR 167 project..

WSDOT also investigated the need to provide additional public outreach techniques for the non-English speaking population. WSDOT was prepared to provide interpreters and other bilingual forms of communication at the events, if necessary, to ease the language barriers with the public. These efforts such as offering interpreters for public meetings and translated materials will continue throughout the completion of this project.

Summary of Environmental Justice Analysis

During the analysis of environmental effects from the project, WSDOT evaluated how the project's effects might affect persons who live and do business in the area. As part of the evaluation, WSDOT considered whether or not adverse effects associated with the project would be disproportionate on the EJ population. In other words, would adverse effects be (1) predominantly borne by the EJ population; (2) appreciably more severe or greater in magnitude on the EJ population as compared to the non-EJ population; (3) does the project impact a resource that is especially important to an EJ population (i.e., does the project impact Tribal treaty rights (usual/accustomed fishing/hunting grounds), does it serve an especially important social, religious or cultural function for the EJ population)?

Taking the above into consideration, it does not appear that the construction affects associated with this project will impact the EJ population any more than the non-EJ population. The mitigation described above will help to minimize construction impacts. Once construction activities have been completed, it is anticipated that this corridor will have an overall positive effect on the cohesiveness of the community, providing improved traffic movement throughout the region. The new highway alignment in the I-5 vicinity will allow for greater access to/from the Port of Tacoma, allowing industrial traffic to bypass residential areas.

Although displacement of some residential units and businesses will occur, the totality of impacts does not appear to impact EJ populations any more than non-EJ populations (see Table 3.11-7 & Summary Table 3). Information received from the Pierce County Housing Authority indicates that there are affordable housing units available within proximity of the project area. Individuals, families and businesses displaced by this project will receive, as appropriate, assistance under the Uniform Relocation Assistance and Real Property Act of 1970. Translation services and translation of informational brochures will be offered, as appropriate, during the relocation process.

Tribal trust properties might experience disruptive impacts to existing access and parking; however, this would not result in displacement and the current property utilization will not be altered. The access and parking can be modified and reorganized within the existing parcel.

Considering the totality of impacts, this project is not expected to disproportionately impact minority and/or low-income populations within the project area. The impacts that have been identified are not considered to be high and adverse after proposed mitigation measures are implemented.

3.11.4 Indirect Effects

Indirect Effects are those effects caused by the proposed action that are later in time or farther removed in distance, but still reasonably foreseeable. Land Use, Socioeconomics, and Environmental Justice may be affected by land use changes consistent with local comprehensive plans developed under the GMA. Indirect Effects from this project are not expected.

3.11.5 Cumulative Impacts

There will be no cumulative impacts to Environmental Justice populations as a result of this project. Environmental Justice populations may be affected by other land use changes consistent with local comprehensive plans developed under the GMA.

3.11.6 Mitigating Measures

Land Use

The most substantial land use impact of the project will be the conversion of approximately 380 to 400 acres of existing land uses to transportation-related land uses. Depending on the interchange option selected, a total of approximately 106 to 113 acres of additional land will be converted for riparian restoration. These changes will result in permanent displacement of the current land use. In some areas, the direct conversion of existing land uses to accommodate new ROW may be avoided or minimized through additional design features such as retaining walls, design modifications to project improvements that result in reduced ROW requirements, etc. As the design proceeds, opportunities to minimize the impact on existing land uses will be examined.

Socioeconomics and Environmental Justice Mitigation

Construction Mitigation

As required under WSDOT contract provisions, the scheduling of road closures and detour routes will be coordinated with police, fire and emergency services, school districts, and businesses dependent on delivery routes in the active construction area to minimize delay times. Traffic control requirements during construction will conform to state and local regulations. Restricting lane closures and construction that impact traffic during peak commuter hours and peak holiday travel periods should help to ease backups and time delays. Maintaining ongoing communication will keep local residents informed of development phases, areas of construction and possible travel alternatives.

Long-term impacts on tax revenues are expected to be positive and not require mitigation. In the short-term, any reductions in tax base and stagnation in the increase of property values affected by construction could be mitigated through advance purchase of ROW and effective construction phasing and scheduling.

Operational Mitigation

To the extent possible, the final design will minimize the need for property acquisition and displacements. In some areas, the direct conversion of existing land uses to accommodate new ROW may be avoided or minimized through additional design features such as retaining walls, and design modifications to project improvements that result in reduced ROW requirements.

Due to the loss of agricultural land needed for ROW in the central and southern portion of the project corridor, it is likely that localized impacts to employment within the agricultural sector may occur. The loss of employment in the agricultural field is expected to be offset by the provision of new jobs, a result of increased economic development activity in the area. In the long-term, transportation investments generally have a positive effect on regional economic output. Business growth associated with highway investment can be attributed to increased productivity through improved access to markets, an increase in available labor, decreased travel time and increased mobility throughout the region.

When a displacement occurs, the property owner will be entitled to relocation assistance in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended. Chapters 8.25 and 8.26 of the Revised Code of Washington govern the ROW acquisition process. Also see Section 3.13.4 for more information regarding relocation assistance.

Mitigation for displacements resulting from ROW acquisition is discussed in Section 3.13.4.

3.12 Farmland

The conversion of farmland to transportation uses and the disruption to the remaining farming operations were major environmental concerns of the SR 167 *Tier I EIS and the Tier II EIS Study Plan* (Study Plan) (Washington State Department of Transportation [WSDOT] 2000). In addition to the direct loss of farmland to highway right-of-way (ROW), highways may increase the pressure for conversion from farming to other uses. Conversion may indirectly occur when agricultural parcels are cut off or stranded.

This chapter examines the impacts of the SR 167 project on farmlands in the study area. Farmlands are protected by both federal and state legislation. The Federal Farmland Protection Policy Act (FPPA) (7 USC 4201-4209) is intended to minimize the extent to which federal activities contribute to the conversion of farmland to non-agricultural uses. The FPPA requires federal agencies to examine the impact of their programs before they approve any activity that would convert farmland.

The environmental screening criteria in the Study Plan include two that address farmlands: the acres of impacts to prime and unique farmlands under the FPPA and to farmlands in general. The double weight given to farmland emphasizes the significance placed on impacts to these properties.

3.12.1 Studies Performed and Coordination Conducted

This chapter incorporates information compiled in the *SR 167 Tier II EIS Land Use/Farmland/Social-Economic Discipline Report* (WSDOT 2004) and supporting memoranda.

The current comprehensive plans and zoning regulations for the City of Tacoma (1999), City of Fife (1996), City of Puyallup (1994), City of Milton (2002), and Pierce County (1998) were used for all analysis performed. Zoning designations in the study area were obtained from the following sources: City of Fife zoning map (2000); Pierce County map of zones designated “general” and plat maps with zoning overlays (2000); City of Puyallup zoning map (2000); City of Milton zoning map (2002); and City of Tacoma zoning map (2000). This information was supplemented and updated as necessary.

Under the FPPA, federal agencies are required to submit a Farmland Conversion Impact Rating (Form NRCS-CPA-106 for Corridor type projects) to the Natural Resources Conservation Service (NRCS). The NRCS uses this information to evaluate whether there are farmlands subject to the FPPA requiring protection in the project area. Farmlands that score 160 points or less do not need to be given further consideration for protection by the federal agency (7 CFR 658.4). The FPPA farmlands within the project study area, including the Riparian Restoration Proposal and a 150-acre potential wetland mitigation site, scored 153.6 points and therefore fall into this category (Table 3.12-1). This total score is 10.1 points lower than that reported in the DEIS, mostly because an updated NRCS soil evaluation re-designated some prime farmland in the county – not in the project area – to lower rated farmlands of statewide and local importance (WSDOT

2004). While not subject to protection under the FPPA, the farmlands in the study area are still subject to evaluation under the National Environmental Policy Act of 1969 and the State Environmental Policy Act.

3.12.2 Affected Environment

Since Tier I, the City of Fife has annexed most of the unincorporated county portions that lie within the study area. Over the past few years, the conversion of lands currently in agricultural production to urban uses has escalated. Most of the land in agricultural production within the study area is located in the city of Fife.

None of the applicable comprehensive plans designate lands within the study area for long-term agricultural use under the state Growth Management Act. The highest and best use of parcels within the project area is typically manufacturing or industrial, with occasional pockets of residential uses. However, the cities of Fife and Puyallup encourage and support continued agricultural uses until such time as conversion occurs.

Farmland, as defined in the FPPA, refers to land in any of four different categories: (1) prime farmland, (2) unique farmland, (3) farmland other than prime or unique that is of statewide importance, or (4) farmland other than prime or unique that is of local importance. These categories are based on soil types rather than farming activity (Natsuhara 2000). Farmland in Pierce County and in the proposed study area has been identified as prime farmland.

Prime farmland is land that has the best combination of desirable physical and chemical characteristics and minimum costs for producing agricultural crops. Prime farmland includes land currently in use as cropland, pastureland, rangeland, or forestland. The land must also not be in or committed to urban development or water storage. Such land includes land with a density of 30 structures per 40-acre area. All of the lands in the study area that are actively farmed and not committed to urban development qualify as prime farmland under the FPPA.

The NRCS evaluation identified 395,160 acres as farmable within Pierce County, 98 percent of which fall under the definitions of farmland in the FPPA. Approximately 3.4 percent of the farmable land in Pierce County has an equal or higher relative value as that of the soil identified in the proposed project corridor. According to the NRCS evaluation, the amount of farmland that would be converted in the proposed project corridor accounts for 0.15 percent of the farmland in Pierce County (Natsuhara 2004). Figure 3.12-1 depicts land under cultivation in 2001 within and adjacent to the study area. There are no parcels along the proposed SR 167 mainline north of I-5 nor adjacent to the SR 161/167 interchange that are actively farmed, although there are parcels labeled as agricultural in the Tax Assessor's database in this area.

Table 3.12-1: Farmland Conversion Impact Rating

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request: 5/7/04	4. Sheet 1 of 1
1. Name of Project: SR 167 EIS Tier II	5. Federal Agency Involved: FHWA		
2. Type of Project: New Highway	6. County and State: Pierce, WA		
PART II (To be completed by NRCS)		1. Date Request Received by NRCS: 5/10/04	2. Person Completing Form: C. Natsuhara
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form): YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated: N/A Average Farm Size: 51	
5. Major Crop(s): grass-legume hay, truck crops, pasture	6. Farmable Land in Government Jurisdiction: Acres: 395,160 % 50	7. Amount of Farmland As Defined in FPPA: Acres: 387,633 % 49	
8. Name Of Land Evaluation System Used: Draft Pierce County	9. Name of Local Site Assessment System: None	10. Date Land Evaluation Returned by NRCS: 5/27/04	

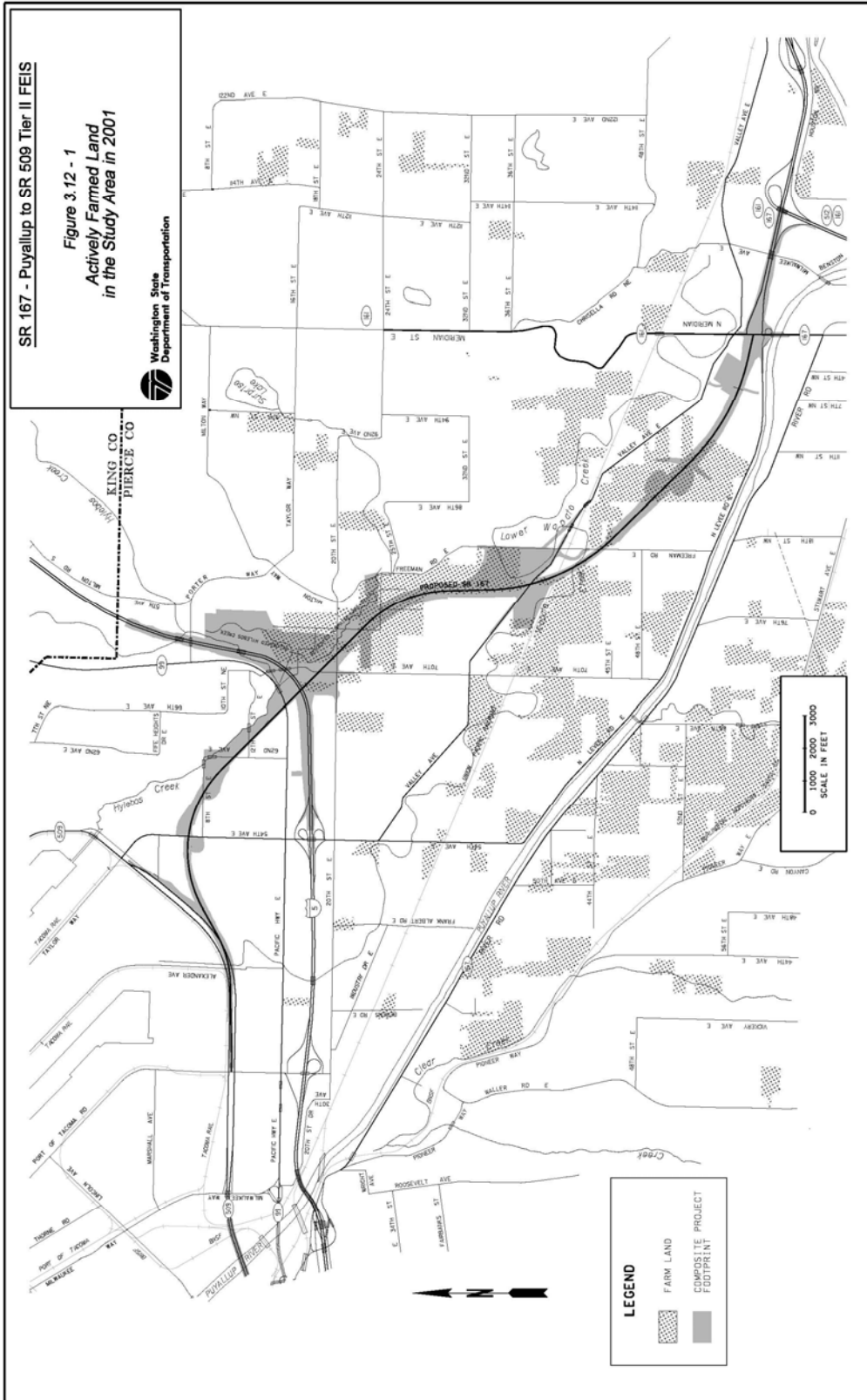
PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	525.7			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	69.9			
C. Total Acres In Corridor	595.6	0	0	0
PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	590.6			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.15%			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	3.4%			
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative Value of Farmland to Be Serviced or Converted (Scale of 0-100 Points)	84.6			
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))				
	Maximum Points			
1. Area in Nonurban Use	15	0		
2. Perimeter in Nonurban Use	10	2		
3. Percent Of Corridor Being Farmed	20	20		
4. Protection Provided By State And Local Government	20	0		
5. Size of Present Farm Unit Compared To Average	10	10		
6. Creation Of Nonfarmable Farmland	25	13		
7. Availability Of Farm Support Services	5	5		
8. On-Farm Investments	20	10		
9. Effects Of Conversion On Farm Support Services	25	1		
10. Compatibility With Existing Agricultural Use	10	8		
TOTAL CORRIDOR ASSESSMENT POINTS	160	69	0	0
PART VII (To be completed by Federal Agency)				
Relative Value Of Farmland (From Part V)	100	84.6		
Total Corridor Assessment (From Part VI above or a local site assessment)	160	69	0	0
TOTAL POINTS (Total of above 2 lines)	260	153.6	0	0
1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>	

5. Reason For Selection:

Thomas A. Whitney

Signature of Person Completing this Part: _____ DATE: 4/3/06

NOTE: Complete a form for each segment with more than one Alternate Corridor



The soil in the project area is suitable for a wide range of cultivated crops and is favorable for growing row crops. Rhubarb, lettuce (bibb, romaine and red leaf), sweet corn, cucumbers, green beans and strawberries are the most commonly grown crops in this area. Depending on climatic conditions, farmers in this area are able to farm and harvest two full crops and sometimes three during each annual growing season. These crops are sold locally as well as through wholesalers to supermarket outlets throughout the region and state.

The Washington Lettuce and Vegetable Company is a produce wholesaler and distributor located within the proposed project area. It provides support services for local farmers such as cooling, holding, selling, delivering, packing, and repacking produce for local farmers; handling orders for grocery chain stores; and handling rejected shipment and deliveries. The services that the company provides are used to varying degrees by the different farmers in the valley. The company's vacuum-cooling operation for lettuce is the most heavily used service (Dill 2001).

Local area farmers are finding it increasingly difficult to raise crops profitably in a growing urban area where property taxes on the land, now located within the city limits, have risen dramatically. Some farm families have voluntarily participated in municipal service improvements to their property to protect their property values. The encroachment of commercial development, high property assessments, and the financial challenges facing family farm operations has brought into question the longevity of existing agricultural operations. The value of agricultural products sold went down while the value of farmland went up from \$4,756 per acre to \$7,273 per acre (News Tribune 2001). Some farmers see their only profit in selling their land to developers. Approximately 421 acres currently under cultivation within the immediate project area are either for sale or undergoing negotiations with developers for sale (WSDOT 2004).

Between 1992 and 1997, Pierce County lost 70 full time farms, or almost 8,000 acres of farmland (1997 U.S. Department of Agriculture census). In the past 5 to 10 years, the number of farmers actively farming in the study area has declined from 10 to 15, to five or six farmers. The valley lost another farmer to retirement from farming following the 2001 season (WSDOT 2004).

The majority of the land that is currently being farmed within the study area is being leased from property owners. Most leases are short-term leases, though owners work with the same farmers most of the time. Property owners include local owners, development corporations, and even WSDOT, which is leasing 32 acres previously owned by the Washington State University Extension Service.

3.12.3 Direct Impacts

The impacts of construction and operation are considered together in this section. The conversion of farmland at the time of construction and the temporary disruption to farming during construction are the most substantial impacts. The operation of the freeway will have few additional impacts on farming although its cumulative impact along with other actions may expedite conversion (Section 3.12.4).

No Build Alternative

The No Build Alternative assumes that the proposed project would not be constructed and that no ROW acquisition would be acquired. Therefore, no direct impacts to farmlands are expected. However, the conversion of farmland to non-agricultural uses would continue due to the current zoning and development pressures. As the cities of Fife and Puyallup implement their Comprehensive Plans, eventually all land currently farmed within the study area is expected to be converted. The cities of Fife and Puyallup would also continue to make capital improvements to roads, utilities, schools, and other facilities that would increase the pressure on the remaining farmlands.

WSDOT would also continue to make improvements to I-5, SR 509, SR 99, SR 161, and SR 167 should the project not be constructed. These improvements could include adding capacity, building High Occupancy Vehicle lanes, constructing park and ride lots, and improving intersections. All of these activities have the potential of expediting the conversion of farmland to other uses because they improve the transportation system and support investments in high intensity land uses like manufacturing.

Build Alternative – Temporary Impacts

Temporary impacts on existing farmland during construction could include increased noise, dust, traffic detours, and traffic congestion. Other impacts as a result of construction would include disruption of access to parcels being farmed and traffic delays. Farmers access their farms and move farm equipment to and from their sites by way of local streets. It is anticipated that the restriction of travel lanes in work zones, possible road closures and rerouting of traffic onto secondary roads could impact farming operations. Construction in the immediate vicinity of farmlands would produce increased noise, dust and/or air pollution, but is anticipated to have negligible effect on agricultural activities.

Build Alternative – Permanent

Table 3.12-2 shows the acreages of impacts on lands actively farmed. The table does not separate the mainline from the intersection acres of impact. However, the bulk of the impacts are from the mainline as can be seen in Figure 3.12-1. Indirect impacts refer to parcels that are bisected by the proposed project mainline and interchanges or the riparian restoration proposal where the remaining sections are either impractical or uneconomical to farm. Depending on the final design and the intersection options selected, approximately 148 to 182 acres of land that could be, or is being farmed, would be converted to transportation-related uses (including a park and ride lot located at Valley Avenue).

Table 3.12-2: Impacted Farmland (acres)

Right-of-Way	Direct	Indirect	Total
Mainline and I-5 Interchange*	121	14.5	135.5
Preferred Valley Avenue	34	12.2	46.2
Valley Avenue Realignment	11	1.8	12.8
Freeman Road	22	1.8	23.8
Subtotal			148.3-181.7
Riparian Restoration	Direct	Indirect	Total
Mainline and I-5 Interchange	43.7	16.2	59.9
Preferred Valley Avenue	21.2	9.4	30.6
Valley Avenue Realignment	35.4	6.1	41.5
Freeman Road	37.6	17.7	55.3
Grand Total			238.8-296.9

*Includes impacts due to proposed weigh stations and park-and-ride lots.

Table 3.12-2 also indicates that riparian restoration will involve additional conversion of approximately 91-115 acres of farmland. The total impact to farmlands from the mainline, intersection options, stormwater facilities, riparian restoration and realignment of Hylebos could range from 239 to 297 acres. Mitigation of unavoidable impacts to wetlands, many of which were previously converted to farming, will convert as much as 100 acres of farmland into wetlands (Section 3.3.5).

The activities of six different farmers will be affected by the proposed project alignment. The alignment bisects parcels that are part of a leased farming operation located near the SR 161/SR 167 intersection. This causes a physical separation that could lead to difficulties in transporting equipment between parcels. Two different landowners, one of which is a development company, own the land currently being leased by one farmer. The land currently being farmed is the site of two approved commercial developments.

Two parcels between Freeman Road and Valley Avenue will be bisected by the alignment. These parcels are being leased and farmed by a local farmer. Since the alignment is on structure along this section of the proposed project, the roadway would not necessarily create a barrier effect between any separated lands. Being on structure would permit equipment to traverse under the structure and allow continued access to land on either side of the roadway. The Puyallup Tribe of Indians recently purchased this property.

North of Valley Avenue two parcels belonging to WSDOT (32 acres) will be bisected by the alignment. The site is being leased to a local farmer to farm. Due to the ROW required for the construction of travel lanes and interchange ramps, it is anticipated the remaining portions of the bisected parcels would be impractical or uneconomical for further farming. A local farm in the vicinity of 20th Street East, consisting of partially owned and partially leased acreage (45 acres total) will also be impacted by the alignment bisecting farm parcels. This farm will be impacted as a result of the riparian restoration proposal.

Washington Lettuce and Vegetable Company will be displaced by one of the park and ride lots. The company's facilities are used to varying degrees by the

different farmers in the valley, particularly for the vacuum-cooling operation for lettuce. However, the loss of this business would not necessarily lead to the termination of farming operations in the valley. Other farm support services are available within the region for farmers to utilize.

Valley Avenue Interchange Options

Based on the results of field surveys, there are no actively farmed parcels in the impact area at either the 54th Avenue East partial interchange or the SR 161/SR 167 interchange (Figure 3.12-1). However, there are parcels whose use is labeled agricultural in the Pierce County Assessor's database.

The farmland acreage in Table 3.12-2 differs from the agricultural land acreage in the ROW acquisition table in section 3.11. The agricultural land acreage in Table 3.11-1 and Table 3.11-2 came from the Tax Assessor's database and includes lands that are not actively being farmed. The agricultural land may already be converted but its label in the database may not have been updated. The farmland acreage in Table 3.12-2 came from field surveys of actual conditions.

The total farmland impacts of the alignment and riparian restoration at the Valley Avenue interchange would be approximately 50 percent greater for the Preferred Valley Avenue and Freeman Road options (76.8 and 79.1 acres, respectively) than for the Valley Avenue Realignment option (54.3 acres, Table 3.12-2).

The different proposed options for the Valley Avenue interchange would impact the farming activities of one local farmer along Freeman Road (106 acres). The impact on the farm would vary between the different options. Under the Freeman Road and Preferred Valley Avenue options, along with associated riparian restoration impacts, the farming activity would lose the ability to access approximately 10 acres of land. This would not displace farming activities, but would reduce the amount of land available to be farmed.

3.12.4 Indirect Impacts

The geographic boundary considered when addressing indirect impact for the project includes the area up to a quarter mile from the ROW boundaries of the intersection options.

In addition to the direct loss of farmland through ROW acquisition, construction of a highway through parcels could indirectly affect the viability of some parcels for agricultural use. Indirect impacts refer to parcels that are bisected by the proposed project mainline and interchanges as well as the riparian restoration proposal where the remaining sections of the parcel are either impractical or uneconomical to farm. The amount of farmland that would be indirectly affected would be dependent on the final design as well as the Valley Avenue interchange option selected. Problems associated with equipment access and size of the leftover parcels may make farming on one or both of the remaining sections of the bisected parcels impractical or uneconomical.

Depending on the Valley Interchange option selected approximately 39 to 61 acres would indirectly impact farmland within the project area. Sixteen to twenty-seven acres would be indirectly impacted due to alignment ROW requirements for the proposed freeway and 22 to 34 acres indirect impacts by riparian restoration requirements.

The proposed alignment would also impinge into the edge of other farmland parcels resulting in possible disruptions, but would not be expected to lead to further fragmentation of farming activities. For possible mitigation measures refer to Section 3.12.6 of this report.

3.12.5 Cumulative Impacts

The geographic boundary for the project area includes all of Pierce County. The temporal boundary extends back to 1992 and forward to 2030. The temporal analysis was limited by available information.

Farmlands in Pierce County have decreased about 13 percent in the 1992 to 1997 time period, mostly because of urban development throughout the county as it continues to grow in population. Under the Build alternative it is expected to contribute to that trend with the long-term conversion of farmland for transportation related use as well as wetland restoration and mitigation. All of the land being farmed within the project area is occurring within urbanized areas. The majority of which is in the city of Fife city limits. Both the cities of Fife and Puyallup have determined that the highest and best use of the property located within the project area is commercial or industrial use and has zoned the land as such.

Since the beginning of the study much of the land that has been identified for the highway alignment has been on the market for sale or has already been sold for development purposes. Within the project area most of the land being farmed has been either under negotiations with or sold to developers or other parties, including the City of Fife. Even under the No-Build alternative it is expected that the impacted farmland would convert to long-term commercial/industrial uses.

There is not quantitative data that details how this loss of farmland in the SR167 corridor will impact the economy, produce availability, farm workers, and residents within the local region. However, farmers that operate within the corridor were interviewed regarding local impacts if their farms went out of business. They stated that there could possibly be impacts to the wholesalers and produce stands that purchase their produce, but that other produce would be brought in from other areas. None of the local farmers interviewed grow organic produce. Two farmers stated that their produce is unique, with rhubarb being the only specific crop identified as unique. One of these two farmers stated that there wouldn't be the same crops available in the area if he went out of business. The other farmer that has unique produce stated that the same crops he presently grows would still be available at other farmers markets in the region.

All of the farmers interviewed stated that the crops that they produce could be purchased elsewhere. Some of purchasers of the local farm produce are wholesale houses, major grocers, and produce stands. These consumers could replace the loss of local crops with produce grown in Orting, Auburn, the Skagit Valley, the Willamette Valley, and California.

The loss of farmland in the Puyallup River Valley represents a shift in historic use of the area. However, many of the farms are currently in operation are leased facilities rather than family farms and it is difficult to assess the impact of the change in the Puyallup River Valley on current and future residents. The farmland in the study area, specifically in the city of Fife, has a relatively higher value which means that it requires minimal land management to make the land farmable. It also does not require irrigation systems to produce crops but they are used because of the double and triple cropping to produce truck farm crops. Some families have farmed the area for three generations. However, interviews with farmers in the area make it clear that most are leaving the area due to increased urbanization and property values that are making farming unprofitable. One farmer stated that he believed most, if not all, of the farms in the area would be gone by the time the highway is built.

A few of the farmers interviewed identified California as the primary competitor for their products. One noted that the year round marketing in California makes it difficult to compete with them.

Cumulative impacts on farmlands are expected to be substantial. This is a result of the urban designation of the area, the increasing land values that make farming less profitable, and lack of farmland protection policies.

3.12.6 Mitigating Measures

Consultation and coordination with affected farmers will be conducted to ensure that disruptions to farming are minimized and adequate advanced notice of potential disruptions is given.

Erosion control measures will be implemented during construction. Construction zones along the roadway will be replanted after construction in accordance with local and state guidelines. Planned water detention facilities will assist in protecting farms from the runoff from roadways. The use of water trucks and other construction best management practices will be used in the control of dust. As part of construction management, access and traffic mitigation and dust control measures will be prepared and included in the project's contract specifications.

Once design is complete, WSDOT will work individually with farmers to identify circulation options for movement of farm equipment and to provide access to fragmented acreage. Generally, the small size of the fragmented land (10 to 15 acres) negates the use of farm sheds to store separate farm equipment. The incursion of development and acquisition of land by developers within the area does not make the option of swapping land a satisfactory option to preserve sufficient acreage to allow farming on either side of the proposed alignment.

FHWA and WSDOT will try to provide access from local streets by way of access roads and/or easements. For farms located in the vicinity of 20th Street East, an easement and corridor could be provided through WSDOT ROW in the vicinity of the proposed 20th Street East and 70th Avenue East roundabouts to allow movement of farm equipment underneath the SR 167 structure where it transitions from ground level.

Just east of the Puyallup Recreation Center, a developer is proposing to build a crossing over the SR 167 mainline. The crossing would connect Valley Avenue to North Levee Road. This crossing would accommodate the size and type of tractors used in these fields. Providing access to the crossroad from the fields would allow for the continued farming of acreage on either side of the roadway. If this crossing is not built at the time of construction, FHWA and WSDOT would determine the alternative mitigation at the design stage.

For farming operations on leased land, mitigation would be predicated on the options available to the landowners and their intentions for further utilization of their land. Currently two of the larger farm operations are occurring on leased land, both of which are undergoing sale negotiations with developers. It is anticipated that future use of the property would change prior to acquisition of property for the project.

The future of farming is uncertain within the study area of the Fife/Puyallup Valley; property has been rezoned for higher intensity land uses and property assessments have risen dramatically. As noted earlier, 421 acres of the land that is being farmed within the proposed project alignment is currently on the market for sale or owners are in negotiation with commercial developers. Any mitigation that addresses the issue of farmland would depend on the land use at the time of acquisition and construction.

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3.13 Displacement, Disruption, and Relocation

This section discusses the impacts of the project through displacement, disruption and relocation of residences and businesses. The Tier I FEIS contains a discussion of these impacts at the corridor level. The Tier II analysis considers additional project details and provides more specific mitigation measures. While this section focuses on the impacts to residences and businesses in the corridor, it is closely related to the land use changes caused by the project that are discussed in Section 3.11.

Displacement and disruption as used in this section are defined as follows:

- Displacement refers to any structure or use that would be permanently displaced as the result of new right-of-way (ROW) acquisition.
- Disruption refers to any disturbance of access, parking, landscaping, etc. that would not result in the displacement of the associated property.

When a displacement occurs, the property owner is entitled to relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Chapters 8.25 and 8.26 of the Revised Code of Washington govern the ROW acquisition process. All Tribal Trust properties potentially impacted by the project have been addressed in Section 3.11.1. FHWA, WSDOT, the Bureau of Indian Affairs, and the Puyallup Tribe of Indians will coordinate site specific requirements for each parcel affected.

3.13.1 Studies Performed and Coordination Conducted

This section incorporates information from the *SR 167 Tier II EIS Displacement and Relocation Discipline Report* (Washington State Department of Transportation [WSDOT] 2004) and updated information contained in a WSDOT memorandum dated July 14, 2006. Aerial photographs, census data, county assessor's data, land use codes, and site inspections were used to determine the characteristics of potentially displaced or disrupted residences and businesses in the project vicinity.

Right-of-way requirements and associated disruptions and displacements were identified based on WSDOT preliminary project design drawings and reinforced by site inspections of the proposed project area. All businesses potentially displaced by proposed project improvements were contacted to obtain information regarding the nature of their business, number of employees, and whether they had any particular or unique needs for replacement sites if they were to relocate for any reason. Managers of residential development units (apartments) that would potentially be displaced were contacted to obtain information on current housing costs, number of bedrooms, vacancies, and other data.

3.13.2 Affected Environment

The study area (defined in Section 3.1) includes industrial, commercial, vacant/undeveloped, residential, and agricultural land uses (see Section 3.11 for a discussion of land uses and socio-economic conditions within the study area). Table 3.11-5 provides a community profile including information on total population, minority percentages, median household income, per capita income, percentage of low income households, handicap population percentage, and elderly population percentage.

3.13.3 Impacts of Construction and Operation

The impacts of construction and operation are considered together because displacement of a business or residence occurs at the time of construction while disruption occurs during construction and may continue after the transportation facility is operating. The source and nature of the disruption may change between construction and operation, but the affect on the business or residence remains similar.

No Build Alternative

The No Build Alternative assumes that the proposed project would not be constructed and that no ROW would need to be acquired. Land use development trends would continue to occur under this alternative according to land use plans, zoning designations, and regulations adopted pursuant to the GMA by the affected jurisdictions that directly surround the proposed SR 167 highway extension.

Local jurisdictions and WSDOT would continue to improve both the local and state route transportation network in the study area. As a consequence, these agencies would acquire new ROW for the various improvements. These projects include road widening, new lanes, park and ride lots, intersection upgrades, HOV lanes, sidewalks and bike lanes, and ramp improvements. The location of new ROW under the No Build Alternative cannot be determined at this time but is likely to be substantially less than what is required for the Build Alternative. Which uses or buildings would be displaced would be determined at the time of design and permitting for any particular improvement.

Build Alternative (Preferred)

Additional ROW acquisition along the proposed project corridor will convert existing land uses to transportation-related uses as a result of the project alignment, stormwater facilities, riparian restoration, and the relocation of Hylebos Creek (see Section 3.11). Land acquisition will depend upon final design and the options selected for the 54th Avenue East, I-5, Valley Avenue, and SR 161/SR 167 interchanges. The total acreage required for new ROW and siting of weigh stations and two park and ride lots ranges from approximately 286 to 306 acres depending on the selected interchange options. Riparian restoration will require approximately 214 to 237 more acres of ROW, and additional ROW will be needed for wetland mitigation.

Existing vacant and agricultural uses will be affected the most, with 95 to 105 acres vacant/undeveloped land and 91 to 112 acres of agricultural land converted, depending on the final approved design. Other uses converted include 42 to 48 acres of residential, 40 to 43 acres of commercial/industrial, and 9 to 11 acres general/public land. The latter includes public property and general use such as city facilities, churches, educational, and recreational activities.

Table 3.13-1 depicts the number of residential units and businesses displaced that result from ROW acquisition for each interchange option including associated mainline. For the Preferred Alternative, a total of 57 single-family residential units, 12 multi-family apartment units, 9 manufactured home units, 22 to 27 businesses, 1 public facility, and 1 farming operation will be displaced under the Build Alternative.

The impacts due to the riparian restoration in the build alternative are discussed separately. Later in this section, Table 3.13-2 depicts the number of residential units and businesses displaced that result from ROW acquisition because of the riparian restoration proposal. The number of displacements and relocations are contingent on final approved design plans (see Chapter 2 for a description of the preliminary design plans).

Table 3.13-1: Summary of Displacements (Preferred Alternative)*

	Single Family Units	Manufactured Homes and Multi-Family Units	Business	Public Facilities	Farms
54th Ave E Interchange					
Preferred Loop Ramp	9	9 (manufactured homes)	8	1	0
I-5 Interchange	31	12 (apartments)	14	0	0
Valley Ave Interchange					
Preferred Valley Ave	11	0	2	0	1
SR 161/167 Interchange					
Preferred Urban Interchange	6	0	1	0	0
Total	57	21	25	1	1

*Displacements for other interchange options are described in the following text.

The majority of anticipated displacements will occur within the Fife City limits. The residences are mostly older single-family residential units located in the North Fife area and in the vicinity of the I-5 interchange near 70th Avenue East. The bulk (14) of the affected businesses is located in the vicinity of the I-5 interchange. The manufacturing/industrial businesses affected by the proposed alignment are located north of I-5, primarily in the vicinity of the northern limit of the project (54th Avenue East).

A description of affected homes, business, and other impacted properties is provided in the *SR 167 Tier II EIS Displacement and Relocation Discipline Report* (WSDOT 2004). This section summarizes impacts of the Preferred Alternative to these properties.

54th Avenue East Interchange

Preferred Loop Ramp Option

ROW will be required for the construction of travel lanes and interchange ramps. Residential units that will be impacted include nine manufactured home units located in the Hybelos Creek Estates and up to nine single-family homes.

Eight commercial businesses will be impacted including: Jesse Engineering, Waste Management, Art Morrison Enterprises Inc., Northwest Fruit & Produce, Maid Brigade, Odom Corporation, Metal Roof Specialties, and the Selma R. Carson Home.

The proposed alignment will impact the new OPUS Fife North Landing on 8th Street East, east of 54th Avenue East, where three businesses are operating. The loop ramp option will require partial acquisition for project ROW and will disrupt property access. ROW requirements for the Loop Ramp option will displace at least one of these businesses. Under the Loop Ramp option one City of Fife water control station located at the corner of 54th Avenue East and 8th Street East may be displaced.

Half Diamond Option

ROW would be required for the construction of travel lanes and interchange ramps. Displacements under this option include 4 mobile home units, up to 10 single-family homes, and 3 additional single-family residences located at the end of 10th Street Court East would be displaced from loss of access resulting from the closure of the road by a SR 167 southbound off ramp.

Five commercial displacements would be expected as a result of ROW acquisition including: Jesse Engineering, Northwest Fruit & Produce, Maid Brigade, Odom Corporation, and the Selma R. Carson Home.

Art Morrison Enterprises, Waste Management, and Metal Roof Specialties, would experience substantial disruption of property access that would not be expected to result in displacement of the businesses. The disruptions and displacements to the new OPUS Fife North Landing commercial development would be similar to those under the Loop Ramp option.

I-5 Interchange

ROW will be required for the construction of travel lanes, interchange approaches and ramps, two roundabouts and approaches at 70th Avenue East and 20th Street East, 70th Avenue East bridge relocation, and the realignment of 20th Street East. Residential displacements will include up to 4 single-family residences located along 67th Avenue East and at 70th Avenue East off of SR 99 and up to 21 single-family homes located along 70th Avenue East near the intersection of 70th Avenue East and 20th Street East. In the vicinity of the

western most proposed 20th Street East roundabout up to 6 residential units, all single-family, will be displaced. Up to 5 more single-family homes could experience substantial disruption from property access, which may not result in displacement pending final design of the 20th Street East realignment and roundabouts.

Twelve rental units (two buildings) in the Mountain View 241-unit apartment complex will be displaced by proposed project ROW.

Fourteen commercial displacements will be expected as a result of ROW acquisition including: Liberty Distributing Inc. (Vitamilk), Western Superior Structurals Manufacturing, Java Junkie, Olympic Boat, Shurgard Storage, Quality Home Enclosures, Heartland, Urban Paintball Park, Freeway Trailer Sales, Great American RV, Kanopy Kingdom, Xplorer Motorhomes NW, Linwood Homes, and Golden Rule Motel (which has been sold and demolished since the Draft EIS).

Great American RV, Auto Center at Fife, Fife Commerce Center and Secoma Fence will experience various types of disruptions due to ROW acquisition that is not expected to result in a displacement of the businesses. The Executive Inn, Selden's Furniture, and Acura of Fife will experience disruptions of existing landscaping along I-5.

Valley Avenue Interchange

Preferred Valley Avenue Option

ROW will be required for the construction of travel lanes, interchange approaches, and ramps. Under the Preferred Valley Avenue option, up to 11 single-family homes may be displaced. Up to nine additional residences located along Valley Avenue and Freeman Road will experience disruptions of property access as well as varying degrees of partial acquisition for project ROW, but will not be expected to result in displacements.

Commercial displacements include H&K Underground and Holt Drilling. One single-family residence is also located on site and will be displaced.

Pending final design, the Washington Lettuce and Vegetable may be displaced by the siting of a 16-acre park and ride lot west of the Preferred Valley Avenue interchange.

Under the Preferred Valley Avenue option, there will be some disruptive impact to parking and property access for two commercial businesses: Cross Smoke Shop and an espresso stand. These businesses will not be displaced.

It is expected that the farming activities will also be displaced at the former experimental agricultural research site (32 acres) of the Washington State University (WSU) Cooperative Extension. This property was purchased by WSDOT in 2004.

Three other farming operations are located between 20th Street East and Freeman Road south of Valley Avenue. Most of these farming activities are occurring on

leased land. All three farms will be impacted by the acquisition of property that is currently under cultivation. The farming activities of two farms will experience substantial disruptions caused by the alignment bisecting cultivated parcels, however bisection is not expected to result in displacement. Section 3.12 discusses impacts to farmlands in the study area.

Valley Avenue Realignment Option

ROW would be required for the construction of travel lanes, interchange approaches and ramps, and the realigned portion of Valley Avenue. Residential displacements under this option would include up to 17 single-family residences. As with the Preferred Valley Avenue option, residences located along Valley Avenue and Freeman Road would experience disruptions of property access as well as varying degrees of partial acquisition for project ROW that would not be expected to result in displacements.

Up to 11 rental units (four buildings), and a 12-bay storage unit, along with two singlewide mobile homes would be directly displaced by ROW requirements for the realigned Valley Avenue.

Commercial business displacements would be similar to those under the Preferred Valley Avenue option (H&K Underground and Washington Lettuce and Vegetable) as well as Holt Drilling located on Freeman Avenue (which has one of the single-family residences located on site). Three other commercial businesses may experience some disruptive impacts due to property access revisions and temporary loss of parking but this would not result in any displacements.

Under the Valley Realignment option, the displacements and disruptions to farming at the former WSU Cooperative Extension experimental farm research site would be the same as those under the Preferred Valley Avenue option.

Freeman Road Option

ROW would be required for the construction of travel lanes, interchange approaches and ramps, and realignment of the Freeman Road/Valley Avenue intersection.

Up to 16 single-family homes would be displaced. Three single-family units along Freeman Road would experience disruption of property access, which could result in displacement pending final design of Freeman Road and the Freeman Road/Valley Avenue intersection.

In addition to displacements and disruptions of commercial businesses similar to the two previous Valley Avenue interchange options, the Freeman Road option would displace Firwood Corner Grocery (where one of the single-family residences is located on-site) and disrupt the Firwood Tavern.

Displacements and disruptions to farming operations would be similar to those under the previous two options. However, disruptions under the Freeman Road option may also include substantial disruption to one farm located along Freeman

Road. The disruption to farming would not be expected to result in a displacement.

SR 161/SR 167 Interchange

Preferred Urban Option

Between the Valley Avenue interchange and the SR 161 interchange, ROW will be required for the construction of travel lanes, interchange approaches, ramp improvements, the Puyallup bridge reconstruction, and two weigh stations. Less new ROW is required along this segment because there is existing ROW associated with the current SR 161 alignment and SR 512/SR 167 interchange.

New ROW for the southbound ramp to SR 167 will impact approximately four to six single-family homes that may be displaced. Displacement may occur to one business (UniFirst Uniforms), but may be avoided through the use of retaining walls. This will be determined during final design.

Disruption will occur to a leased farming operation in the form of fragmentation. Parking and property access of Puyallup Mini-Storage may be disrupted including potential displacement of three of the storage buildings, but displacement of the business is not expected. Disruption will also occur to a portion of paved parking in an industrial park.

Diamond Medium Option

The Diamond Medium Option would have the same impacts as discussed under the Preferred Urban Option. However, this option may displace the Puyallup Mini-Storage rather than just disrupt it as under the Preferred Urban Option. The projected ROW would displace the facility's offices and three storage buildings of Puyallup Mini-Storage. The property is not large enough to accommodate relocation of the offices on the property, thereby resulting in displacement of the business. The single-family residential unit located on site would also be displaced.

As under the Preferred Urban interchange option, the proposed alignment and weigh stations would cause fragmentation of farmland on site. The Diamond Medium option would have a similar impact to the farming operation and would not result in displacement.

Diamond Low Option

ROW would be required for the construction of travel lanes, interchange approaches, ramp improvements, and two weigh stations. Under this option, impacts would be similar to those of the Diamond Medium interchange option except for the Puyallup Mini-Storage. It may experience only disruption rather than displacement.

Riparian Restoration

The Hylebos Creek realignment and proposed Riparian Restoration Proposal, that will restore floodplains along the lower Hybelos, Wapato and Surprise Lake Creeks, will require additional ROW acquisition and removal of human made

structures. Depending on the interchange option selected, a total of approximately 106-113 acres of land would be converted to riparian habitat.

Depending on the interchange options selected, an additional 22 single-family residential units, eight manufactured home units, five to six businesses, three City of Fife public facilities, and one farming operation could be expected to be displaced when the riparian restoration proposal is implemented (Table 3.13-2).

Table 3.13-2: Summary of Riparian Restoration Proposal Displacements (Preferred Alternative Only)

	Single Family Units	Manufactured Home and Multi-Family Units	Business	Public Facilities	Farms
Mainline					
SR 509 to I-5	7	8	1	2	0
I-5 Interchange	5	0	1	0	0
I-5 to Valley Avenue	3	0	0	1	1
Interchange Options					
54th Ave E Interchange					
Preferred Loop Ramp	0	0	0	0	0
Valley Ave Interchange					
Preferred Valley Ave	11	0	1	0	0
Total	26	8	3	3	1

Twelve of the displacements will occur North of I-5 and East of 54th Avenue East. Most of the residences are older single-family residential units, the majority of which are located along 12th Street East, 62nd Avenue East, and 67th Avenue East. No displacements, as a result of the riparian restoration proposal, will occur at the SR 161/SR 167 intersections and associated mainline in Puyallup.

To accommodate the riparian restoration proposal between 54th Avenue East and I-5, the mainline roadway will be constructed on embankment rather than on structure. ROW will be acquired to construct the mainline roadway at ground level as well as bicycle/pedestrian facilities. No displacements will occur under the 54th Avenue East interchange option as a result of the riparian restoration proposal requirements.

SR 509 to I-5 Segment

Between 8th Street East and 12th Street East the displacement of seven single-family residential units and outbuildings, sheds and a water control station belonging to the City of Fife are anticipated as result of the riparian restoration proposal. Two parcels owned by the Puyallup Tribe of Indians, located in the vicinity of 12th Street East, will be impacted by the riparian restoration proposal and will result in the displacement of a single-family residence.

Eight manufactured homes in the Hylebos Creek Estates will be directly displaced by land acquisition for riparian restoration. The roadway ROW would displace nine units. The riparian restoration proposal together with the roadway ROW will displace the entire Hylebos Creek Estates complex, where all 17 of the manufactured homes were occupied as of July 3, 2002. The park consists of a combination of retirees and young families.

I-5 Interchange Segment

Riparian restoration will also require the removal of 62nd Street East from 12th Street East to 8th Street East and removal of 8th Street East from 62nd Avenue East to the new SR 167 alignment. One single-family residence located near the intersection of 8th Street East and 62nd Street, one business (Sound Analytical), along 8th Street East, and a City of Fife water station, located off 8th Street East will be displaced due to loss of property access as a result of the proposed riparian restoration site. A well associated with a residential unit adjacent to the project has the potential to be disrupted, which could impact the adjacent property.

At the I-5 interchange up to three residential displacements along 67th Street will occur. The riparian restoration proposal will directly displace eight of the residential units and one will be displaced as result of loss of property access. Three businesses; Secoma Fencing, H&H Diesel Service Inc., and NW Bus Sales will be directly displaced by this plan. Secoma Fencing also contains a single-family residence located on the business property that will be displaced as well.

I-5 to Valley Avenue Segment

Riparian restoration along SR 99 (Pacific Highway) will occur within the proposed alignment footprint that has been already accounted for and will not result in additional displacements or disruptions. Displacements along the mainline from I-5 to Valley Avenue will consist of two residences, and one farming operation. A farming operation located along 20th Street East will be bisected by the riparian restoration proposal, which will directly displace a single-family home and associated farming buildings located on the property.

At the Valley Avenue interchange, the Preferred Valley Avenue option will require 47 acres for riparian restoration. Displacements will include nine single-family residences, one multi-family residence, and two businesses (Firwood Tavern and Holt Drilling).

Other Interchange Options

The Freeman Road option would require 66 acres for riparian restoration. Twelve displacements would occur under the Freeman Road option, 12 single-family residences and one multi-family residence.

The Valley Avenue Realignment option would require 57 acres for riparian restoration. Residential displacements due to riparian restoration under the Valley Avenue Realignment Interchange Option would include eight single-family residences. One business located on Valley Avenue would be displaced (Drywall Inc.) under this interchange option as a result of riparian restoration.

Mitigation Areas

The Conceptual Mitigation Plan (Section 3.3.5) includes several areas where mitigation could be designed for unavoidable impacts to wetlands. Most mitigation areas being considered are along the Build Alternative, and in some cases associated ROW acquisition would affect numerous properties. Displacements, disruptions, and replacements will be considered during the selection of sites for detailed mitigation design.

3.13.4 Mitigating Measures

Minimization of Displacements and Substantial Disruptions

Some displacements may be avoided through final design measures, including the use of retaining walls and other modifications resulting in reduced ROW requirements. These will be determined during final design.

Mitigation measures that may be implemented to minimize disruption impacts from construction include maintaining access to existing uses wherever possible. These measures are also discussed in Sections 3.11 and 3.14 on Land Use and Transportation respectively. The contractor will be required to submit an approved construction plan before the start of construction activity. Affected businesses and residences will be notified of construction activities in advance (including any necessary closures and detours), and reasonable efforts will be made to minimize traffic disruptions and access revisions during construction.

In some cases, the future use of affected property may change prior to any project acquisition. Mitigation will depend on the land use at the time of acquisition.

The Real Estate Services Division of WSDOT conducts all displacement negotiations as part of the acquisition process. WSDOT will conduct a negotiation for each property owner affected. The terms of the acquisition may include relocation assistance if the property owner is eligible. During the relocation negotiations, all reasonable options for minimizing the extent of the displacement are examined. FHWA and WSDOT may identify site-specific changes in the design of the facilities that could lessen the impact of the displacement. The *Displacement and Relocation Discipline Report* (WSDOT 2004) contains some suggestions on minimizing displacement impacts to specific properties.

Relocation Assistance

Where ROW acquisition is needed, the acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources are available to all relocated residents and businesses without discrimination. Chapters 8.08, 8.25, and 8.26 of the Revised Code of Washington govern ROW acquisition proceedings. These laws ensure fair and equitable treatment of those displaced. They also encourage and expedite acquisition of property by negotiation.

Federal and state laws require that no person can be required to move from his or her residence unless comparable replacement property is available for sale or rent within the displaced person's financial means. The location and sale price or rent of the comparable property is made available to the displaced individual.

The benefits for displaced business can include moving costs reimbursements, re-establishment costs, and fixed schedule moving options. The eligibility of the business for these benefits and the amounts will be determined at the time of displacement.

Availability of Replacement Housing and Commercial Businesses Relocation Sites

Replacement Housing

Relocation of displaced residents depends on the availability of residences similar in cost and access to services. Review of the study area on July 14, 2006, identified 186 single-family homes for sale. Eighty-three single-family homes for rent were identified, as well as 47 apartment complexes with vacancies. Therefore, more than adequate housing should be available for all persons displaced.

Commercial Business

In total, 45 listings of commercial land were available on August 14, 2001 within the project vicinity. The majority (21) of the land listings were in the Puyallup area. Fife had the second largest number of listings with 19, followed by Edgewood with four. All but four were sites greater than one acre in size. In addition, a total 20 listings of improved commercial properties were available. Six of the listings were for office properties, four retail, and ten industrial. All but three of the improved commercial listings were located in Puyallup, with the remainder located in Fife. Based on these findings, there appears to be adequate commercial space available within the vicinity of the proposed project area to accommodate displaced businesses.

Agricultural Lands

There is no requirement to replace the farmlands displaced by the project. Some of the farm operations may be eligible for benefits as displaced businesses. Locating suitable replacement farmlands will be difficult. Within Pierce County, there are 16,798 acres that are agricultural designated lands. Other rural designated land could be used for farming purposes (Erkkinen 2001). Many of these lands, like those in the study area, are under increasing development pressure to convert to commercial, industrial, or residential uses. These trends will continue in the future making farming a difficult business for which to find replacement lands.

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3.14 Transportation

3.14.1 Studies Performed and Coordination

The Tier I FEIS analyzed the transportation element of SR 167. Year 1990 traffic volumes were used for the existing condition. The Tier II EIS has been updated with year 2000 existing traffic volumes.

Studies documenting the transportation-related impacts of the proposed corridor included: traffic forecasts, analyses of traffic operations on the freeway, truck transportation analysis, arterial and local street systems, and evaluation of transportation safety. Bicycle and pedestrian facilities are discussed in Section 3.15. The project has a limited effect on other modes of transportation, including transit and rail so specific studies of these elements were not required.

Traffic Data

Existing transportation conditions were analyzed using several methods and data sources. Traffic volume counts and intersection turning movement data for the area south of I-5 were obtained from the Washington State Department of Transportation (WSDOT) and the City of Fife. Traffic counts were obtained from WSDOT, the City of Tacoma and City of Fife for the area north of I-5, including counts for the existing SR 509. WSDOT provided mainline and ramp traffic counts for I-5. Local traffic data for the existing roadway system, including truck routes, was obtained from WSDOT, City of Tacoma, City of Fife, City of Milton, and City of Puyallup.

Traffic Forecasts

Traffic forecasting for transportation projects is usually done for two time periods, the year the project will be opened and fully operational (year of opening 2015) and twenty years after construction is scheduled (the Design Year 2030). For the Tier II EIS, the year of construction was established to be 2010 and the design year established to be 2030 due to the magnitude of the project.

Two forecasting tools, the Puget Sound Regional Council (PSRC) and Pierce County EMME/2 Travel Demand Forecast Models (2001), were used in developing the 2030 traffic forecasts. Both models utilize the traditional four step modeling process: trip generation, trip distribution, mode split, and traffic assignment. The models use the 2030 land use, social economic, and transportation networks as input.

The PSRC model was developed to forecast Average Daily Traffic (ADT), AM and PM peak three hours, transit, high occupancy vehicle (HOV) and commuter rail passenger volumes. Since it has a regional focus, its traffic analysis zones (TAZ) are relatively large and the model networks include only major regional facilities. As a result, the model is able to generate more reasonable forecasts for major regional freeways, but the local surface street output for the network is fairly crude. The Pierce County model has a finer TAZ structure and includes more local roads, thus it is able to provide more reasonable forecasts for the local

transportation networks. The drawback of this model is that it does not have a calibrated AM peak hour model.

Since FHWA and WSDOT's standard practice is to analyze both AM and PM peak hour traffic, both models were used to generate more confident traffic forecasts for both peak periods. Most mainline volumes did not vary between AM and PM peak hour volumes, but some of the on-off ramps showed substantial differences between the two.

2030 Land Use Data

The initial 2030 land use data were developed by PSRC as a working draft for updating the PSRC's 2030 Metropolitan Transportation Plan. For the PSRC model, this set of data was used without modifications. For the Pierce County model, the regional land use forecast was reviewed and refined by Pierce County staff. The refinements, with PSRC's control total remaining fixed, were made to more accurately reflect the most recent housing growth trend and the potential developable lands available.

2030 Network Data

In order to represent the future transportation systems, both the PSRC and Pierce County models assumed completion of HOV lanes on I-5, existing SR 167, and SR 512. The PSRC model also reflected the completion of Canyon Road and the commuter rail from Seattle, via Puyallup, to Tacoma.

The traffic forecasts include AM and PM peak hour general purpose as well as HOV trips for the roads, freeway ramps, and intersections in the study area. According to the WSDOT long-range HOV policy and consistent with the PSRC *Metropolitan Transportation Plan* (PSRC 2001), HOV occupancy is defined as three people and above per vehicle in the year 2030.

Traffic Operations Analysis

Year 2000 and 2030 volumes were used for analysis of existing and design year traffic operations, respectively. Capacity and level of service (LOS) calculations for intersections and freeways were based on the 2000 *Highway Capacity Manual* (HCM) (WSDOT 2000). The *SR 167 Tier II EIS Traffic Report* covers the analysis in more detail (WSDOT 2001a).

The LOS concept uses qualitative measurements that characterize operational condition (speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience) within the traffic stream. There are six levels of service: LOS A represents free-flowing traffic, LOS B represents reasonably free-flow conditions, LOS C provides for stable operations (but flows approach the range in which small increases in flow will cause substantial deterioration in service), LOS D borders on unstable flow, LOS E describes operation at capacity, and LOS F describes unstable flow or stop and go conditions.

Both isolated and closely spaced or coordinated signal systems were analyzed using Synchro traffic software. The traffic forecast models described above were used to generate volumes (total vehicles per hour for each movement) required for analysis. LOS calculations for unsignalized intersections are based on the

delay for each stop-controlled movement not for the overall intersection. LOS was computed using Highway Capacity Software. For urban or suburban areas, the reserve capacity at LOS D is considered to be acceptable. Lower levels of service (LOS E or LOS F) indicate that the traffic on side streets will experience unacceptable delays.

3.14.2 Affected Environment

The project's study area is bounded by the proposed SR 167/SR 509 interchange to the west, the I-5/SR 18 interchange to the north, the SR 167/SR 410 interchange to the southeast, and the I-5/ Port of Tacoma Road Interchange to the southwest. The transportation network within the study area is illustrated in Figure 3.14-1.

Existing Freeway Network

The study area is served by I-5, the primary north-south freeway route on the West Coast, and a number of principal, minor and collector streets as shown in Figure 3.14-2. I-5 serves as the principal north-south arterial in the Puget Sound region. North of the study area, SR 18 provides the link to I-90 and destinations east.

Within the project area, I-5 consists of four travel lanes in each direction. Interchanges are provided at Portland Avenue/Bay Street (the connection to the existing SR 167 via River Road), Port of Tacoma Road and 54th Avenue East. 70th Avenue East and Porter Way bridges cross over I-5.

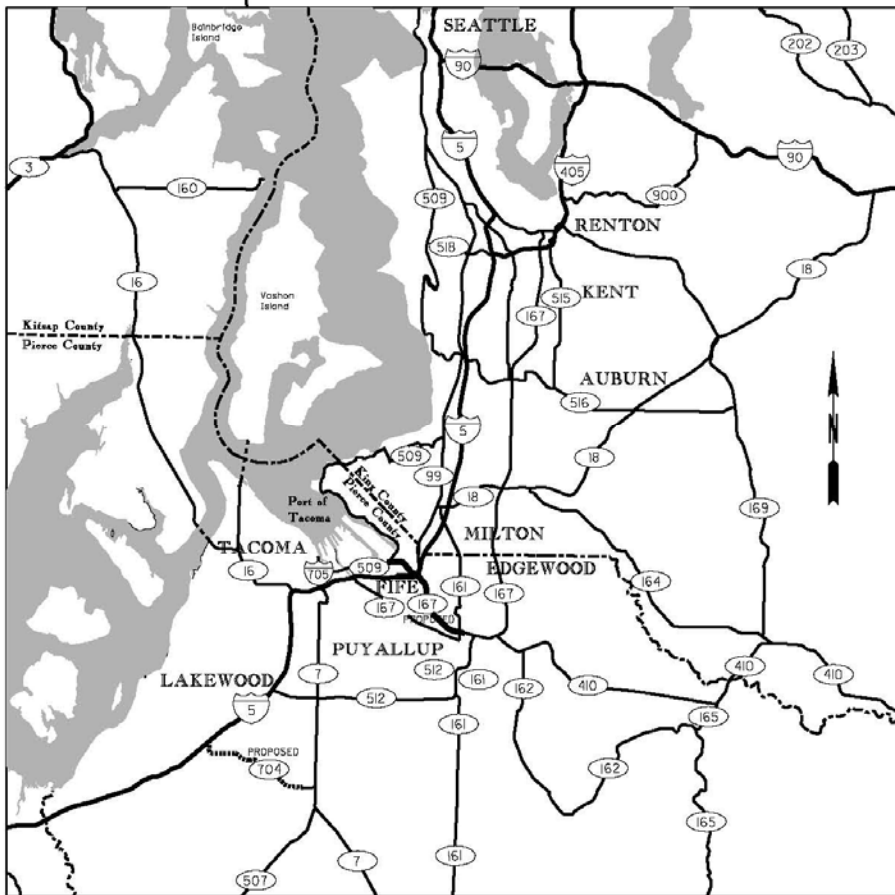
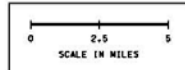
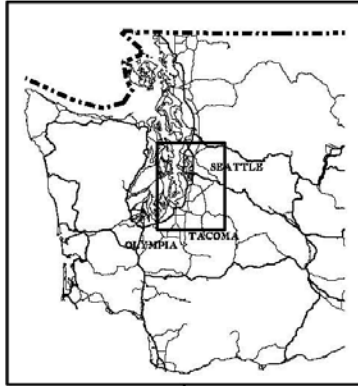
I-705 provides a freeway connection between I-5 and downtown Tacoma. It branches off of I-5 west of the Puyallup River, on the western edge of the project area, and extends north with interchanges at South 21st Street, South 15th Street, and South 11th Street.

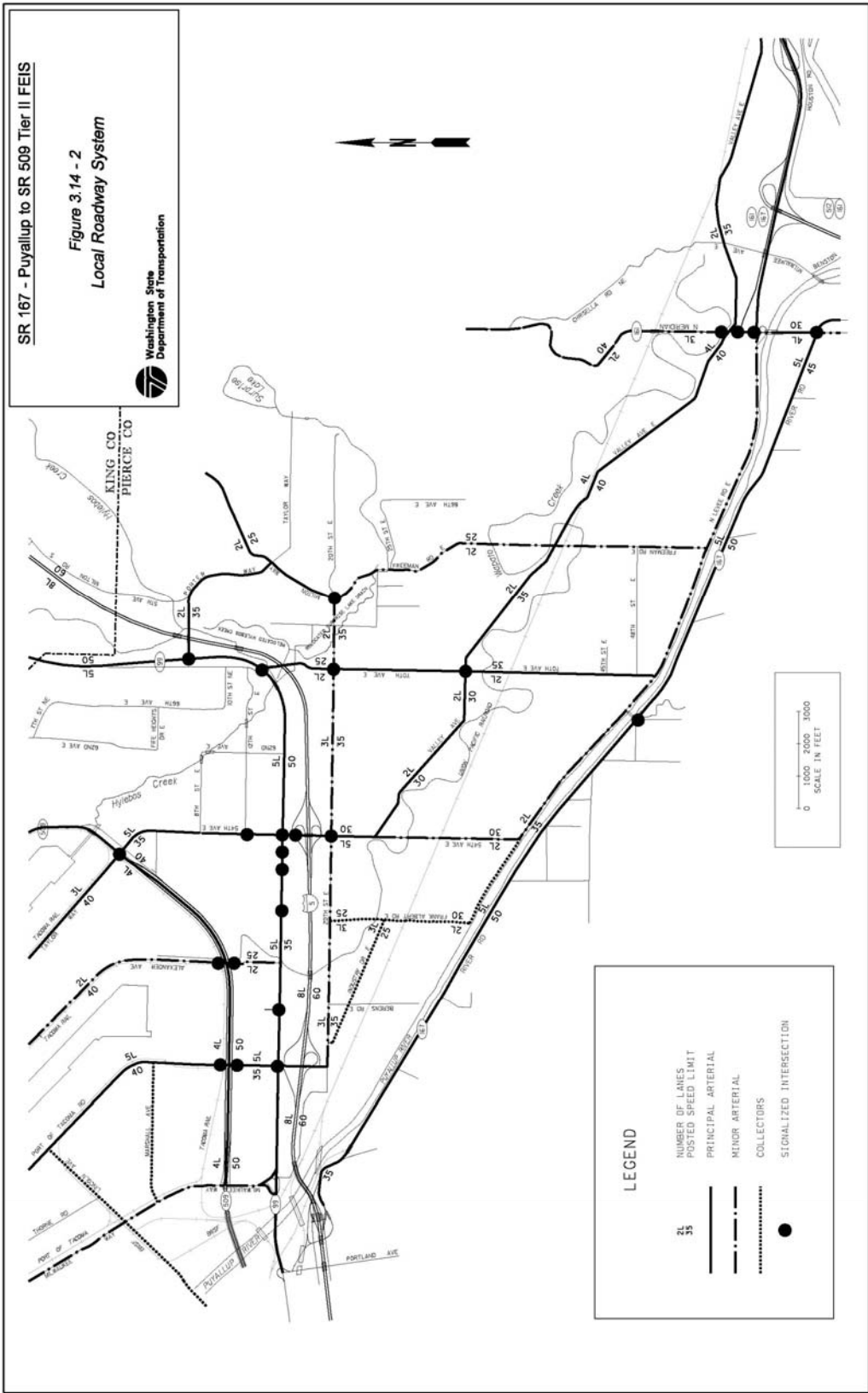
SR 509 provides east-west access to the Port of Tacoma as well as northeastern Tacoma. Currently, a four-lane facility is in operation from I-705 to Port of Tacoma Road.

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.14 - 1

Regional Highway System





The southeastern portion of the project study area is served by the SR 512/SR 161 and SR 167 freeways. Both these facilities currently terminate in the vicinity of North Meridian, immediately north of the Puyallup River. SR 167 provides the following connections:

- SR 410 freeway to Bonney Lake
- SR 410 to Yakima via Cayuse/Chinook Pass and/or White Pass
- SR 18 in Auburn connecting to I-90 west of North Bend
- I-405 in Renton

The Auburn to Renton section of the SR 167 freeway serves a major regional distribution and employment center. The SR 512 freeway provides access from Puyallup to I-5 in Lakewood. WSDOT is responsible for the operation and maintenance of all freeways within the project area.

Existing Surface Streets

North of I-5, the arterial network has not been fully developed. Port of Tacoma Road and 54th Avenue East provide direct routes between I-5 and the Port of Tacoma. North of Port of Tacoma Road, SR 509 (East 11th Street) has not been developed into a limited access freeway.

In general, the arterial network is not well developed south of I-5. Through traffic between the SR 167 and SR 512 freeways and I-5 or the Port of Tacoma and Tacoma central business district areas is routed onto either Valley Avenue or existing SR 167 on River Road between these points. A high percentage of truck traffic from the east is forced to use these routes to access the Port. This traffic, in combination with locally generated traffic, results in high traffic demands on the existing local system.

Non-freeway arterial routes operated by WSDOT include East 11th Street (SR 509), Pacific Highway (SR 99), River Road (SR 167), and North Meridian (SR 161).

Phase 1 of the SR 509 East-West corridor project built a four-lane freeway from Pacific Avenue to Milwaukee Way. The second phase of this project is not yet funded for completion. It will extend the four-lane freeway in the parkway median from Milwaukee Way to north of Taylor Way, with grade separations at Alexander Avenue and Taylor Way. Since the Tier II DEIS was published, the City of Tacoma, Pierce County, and Port of Tacoma staff have coordinated the closure of Alexander Avenue north of SR 509.

River Road (SR 167) is a five-lane principal arterial, functioning as the link between I-5 in Tacoma and the existing SR 167 freeway near Puyallup. Pacific Highway is a four-lane principal arterial east of 54th Avenue East managed by WSDOT. West of 54th Avenue East, it is a city street owned by the City of Tacoma. North of Valley Avenue East, North Meridian (SR 161) is a two lane minor arterial that serves as a route to I-5 in Federal Way north from Puyallup.

Principal arterials that are operated by Pierce County or other local jurisdictions include 54th Avenue East, Pacific Highway East, 70th Avenue East, Valley Avenue East and Port of Tacoma Road. Valley Avenue East is an existing two-lane road (with four lanes between Freeman Road East and North Meridian) connecting the cities of Fife and Puyallup. North of 24th Street East, this route continues as 54th Avenue East, which has been widened to three lanes south of I-5 and five lanes north of I-5, where it provides access to the Port of Tacoma. The principal existing access route to the Port from I-5 is Port of Tacoma Road, a five-lane surface street. The City of Fife is currently making capacity improvements to the Port of Tacoma Road/Pacific Highway intersection.

Other locally maintained minor arterial streets within the project area include 20th Street East, 54th Avenue East (south of Valley Avenue), North Levee Road East, and Freeman Road East. These streets are generally two lanes wide. As adjacent land is developed, continuous center two-way left turn lanes have been constructed on these streets. At present numerous gaps remain.

Existing (2000) Traffic Volumes

Selected average daily traffic volumes on the freeways and streets within the project area are displayed on Figure 3.14-3. These volumes are based on traffic counts conducted by the jurisdiction operating the various facilities. Where year 2000 data is not available, the traffic volumes were estimated by applying growth factors to earlier counts. The project traffic data will be reviewed and updated as necessary in the design phase of the project development.

Roadway Capacity

Most existing capacity restrictions are in the vicinity of principal arterial intersections or freeway interchanges. Freeway mainline and interchange operations as well as key intersections on the surface street system are explained below.

Freeways

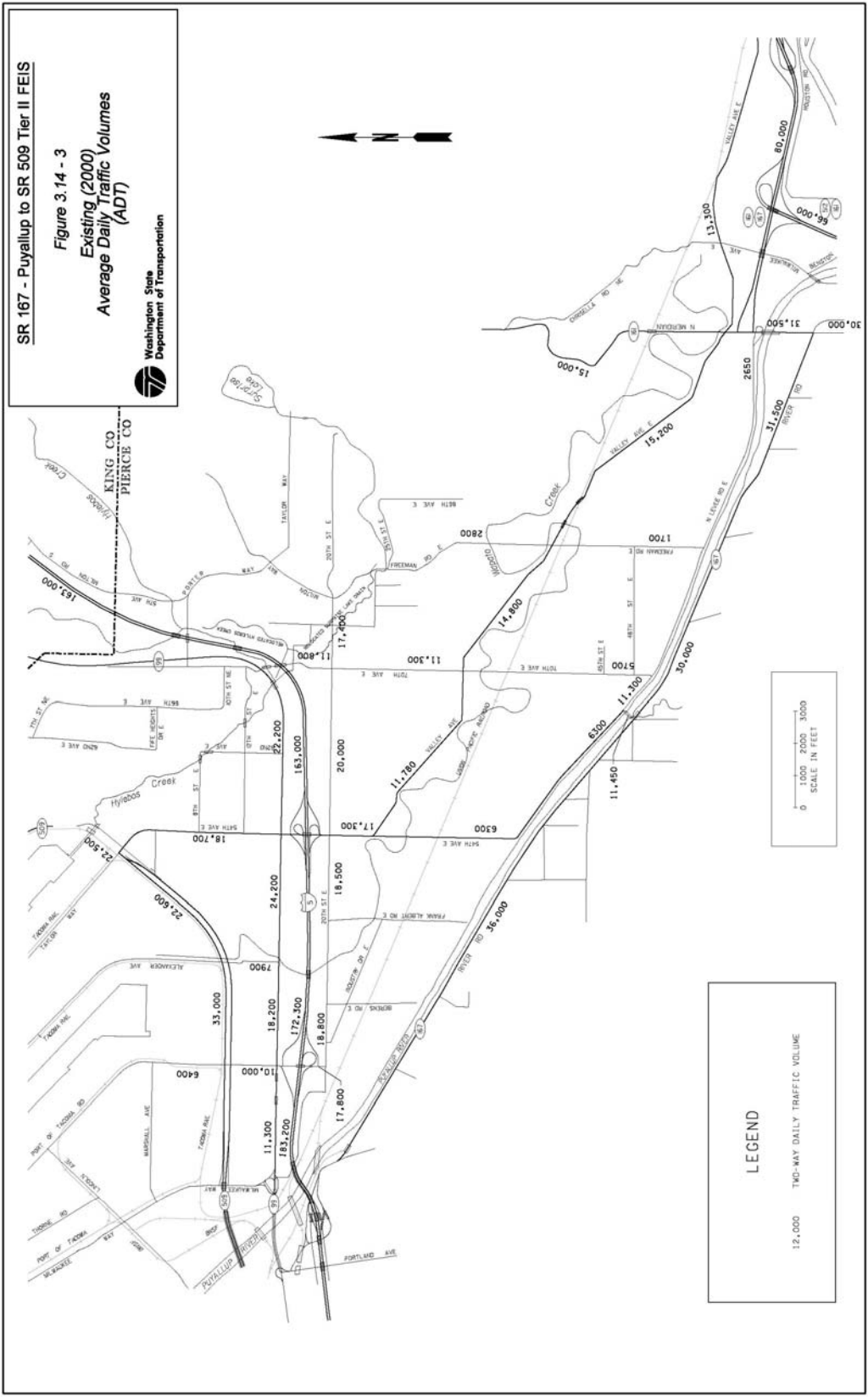
In the year 2000, traffic studies undertaken by WSDOT provided data used to analyze existing freeway operations.

I-5 operates at 65 mph during the AM and PM peak hours, with the exception of southbound (SB) PM, which operates at 60 mph. Traffic flow on I-5 through the study area is within acceptable levels during the AM/PM peak hours, except southbound PM peak hour.

The SB I-5 exit ramps serving traffic to Fife at Port of Tacoma Road and 54th Avenue East interchanges operate at LOS C and LOS F respectively.

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.14 - 3
Existing (2000)
Average Daily Traffic Volumes
(ADT)



Surface Streets

The capacity of the local roadway system is generally controlled by both signalized and unsignalized intersections. Those intersections nearest existing interchanges on I-5 and at the terminus of the freeway section of SR 167 experience the highest levels of peak-period traffic demands near or over their capacity. Figure 3.14-4 and Table 3.14-1 show existing (year 2000) PM peak hour operations at key intersections.

The existing SR 167 route between SR 161 and I-5 is on surface streets through the City of Puyallup via North Meridian and River Road. Several intersections operate at over-capacity conditions during peak periods resulting in traffic backups and delays. High traffic volumes on River Road result in poor levels of service for traffic turning out of side streets, particularly at higher-volume locations such as the intersection of River Road and Pioneer Way. WSDOT continues to make operational improvements to decrease traffic delay.

An alternate route from SR 161 to I-5 winds through Fife via Valley Avenue and 54th Avenue East. The proximity of intersections on 54th Avenue East near I-5 combined with high truck volumes, high turning volumes, and inadequate lane configurations; result in delays for traffic passing through these intersections. The intersections at 54th Avenue East and I-5 northbound (NB) and I-5 SB ramps operate at LOS F. The intersection of 54th Avenue East and 20th Street East operates at a LOS E. WSDOT completed some signalization and channelization modifications in the 1990s, which improved intersection operations temporarily, until traffic volumes increased.

The City of Fife has made capacity improvements to Valley Avenue and 54th Avenue East. The City of Puyallup has widened Valley Avenue to four lanes between SR 161 and Freeman Road. The City of Fife is currently designing the widening of Valley Avenue to four lanes between Freeman Road and 70th Avenue East.

Intersections in the vicinity of the Port of Tacoma Road interchange on I-5 are similarly experiencing traffic demands near or greater than their capacity. The intersections with SR 99 and with 20th Street East operate at LOS E and LOS F respectively. WSDOT has made several attempts to improve operations with signal timing adjustments, but traffic volumes are continuing to increase. The high volume of trucks (30 to 40 percent daily on Port of Tacoma Road) that use the interchange further add to this problem (WS LTC 1996).

SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.14 - 4
Existing (2000) P.M. Peak Hour
Level-of-Service

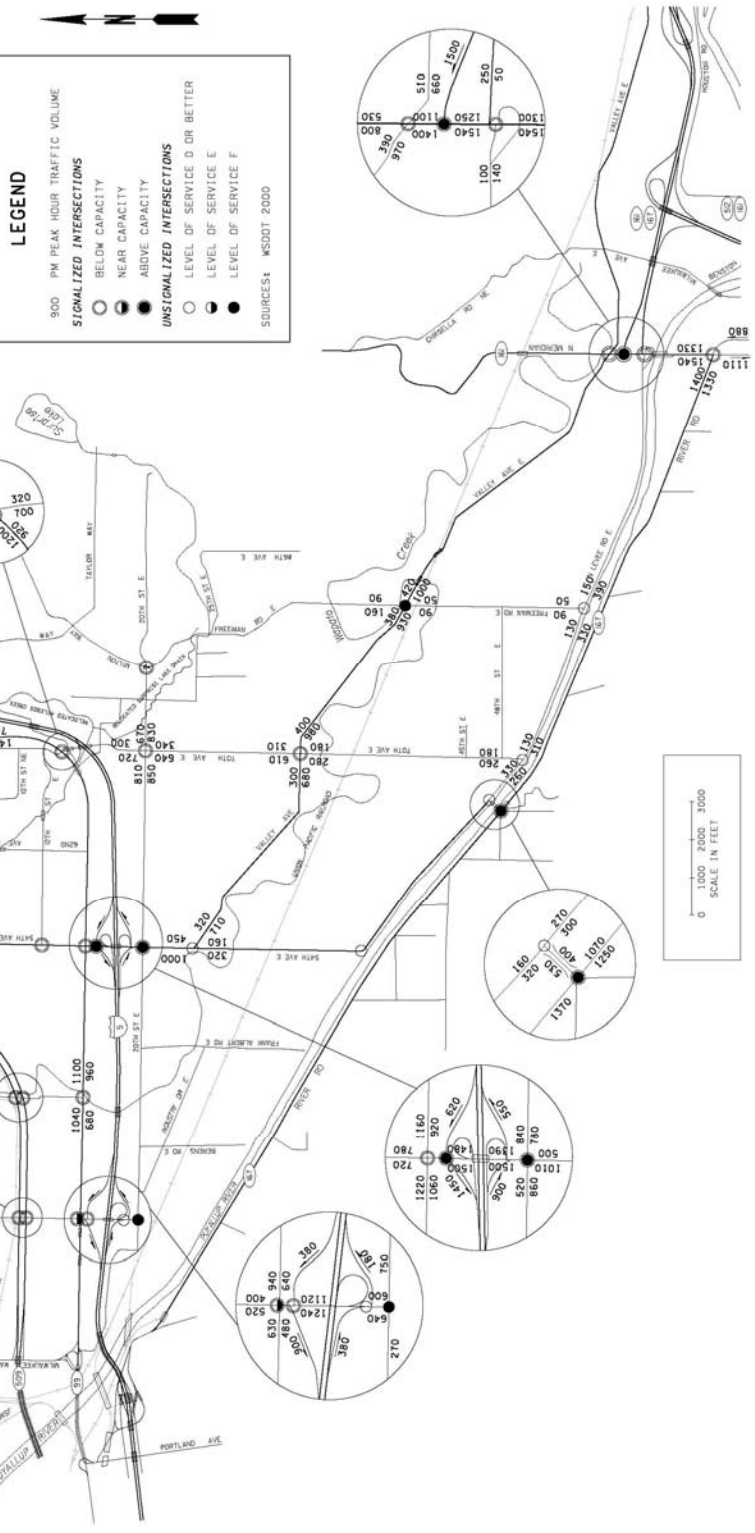


Table 3.14-1: Study Area Intersections - Level of Service

Intersection Locations		Year 2030		
		2000	No-Build	Build
Port of Tacoma Road and 20 th Avenue		F	F	F
Port of Tacoma Road and NB 5 on/off ramp		B	F	E
Port of Tacoma Road and SB 5 on/off ramp		C	F	F
Port of Tacoma Road and SR 99	Signal	E	F	F
Port of Tacoma Road and NB SR 509	Signal	B	N/A	B
Port of Tacoma Road and SB SR 509	Signal	B	N/A	D
Alexander Avenue and SR 99	Signal	C	C	C
Alexander Avenue and NB SR 509	Signal	C	F	N/A
Alexander Avenue and SB SR 509	Signal	C	F	N/A
54 th Avenue and Valley Avenue		B	F	B
54 th Avenue and 20 th Avenue	Signal	F	F	C
54 th Avenue and NB 5 on ramp (SB left and NB right from 54 th)		F	F	F
54 th Avenue and NB 5 off ramp (to SB 54 th Avenue)		D	F	F
54 th Avenue and SB 5 on/off ramp	Signal	F	F	B
54 th Avenue and SR 99	Signal	D	F	F
54 th Avenue and 12 th Street	Signal	A	D	C
54 th Avenue and SR 509	Signal	B	F	F
54 th Avenue and SR 167 on ramp	Future Signal	N/A	N/A	A
54 th Avenue and SR 167 off ramp	Future Signal	N/A	N/A	B
SR 99 and Porter Way	Signal	D	F	C
SR 99 and 70 th Avenue	Signal	B	F	F
70 th Avenue and 20 th Avenue	Signal	D	F	B
70 th Avenue and Valley Avenue	Signal	C	F	F
70 th Avenue and North Levee Road		B	C	B
Pioneer Way and SR 512 WB ramps	Signal	B	C	B
Pioneer Way and SR 512 EB ramps	Signal	B	B	B
66 th Street and existing SR 167	Signal	F	F	F
66 th Street and North Levee Road		F	No Data	No Data
Freeman Road and 20 th Avenue	Signal	No Data	No Data	No Data
Freeman Road and Valley Avenue		F	F	F
82nd and North Levee Road		A	E	B
Meridian Avenue and River Road (existing SR 167)	Signal	C	F	F
Meridian Avenue/ NB at city street		B	F	F
Meridian Avenue and SR 167	Signal	F	F	D
Meridian Avenue and Valley Avenue	Signal	C	F	F
Meridian Avenue and SB at North Levee Road	Signal	C	F	F
Valley Avenue and SR 167 NB ramps	Future Signal	N/A	N/A	A
Valley Avenue and SR 167 SB ramps	Future Signal	N/A	N/A	A

Transportation Safety

The Tier I FEIS accident data analysis sufficiently reflects the safety conditions on the existing freeway and local street system. As identified in the Tier I EIS, severe congestion and inadequate intersection geometry on both networks continues to attribute to areas with high accident rates.

Existing SR 167(River Road) Collision Data

The following is a summary of the collisions on the River Road segment of SR 167. This data is for the time period January 1, 2003 through July 31, 2006:

SR 167, I-5 to Puyallup City Limits (MP 0 to MP 5.23)

Year	# Collisions	Collision Rate	Statewide Rate
2003	102	2.06	2.41
2004	86	1.67	2.36
2005	147	2.75	2.56

(2006 Thru July 31, 2006 there have already been 82 collisions)

Further analysis on I-5 has been completed in preparation of the Access Point Decision Report required by Federal Highway Administration. Several locations on I-5 Ramps within the project study limits have been identified as High Accident Locations (HAL) in 2002:

- NB On Ramp at existing SR 167
- SB Off Ramp at Port of Tacoma Road
- NB Off Ramp at 54th Avenue East
- NB Loop Off Ramp at 54th Avenue East
- SB Off Ramp at 54th Avenue East

Heavy volumes of traffic, geometrics that do not meet current standards, and interchange-related congestion are the primary contributing factors to the accidents. This project and other Core HOV projects will correct some of the geometric deficiencies. As for the congestion related accidents, the proposed SR 167 project will provide relief with the addition of the SR 167/54th Avenue East Interchange.

The HAL safety locations listed herein were addressed in some manner during the 2003-2005 biennium. WSDOT is required to study those locations, identifying how best to reduce the number and severity of accidents. WSDOT often uses the application of appropriate Transportation System Management Strategies described in Section 3.14.5 to relieve congestion, thus lowering accidents.

The statewide accident rate (number of accidents per million vehicle miles) for urban interstate is 1.60 based on the 1996 Washington State Highway Accident Report (WSDOT 1996). The 1999-2000 accident rate for I-5 south of 54th Avenue East (including ramps) is 1.02 and north of 54th Avenue East is 0.76, both well below the statewide averages.

Port, Rail, and Transit Facilities

Major regional non-highway transportation facilities and services exist within the project area and are described below. These facilities include the Port of Tacoma, numerous railroad operations, and transit service providers. Both Pierce Transit and Sound Transit provide express regional commuter services.

Port of Tacoma

The Port of Tacoma generates large volumes of traffic and the facility will benefit from the improved connections to I-5 and completion of SR 167 extension to the Port. In recent years the Port of Tacoma has become one of the major container ports on the West Coast, serving as a transfer point from rail to ship for cargo destined for Pacific Rim ports from Midwest, East Coast, and European origins (and vice-versa). Containerized cargo with origins or destinations in the Northwest is trucked from the Port, resulting in high numbers of container hauling trucks in and out of the Port on the regional highway system. Other activities that also generate large volumes of truck traffic include: auto handling, log handling, break-bulk, and dry-bulk facilities. Land use in Fife will also complement the Port area with warehousing and industrial complexes nearby.

The Port is participating in the Freight Action Strategy Corridor program which is a regional effort to increase the efficiency of moving freight and people in and around Puget Sound. A result of that effort is the recently completed Port of Tacoma Road overpass of SR 509 and new railroad tracks that run parallel to SR 509.

The 1997 removal of the 11th Street Bridge has created opportunities for growth in the Blair Waterway area. The Port has recently completed the Blair Waterway dredging and has plans to further widen the Waterway. The dredging and widening are both elements of the Port of Tacoma 2020 Master Plan. The Puyallup Tribe of Indians also owns property on the Waterway and is jointly working with the Port to develop the Waterway property. The plan will allow the development of a world-class container terminal facility.

Rail Operations

The project area is served by two intercontinental railroads and a local short line railroad. Existing rail lines provide passenger and freight service between the Seattle-Tacoma and the Portland metropolitan areas. The Port of Tacoma generates a large volume of rail traffic. Goods transported by rail, destined for other Pacific Rim ports from Midwest, East Coast and European origins (and vice-versa), are transferred between rail and ship at the Port of Tacoma.

Tacoma Rail, an operating division of Tacoma Public Utilities, switches freight between the two intercontinental railroads and Tacoma industries. Its customers

include the Port of Tacoma. Tacoma Rail also has a maintenance-servicing track for CEECO. Tacoma Rail provides service 24 hours a day, seven days a week. The Tidelands Division has 38 miles of track located north of SR 509.

The Burlington Northern Santa Fe (BNSF) Railroad operates between Seattle and Tacoma on a double track mainline, which continues south to Vancouver, Washington. Between Seattle and Tacoma, it passes through the cities of Tukwila, Renton, Kent, Auburn, Pacific, Sumner and Puyallup. Approximately 60 freight trains operate daily on the line. The Amtrak Coast Starlight and Cascade runs also uses the mainline eight times daily for passenger service through Seattle and Tacoma. The BNSF mainline is located on the south side of the Puyallup River. The BNSF track serving the Port of Tacoma is located west of Port of Tacoma Road. Neither track is directly affected by the project.

The Central Puget Sound Regional Transit Authority Sound Transit commuter rail commuter service established in September of 2000 operates four daily commuter runs on the BNSF mainline. This service currently averages more than 3,000 passengers daily between Seattle and Tacoma, passing through the Port area.

The Union Pacific Railroad (UPRR) mainline operates a single track through the southern portion of the project area. The mainline tracks are part of the UPRR Seattle to Tacoma mainline. Railroad yard facilities are located south of I-5, in the vicinity of Frank Albert Road. South of Tacoma to Portland, Oregon, UPRR trains operate on BNSF tracks. Approximately 16 trains each day use the Seattle to Tacoma mainline. With the exception of Valley Avenue and Frank Albert Road, local arterial streets cross the railroad at grade. Railroad officials continue to stress that all additional crossings within the project area will require grade separation designs. (WSDOT Rail Division Office 2001b)

Transit

The project lies within the Pierce County Public Benefit Area and Sound Transit (ST) service boundary. Pierce Transit provides bus service within this area. Local routes connect Tacoma and Fife with Federal Way, Puyallup, and Milton areas. Pierce Transit and ST also operate express bus service on I-5, connecting Tacoma with Lakewood and Seattle. The Tacoma Dome Station, a 2400 stall facility, serves as a transportation hub for local transit service and regional express service connections for ST express bus service. The Station also serves as destination for ST commuter rail Seattle/Tacoma connection. Greyhound and Northwestern Trailways Bus terminal with services to Seattle and Portland via I-5 are also located in the vicinity. The following local transit routes operate in the study area:

- Route 65 between downtown Tacoma to points south of Valley Avenue i.e., 45th Court East via Milwaukee Way, 20th Street East, 70th Avenue East and Valley Avenue
- Route 402 between Federal Way, Puyallup, and Graham via SR 161 and North Meridian

- Route 490 South Hill to Tacoma express via Pioneer Way East
- Route 500 between downtown Tacoma to Federal Way via Pacific Avenue and 20th Street East
- Route 501 between downtown Tacoma to Federal Way, via 20th Street East

Express bus service is provided in the I-5 corridor to SeaTac airport and downtown Seattle, downtown Tacoma, and Olympia. The following routes pass through the study area:

- Express Route 574 between the Lakewood Transit Center, Tacoma Dome Station to SeaTac Airport via I-5
- Express Route 582 between Bonney Lake to downtown Tacoma express via River Road
- 590 between downtown Tacoma, Tacoma Dome Station to Seattle via I-5
- 591 between Lakewood, Tacoma Dome Station to Seattle via I-5
- 592 between DuPont, Lakewood to Seattle via I-5
- 594 midday and weekends between Lakewood, downtown Tacoma, Tacoma Dome Station to Seattle via I-5
- 595 between Purdy, Gig Harbor, Narrows Park and Ride, Tacoma Community College to Seattle via I-5

Pierce Transit began direct Pierce County to Seattle express transit service in 1990. Sound Transit commenced service between Seattle and Tacoma in 1999. ST service is currently operating from the Lakewood park and ride lot in the vicinity of SR 512/I-5 interchange, Tacoma Community College, Kimball Drive via SR 16, downtown Tacoma and the Tacoma Dome Station. Extended Regional service connections are also operating from the Intercity Transit Olympia downtown station via I-5. ST opened a new transit station in DuPont in February 2003. The ST long-range vision for electric light-rail includes the possibility of a future high-capacity transit corridor running south along I-5 through SR 167.

Park and Ride Lots

Alternative 2 of the Tier I FEIS suggested the possibility of locating a park and ride lot within the project's acquired right-of-way in the area of I-5/SR 167. Preliminary park and ride lot site findings have determined that the area lacks adequate property and direct freeway access and will not be further considered.

In 1989, Pierce Transit began studies to locate a park and ride lot in north Pierce County between downtown Tacoma and King County. A 1990 effort indicated a need for roughly 2,800 stalls along the I-5 corridor from Federal Way south.

A January 2001 WSDOT Puget Sound Park and Ride System Update report indicated a corridor level demand for year 2020 as follows:

- I-5 Central park and ride lots (I-5 Tacoma North) 960 to 1,060 stalls
- Valley park and ride lots (SR 167/Sumner Station and Puyallup Station) 730 to 930 stalls combined.

The SR 167 Tier I FEIS proposed upwards of 1,500 stalls be established within the project corridor. The report recommended a 500-stall site in the vicinity of SR 167/SR 161 interchange and a 1,000 stall lot along the I-5 corridor.

Pierce Transit has recommended the addition of two park and ride lots in the project corridor: one in the vicinity of the southwest quadrant of the Valley Avenue Interchange and one southwest of the Valley Avenue and SR 161 Intersection (Pierce Transit 2002). These two recommended park and ride lot locations have been included in this FEIS.

Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities are covered in more detail in Section 3.15. The discussion herein summarizes some details relating to transportation.

Pedestrian facilities within the project area are limited. With exceptions of the local street system in the city of Fife, sidewalk facilities are relatively nonexistent or discontinuous. Gaps in existing facilities are being filled in as adjacent land is being redeveloped from agricultural to commercial, or industrial uses. Pedestrian use of the existing facilities is light, due to the relatively low density of existing land uses and the lack of adequate pedestrian facilities.

Bicycle facilities are also relatively undeveloped within the project area. The completion of SR 509 affords the experienced bicyclist a substantial east-west corridor in lieu of the permanent bicycle prohibition on I-5. The cities of Fife, Milton, Edgewood, and Puyallup transportation plans do identify a multitude of facility improvements for bicycle travel. Existing bicycle activity in the project area is light, again due to relatively low land use densities and a lack of safe and desirable facilities along existing roads. Complete bicycle route information is contained in the *Pedestrian and Bicycle Discipline Report*. The project will accommodate the Interurban Trail and re-establish the public access connection to the trail in the vicinity of 70th Avenue East and I-5. The relocated portion of the trail will be ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife pedestrian and bicycle facilities. The Interurban Trail is a recreational 4(f) facility and additional information is included in subsection 5.4.2 of this FEIS.

Nearly all of the project's mainline shoulders would serve to create a new travel corridor for experienced bicycle riders. A separate multiuse path is planned north of SR 167 approximately from 54th Avenue East Interchange to SR 99. Traffic volumes, ramp movements and vehicle speeds create unsafe conditions on the I-5 Interchange facility and on southbound SR 167 between 54th Avenue East and SR 509 and warrant a bicycle prohibition through these segments of the project.

Long-range local transportation plans identify pedestrian and bicycle facility route improvements. The improvements are essentially beyond the constrained funding levels of local municipalities that would serve to increase pedestrian and bicycle mobility opportunities. Local roadways intersecting the project will accommodate pedestrian travel based on WSDOT design practices and local jurisdiction roadway design.

3.14.3 Impacts of Operation

Year 2030 traffic forecasts have been developed for the No Build and Build Alternatives to determine the effects of the project on traffic circulation. These forecasts help determine congestion and level of service impacts, capacity and circulation changes, and potential safety impacts associated with each alternative. Impacts on Port of Tacoma, railroad, transit, pedestrian and bicycle facilities have also been studied.

No Build Alternative

Completion of SR 509 and the regional HOV lane projects represent the only major changes to the regional highway system with the No Action Alternative. Several changes to the surface street system are planned by local jurisdictions: widening Pacific Highway, 54th Avenue East, and Valley Avenue within the city of Fife; widening Valley Avenue between North Meridian and Freeman Road East; and the completion of Canyon Road which has yet to be funded.

Traffic Projections

Within the project study area, large traffic volume increases are expected to occur between year 2000 and 2030. Rezoning by the city of Fife has led to a rapid land use shift from agriculture to light industrial and manufacturing. Figure 3.14-5 displays projected year 2030 average daily traffic volumes on the local roadway system. (Included in the projections are the planned surface street improvements listed above.) With the No Build Alternative, the largest traffic increases would occur on the surface street system as more development in the Puyallup Valley leads to more vehicles on the local system.

Total traffic generated within the Tacoma Tideflats area (between Commencement Bay and I-5) is forecast to increase from a 1996 daily total of 63,300 auto and truck trips to 105,400 daily trips in 2020. This represents a growth rate of about 2.1 percent per year (WS LTC 1996). Substantial increases in traffic will occur on Pacific Highway (SR 99), where daily traffic volumes are forecast to increase from 24,200 to 43,000 (nearly 77 percent) from year 2000 to 2030. Daily traffic volumes on I-5 through the project area are forecast to increase 32 percent over existing year 2000 levels, from 163,000 to 214,500 in year 2030.

On the local street network, traffic volumes on River Road and Valley Avenue, both of which function as connectors between the end of the SR 167 freeway and I-5, would be expected to nearly double between the year 2000 and 2030. Near 70th Avenue East, River Road volumes are anticipated to increase from 30,000 to 44,000 and Valley Road from 11,780 to 22,000. Substantial traffic increases

would also occur on North Levee Road as well as SR 161 (North Meridian) (Figures 3.14-3 and 3.14-5). Directional Design Hourly Volumes predicted for the No Build Alternative in 2030 are presented in Figure 3.14-6.

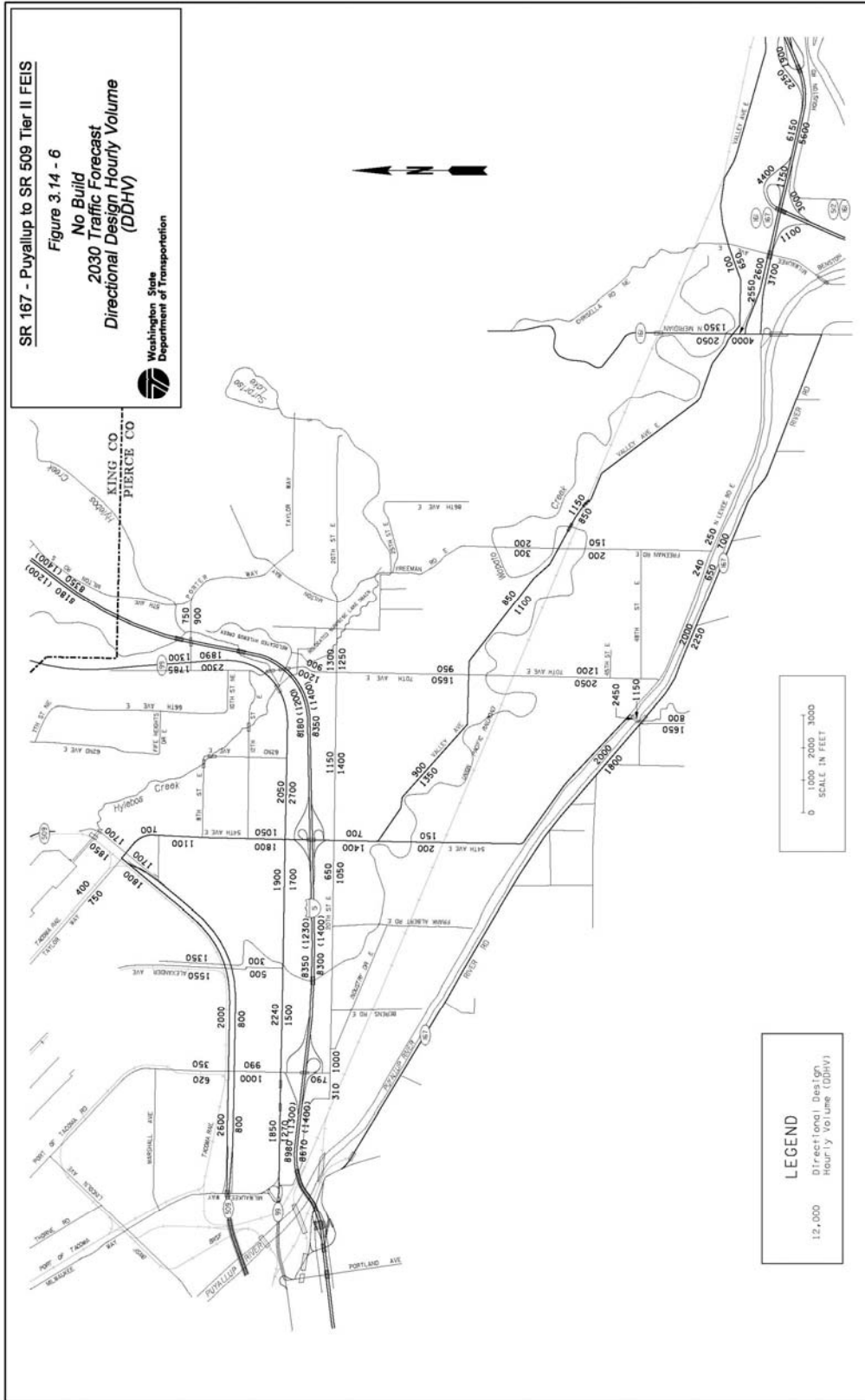
Congestion and Traffic Operations Impacts

With the projected growth in traffic and a relatively small number of capacity improvements, congestion of freeway and surface street facilities would be expected to increase with the No Build Alternative. On I-5, the mainline level of service during peak periods is expected to drop to LOS E or LOS F in some sections in the year 2030. I-5 in the study area will be particularly congested northbound in the morning and southbound in the evening peak periods. Some improved LOS would be realized during the No Build SB AM peak hour; this is due to the planned HOV lane addition included in the modeling (Table 3.14-2).

Under the No Build Alternative, many surface street intersections within the project area would experience traffic demands greater than their capacity, operating at LOS E or LOS F (Table 3.14-1).

Table 3.14-2: I-5 Peak Hour Level of Service

I-5 Section	2000 Existing		2030 No Build		2030 Build	
	AM	PM	AM	PM	AM	PM
Northbound						
Puyallup River to Port of Tacoma Road	D	D	F	F	F	F
Port of Tacoma Road to 54th Avenue East	D	C	E	D	D	D
54th Avenue East to SR 167 (proposed)	D	C	F	D	C	C
SR 167 (proposed) to SR 18					F	E
Southbound						
SR 18 to SR 167 (proposed)					D	F
SR 167 (proposed) to 54th Avenue East	C	E	C	F	C	C
54th Avenue East to Port of Tacoma Road	D	D	C	E	C	D
Port of Tacoma Road to Puyallup River	D	F	C	F	D	F



Circulation Changes

North of I-5, the principal traffic circulation changes are associated with SR 509. Trucks exiting the Port of Tacoma have access to southbound I-5 via SR 509 and I-705. Those trucks traveling east or north can access I-5 northbound via the recent improvements on the Port of Tacoma Road. However, those improvements moved the existing congestion problems from the railroad tracks to the I-5 ramp intersections at Port of Tacoma Road. As quoted previously, truck traffic accounts for 30 to 40 percent of the traffic on Port of Tacoma Road (WS LTC 1996). Drivers are now seeking alternative routes via SR 99 and 54th Avenue East Interchange to avoid the congestion.

South of I-5, increased congestion levels on the existing highway and street system would likely lead to increased volumes on secondary routes. To avoid congestion on River Road and Valley Avenue, drivers would seek out alternative routes on North Levee Road, 54th Avenue East and 70th Avenue East.

Safety Impacts

As traffic volumes increase on the I-5 and local street system, the number of accidents would also increase. The influx of the number of trucks using the surface street system could increase the severity of the accidents occurring due to increased congestion. The accident rates at current problem areas, such as on I-5 ramps or along River Road would likely increase.

Impacts on Port, Railroad and Transit Facilities

The No Build Alternative would not provide any additional access to the Port of Tacoma from the regional freeway system, particularly to the north via I-5 or east via SR 167, which in turn connect to SR 18 and I-90. Substantial growth in Port-generated truck traffic could be expected to increase congestion on routes leading to and from the Port facilities. The additional time required to access the Port could increase shipping times.

The No Build Alternative would not seriously affect railroad facilities. However, more rail traffic and more truck traffic at crossings would result in longer delays and decreased safety at at-grade crossings.

Without the extension of SR 167 freeway between North Puyallup and I-5, there would not be an opportunity to connect the planned I-5 HOV facilities with SR 512 and SR 167. Transit routes would experience congestion without designated lanes for travel.

Impacts on Bicycle Travel

The No Build Alternative, as it relates to the existing local roadway system and the non-motorized user, would continue the degradation of non-motorized travel options, alternatives and mobility opportunities. The increased traffic volumes associated with the no build alternative would further lessen safety and livable community aspects for non-motorized users. Under the No Build scenario, no major improvements would be made to the existing local roadway facility network within the project area other than those that would be made by the local jurisdictions.

Build Alternative (Preferred)

The SR 167 freeway will be extended from its current terminus at North Meridian (SR 161) to I-5 and tie into SR 509. Interchanges will be provided at 54th Avenue East, I-5, Valley Avenue and SR 167. The proposed alignment and interchanges are described in more detail in Chapter 2 of this document. The other improvements discussed in the No Build Alternative will also be constructed: SR 509, widening SR 99, the widening of several surface streets, and the completion of Canyon Road when funding occurs.

Traffic Projections

Projected average daily traffic volumes for the freeways and local surface network are displayed in Figure 3.14-7. Between I-5 and SR 509, the new freeway segment will carry approximately 42,000 vehicles per day (vpd); from I-5 to SR 161, about 100,000 vpd. The predominant traffic movements at the SR 167 and I-5 Interchange will be to and from the north, followed by traffic to and from the south. Predicted Directional Design Hourly Volumes for the Build Alternative are shown in Figure 3.14-8.

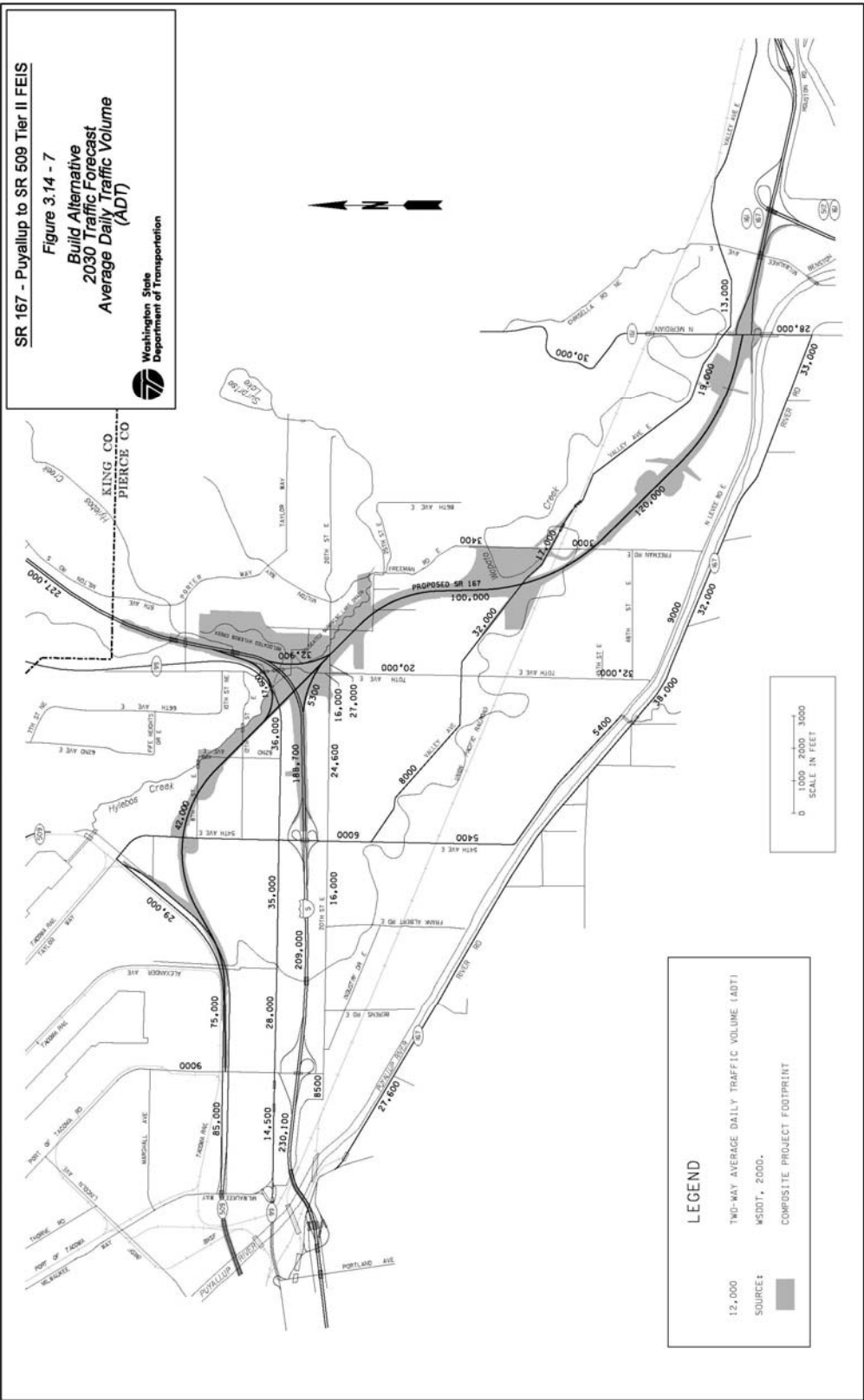
On I-5, traffic volumes will decrease compared to the No Build conditions between Port of Tacoma Road and the new I-5 interchange (Figure 3.14-5 and Figure 3.14-7). The decrease is due to several changes in regional traffic patterns: the proposed SR 167 provides more direct access to the Port of Tacoma and SR 509; southbound SR 167 traffic that previously diverted to SR 512 will remain on the freeway to directly tie in to southbound I-5; local Puyallup Valley commuter traffic will be able to access the freeway system via SR 167, forgoing circuitous routes through Milton and Edgewood.

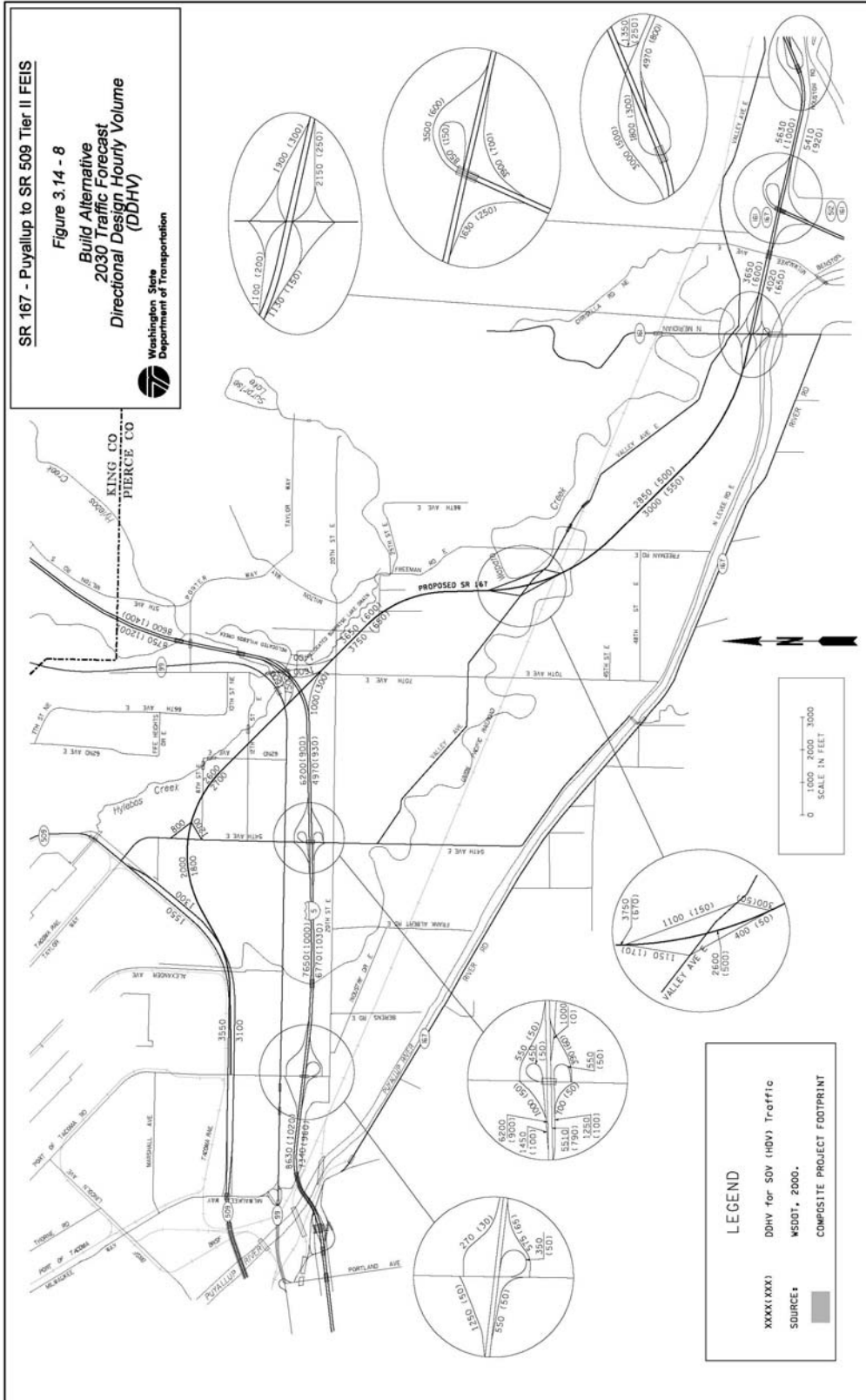
The existing alternate routes on River Road and Valley Avenue will also experience volume reductions.

Capacity Changes

Chapter 2 describes the SR 167 Build Alternative in detail. To summarize: The build alternative will provide a six-lane freeway (two general purpose lanes and one HOV lane in each direction) between the existing freeway terminus and I-5. Four lanes will continue northwest to tie into SR 509. At the I-5 interchange, direct freeway connections are planned for the SR 167 general-purpose lanes as well as the HOV lanes. The Preferred Loop Option interchange will be provided north of I-5 at 54th Avenue East. Two full interchanges are planned at both Valley Avenue and North Meridian.

Locally, the City of Fife is planning to widen Valley Avenue to four lanes. 70th Avenue East will be reconstructed from the existing two lanes to five lanes. Additional capacity improvements are occurring on 20th Street East, and Milton Way due to tremendous growth in the Puyallup Valley. The City of Puyallup plans to tie the proposed North Canyon Road into 70th Avenue East in the vicinity of Valley Avenue, but currently there is no funding.





Congestion and Traffic Operations Impacts

Peak-period congestion levels on I-5 will be somewhat better than those that will occur with the No Build Alternative. I-5 will operate at LOS F south of the existing SR 167 Interchange and north of the proposed interchange during the PM peak period. There will be improved level of service on the I-5 segments between the existing SR 167 Interchange and proposed SR 167 interchange (Table 3.14-2).

The proposed SR 167 freeway will operate at LOS D or better between I-5 and SR 161 (North Meridian) interchanges (Table 3.14-3). Approximately 100,000 vehicles per day will be able to travel through the proposed route unencumbered. Some congestion (LOS D) was identified to occur between North Meridian and SR 512, but an auxiliary lane is planned to relieve the congestion.

Table 3.14-3: SR 167 Peak Hour Level of Service

	2030 AM	2030 PM
SR 167 Northbound		
SR 509 to 54th Avenue East	B	C
54th Avenue East to I-5	C	C
I-5 to Valley	B	C
Valley to Meridian	C	D
Meridian to SR 512	C	D
SR 167 Southbound		
SR 512 to Meridian	D	C
Meridian to Valley	D	C
Valley to I-5	C	C
I-5 to 54th Avenue East	C	C
54th Avenue East to SR 509	B	C

Circulation Changes

Freeway Network

Major circulation changes will occur with the completion of the SR 167 extension project. The regional freeway network will gain a valuable connection for truck traffic traveling from the Port of Tacoma to the north via I-5 or east via SR 167 to I-90. SR 167 traffic previously diverting to SR 512 to access I-5 south will have a more direct route to I-5. Substantial traffic reductions are expected on I-5 between the SR 167, 54th Avenue East, and Port of Tacoma Road interchanges as Port of Tacoma traffic is diverted to SR 509 and SR 167. Drivers may opt to use SR 167 as an alternate north-east option, decreasing congestion on the north I-5 to SR 18 route to I-90 east.

Local Roadway Network

Drivers on the local roadway system will be provided access to SR 167 at Valley Avenue with the preferred option. Truck volumes in existing residential areas near 54th Avenue East will be reduced. In addition to 2030 reduced traffic

volumes, the improvements planned by the City of Fife and the City of Puyallup will improve capacity and operations of the local system.

The complexities of the SR 167/I-5 interchange design led to the realignment of 20th Street East. The current alignment of 20th Street East could not be accommodated with a bridge over proposed SR 167. Instead, vehicles will take a more circuitous route with two roundabouts to the intersection with 70th Avenue East, which accesses the area north of I-5 (Figure 3.14-9).

Safety Impacts

Construction of the Build Alternative is expected to reduce the number of accidents within the corridor by providing a safer facility with full-access control. Year 2030 congestion levels at many key intersections will be lower than the No Build Alternative, which should result in a reduced number of accidents occurring at these intersections.

Impacts on Port, Railroad, and Transit Facilities

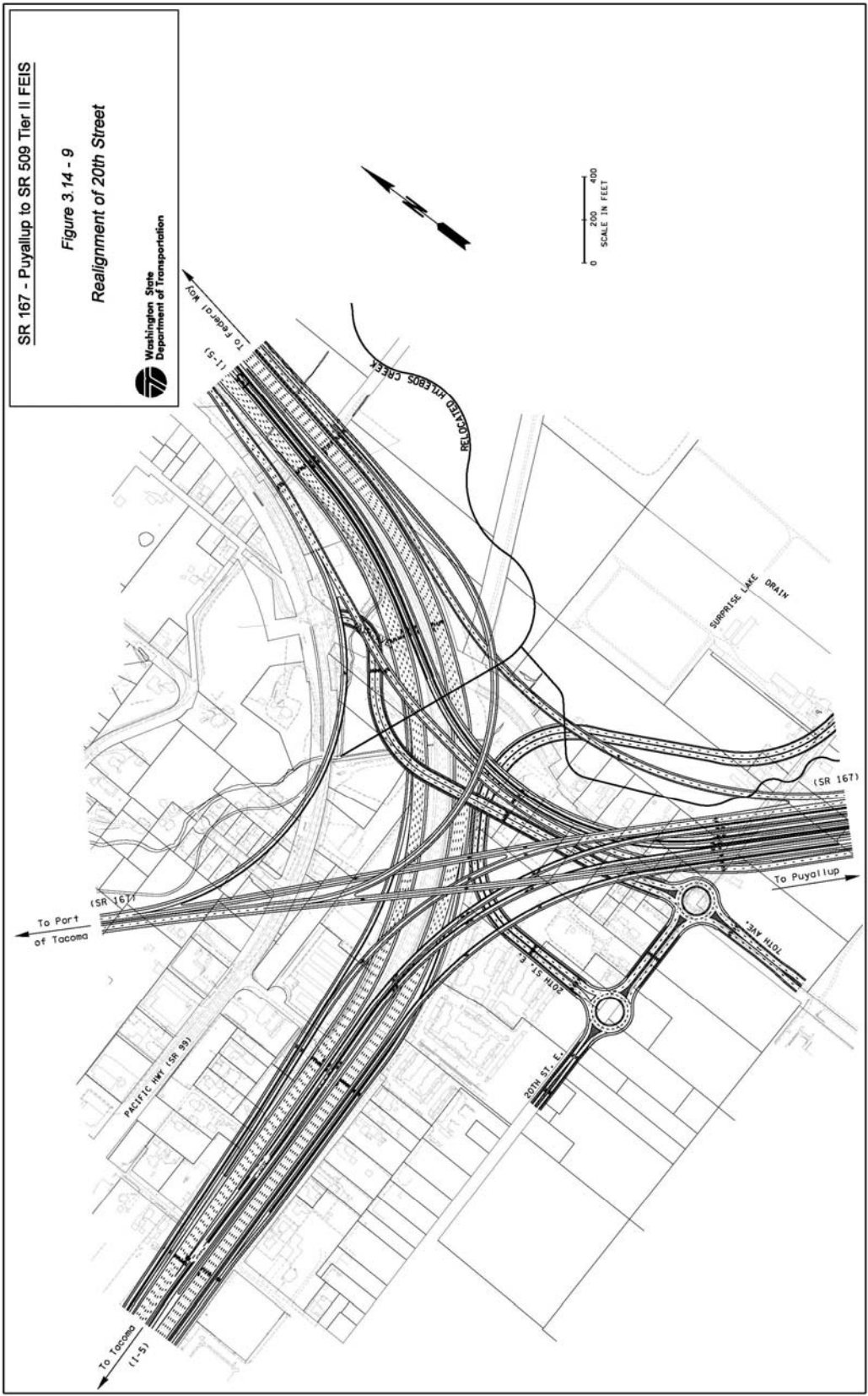
The Build Alternative will greatly improve traffic traveling to and from the Port of Tacoma. The northbound I-5 access will be more direct via SR 167 with free-flowing conditions. Port traffic to Eastern Washington can remain on SR 167 to access I-90 via I-405 or SR 18 in Kent, avoiding the steep grade portion of SR 18 near I-5.

One railroad crossing is planned over the UPRR line just south of the planned Valley Avenue Interchange. Minimal delays may occur during construction. Construction activities will be coordinated with UPRR officials to minimize disruptions through SR 167 construction areas.

Transit facilities will be improved in the Build Alternative. Pierce Transit has recommended two park and ride lot locations in the project area. The build alternative includes construction of freeway HOV lanes to connect from I-5 to SR 161 (North Meridian).

The project will improve travel times for transit using the proposed HOV lanes and direct connect ramps between I-5 and proposed SR 167. Some impacts to transit headways will be anticipated during construction and temporary detours. Coordination with Pierce Transit will be critical in limiting headway times due to detour and/or intermittent traffic stops.

One alternative for a wetland mitigation site is on UPRR property located south of their tracks, west of Frank Albert Road, and north of North Levee Road. This location will have the potential to accommodate some wetland mitigation as well as future UPRR yard facility expansion south of the rail line. WSDOT, City of Fife, UPRR, and Port of Tacoma staff will continue to coordinate efforts in the development of this site.



SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 3.14 - 9
 Realignment of 20th Street



Truck Routes

WSDOT studied the effect of the Build Alternative on the movement of trucks on city of Fife surface streets. The three existing truck routes studied in detail are shown in Figure 3.14-10.

Build conditions show an improvement in travel times for trucks using the three routes. Table 3.14-4 summarizes the findings.

Table 3.14-4: City of Fife Truck Travel Time Improvements

	No Build (min)	Build (min)	Time Improvement (min)
Route 1	56.7	10.7	46
Route 2	104.8	26.8	78
Route 3	62.8	11.8	51
New SR 167	(NA)	5.8	(NA)

Impacts on Pedestrian and Bicycle Travel

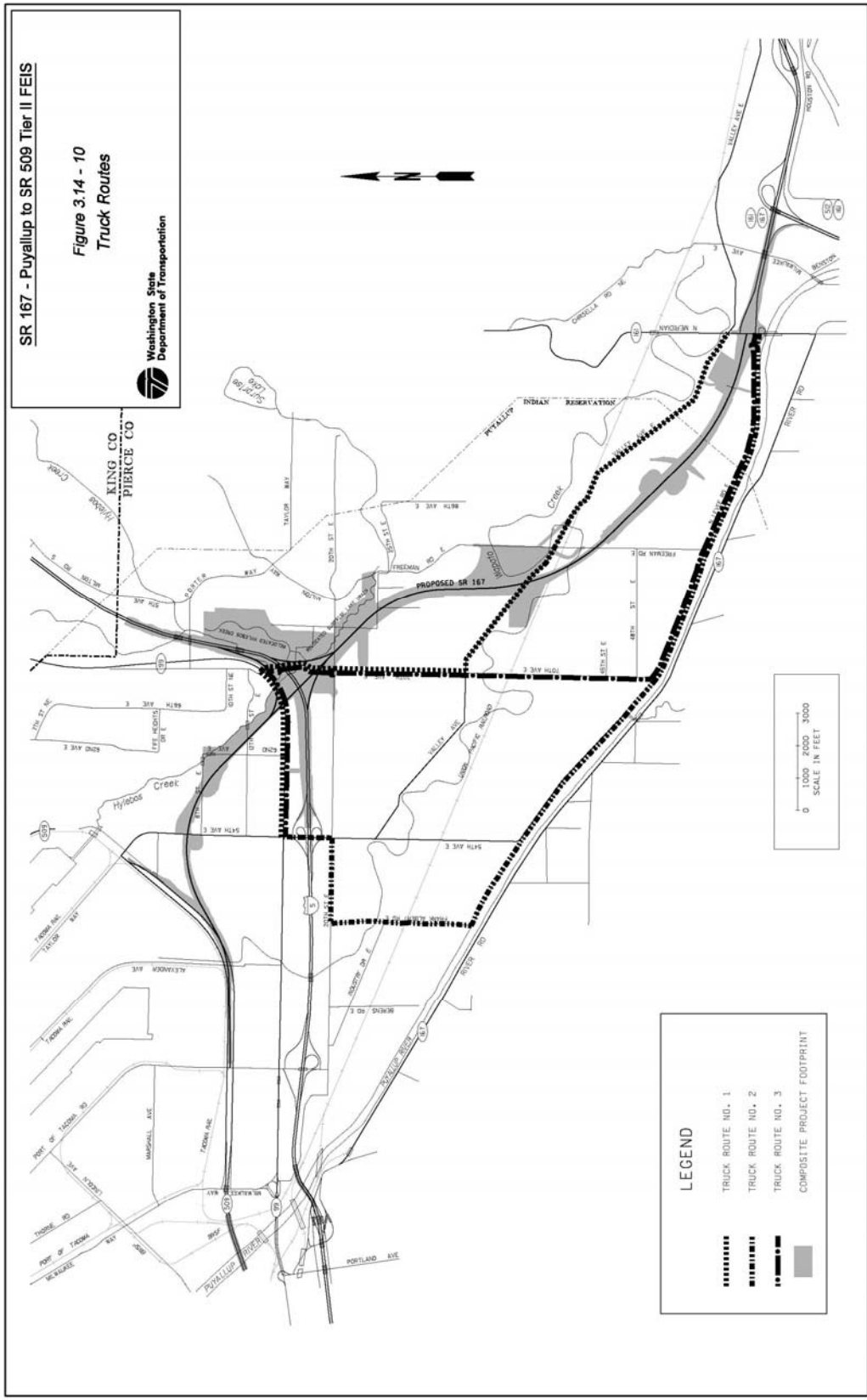
Pedestrians and bicyclists will experience limited temporary impacts during the project's construction. Special attention should be paid to safely accommodate pedestrians and bicyclists during times when the normal travel routes are disrupted.

The closure of the SR 167 mainline to bicyclists between SR 99 and 20th Street East, and southbound SR 167 between 54th Avenue East and SR 509, will require possible improvements to the local city roadway systems to accommodate safe and expeditious bicycle travel through the area (See additional discussion Section 3.15).

Summary of Traffic Conditions without the SR 167 Extension Project

The project traffic horizon year is 2030. It is expected that by 2030 the level of service (LOS) throughout the project area would be poor due to population growth, including the SR 167 Extension project. However, without the SR 167 Extension project (No-Build Alternative) in the year 2030, congestion and LOS on I-5 and other adjacent roadways would be substantially worse.

Currently, the only east-west routes are local streets that travel through commercial districts and neighborhoods. Because of the proximity to the Port of Tacoma, the truck traffic in this area is extremely heavy and, consequently, the local streets are very congested. The SR 167 project will allow the trucks to arrive and leave the Port of Tacoma through a limited access route and stay off the local street system. This will improve the congestion and safety on the local streets considerably. With or without the SR 167 project, this area will continue to experience heavy traffic volumes because the area contains the Port of Tacoma, as well as several commercial businesses and retail stores.



3.14.4 Mitigating Measures

No Build

Development will continue to escalate in the Puyallup Valley as the area moves away from its agricultural base to an area zoned for light industrial and manufacturing uses. Currently, I-5 operates at over capacity conditions north of the project area. The surface street system also operates at over capacity conditions on Valley Avenue, 54th Avenue East and 70th Avenue East and at several key intersections. Truck traffic on residential streets is increasing.

The City of Fife, the City of Milton, and the City of Puyallup will continue to make improvements to the local system as funding becomes available. From Table 3.14-1 it is evident that most intersections will operate at over-capacity conditions (LOS F) in 2030. In order to handle increased traffic volumes on the local streets, construction of additional lanes, turning lanes, and signal upgrades will be necessary.

Build Alternative (Preferred)

Construction

Along the length of the corridor, construction impacts on traffic operations will occur. The timing and extent of closures and/or detours will be determined in the design phase of the project. The detour routing plan will also analyze effects of rerouted traffic on detour routes and develop an operations plan to mitigate the effects of the increases in traffic.

Construction of the I-5 interchange will require placement of SR 167 mainline and ramp structures over I-5 travel lanes. I-5 freeway lane closures will be limited to nighttime periods of low traffic volumes. Advisory signing and media notices will give advance warning of any extended lane closures. Most overhead roadways will be constructed in phases, allowing surface street traffic to be maintained by shifting traffic from one side of the road to the other.

Construction activities will be coordinated with UPRR, BNSF, Tacoma Rail, and the Port of Tacoma to minimize disruption of rail operations through the project construction areas.

WSDOT construction practices will be followed for detour traffic signing and traffic operations through construction work zones. To the extent possible, traffic disruptions from adjacent local improvement projects will be coordinated to minimize delay on the surface streets.

Operation

The *SR 167 Tier II EIS Traffic Report* (WSDOT 2001a) identified several traffic mitigation locations in the project area. The design team reviewed each location and determined whether each mitigation could be included in the project (Table 3.14-5).

Table 3.14-5: Identified Traffic Mitigation Areas

Location	Mitigation	Outcome
Existing SR 167 – SR 161 to SR 512 both directions	Add Auxiliary Lanes	Added to design: Weave/Auxiliary Lane added NB, Auxiliary lane added SB.
Existing SR 167 NB to SR 512	Add Additional Lane to Pioneer I/C	Not used. Outside scope of project.
I-5 NB and SB	Add 5 th GP Lane	Not used. Additional cost not reasonable for small benefit.
Intersection of 20 th and 70 th	Add 2 Roundabouts	Added to design.

Transportation Demand Management, Transportation System Management, and Intelligent Transportation System Elements

The Preferred Alternative will have the capability and flexibility to provide multi-modal solutions for transportation needs by including many Transportation Demand Management (TDM), Transportation System Management (TSM) and Intelligent Transportation System (ITS) elements. All TDM, TSM and ITS elements contained in the No Build Alternative are also included in the Preferred Alternative.

The mix of modal investments in the Preferred Alternative will provide a balanced system of roadway, transit, and demand management strategies that are expected to provide reasonable long-term solutions to the needs for personal and freight mobility and congestion reduction within the SR 167 Extension area. The TDM, TSM and ITS elements described below are components of the proposed long-range solution for managing forecasted traffic demands and maintaining system infrastructure for the SR 167 Extension.

Transportation Demand Management

Transportation Demand Management includes various strategies to encourage more efficient travel patterns and behaviors. TDM efforts provide multiple benefits including reduced traffic congestion, road and parking facility cost savings, user financial savings, increased road safety, increased travel choice (especially for non-drivers), increased equity, reduced pollution, and energy savings. The specific strategies listed below are either in place or may be implemented at project completion:

- Effective land use zoning and planning
- Commute trip reduction
- Rideshare information and assistance
- Non-motorized transportation facilities
- Local and regional transit service
- Park and ride lots

The specific TDM strategies listed above are briefly described below:

Effective Land Use Zoning and Planning

The Preferred Alternative is consistent with the local and regional land use plans affecting the corridor. The Preferred Alternative will support planned growth of the area as envisioned by the local and regional jurisdictions. The extension of SR 167 to SR 509 has been promoted by the cities of Fife, Puyallup, and Milton in their respective comprehensive plans. The project is also consistent with Pierce County's Comprehensive and Transportation Plans and is considered a priority project.

The Port of Tacoma strongly endorses a new SR 167 corridor that would connect with SR 509, as a critical transportation infrastructure need. The Preferred Alternative will provide a direct high-speed connection to the Port of Tacoma, assist in improving traffic movement, reduce congestion, and provide greater accessibility of port facilities to meet the needs of growing containerized cargo and other freight traffic (Chilcote 2000). These conclusions support the Purpose and Need statement for the project.

Commute Trip Reduction (CTR)

The goals of the Washington State CTR program are to reduce traffic congestion, reduce air pollution, and petroleum consumption through employer-based programs that decrease the number of commute trips made by people driving alone.

The CTR program results are achieved through collaboration between local jurisdictions, employers, and WSDOT. The state's nine most populated counties (including Pierce County), and the cities within those counties, are required to adopt CTR ordinances and support local employers in implementing CTR. Employers are required to develop a commuter program designed to achieve reductions in vehicle trips and may offer benefits such as subsidies for transit fares, flexible work schedules and work from home opportunities.

WSDOT would provide technical assistance to jurisdictions and employers in the SR 167 project area to help implement the CTR program. Technical assistance includes training, support with data collection and analysis, and maintaining networks of partners and documentation on best practices.

Rideshare Information and Assistance

WSDOT has an ongoing program that provides commuters information about using transit services and ridesharing to get to and from work. This information service also provides commuters an easy way to find others who are interested in sharing their commute in a carpool or vanpool. Ride-match services to regional events, such as the annual Western Washington Fair in Puyallup, helps individuals find others who want to share a ride to the event. Rideshare information in and near the SR 167 corridor is available at major employers, social service providers (state/county/city offices, hospitals, etc.), transit agencies as well as all WSDOT offices. Commuters can also request a ride-match or receive information about carpooling/vanpooling at WSDOT's Rideshare Hotline number 1-888-814-1300 or RideshareOnline.com.

Non-motorized Transportation Facilities

The need for non-motorized transportation facilities in the SR 167 project area has been outlined in plans adopted by WSDOT, Puget Sound Regional Council and Pierce County. These plans include the State Highway System Plan adopted by WSDOT, the Vision 2020 Update and Metropolitan Transportation Plan adopted by the Puget Sound Regional Council (PSRC) and subsequent updates and the Pierce County Comprehensive Plan. These long-range transportation plans identify trail, bicycle and pedestrian facility route improvements.

Trail Improvements

In general, the proposed trail improvements in the SR 167 Extension will provide non-motorized transportation routes that will improve bicycle and pedestrian mobility and safety in the region. The proposed trail improvements are consistent with the Washington State System Plan and local non-motorized Transportation Plans. The SR 167 project will accommodate the Interurban Trail and re-establish the public access connection to the trail in the vicinity of 70th Avenue East and I-5.

Bicycle

Bicycle facilities are relatively undeveloped within the project area. The completion of SR 509 affords the experienced bicyclist a substantial east-west corridor in lieu of the permanent bicycle prohibition on I-5. The cities of Fife, Milton, Edgewood, and Puyallup transportation plans identify facility improvements for bicycle travel. Existing bicycle activity in the project area is light, again due to relatively low land use densities and a lack of desirable facilities along existing roads. Nearly all of the project's mainline shoulders would serve to create a new travel corridor for experienced bicycle riders.

A separate bike path is planned north of SR 167 approximately from 54th Avenue Interchange to SR 99. Traffic volumes, ramp movements and vehicle speeds create unsafe conditions on the I-5 Interchange facility and on southbound SR 167 between 54th Avenue East and SR 509 and warrant a bicycle prohibition through these segments of the project.

Pedestrian

Pedestrian facilities within the project area are limited. With exceptions of the local street system with Fife, sidewalk facilities are relatively nonexistent or discontinuous. Gaps in existing facilities are being filled in as adjacent land is being converted from agricultural to commercial or industrial uses. Pedestrian use of the existing facilities is light, due to the relatively low density of existing land uses and the lack of adequate facilities. Local roadways intersecting the project will accommodate pedestrian travel based on WSDOT design practices and local jurisdiction roadway design.

Local and Regional Transit Service

Pierce Transit and Sound Transit currently provide transit service in the project area. Local service is provided by Pierce Transit within the communities of the Tacoma, Fife, Milton and Puyallup. Regional service is provided by Sound

Transit (ST), along with connecting routes to nearby communities such as Lakewood, Renton and Seattle. Greyhound and Northwestern Trailways bus services to Seattle and Portland via I-5 are also located nearby at the Tacoma Dome Station.

The SR 167 project will improve travel times for transit simply by using the new freeway lanes and will have other features that would distinguish it from the existing transit service on River Road, including more frequent and predictable schedules due to the use of the freeway lanes and easily accessible stops (Park and Ride lots). In the future transit service would be improved due to clearly identifiable priority lanes (using the proposed HOV lanes). Other potential improvements could include HOV direct access ramps at I-5 and in-line freeway (ramp) transit stations associated with the park and ride lots or major attractions and traffic generators (commercial districts).

Park and Ride Lots

A January 2001 WSDOT Puget Sound Park and Ride System Update report indicated a corridor level demand for year 2020 as follows:

- I-5 park and ride lots (I-5 from Tacoma North) 960 to 1,060 stalls
- Puyallup Valley park and ride lots (SR 167/Sumner Station and Puyallup Station) 730 to 930 stalls combined.

The SR 167 Tier I FEIS proposed upwards of 1,500 stalls be established within the project corridor. The Tier I FEIS recommended a 500-stall site in the vicinity of SR 167/SR 161 interchange and a 1,000 stall lot along the I-5 corridor. A Pierce Transit study recommended the addition of two Park and Ride Lots in the SR 167 corridor: one in the vicinity of the SW quadrant of the Valley Avenue Interchange and one southwest of the Valley Avenue and SR 161 Intersection. (Pierce Transit, 2002) The location of these two recommended Park and Ride Lots have been included in this FEIS. The further development of potential park-and-ride lots would be subject to additional study in the comprehensive transportation planning process.

Transportation System Management

Transportation System Management elements are closely related to facility infrastructure design, operations and efficiencies and serve to improve the flow of traffic by constructing new facilities to move passengers efficiently within the existing corridor, implementing roadway design improvements and providing the motorist sufficient advance information to make route or conveyance choices, as well as managing daily problems on the highway. TSM elements that will be incorporated as feasible and per design standard are as follows:

- HOV lanes
- Ramp metering
- Roadway design improvements
- Intelligent Transportation Systems

- Traffic incident management

The specific TSM strategies listed above are briefly described below:

High Occupancy Vehicle (HOV) Lanes

The Preferred Alternative will construct three general purpose lanes and one high occupancy vehicle (HOV) lane in each direction to connect I-5 with SR 161 (North Meridian). The HOV lanes will be consistent with WSDOT's long-range HOV policy and also consistent with PSRC's Metropolitan Transportation Plan.

Ramp Metering

If traffic volumes on the SR 167 mainline increase enough to warrant congestion reduction measures studies would be conducted to determine if and when ramp meters could be installed at SR 167 local interchange on-ramps. Installation of ramp meters would smooth SR 167 mainline traffic flow by staggering the queue of entering traffic momentarily to reduce conflicts at the ramp gore point and allow it to merge more safely.

Roadway Design Improvements

Proposed roadway design improvements for the SR 167 project that would serve to improve the flow of traffic include access control; lane channelization; interchange improvements (urban interchanges and round-a-bouts); signal improvements, including synchronization; and signage improvements.

Intelligent Transportation System

An Intelligent Transportation System will be implemented for this project in accordance with the WSDOT Olympic Region ITS Implementation Plan. ITS strategies are a subset of TSM.

Traffic Monitoring and Communication Systems

ITS traffic monitoring and communication system strategies include construction, operation, and maintenance of data stations, closed circuit TV surveillance cameras, dynamic message signs, traffic advisory communication system (car AM radio), and other ITS devices where appropriate. The system will provide pre-trip, en-route, on-site traveler information to road users and also allow WSDOT personnel to identify, detect, and respond to traffic related incidents more effectively.

ITS Lane Occupancy Restrictions

Any expansion of managed lane operations beyond the future HOV lanes proposed in the Preferred Alternative design will be subject to further analysis outside of the SR 167 EIS process.

Traffic Incident Management

Traffic incident management would involve WSDOT's response to problems in the SR 167 project area including immediate and accurate identification of the type of incident (disabled vehicle, material spill, fire, injury or non-injury accident). WSDOT has trained personnel that would continuously monitor the

SR 167 freeway through communications with the public and other agencies such as Washington State Patrol (WSP), Pierce County Sheriff and local police and fire departments. Roadway monitoring could also include surveillance cameras and on-site observation by highway maintenance crews and other personnel designated to patrol the roadway system.

Compatibility with Future Multimodal Transportation System

All of the future multimodal needs for the SR 1676 corridor are not known at this time. As the project is further designed, consultations will be held with Pierce Transit and Sound Transit to ensure that all transportation improvement opportunities are considered, where feasible, for the project area.

3.15 Pedestrian and Bike Facilities

This section identifies impacts of the SR 167 project on pedestrian and bike facilities in the study area. The Tier I FEIS examined the impacts at a corridor level and concluded that no existing or proposed pedestrian or bicycle facilities would be affected. The Tier II analysis examines the specific impacts of the proposed facility at a greater level of detail.

The Washington State Transportation Commission in 1991 adopted a Bicycle Policy Plan that has four policy areas; bicycle facilities, funding, safety education and enforcement, and promoting bicycle touring and commuting. The plan also identifies the State's existing roadway system as the basic network for bicycle travel.

In 1993, the Commission adopted the Pedestrian Policy Plan, which focuses on local and regional planning for pedestrians, necessary pedestrian facilities types and locations, and funding sources. The adopted pedestrian policies include recommendations from the Washington Traffic Safety Commission's Pedestrian Safety Strategic Plan. The strategies and performance measures propose doubling the amount of walking and bicycling while reducing the number of accidents by 10 percent over the next 20 years.

The Washington State Department of Transportation (WSDOT) is also bound by the recreational trail law (RCW 47.30.010) that reads in part:

No limited access highway shall be constructed that will result in the severance or destruction of an existing recreational trail of substantial usage for pedestrians, equestrians or bicyclists unless an alternative recreational trail, satisfactory to the authority having jurisdiction over the trail being severed or destroyed, either exists or is reestablished at the time the limited access highway is constructed.

The WSDOT *Design Manual* (WSDOT 2005) incorporates the 2001 U.S. Department of Transportation policy for designing bicycle and pedestrian facilities. The Federal Highway Administration (FHWA) and WSDOT intend to accommodate non-motorized transportation modes in the project area using best practice design. For the proposed SR 167 facility, non-motorized travel is permitted on the mainline except for the segment from the 54th Avenue East interchange to the vicinity of 20th Street East, including the I-5 interchange structure.

3.15.1 Studies Performed and Coordination Conducted

This section incorporates information compiled in the *Pedestrian and Bicycle Facilities Discipline Report* (WSDOT 2004), which

- Reviewed existing transportation facilities that would accommodate non-motorized travel

- Reviewed local agencies’ non-motorized transportation plans for planned improvements
- Interviewed local agency staff and bicycle advocates
- Evaluated land uses for potential generator and destination zones (travelsheds) of non-motorized traffic
- Researched actual non-motorized travel through records of the Pierce County Commute Trip Reduction (CTR) Program (Pierce County 2002)

The DR divided the study area into six travel sheds encompassing a one-mile travel distance from the corridor. Within the travel sheds, the DR identified bicycle and pedestrian trip generators (Figure 3.15-1).

3.15.2 Affected Environment

The DR inventoried each jurisdiction for existing and proposed pedestrian and bicycle facilities. The bike facilities are classified according to Table 3.15-1. The only existing roadway in the study area with bike lanes is SR 509 between I-705 and Taylor Way. Bicycle traffic is prohibited on I-5. The other roads in the study area are “shared roadways” with various levels of bicycle and pedestrian-friendly attributes. Very few of these roads are officially designated for bicycle travel. In many cases, these roads do not presently have adequate shoulders to safely accommodate bikes or pedestrians. A more detailed description of the existing facilities by jurisdiction follows below. Figure 3.15-2 illustrates the existing and potential bike and pedestrian routes a person might travel to get from the north to south limits (SR 509 to SR 161).

Table 3.15-1: WSDOT Bicycle Facility Classification Descriptions

Bike Route	A system of bikeways designated by the local jurisdiction(s) having authority, featuring appropriate direction and information route markers. A series of bikeways may be combined to establish a continuous route and may consist of any and all types of bic
Bike Lane	A portion of a highway or street identified by signs and or pavement markings reserved for bicycle facilities.
Bikeway	Any trail, path, part of a highway or shoulder, or any other traveled way specifically signed and/or marked for bicycle travel.
Shared Roadway	A roadway that is open to both bicycles and motor vehicle travel. Shared roadways do not have dedicated facilities for bicycle travel.
Signed Shared Roadway (designated as a bike route)	A shared roadway that has been designated by signing as a preferred route for bicycle use. Appropriate bike route signs as installed to assure bicyclists that improvements such as widening shoulders have been made to improved safety.
Shared Use Path	A facility on exclusive right of way with minimal cross flow by motor vehicles. It is designed and built primarily for use by bicycles but is also used by pedestrians, joggers, skaters, wheelchair users (both motorized and non-motorized), and others.

Reference: WSDOT Design Manual Chapter 1020 (2005)

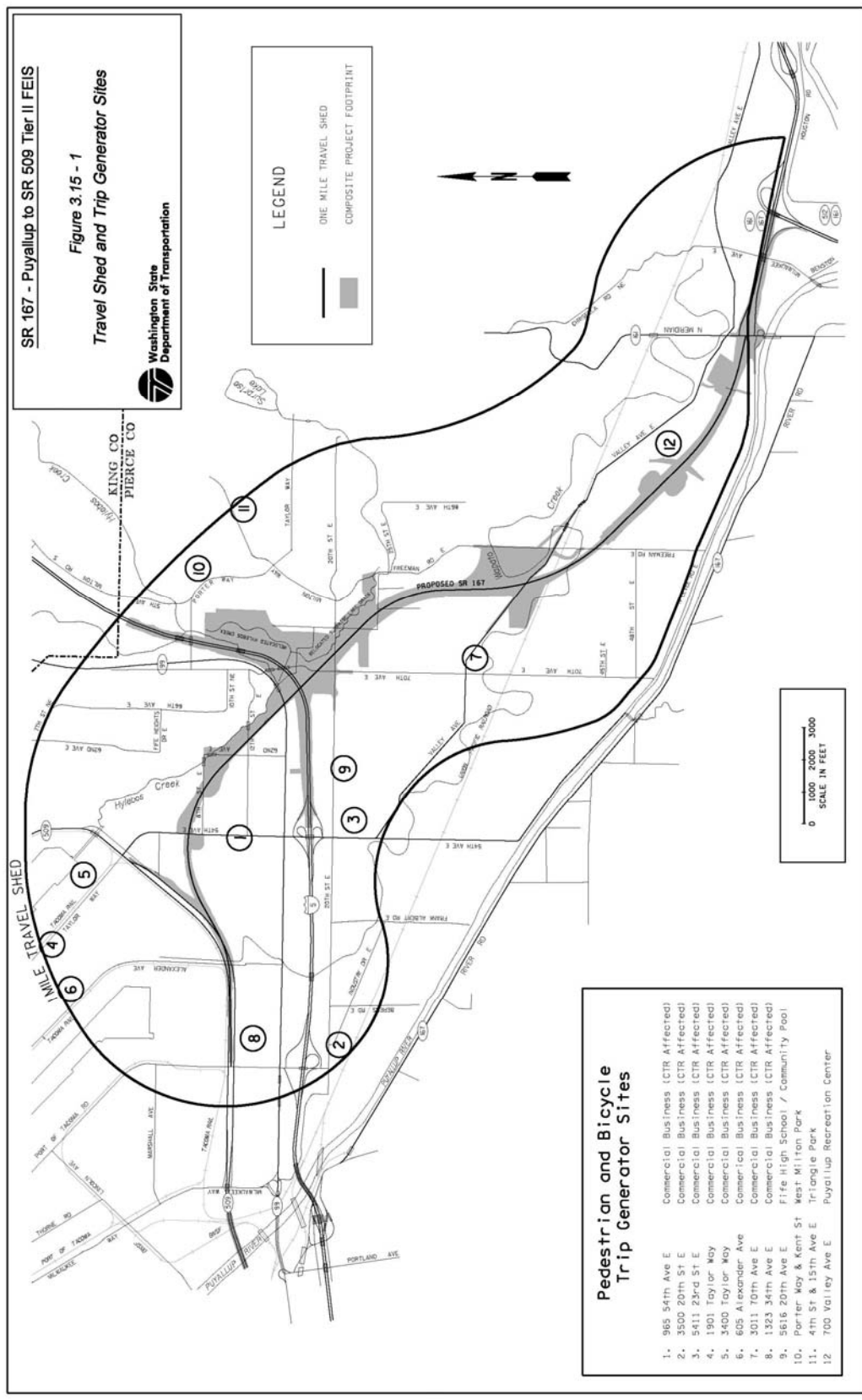
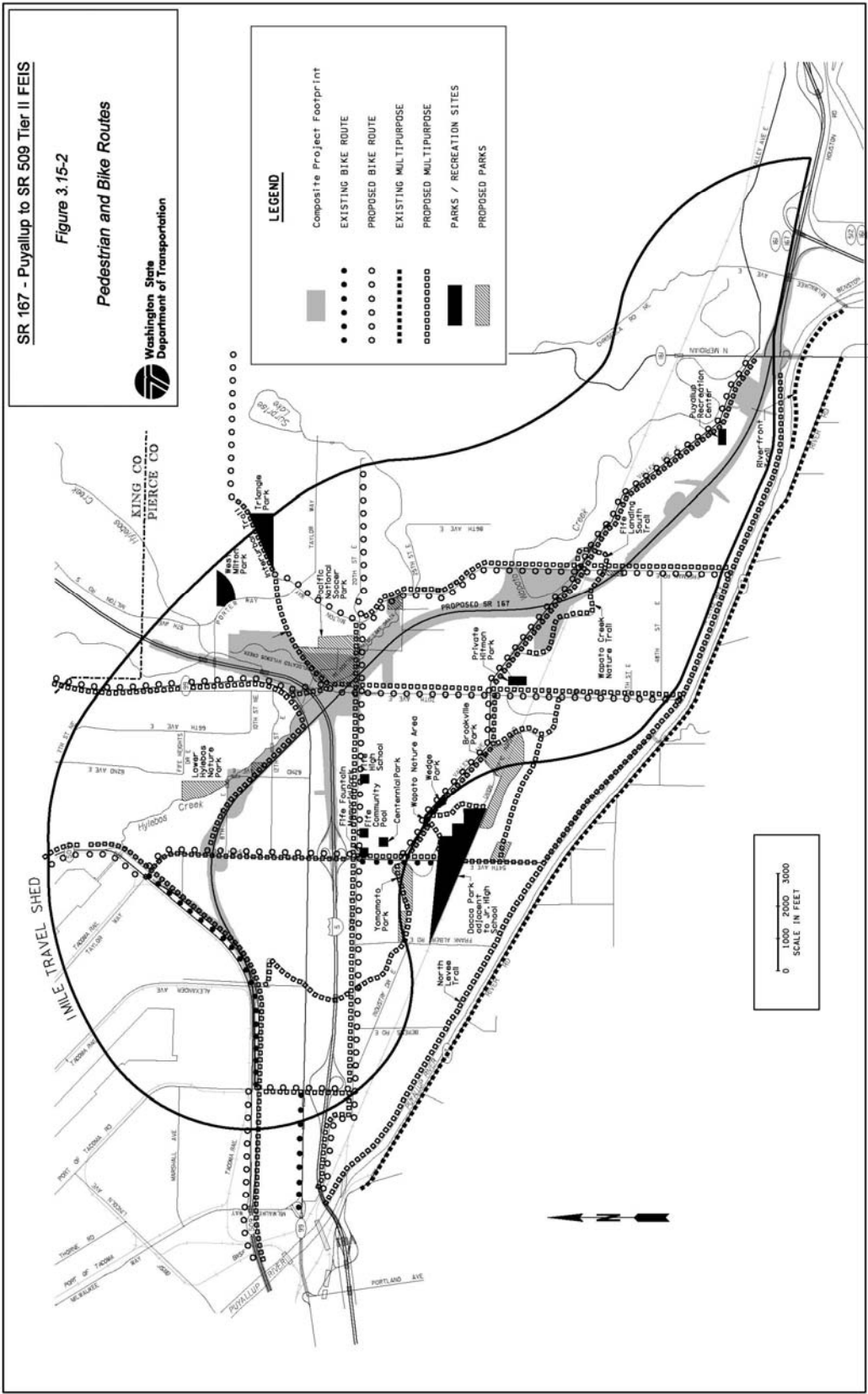


Figure 3.15-2

Pedestrian and Bike Routes



Port of Tacoma

The area along the Port of Tacoma Road near Pacific Highway (SR 99) is developed primarily as commercial, with limited retail and office use. The land adjacent to SR 509 in proximity to the proposed SR 167 corridor includes log storage, auto import storage, warehouse/packaging and vacant land. The area has four CTR worksites. Beyond common shared roadway facilities, the existing roadway network is virtually devoid of adequate accommodations for bicycle riders. SR 509 and 54th Avenue East are the only roadways with striped bike lanes and limited pedestrian amenities at some intersections. SR 509 is known as a main bicycle recreational route with destinations from Tacoma north to King County. With existing accommodations, the roadway system in this area is likely to be traveled by only the more experienced bicycle riders.

City of Fife

The city of Fife is a mixture of residential, commercial, industrial manufacturing, and agricultural uses. The main residential areas are located in the center of the city, north of the Union Pacific Railroad (UPRR) line, east of 54th Avenue East, and west of 70th Avenue East. These areas would be expected to generate a higher level of non-motorized demand as development continues to replace unimproved property sites.

Recently, an increase of industrial and commercial development has occurred within the city of Fife. This type of development has created shoulders and sidewalks but lacks the population density necessary to generate substantial volumes of bicycle and pedestrian demand.

The majority of the roadways and roadway corridors within the city have been designated as primary bikeways, sidewalk and trail links in the City of Fife transportation plans. All the roads are currently shared facilities and most are without sidewalks. All but the major intersections are without pedestrian signals.

There are multiple proposed trails within the City of Fife. Additional information for those trails requiring a recreation 4(f) analysis is contained in Chapter 5 of this FEIS. The North Levee Trail is a proposed shared use path (Figure 3.15-2). The overall trail will stretch from Puyallup to Tacoma essentially following the Puyallup River and involve multiple jurisdictions and the Puyallup Tribe of Indians. The trail project is contained in the City of Fife non-motorized plans, however no completion date has been identified. The area of trail access improvement is located beneath the SR 161 bridge and borders the Puyallup River. Vehicle access from North Levee to SR 161 northbound may be redesigned and will remain available for non-motorized use. This will eliminate the need of an at-grade crossing of SR 161 at this location, thus affording the non-motorized user safe unimpeded travel underneath the roadway. The area beneath the roadway would serve well as a public trailhead location and be redesigned accordingly with input and coordination of the City of Puyallup.

The proposed Wapato Creek Nature Trail extension (Figure 3.15-2) is a non-motorized facility or shared use path that extends through the SR 167 right of way. The trail, as proposed by the City of Fife, would extend along the creek southeast through the city of Fife to the UPRR in the city of Fife southern limits

to Freeman Road. Part of the proposed trail would be located on tribal property. At present the Puyallup Tribe of Indians is not supportive of the City of Fife Wapato Creek Trail proposal. Additional coordination, consultation, and agreements will be required before this facility can be legitimately recognized and moved forward.

Between 8th Street East and 4th Street East, adjacent to the existing Milgard Restoration Site, the City of Fife has proposed to construct the Lower Hylebos Conservancy Trail (Figure 3.15-2). It is proposed to parallel the west side of the creek, extending northwesterly from SR 99 towards SR 509. Long range conceptual plans have suggested the trail continue into King County under the electric power transmission corridor. No impacts are anticipated with the project. The 54th Avenue East to SR 99 shared use path contained in the project may perhaps be considered by others for inclusion into the Hylebos Trail plan.

The existing Interurban Trail extends from King County into Pierce County and currently ends northeast of Triangle Park, outside of 1-mile travel shed studied in the DR. A southwestward extension (Figure 3.15-2) of this multipurpose trail has been proposed. Pierce County has partnered with the cities of Fife and Milton to provide proposed parking for both the Interurban Trail extension and the Pacific National Soccer Park that is planned on the east side of I-5, just north of 20th Street East and east of 70th Avenue East. As a planned facility there is no current usage for the soccer park, but the City of Fife estimates as many as 50,000 families per month during peak season will access the site once it is operational. Chapter 5 provides additional description of this planned recreational facility.

City of Puyallup

The study area includes only the northern section of the city of Puyallup. Zoning is limited to manufacturing in the section adjacent to the Puyallup River. The rest of the North Puyallup area is zoned for general commercial and multi-family housing developments.

The Puyallup Recreation Center sits adjacent to the proposed SR 167 and consists of ball fields, and 25,000 square feet of indoor space with no existing plans for expansion (Figure 3.15-2). The automobile remains the overwhelming travel mode choice for users of the Recreation Center. Existing information suggests that pedestrian and bicycle mode traffic is nearly non-existent. Roads serving this site are designated as shared roadways with sidewalks. The lack of measurable non-motorized mode use to the Center could be contributed to the lengthy distance from the Center to the majority of residential population areas.

The City of Puyallup's non-motorized circulation plan and the SR 167 Tier I FEIS suggest the possibility of a southern access to the Recreation Center that would connect it to the North Levee Road. An overcrossing at the Recreation Center was subsequently determined to be unreasonable. The low recorded non-motorized demand and the uncertainty of the completion of necessary local connectivity were factors in rejecting the option. An overcrossing due east of the Recreation Center is included in the Urban Option at the SR 161/167 interchange.

A proposed development, including a local access overcrossing connection located directly west of the Recreation Center, remains a viable option to a separate facility as indicated in the Tier I FEIS. This ideal north-south connection for local pedestrians and bicyclists could easily accommodate access to the Recreation Center. FHWA and WSDOT shall remain cognizant and committed to assisting the local jurisdiction with the facilitation of this proposed connection.

Proposed project improvements of the SR 161 Interchange from Puyallup north to Valley Avenue may encourage non-motorized usage and improve eastern route connectivity on Valley Avenue to the Recreation Center as well.

City of Milton

The study area that is west and south of Porter Way extending along I-5 includes a portion of the city of Milton. Existing land use in this area is primarily low-density single-family residential, commercial, and vacant land. The area is zoned business and light manufacturing. The City of Milton has designated several roads in the study area as Bicycle/Pedestrian Routes including Porter Way and Freeman Road East. Neither road has paved shoulders or sidewalks, with moderate to extreme grades.

Two city parks, West Milton and Triangle (labeled 10 and 11 on Figure 3.15-1), are considered significant local non-motorized site destinations. Roads serving these sites are regarded as a shared roadway.

The proposed extension of the Interurban Trail will terminate at 70th Avenue East adjacent to I-5 (Figure 3.15-2). The existing unimproved trail corridor is active with non-motorized and equestrian use. The City of Milton has plans to pave the trail.

Pierce County

Adjacent to the cities of Fife and Tacoma, east of 54th Avenue East, is a small portion of unincorporated Pierce County that lies within the study area. This area consists mainly of single-family residential and vacant land with commercial land use along both sides of Pacific Highway. Zoning is designated as Moderate Density, Single Family and Mixed Use by Pierce County. Minimal bicycle travel usage exists in this area with the exception of the SR 509 corridor.

Located directly north of the bluffs above Hylebos Creek is Fife Heights. Fife Heights is a largely residential community with a rural character and borders the Pierce/King county line.

3.15.3 Impacts of Construction

No Build Alternative

Construction impacts under the No Build Alternative would result from transportation improvements on local roads by local jurisdictions. The improvements are likely to require temporary closures and re-routing of traffic. Most jurisdictions will attempt to minimize traffic disruptions during

construction, including those to non-motorized travel. However, most of the local roads are not considered major non-motorized facilities and bicyclists and pedestrians are likely to be inconvenienced by these improvements. The construction impacts would include increased dust, additional heavy truck traffic, fractured and broken pavement, detours around construction zones, and traffic delays.

Programmed improvements will continue to the transportation system in the study area including I-5, SR 99, SR 509, SR 161, and SR 167. Any improvements to SR 509 would include accommodation of its designation as a bikeway by FHWA and WSDOT. None of the other WSDOT facilities carry this designation and improvements to them would likely result in the same types of disruptions to non-motorized travel as occurs with local improvements.

Build Alternative (Preferred)

The analysis of construction impacts does not distinguish between the mainline and intersection improvements. The construction impacts are temporary and will be localized.

During construction, it is anticipated that all existing local and state roadways will remain open to non-motorized users, unless otherwise noted. Standard WSDOT construction practices accommodates non-motorized users as best possible during construction and provides public notifications of disruptions. This will include maintaining the roadway and route continuity. However, non-motorized users could experience some impacts, including temporary closures of some or all of the existing roadway to pedestrians and/or bicyclists, during certain phases of construction. The construction impacts will include increased dust, additional heavy truck traffic, fractured and broken pavement, detours around construction zones, and traffic delays.

The construction of the SR 509/SR 167 connection will likely result in temporary closures to the bike lanes on SR 509. Detours will be available on the surrounding local streets.

The reconstruction of 70th Avenue East will likely include a closure that will temporarily impact users of the Interurban Trail. The trail will use 70th Avenue East to cross over I-5 and continue on SR 99.

The relocation of Hylebos Creek may result in temporary closure of the Interurban Trail during construction depending on the final design of both the trail and the relocated creek.

3.15.4 Impacts of Operation

No Build Alternative

Under the No Build Alternative, the degradation of non-motorized travel options and mobility opportunities would continue. The increased traffic volumes on local streets would further lessen safety standards for non-motorized users. In particular, the large volume of truck traffic makes existing shared roadways hazardous for bicyclists. Most of these roadways do not have paved shoulders.

While local design standards often require paved shoulders and sidewalks when improvements are made, the schedule for making these improvements is uncertain given funding limitations.

Build Alternative (Preferred)

SR 167 will be open to non-motorized travel except for the section from the 54th Avenue East interchange to the vicinity of 20th Street East. Increased traffic volumes on the proposed SR 167 roadway will, over time, lessen the comfort level of many bicycle riders and likely force them onto the local roadway system. The SR 167 facility has projected year 2030 traffic volumes at 42,000 Average Daily Traffic (ADT) for the SR 509 to I-5 segment. The volumes are estimated at 100,000 ADT for the I-5 to SR 161 segment. As vehicle volumes increase, FHWA and WSDOT will periodically evaluate the safety of bicyclists using the SR 167 facility. SR 167, being a limited access facility by its nature, is self-restricting to local pedestrian travel. Local roadway connectivity will remain the prominent avenue for local pedestrian travel.

Mainline

The connection of SR 509 and SR 167 will provide for continued bike and pedestrian travel on the existing facilities of SR 509. The 54th Avenue East interchange will provide mainline east-westbound access for bicyclist traveling to and from SR 509. The impact of SR 167 on 54th Avenue East will not disrupt existing bike and pedestrian activities on that route.

The SR 167 mainline roadway from the 54th Avenue East interchange south to the vicinity of 20th Street East will be closed to non-motorized travel. With high speed, high traffic volumes and single travel lane configurations it was deemed a less than optimal facility for bicycle travel. Access and travel will be eliminated on portions of 8th Street East and 62nd Avenue East. No impacts are associated with this action, as all residential and regional demand will have also been eliminated with complete real estate acquisitions and establishment of the riparian vegetation in the stormwater treatment area. Conditions created by the mainline roadway embankment fill and restrictions from 54th Avenue East to SR 99 will be resolved by the construction of the 54th Avenue East to SR 99 shared use path. The path is designed within the north side of the project right-of-way. An at-grade crossing of the path will exist at 12th Street East and will require a mid-block design crossing. The southern path terminus beneath the SR 167 overhead structure at SR 99 shall also require a crossing treatment design.

SR 167 mainline access from 20th Street East will be available to bicyclists traveling to and from destinations 20th Street East to SR 161.

Between the Valley Avenue interchange and the Puyallup Recreation Center, a developer has planned an overcrossing that when constructed will serve the proposed residential housing development. With construction of SR 167, this connection road will be elevated. This north-south roadway will connect Valley Avenue to the North Levee Road. The local roadway will provide non-motorized users an additional safe north-south travel option not currently available in this area.

With the construction of the above-mentioned local roadway, opportunities will exist to provide mainline access for bicycle travel. Access consideration should be at the request of the local jurisdiction.

Bicyclists desiring to continue to travel on the proposed SR 167 facility beyond the SR 161/SR 167 intersection will have to contend with high vehicle speeds and volumes, double ramp lane configurations, and a traffic weave of vehicles.

I-5 Interchange

No operational impacts to non-motorized travel are expected at the I-5 interchange as the facility prohibits bicycle travel. Bicycle travel will be prohibited to non-motorized travel on SR 167 from 54th Avenue East Interchange to 20th Street East. Non-motorized travel in these areas will be dependant on existing local options and the newly constructed shared use path adjacent to the Hylebos Creek between 54th Avenue East and SR 99. When completed, the new and improved 70th Avenue East overpass will allow users of the Interurban Trailhead to cross I-5 as before.

Lower Hylebos Nature Park

The City of Fife, together with the Commencement Bay Natural Resources Trustees, Pierce County, and the NOAA National Marine Fisheries Service (NOAA Fisheries), have a proposal to design and construct a restoration project adjacent to a tidally influenced reach of Hylebos Creek. This restoration project is the nature trail, including viewing platforms and interpretive signs, that will be added to provide public access and educational opportunities, and, when completed, will be part of the City of Fife park system, called the Lower Hylebos Nature Park.

NOAA Fisheries is the lead agency for construction at this site, projected to begin in the summer of 2005. The City of Fife will operate and maintain the site after completion of construction. The 2005 construction program will include parking at the south entrance, near the intersection of 62nd Avenue and 8th Street East. Access to the site, including parking, will be coordinated with the City of Fife.

Hylebos Creek and Surprise Lake Drain Relocation

The relocation of Hylebos Creek and Surprise Lake Drain will require coordination with the City of Fife and Milton to minimize construction impacts to the Interurban Trail and planned Pacific National Soccer Park. Temporary construction related impacts and closures will be minimized with coordination and adherence to approved construction practices. No permanent operational impacts are expected after the creek is relocated.

Interurban Trail Connection

Design modifications to the trailhead connection and parking area will be provided with the realignment of 70th Avenue East. Coordination with the cities of Milton and Fife will be required. As already stated, the relocation of Hylebos Creek will result in temporary closure of the Interurban Trail during construction and will not have any permanent impact on this trail. The relocated portion of

the trail will be ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife's pedestrian and bicycle facilities. A Section 4(f) evaluation is provided in Chapter 5.

54th Avenue East Partial Interchange

There are two options for the partial interchange at this location. Ramps for both the options are single-lane ramps. The impacts of the two options are essentially alike as they relate to non-motorized travelers. The interchange configurations as proposed provides access to from SR 167 to SR 509 and excludes access northbound as the section will remain closed to bicycle travel to 20th Street East.

Valley Avenue Interchange

Three design options were developed for this interchange location. For each, the SR 167 mainline will be elevated over Valley Avenue, the UPRR line, Wapato Creek and Freeman Road. The operational impacts are described below.

Freeman Road Option

This option would have an impact to some bicycle users relating to the location of the access point to SR 167 facility. Bicyclists with origin and destinations east of the interchange would have to travel to and from Valley Avenue to access the on ramp. However, Freeman Road is a local designated bike route. With the addition of the freeway access point, the traffic volumes on Freeman Road north of Valley Avenue would substantially increase. These volumes would likely impact the non-motorized users' ability to cross the Valley Avenue/Freeman Road intersection and the freeway access intersection on Freeman Avenue. However, Freeman Road and Valley Avenue would be widened in the vicinity of the ramps and would meet design standards with 8-foot shoulders or match existing roadway design cross-section. Population density projections suggest continued low non-motorized mode usage rates.

The designed roadway configuration of Valley Avenue and Freeman Road would include 8-foot shoulders and/or sidewalks throughout the project area. Intersections may be signalized to include crosswalk and pedestrian crossing signals as warranted.

Preferred Valley Avenue Option

With the addition of freeway ramp access points at Valley Avenue, traffic volumes and turning conflicts will increase from present day volumes. These volumes will likely impact the non-motorized users ability to cross the Valley Avenue on and off-ramp intersections. Adherence to design standards, the inclusion of shoulders, sidewalks, crosswalks and pedestrian signs as warranted will effectively address non-motorized movements in the area. Population density projections suggest continued low non-motorized mode usage rates.

Valley Avenue Realignment Option

With the addition of freeway ramp access points at Valley Avenue, traffic volumes and turning conflicts would increase. These volumes would likely affect the non-motorized users ability to cross the Valley Avenue on and off-

ramp intersections. Population density projections suggest continued low non-motorized mode usage rates.

SR 161/SR 167 Interchange

Three design options for a full interchange have been developed for this connection. In each design option, the SR 167 mainline will be elevated over SR 161 (North Meridian). In addition to designed at-grade crossings of SR 161, the North Levee road connection beneath the SR 161 roadway will remain open to non-motorized travel, effectively providing an alternative route to SR 161.

Preferred Urban Interchange Option

This interchange design presents difficult non-motorized travel conditions for all but advanced riders and pedestrians with high walking rates. The increase ramp volumes and constant vehicle movements will challenge even the most experienced bicycle users during peak travel times. Pedestrians, even with signalized crosswalks, may be less than comfortable with limited cycle times, constant vehicle movements, and high traffic volumes. Impacts to non-motorized users will occur with the construction of the Urban Option Connection road (see Figure 2.5-7) and the North Levee Road east to SR 161 connection. Given the increased traffic volumes at the North Levee Road intersection, non-motorized users will need to use the utmost care when navigating during peak travel periods and adhere to crosswalks and pedestrian signals.

Diamond Low Option

The interchange design presents difficult non-motorized travel conditions for all but advanced riders and pedestrians with high walking rates. The non-motorized user would face the addition of the SR 167 westbound (to Tacoma) on-ramp, the removal of the North Levee Road to SR 161 northbound ramp, and the addition of the SR 167 eastbound off-ramp to the North Levee Road. This design would increase traffic volumes and turning conflicts for non-motorized users at the interchange and the Valley Avenue intersection.

Medium Diamond Option

The impacts of this option are essentially identical to the Diamond Low Option.

Riverfront Trail

This existing City of Puyallup multi-use trail extends along the south levee of the Puyallup River from the Milwaukee Avenue Bridge westward to the vicinity of 4th Street NW. It is 10 to 12 feet wide, paved, and passes beneath the two SR 167 Puyallup River bridges on its own structure. FHWA, WSDOT, and the City of Puyallup are committed to work cooperatively in identifying an acceptable interim route for the trail during the course of construction.

3.15.5 Cumulative Impacts

Cumulative impacts to non-motorized travel are not discussed because the proposed transportation project is not likely to contribute, either positively, negatively, nor is it likely to alter the magnitude of other foreseeable impacts.

3.15.6 Mitigating Measures

FHWA and WSDOT policies accommodate non-motorized transportation modes in the study area using best practice design. Towards this goal, a number of general project mitigation measures are followed regarding bicycles and pedestrians. These include:

- Local access roadways within the right-of-way of the SR 167 interchanges will be designed to the local jurisdiction's design standards and often will include paved shoulders and sidewalks for bicyclists and pedestrians.
- All bicycle and pedestrian paths modified by the project would include ADA design standards.
- SR 167 mainline shoulders will be designed to a maximum of 10 feet.
- Local roadways and ramp intersections will, as traffic volumes warrant, be signalized to include pedestrian crosswalks and activated signal systems.
- Work zone traffic control plans will take into account non-motorized route continuity needs including public notification and provisions for safe detour routes wherever reasonable. Any detour route for non-motorized traffic indicated on the Traffic Control Plans will be physically reviewed. The existing surfaces within the project limits will be repaired, if necessary, to accommodate the special needs of non-motorists.
- Local comprehensive plans will again be reviewed prior to completion of contract plans for construction. This effort will address non-motorized route continuity both at the local level and within the project, consistency, and local jurisdiction coordination. Any such local plans affected by the project and determined to have been completed, progressed to design or construction phase will be evaluated and appropriate measures taken to address impacts.

At each segment or intersection, specific mitigations are recommended to accommodate non-motorized travel.

Roadway shoulder improvements will be made to SR 99 at the shared use path terminus north to 70th Avenue East. Shoulder width will be widened to not less than 5 feet and sidewalks, curb and gutters will be considered to control motorized access and provide for safe pedestrian travel on this regionally recognized bike route. The south path terminus beneath the SR 167 overhead structures at SR 99 will also require a crossing treatment.

With the temporary closure of 70th Avenue East and the remaining routes being 54th Avenue East and Porter Way, physical reviews of the facilities and minor improvements may be necessary to accommodate non-motorized travel during the 70th Avenue East detour phase.

The SR 167 project includes riparian restoration that will impact the westerly segment of the Interurban Trail. The trail alignment will be re-established outside of the Hylebos Creek and riparian restoration zone, as discussed in Chapter 5 as part of efforts to avoid and minimize impacts to recreation resources.

Elements of the I-5 Interchange design, including relocation of Surprise Lake Drain and Hylebos Creek, associated riparian areas, and the relocation of 20th Street East will impact the Pacific National Soccer Park. As discussed in Chapter 5, FHWA and WSDOT will work closely with the cities of Fife and Milton, and with Pierce County to address impacts to this proposed facility.

FHWA and WSDOT will also work closely with the City of Fife to address impacts to the Lower Hylebos Nature Park, potentially including access and parking.

3.16 Cultural Resources

Federal regulations, particularly Section 106 of the National Historic Preservation Act of 1966, and Section 4(f) of the Department of Transportation Act of 1966, require identification and evaluation of historic properties, including archaeological sites, within the area of potential effect (APE) of proposed federally aided or sponsored projects. Properties or sites that are listed in the National Register of Historic Places (NRHP) are protected from project impacts. Those potentially eligible for NRHP listing require mitigation or further evaluation of eligibility.

During the Tier I NEPA Process, Eastern Washington University Archaeological and Historical Services (AHS) performed a cultural resources overview. Background research included archaeological and historical record reviews and consultations with staff of Pierce County, the Puyallup Tribe of Indians, and Washington State Office of Archaeology and Historic Preservation, which is now the Department of Archaeology and Historic Preservation (DAHP). Findings relevant to Tier I Preferred Alternative 2 included three properties recorded by Pierce County and an ethnographically documented Puyallup winter village. Both the Tier I FEIS and Record of Decision (ROD) identified an archaeological survey would be done as part of Tier II studies. The Tier I FEIS called for special attention to creek crossings and remnant and extant marshes. The Tier I ROD required the Tier II project area also be canvassed for historic buildings.

3.16.1 Studies Performed and Coordination Conducted

During the Tier II NEPA Process, AHS conducted cultural resource investigations of the proposed SR 167 mainline and the interchange options and proposed weigh stations. Tasks included collection of background information, a pedestrian survey, evaluation and inventory of historic structures, archaeological testing, and preparation of a discipline report in 2001 that was subsequently revised to include supplemental information (AHS 2005). Most fieldwork was conducted in 2000 and 2001. Supplemental studies of the Hylebos Creek relocation and riparian restoration proposal were completed in 2002 (AHS 2002). Additional studies of buried trees in the city of Fife area and of a potential wetland mitigation site, which is no longer preferred, were conducted in response to comments on the Tier II DEIS. The two park and ride lots were studied in 2004 (AHS 2005).

The Tier II area of potential effect was determined in consultation among AHS, the Washington State Department of Transportation (WSDOT), the Puyallup Tribe of Indians, and DAHP (Brooks pers. comm. 2000). Site files at DAHP in Olympia were searched by AHS for previously recorded cultural resources.

AHS consulted with a geomorphologist-geoarchaeologist to identify landforms and other high potential areas for archaeological testing, which was only conducted after WSDOT obtained permissions to enter from property owners. AHS also coordinated with local farmers to delay surveys in fields containing market-ready vegetables.

Information on a potential area of interest to the Puyallup Tribe of Indians, in the vicinity of the Valley Avenue interchange options, was provided orally by the tribal historian. The cultural resource discipline report was provided to both DAHP and the Puyallup Tribe of Indians. FHWA, with assistance from WSDOT, consulted with the Puyallup Tribe of Indians to help identify traditional cultural properties (TCPs) in the project area that may be eligible for listing in NRHP. Sites indicated as culturally significant by the Puyallup Tribe of Indians were also studied.

Potential impacts of the Preferred Build Alternative were estimated by determining property parcels that contained cultural resource sites or historic structures identified during Tier II and through which passed the footprint of the mainline or interchange options, and related facilities like park and ride lots. This approach tended to maximize impacts, especially for historic buildings, because the structures were sometimes located well away from the project footprint. Thus, when calculating environmental screening scores for the interchange options, only those sites or structures within or immediately adjacent to the footprint were considered affected, and thus given a score of 5, as specified in the *Tier II EIS Study Plan* and Table 2-4 of this document. Structures in potentially impacted parcels, but away from the footprint, were scored a 1 because they would not be affected by the project.

3.16.2 Affected Environment

The project area was originally in the territory of the Puyallup Tribe of Indians. Four permanent Puyallup villages were potentially located on creeks, rivers, or upper tidal flats in or near the project area. The Puyallup Tribe of Indians utilized temporary camps during their annual subsistence harvests. Waterways served as the most important transportation routes because the Puyallup River Valley was covered by a dense forest with almost impenetrable undergrowth.

Fur traders were the first European-Americans to interact regularly with the Puyallup Tribe of Indians. Interactions became increasingly frequent and eventually resulted in the Treaty of Medicine Creek in 1854 that created the Puyallup Indian Reservation. Reservation boundaries were established in 1856, and tribal members were selecting and improving their personal allotments through the 1870s. In the 1890s Congress authorized possession of land on the reservation by non-Indians.

Dairies, chicken ranches, bulb and berry operations, and vegetable truck farms became increasingly prevalent until replaced by hop fields in the 1870s. Vast acres of hops were severely impacted by parasitic hop lice in the 1890s, causing a return of more diversified farming. A number of small settlements sprang up in the area with the advent of railroads. Visible remnants of these remain, as do some farmsteads and scattered houses. In recent years proximity to nearby highways and the Port of Tacoma has created a demand for large manufacturing and product distribution centers in the project area. This has created contemporary changes in land use from traditional farming (see Section 3.11).

Tier II studies of the proposed footprint identified one prehistoric resource that is eligible for listing in NRHP. This site is located on private property along SR 99 in the I-5 Interchange portion of the proposed project. The Federal Highway Administration (FHWA) and WSDOT will ensure that this site is not adversely affected by the project.

One historic site near the Valley Avenue interchange options does not appear eligible for NRHP listing, based on results of archaeological testing in Tier II. However, there is a nearby site of potential interest to the Puyallup Tribe of Indians, based on interviews with the tribal historian. The Sites of Cultural Significance study did not identify any properties potentially eligible for NRHP listing as TCPs within the study area.

In the riparian restoration area between Hylebos Creek and proposed SR 167, a single probable prehistoric artifact was identified during survey and shovel testing. The land parcel that produced this prehistoric artifact is on higher ground than the surrounding area and contains fill from an unknown locale. The artifact does not appear to be associated with the property otherwise, and no possible artifacts were found in other testing of the location. The other field survey done in the riparian restoration area found some cultural material which is considered a historic-modern object of limited significance. The only cultural resource found at the park and ride sites was a 1920s era residence that is not eligible for NRHP listing.

Eight previously recorded historic structures along the mainline were re-evaluated during Tier II. Of these the Puyallup River / North Meridian Bridge, Firwood School Gymnasium, George Hoertrich Electrical Shop, and Golden Rule Motel were previously determined by WSDOT with SHPO concurrence not to meet NRHP criteria. The other four, plus another 56 newly recorded structures, have been evaluated for NRHP eligibility. Of these 60 historic properties, four appear to meet NRHP eligibility criteria. All are residential structures marked by excellent architectural integrity, physical condition, and/or setting.

The Carson Chestnut Tree, located at the SR 161 / SR 167 interchange, was nominated for the Washington Heritage Register as a historically significant arboreal specimen. The buried trees near Fife were determined to be typical of those buried by mudflows and flooding from Mount Rainier-derived lahars throughout the lower Puyallup River valley. Thus the buried trees are not cultural resources. No TCPs were identified in consultations with the Puyallup Tribe of Indians. Nowhere in the SR 167 area of potential effect are there enough historic properties of sufficient quantity and quality to define an historic district eligible for NRHP.

Section 4(f) applies to archaeological sites and structures eligible for inclusion in the NRHP. Section 4(f) analysis was conducted, as required under the Department of Transportation Act of 1966, and it comprises Chapter 5 of this Final EIS.



The Carson Chestnut Tree is thought to be the sole remaining feature of an 1853 land claim by John Carson.

3.16.3 Impacts of Construction

No Build Alternative

The No Build Alternative assumes that the proposed project will not be constructed and that no right-of-way will need to be acquired and developed. Under this alternative, land use development trends would continue to occur according to land use plans, zoning designations, and regulations adopted pursuant to the Growth Management Act (Pierce County and the cities of Fife, Puyallup, Milton, and Tacoma).

Build Alternative

Mainline

Potential impacts are summarized in Table 3.16-1. Most mainline impacts are associated with constructing the I-5 Interchange portion of the project. The NRHP-eligible, prehistoric cultural site near SR 99 and three NRHP-eligible historic structures are located here. Another 15 parcels in this portion of the project contain inventoried buildings, which are not NRHP-eligible historic structures. Chapter 5 discussed NRHP-eligible sites and structures in the context of Section 4(f) properties.

54th Avenue East Interchange Options

At this interchange there were no parcels containing sites or structures potentially eligible for NRHP or Washington Heritage Register (Table 3.16-1). The small difference in cultural resource screening scores between the Half-Diamond and Preferred Loop options at 54th Avenue East (Table 3-16.2) was considered inconsequential because there would be no direct effects to the inventoried structures.

Table 3.16-1: Cultural Resources Potentially Affected

Project Location	NRHP Site/Structures	WA Heritage Register	County Inventory
Mainline Segments			
SR 509	0	0	1
I-5	4	0	15
Valley	0	0	4
SR 161	0	0	2
54th Avenue East Interchange Options			
Half Diamond	0	0	2
Loop	0	0	0
Valley Avenue Interchange Options			
Freeman Road	1	0	12
Valley Avenue	1	0	4
Valley Ave Realignment	1	0	5
SR 161 / SR 167 Interchange Options			
Urban	0	1	2
Diamond Medium	0	1	2
Diamond Low	0	1	2
Total	5	1	28-38

Note: Parcels within the project footprint containing cultural resource sites or inventoried structures were considered to be impacted. All inventoried structures were considered to have potential Pierce County historical significance.

Valley Avenue Interchange Options

One house on Freeman Road is eligible for NRHP at this interchange, which is slightly outside the project area, and thus would not appear to have any direct construction impacts. All three options at Valley Avenue interchange affect this house in the same manner.

One historic site at this interchange is slightly outside the project area, and thus none of the options at Valley Avenue interchange would appear to have direct construction effects.

One site in the vicinity of this interchange option is of potential interest to Puyallup Tribe of Indians. This area could be affected by construction of either the Preferred Valley Avenue or Freeman Road option at this interchange. Prior to any ground disturbing activity in this area, the Tribe will be consulted.

Differences in screening scores among the options reflect effects on structures inventoried during Tier II. The high score for the Freeman Road option (Table 3.16-2) resulted because seven structures were within or adjacent to the option footprint. Conversely, only one structure was considered affected by the Preferred Valley Avenue option. The Valley Avenue Realignment had an intermediate score, with effects predicted on three structures.

Table 3.16-2: Cultural Resource Screening Scores for Interchange Options

Project Location	NRHP	Total
54th Avenue East Interchange Options		
Half Diamond	0	2
Loop	0	0
Valley Avenue Interchange Options		
Freeman Road	1	40
Valley Avenue	1	8
Valley Ave Realignment	1	17
SR 161 / SR 167 Interchange Options		
Urban	0	7
Diamond Medium	0	7
Diamond Low	0	7

Note: Inventoried structures within or adjacent to the project footprint were considered affected and given a score of 5. Parcels with inventoried structures away from the footprint were scored a 1 for No Effect. A score of 0 indicates no parcels with potentially eligible sites or structures occurring within the interchange options, exclusive of the mainline footprint.

SR 161/SR 167 Interchange Options

There was no difference in cultural resource effects or screening scores among the three options at this interchange. No effect on the Carson Chestnut Tree is expected because WSDOT and FHWA have committed to avoiding the tree and avoiding construction activities that might damage the tree. All three options would affect the Puyallup River / North Meridian Bridge.

In spite of the detailed studies during Tier II, construction of SR 167 could disturb or destroy previously undiscovered archaeological sites. If sites or cultural resources are found during construction, all work in the area would stop and the requirements of the project *Cultural Resources Discovery Plan* would be followed.

3.16.4 Impacts of Operation

Cultural resource and archaeological sites are not usually adversely affected by operation of transportation projects after construction. Historic structures, or their use and enjoyment, may be affected by vibrations or noise caused by traffic. None of these factors are expected to cause major effects if this project is constructed.

3.16.5 Indirect Impacts

The geographic boundary for analysis includes lands within the Urban Growth Area developed by Pierce County. Although there is a county-wide inventory of historic properties, the temporal analysis was limited by the lack of historic property inventories outside the project area. Thus this analysis incorporates the current baseline and project effects from development of the Urban Growth Area defined by Pierce County.

The SR 167 Preferred Build Alternative is expected to lead to some limited construction impacts on cultural resources. As design progresses, further efforts will be made to avoid or minimize the effects to cultural and historic resources.

3.16.6 Cumulative Impacts

The SR 167 project and other planned development in the area will have cumulative effects to cultural resources in the immediate project area. Likewise, cumulative effects of other actions in the Puyallup Valley that are unrelated to the proposed SR 167 Extension would mostly result from ground disturbance or building demolition associated with transportation improvements and new commercial or industrial developments. These effects are anticipated to be concentrated in the Urban Growth Boundary as planned under the Growth Management Act, rather than dispersed throughout the county. The mitigation measures developed to avoid cultural resource effects by the proposed project would also minimize contributions to cumulative effects.

3.16.7 Mitigating Measures

The Tier I ROD called for design efforts that attempted to save the Carson Chestnut Tree. Accordingly, all options at the SR 161 / SR 167 Interchange were designed to protect this historic tree, which has been nominated for listing on the Washington Heritage Register.

A Section 106 Memorandum of Agreement (MOA) was developed in consultation with FHWA, SHPO, the Advisory Council on Historic Preservation, and the Puyallup Tribe of Indians to address adverse effects of the project to the identified archaeological site and four historic structures. The MOA includes measures to minimize or avoid the effects. The City of Fife will be notified prior to the purchase of the historic properties subject to protection under Section 106. Prior to any ground disturbing activity in the Valley Avenue Interchange area, the Puyallup Tribe of Indians will be consulted.

An Archeological Monitoring Plan, which may include geological model, detailing personnel and methodologies for locating presently undiscovered buried cultural resources potentially associated with ancient ground surfaces will be developed during final design.

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3.17 Cumulative Impacts

Cumulative impacts are defined by the Council on Environmental Quality's regulations implementing the National Environmental Policy Act (NEPA) as the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR Section 1508.7).

Through public and agency scoping and review of the Draft EIS, the project team focused its discussion of cumulative effects. As a result, the Final EIS describes cumulative effects to those resources for which the proposed project is likely to contribute, either positively or negatively—or where it is likely to alter the rate or magnitude of other foreseeable impacts. These resources are: Water Resources; Wetlands; Wildlife, Fish, and Threatened and Endangered Species; Land Use, Socioeconomics, and Environmental Justice; Farmland; and Cultural Resources.

Cumulative impacts to the other resources are not discussed because the proposed transportation project is not likely to contribute, either positively, negatively, nor is it likely to alter the magnitude of other foreseeable impacts.

Spatial and temporal parameters for cumulative effects analysis of the SR 167 Extension are described in Section 3.1.2. Reasonably foreseeable future actions and projects are summarized in Section 3.2.7. Cumulative impacts on specific resources are discussed in respective sections of Chapter 3.

This section summarizes the conclusions for resources considered most susceptible to cumulative impacts. Net Environmental Benefits Analysis (NEBA) is then discussed to estimate cumulative changes in terms of stream and riparian habitats.

3.17.1 Critical Resources

Table 3.17-1 summarizes the anticipated contribution to cumulative impacts associated with the SR 167 Build Alternative and other development planned under the Growth Management Act (GMA). Resources that may experience substantial cumulative change are shaded in the table and described further in this section. The impacts were determined by reviewing the direct project impacts and best professional judgment of cumulative impacts.

Table 3.17-1: Anticipated Cumulative Impacts Compared

Resource (critical resources are shaded)	Build Alternative	No Build - Other Planned Development	Impacts as a Result of Planned Growth
Water Resources	Impacts	Impacts	Yes
Wetlands	Impacts	Impacts	Yes
Wildlife, Fish and T&E Species	Impacts	Impacts	Yes
Air	No change	No change	Yes
Noise	Impacts	Impacts	Yes
Energy	Improvements	Impacts	Yes
Hazardous Materials	Improvements	Improvements	Yes
Visual Quality	Impacts	Impacts	Yes
Public Services & Utilities	No change	Impacts	Yes
Land Use	Impacts	Impacts	Yes
Socio-Economic	Improvements	Improvements	Yes
Farmland	Impacts	Impacts	Yes
Displacement, Disruption, and Relocation	Impacts	Impacts	Yes
Transportation	Improvements	Improvements	Yes
Pedestrian and Bike Facilities	Improvements	Impacts	Yes
Cultural Resources	Impacts	Impacts	Yes

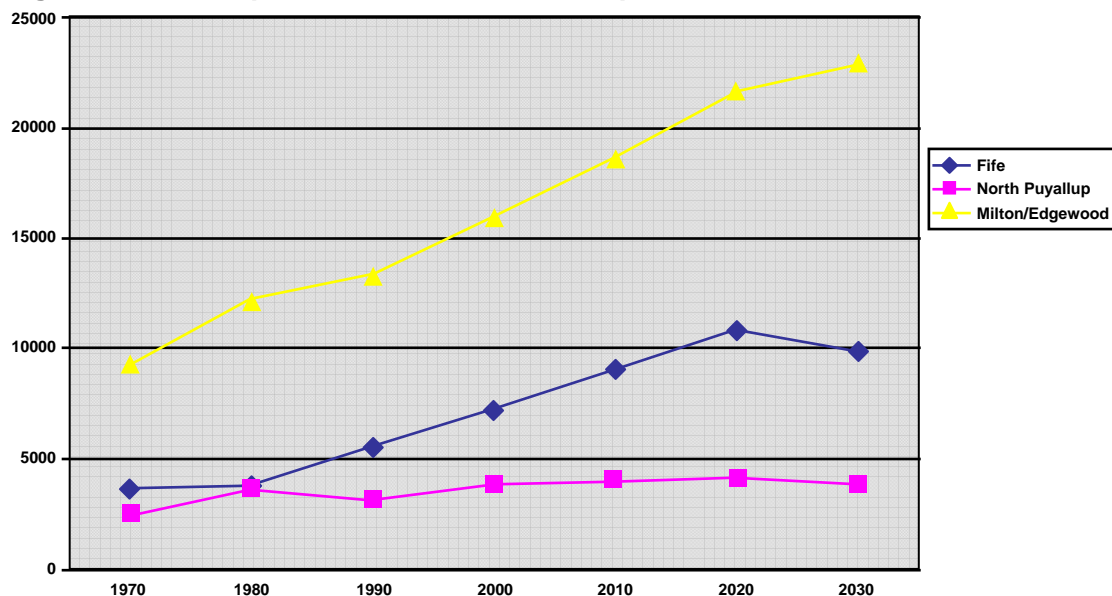
No change = no change from baseline; Impacts = anticipated negative cumulative impacts to the resource; Improvements = anticipated positive cumulative impacts the resource.

The Build Alternative is anticipated to affect the rate of growth of the development planned under the GMA by the cities of Fife, Milton, and Puyallup, and Pierce County. All resource impacts are likely to be affected as a result of planned growth, as identified in Table 3.17-1.

Land Use, Socioeconomics, and Environmental Justice

Cumulative impacts on land use are discussed in Section 3.11.1. Responsibility for the pattern and density of growth and development of the landscape lies with the county and city governments. Considerable population growth has occurred in the study area and Pierce County. This growth is forecasted to continue through 2030. Figure 3.17-1 summarizes population trends documented by Pierce County between 1970 and 2030.

Figure 3.17-1: Population Growth in the Proposed SR 167 Corridor



Under the Build Alternative approximately 286 to 306 acres would be directly converted to transportation-related uses. This incremental effect along with other land use effects and transportation improvement projects in the region would contribute to and hasten the build out within the project area.

The conversion to high density land use is consistent with and supported by the policy framework for future development as identified in the comprehensive plans and development requirements adopted by valley jurisdictions (Fife and Puyallup).

Substantial cumulative impacts occur if a combination of environmental effects (i.e. traffic, displacements, noise, and visual impairments) has more than a moderate impact on community cohesion. No substantial cumulative impact is anticipated as the completion and operation of the proposed project would not create additional physical barriers to social interaction. In addition, the majority of the project in the northern segment of the corridor falls within the existing I-5 corridor; therefore, no cumulative effect on movement within or between neighborhoods is anticipated.

Farmland

Cumulative impacts on farmland are discussed in Section 3.12.5. Since the Tier II DEIS was written, much of the land that has been identified for the highway alignment has been on the market for sale or has already been sold for development purposes. It is expected that as impacted farmland is sold, it will convert to commercial/industrial uses with the Build Alternative or long-term with the No Build Alternative.

Cumulative impacts on farmlands are expected to be substantial. This is a result of the urban designation of the area, the increasing land values that make farming

less profitable, and lack of farmland protection policies. The loss of farmland in the Puyallup River Valley represents a shift in historic use of the area.

Water Resources

Cumulative impacts on water resources are discussed in Section 3.2.7. Groundwater within the Puyallup River Valley is of good quality indicating no major cumulative impacts. Surface waters in the area have been impacted by clearing, conversion to farming, and commercial/industrial or residential development over the past century. The Build Alternative is expected to improve the overall functioning of the riparian-stream-wetland systems in the project area. This will be an overall improvement from the current open and ditched stream systems that are overrun by grasses and other invasive weeds. However, no single project can compensate for all past impacts and all future development. It is likely that water quality, habitat complexity and many other water resources will be impacted by future development regulated by other agencies.

Wetlands

Cumulative impacts on wetlands are discussed in Section 3.3.6. Wetlands in the Puyallup River basin will continue to be converted to residential/commercial/industrial land uses irrespective of the proposed project. The lack of available data on wetland loss and the effectiveness of replacement efforts required of compensatory mitigation make it difficult to quantify the total extent of impacts to wetland functions and values. The long-term impacts on wetlands associated with this project are not considered substantial due to the opportunities for improving degraded wetlands in the area and the benefits of riparian restoration for stormwater management.

Wildlife, Fish and Threatened & Endangered Species

Cumulative impacts on wildlife, fish, and Threatened & Endangered (T&E) species are discussed in Section 3.4.8. The most notable cumulative effects on these species include increases in summer stream temperatures and pollutants including stormwater runoff contaminants, conversion of existing habitats (forested, agricultural, vacant land), hastened build out of high-density uses, further fragmentation of riparian and other habitat areas, and a reduction in available mitigation and restoration areas. The Riparian Restoration Proposal (RRP) will restore and protect a large area of riparian and wetland habitat, connect over 1,450 acres of riparian and upland habitat, and improve stream habitat conditions in Hylebos and Wapato Creeks and Surprise Lake Drain. However, the RRP is not expected to completely offset cumulative impacts. The degree of cumulative impact minimization is largely dependent on successful coordination of large-scale Watershed planning and implementation and the availability of future mitigation and restoration sites.

Cultural Resources

Cumulative impacts on cultural resources are discussed in Section 3.16.6. Past, present, and future actions in the Puyallup Valley cumulatively impact cultural resources primarily through ground disturbance or building demolition associated with transportation improvements and new commercial or industrial developments. Many archaeological sites and historic structures were impacted

by past activities before laws and regulations were promulgated to protect them. This may also be true of some traditional cultural properties of the Puyallup Tribe of Indians. Measures now required to mitigate avoidable adverse effects of new projects to cultural resource minimize future increases in cumulative impacts.

3.17.2 Net Environmental Benefits Analysis

NEBA was conducted to quantitatively estimate the benefits of the RRP being offered as an alternative to conventional stormwater management for the SR 167 Extension Project (CH2M HILL 2005). NEBA is a method for comparing net environmental benefits accumulated over time from different project scenarios.

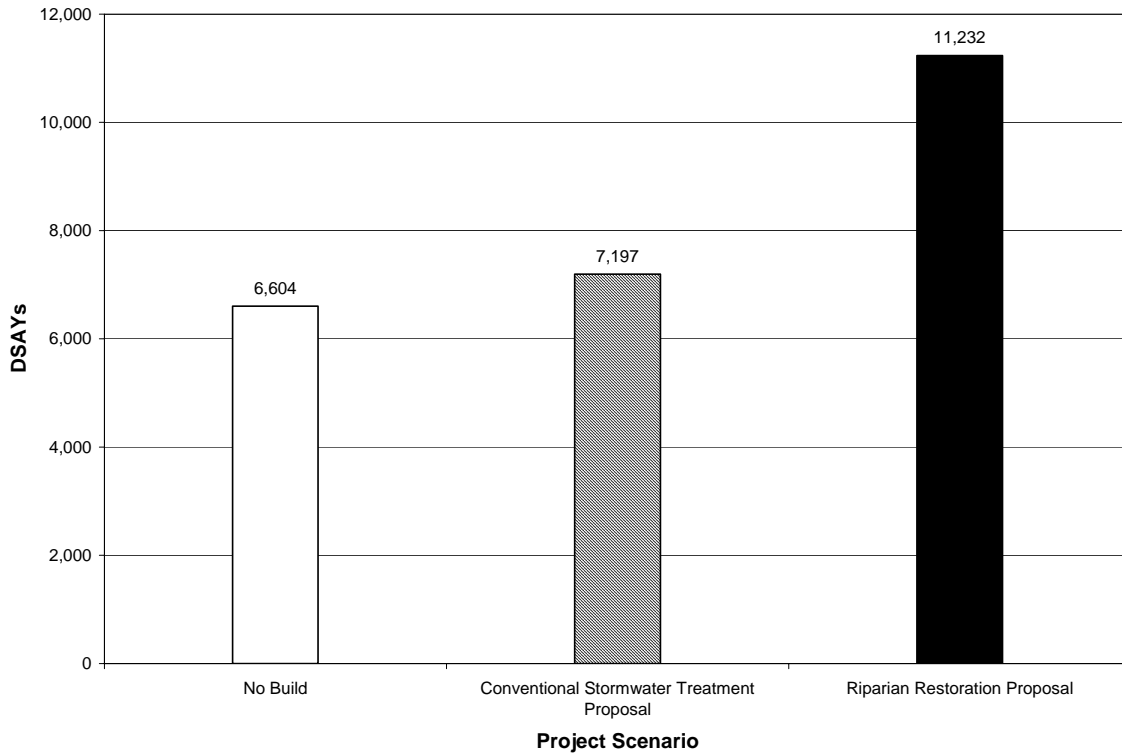
Section 3.2 provides more information about stormwater management alternatives evaluated in the NEBA. Net environmental benefits for stream channel, riparian wetland, and riparian upland habitat types were evaluated for portions of Hylebos Creek, Surprise Lake Drain, and Wapato Creek.

Impacts to habitats related to the proposed road construction outside of the restoration study area were not addressed in this NEBA. In addition, no costs were evaluated in this study.

This NEBA used Habitat Equivalency Analysis to calculate ecological benefits integrated over area and time. This allowed comparison of gains in services that would occur over different time periods.

The results from the NEBA show that the RRP would provide substantially greater environmental benefits than the No Build and conventional stormwater treatment scenarios (Figure 3.17-2). The conventional stormwater treatment proposal would provide more environmental benefits than the No Build, albeit limited.

Figure 3.17-2: Relative Comparison of Ecological Services by Project Scenario



Note: DSAYS or Discounted Service Acre Years is the unit of measure for ecological benefits integrated over area and time.

The RRP has the potential to provide many environmental benefits.

Protects habitat – Preserving priority habitats is necessary before the remainder of the Puyallup River Valley becomes developed. In addition to improving the overall habitat condition, the RRP also protects the stream, wetland, and riparian habitat.

Enhances connectivity of wildlife habitat – The RRP links multiple fragmented habitats together resulting in over 1,000 acres of contiguous habitat. The RRP creates a link from the Hylebos Wetlands in Federal Way down to Hylebos Creek, and potentially Commencement Bay. The linkage of Surprise Lake Tributary connects the Hylebos Creek to undeveloped upland areas of the Surprise Lake drainage. Undeveloped upland habitat areas along the hillside between Surprise Lake Tributary and Simmons Creek connect to the Wapato Creek RRP. It is reasonable to expect the RRP wildlife connectivity would be beneficial to all the habitat areas that are connected.

Allows public access and environmental education – FHWA and WSDOT are proposing a multi-use trail between 54th Avenue East and Highway 99, which could provide opportunities for passive recreational activities in the RRP area.

Treats highway runoff – Where possible, low impact development methods would be used, including ecology embankments or natural dispersion over landscaped fill slopes. No ditches are proposed between the highway and the

creek where natural dispersion or ecology embankments are used, opting instead for natural dispersion through the riparian buffer. This method of conveyance might result to localized ponding and the natural establishment of forested wetlands, which is acceptable for this land use.

Improves stream conditions that are limiting to fish – The relocated sections of Hylebos Creek and Surprise Lake Tributary would include engineered large woody debris (LWD) as part of the channel designs. As the new riparian vegetation matures, it would begin to recruit into the channels and provide a sustainable source of LWD. As the streambank vegetation of the RRP matures, the channels would develop more complexity, including undercut root banks, LWD, and pools. These features provide in-stream refugia and more variety of aquatic habitats. The RRP provides much-needed off-channel-rearing habitat for juvenile salmon.

Supports salmon recovery efforts – The RRP complements other restoration efforts by the Puyallup Tribe, Pierce County, Pierce County Conservation District, and Friends of the Hylebos Wetlands that improve spawning habitat in the upper watersheds, as well as estuarine habitat improvements in Hylebos Creek.

Enhances existing wetlands with the RRP area – Several existing wetlands have been identified within the proposed RRP boundary. Most of these wetlands and their buffers have been disturbed by development, conversion to agricultural lands, or are overrun with invasive plant species. The RRP would enhance the condition of most of these existing wetlands and permanently protect them with land conservancy.

Improves water quality – Hylebos Creek, Surprise Lake Drain, and Wapato Creek each have water quality impairments that the RRP would help improve, including:

- High in-stream temperatures
- Chronic summer low in-stream flows
- Nutrients, phosphorus, and fecal coliform
- Low dissolved oxygen
- Total Suspended Solids
- chemical contamination

Reduces flooding – The RRP addresses flooding issues with a variety of measures, primarily by removing buildings, roads, and infrastructure from the floodplain and restoring natural floodplain connectivity to stream channels. The floodway channel proposed for the relocated Surprise Lake Tributary, in combination with the hydraulic mitigations proposed for Hylebos Creek between Highway 99 and 12th Street, actually reduce the extent of flooding in areas beyond the RRP boundaries, resulting in more developable land.

Encourages public partnerships – The RRP would encourage public partnerships such as:

- Pacific National Soccer Complex
- Interurban Trail
- Potentially the Wapato Creek Trail
- Lower Hylebos Nature Park

Offers an alternative to conventional flow control Best Management Practices – The RRP is proposed as an alternative to conventional flow control Best Management Practices in reaches of Hylebos Creek, Surprise Lake Tributary, and Wapato Creek in the vicinity of the proposed Valley Avenue interchange. The RRP meets the flow control goal of preventing an increase in streambank erosion by directly stabilizing the currently denuded streambanks with native riparian vegetation. The RRP not only prevents an increase in flooded areas, another flow control goal, in the Hylebos Creek and Surprise Lake Tributary, but also reduces flood impacts by nearly 50 percent. The RRP enhances the biological integrity of the streams by improving the habitat of the streams and associated riparian areas.

Conclusion – Although the RRP, if developed to its full potential, could have substantial ecological benefits, cumulative impacts on critical resources are substantial. A single project cannot compensate for all past and future development, but it can set an example of how future development can be designed to reduce cumulative impacts.

3.18 Relationship Between Short-term Uses of the Environment and Long-term Productivity

Construction of the Build Alternative for SR 167 would result in local short-term impacts and uses of resources, while providing long-term transportation improvements consistent with local and regional land use and transportation plans. The long-term productivity of the land as farmland will be lost, but that impact will occur even under the No Build Alternative because of the zoning on the properties.

Short-term environmental impacts related to project construction include construction jobs, construction-related noise and dust, traffic delays from temporary road closures and detours, and increased soil erosion potential.

Landscaping and erosion control measures will be implemented during and after roadway construction. While native plant species may be used in project landscaping, there will be a long-term change in vegetation types from existing conditions, particularly in areas presently in active agricultural use.

There is a potential for short-term effects on Hylebos Creek, Surprise Lake Drain, Wapato Creek, and other streams in the vicinity of project construction. Mitigation measures to relocate Hylebos Creek and Surprise Lake Drain, to protect streams from highway runoff pollutants, and to replace flood storage lost to roadway fills will result in no major impact to water quality and aquatic life and should improve long-term productivity of these systems.

The proposed riparian restoration proposal will provide stormwater flow control and reduce the need for conventional flow control BMPs. In addition, it has the potential for both positive and negative impacts to wildlife species. The most notable positive benefit of the plan is the protection and restoration of a fairly large contiguous block of land in an urbanized setting. The proposal will increase the ability of wildlife to travel in a north-south direction along Hylebos Creek, but will result in an impediment to east-west travel due to most of the freeway extension being placed on fill instead of bridge structure. The proposal will restore floodplains with riparian vegetation along the lower Hylebos Creek, Surprise Lake Drain, and Wapato Creek, and address many of the factors which limit salmon and trout recovery including altered hydrology, lack of riparian forests, loss of stream complexity and large woody debris in the channels, lack of juvenile salmon rearing areas, and increases in stream temperature.

Impacts to both Hylebos Creek and Surprise Lake Drain will be mitigated by relocating portions of the streams into approximately 9,350 lineal feet (4,010 lf Hylebos Creek and 5,340 lf Surprise Lake Drain) of natural sinuous channel within the large buffer provided through the riparian restoration proposal. These relocations will have associated impacts, such as temporary sedimentation, that generally will be short-term (until the new channel reaches equilibrium). The baseline condition of the creeks will be improved by the meandering of the new streambeds, thereby increasing the overall channel length and capacity. The creek and its tributary will be restored to a more natural condition, rather than a ditched, straightened channel. In addition, four county road crossings, one I-5

crossing, and a private crossing will be eliminated and replaced with crossings designed to meet current Washington Department of Fish and Wildlife fish passage criteria.

Construction of the Build Alternative will have the short-term effect of relocating residences, farms, and businesses. However, the project is consistent with regional and local land use and transportation plans. The project will result in more efficient vehicle movements through the area and enhance the area's long-term productivity. Higher average operating speeds on the area's roadway will reduce delays and fuel use. The project will complement the Port of Tacoma's 20-year development plan by providing a high speed, high capacity connection to the region's freeway system.

Provisions of new access, particularly in the vicinity of new interchanges with local arterials, will result in a short-term increase in the development of commercial and industrial properties. There may be a slight decrease in the value of residential properties adjacent to the right-of-way (ROW), although land values may increase if the residential structure is located on commercially-zoned property.

There may be some short-term reduction in property tax revenues because of the loss of residential and commercial properties. Property tax loss will be offset during the construction phase by sales taxes from construction spending. In the long term, increased commercial and industrial development resulting from completion of the Puyallup valley freeway system will probably result in an overall increase in tax revenues.

3.19 Irreversible and Irretrievable Commitment of Resources

Construction of SR 167 between SR 161 and SR 509 involves commitment of a range of natural, human, and fiscal resources. Land required for highway ROW will be irreversibly committed during the functional life of the highway. All of the lands to be acquired are designated for commercial, residential, or industrial uses, but some are currently in agricultural production. The conversion of these agricultural lands will be irreversible after the project is constructed. While it is possible for land to revert to non-highway uses (right-of-way vacation), the likelihood of such an occurrence for a freeway facility is very small. It is more likely that in the long term, the land would continue as a transportation right-of-way, but incorporate other or additional travel modes such as high speed public transit.

Natural materials used in highway construction include fossil fuels (diesel and gasoline), lubricants, cement, aggregate, soils, and bituminous pavement. Steel and aluminum are also used in large quantities. There is a large amount of labor and energy used in the fabrication and preparation of construction materials. These materials are not generally retrievable, although there is a growing market for recyclable metals, and recycled pavement has been successfully used in some localities. These construction materials are not in short supply and their use in this project would not have a major effect on their continued availability.

Project construction would require a substantial expenditure of state and possibly federal funds that are not retrievable and would then not be available for other uses.

The commitment of resources to this project is based on the concept that residents in the immediate area, region, and state will derive long-term benefits from improved transportation services. These benefits consist of improved accessibility and mobility, travel time and fuel savings, and greater safety, and are anticipated to outweigh the commitment of resources to construct and operate the project.

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Chapter 4

Section 404(b)(1) Alternatives Analysis

May 2005

Tier II Final EIS

SR 167

Puyallup to SR 509

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Chapter 4 Section 404(b)(1) Alternatives Analysis

Section 404(b)(1) of the Clean Water Act stipulates that no discharge of dredged or fill materials into waters of the U.S., which include wetlands, shall be permitted if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant environmental consequences. In Washington, the Signatory Agency Committee (SAC, see section 2.5) has agreed to integrate compliance with Section 404(b)(1) guidelines into compliance with the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA) EIS processes. The SAC Agreement also recognizes the need to consider non-water related impacts and acknowledges that these environmental impacts may affect the decision on the least environmentally damaging practicable alternative (LEDPA). This chapter describes the SAC process that resulted in a May 2005 decision on LEDPA.

4.1 Aquatic Resource Impacts and Mitigation

There are a number of waterbodies present within the project area, including Wapato Creek, Hylebos Creek, Surprise Lake Drain, the Fife Ditch, and the Puyallup River. Portions of Hylebos Creek and Surprise Lake Drain will be filled and new sections of stream created to offset impacts. A Conceptual Mitigation Plan has been prepared that identifies sufficient potential mitigation sites within the Puyallup Subbasin. This plan also contains details for compensatory mitigation to offset stream fill activities, the relocation of Hylebos Creek and Surprise Lake Drain. This plan also details steps taken to first avoid, minimize, and then compensate for impacts to the aquatic ecosystem.

4.1.1 Stream Impacts

An approximately 2,050-linear-foot section of Hylebos Creek adjacent to I-5 will be filled due to the construction of the SR 167/I-5 Interchange. This interchange will also require the fill of approximately 1,000 linear feet of Surprise Lake Drain. Several stream crossings are associated with the Preferred Build Alternative (Table 4-1).

Table 4-1: Structure Work (total number) Over Water Bodies

Activity	Hylebos Creek	Puyallup River	Surprise Lake Drain	Wapato Creek
Culvert Replacement	1	0	0	2
Bridge Widening	2	1	0	0
New Culvert Installation	0	0	1	1
New Bridge Installation	0	0	0	5
Bridge Replacement	4	1	0	0
Remove Undersized Crossings	0	0	0	6
Temporary Crossing	2	3	0	2

Note: High spanning structures are not counted.

Proposed structures over Hylebos Creek, Surprise Lake Drain, and Wapato Creek should completely span these waterbodies, minimizing in-water work. While the placement of fill in the stream or stream bank areas will not be necessary to remove and construct crossing structures over these stream systems, there is a potential to impact these systems through erosion, increased sediment loading, and increased turbidity; all of which have the potential to temporarily impact the aquatic environment. The Preferred Build Alternative may also require the placement of up to four bridge piers within the Puyallup River.

4.1.2 Wetland Impacts

In the SR 167 Tier I environmental analysis, the following wetland inventories were utilized in determining wetland impacts for each of the corridor alternatives:

- City of Fife Inventory (Kask 1991)
- Pierce County Inventory
- City of Puyallup Inventory
- National Wetland Inventory

Based on these sources, it was determined that Corridor Alternative 2 had the least amount of direct wetland area impact (11 wetlands affected totaling 7.44 acres).

For the Tier II DEIS, wetlands were identified through field identification and delineation. Through this higher level of analysis, 42 wetlands were determined to be affected by this project totaling 32.9 to 33.6 acres of wetland fill. Section 3.3 of this EIS provides more details on wetland impacts. Table 4-2 summarizes impacts to project wetlands by wetland Category associated with the Preferred Build Alternative. Wetland Categories were determined by using the Washington State Department of Ecology's (Ecology) *Wetland Rating System for Western Washington* (1993).

Table 4-2: SR 167 Wetland Impacts by Category

Category	Wetland Impacts
II	0.8
III	32.1
IV	0.04
Total	32.9

4.1.3 Tier I Wetland Analysis

The U.S. Army Corps of Engineers requested during comment on the Tier II DEIS that the Tier I wetlands analysis be reexamined to further document the increase in wetland impacts. Several factors contributed to the increase.

- Field identification delineated several small wetlands not identified on the existing local and federal wetland inventories.

- The Tier I corridor alternative was limited to a 220 foot wide corridor because it was assumed that there would be a narrower median and the roadway would be placed either on structure or on a lower embankment than what is used in the Tier II DEIS. During the Tier II process, it was also determined necessary to place the roadway above the existing 100-year floodplain, which results in an average vertical height of eight feet of embankment throughout the project and a correspondingly wider footprint.
- Due to traffic demands, an additional general purpose lane was added between the I-5 interchange and the Valley Avenue interchange.
- The Tier II corridor includes additional features such as interchange options, a separated bicycle path between 54th Avenue East to 12th Street East, weigh stations, and park and ride facilities which increases the project corridor in some areas up to 600 feet wide.

The three corridor alternatives (Corridors 1, 2, and 3) analyzed in the Tier I FEIS are not completely independent corridors, partially sharing the same corridor (Figure 4-1). Corridor alternatives 2 and 3 share an even greater portion of the same corridor, becoming independent north of I-5. Given the factors above and the fact that portions of Corridors 1, 2, and 3 are shared, it can be shown that potential wetland impacts would increase within Corridors 1 and 3 proportionately to Corridor 2.

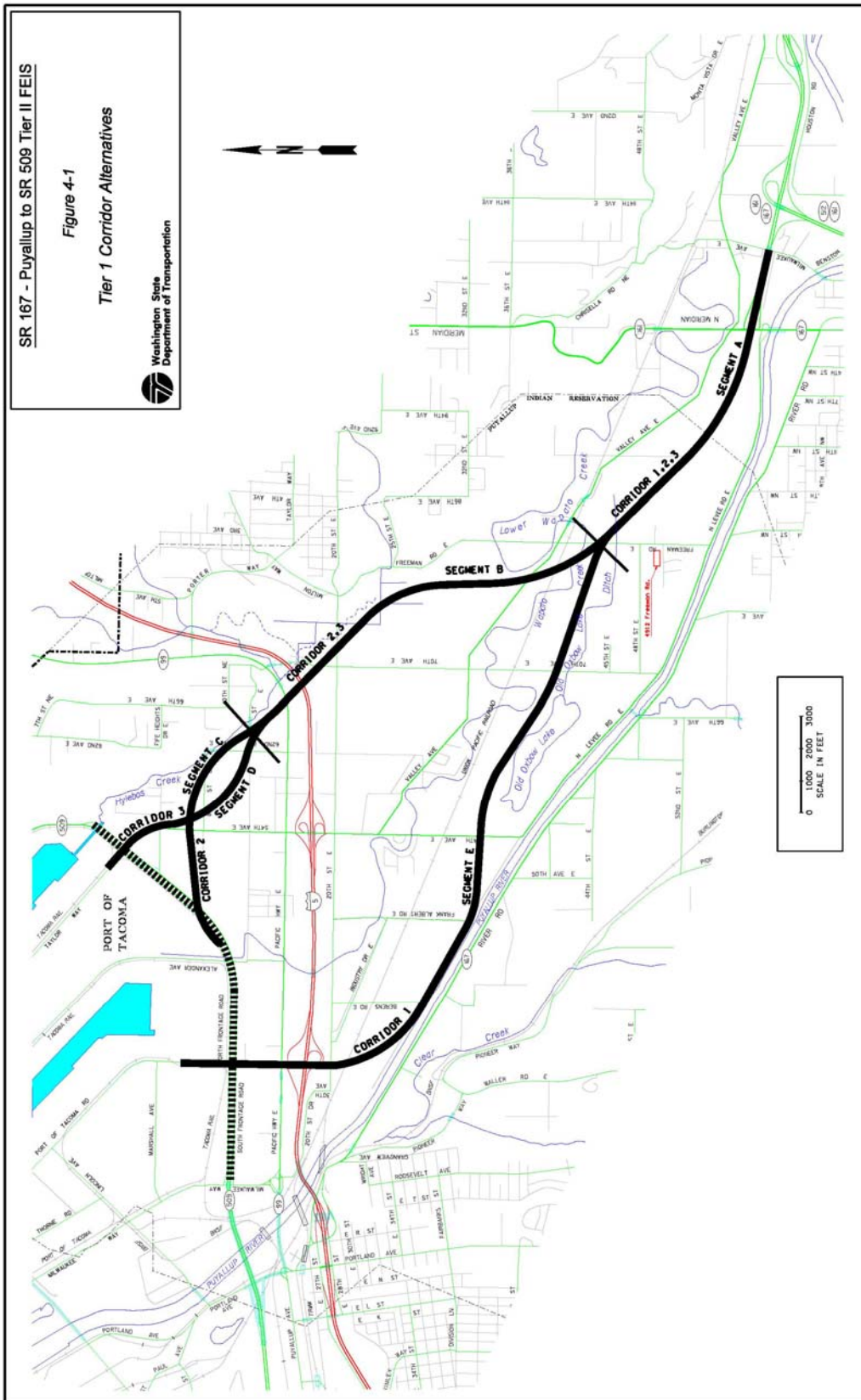
The three corridors analyzed in the Tier I FEIS can be divided into distinct segments, making analysis of increased wetland impacts possible. The three corridors can be divided into five segments: A, B, C, D, and E (Figure 4-1). Segments are determined based on those portions of all three corridors that are shared. In the Tier I FEIS, Corridor 1 identified 21 wetlands, and Corridor 2 and Corridor 3 identified 35 wetlands. In the Tier II EIS, 72 wetlands comprising over 106 acres were delineated in the vicinity of the preferred alternative (Corridor 2).

Segment A

Segment A extends from the project terminus in Puyallup to a point just west of 82nd Avenue East where Corridor 1 diverges from Corridors 2 and 3. Segment A is shared by all three corridor alternatives. In the Tier I FEIS, no wetlands were identified within this segment. In Tier II, seven wetlands were delineated within this segment, with wetland impacts equaling approximately 7.59 acres. This increase in wetland impacts occurs within all three corridors.

Segment B

Segment B extends from the north end of Segment A to where Corridors 2 and 3 diverge, just south of 12th Street East and east of 62nd Avenue East. Segment B is shared by Corridors 2 and 3. In the Tier I FEIS, 30 wetlands were identified within this segment with wetland impacts equaling approximately 7.0 acres. In Tier II, 52 wetlands were delineated within this segment with wetland impacts equaling 24.08 acres. This increase in identified wetland impacts is the same for Corridors 2 and 3.



Segment C

Segment C extends from the north end of Segment B to SR 509 in the vicinity 8th Street East. This segment is specific to Corridor 2 only. In the Tier I FEIS, 5 wetlands were identified with impacts equaling approximately 0.44 acre. In Tier II, 13 wetlands were delineated, with impacts equaling 1.22 acres.

Segment D

Segment D extends from the north end of Segment B to Taylor Way. This segment is specific to Corridor 3 only. In the Tier I FEIS, five wetlands were identified with wetland impacts equaling 8.98 acres. Using the existing information from local and national inventories and applying a 400-foot corridor, currently definable wetland impacts would increase to approximately 12.41 acres (see SR 167 Tier I FEIS Figure 4-23 [Sheet 1 of 5]).

Segment E

Segment E extends from the north end of Segment A to SR 509 at Port of Tacoma Road. Segment E is specific to Corridor 1 only. In the Tier I FEIS, 21 wetlands were identified with impacts equaling 14.55 acres. As with Segment D, using the existing information from local and national inventories and applying a 400-foot corridor, currently definable wetland impacts would increase to approximately 28.67 acres (see SR 167 Tier I FEIS Figure 4-21 [Sheets 1 – 5 of 6]).

Segment E, west of Frank Albert Road, runs parallel to the Puyallup River. In this area, Segment E would cross what has now been identified as a potential compensatory wetland mitigation site for this project. Wetland delineation has not yet occurred at this site, but it is expected that field identification and delineation would increase the amount of wetland impacts associated with Corridor 1 through the wetland mitigation site.

The Tier II DEIS partially delineated one wetland in the vicinity of Freeman Road (the north end of Segment A). Corridor 1 would impact Wetland G, and extending a 400-foot corridor through this wetland would result in 1.63 acres of wetland impacts (see SR 167 Tier II DEIS Figure 3.3-9). Therefore, currently definable wetland impacts associated with Segment E are approximately 30.30 acres, using these factors.

Table 4-3 summarizes wetland impacts, per segment, for both the Tier I FEIS and Tier II DEIS.

Table 4-3: Wetland Impacts per Segment

Segment	Tier I EIS (acres)	Tier II EIS (acres)
A	0.00	7.59 ^a
B	7.00	24.08 ^a
C	0.44	1.22 ^a
D	8.98	>12.41 ^b
E	14.55	>30.30 ^b

a) Actual project impacts based on field identification and delineation shown in Tier II EIS

b) Estimated impacts based on 400' corridor width and wetland inventories shown in the Tier I EIS

Because both Corridor 1 and 3 share portions of Corridor 2, increases in wetland impacts for Corridor 2 would also be seen as an increase in wetland impacts for Corridor 1 and 3. Table 4-4 details which segments are associated with which corridor and estimated wetland impacts that would occur under Tier II. Note that Corridor 1 and 3 impacts would most likely increase substantially with field delineation along the entire corridor length.

Table 4-4: Revised Estimated Tier I Corridor Wetland Impacts

Corridor Alternative ^a	Segments	Tier I FEIS Wetland Impacts	Revised Estimated Wetland Impacts
Corridor 1	A & E	14.55	>37.89 ^c
Corridor 2	A, B, & C	7.44	32.9 ^b
Corridor 3	A, B, & D	15.98	>44.08 ^c

a) Corridor Alternative from the Tier I EIS.

b) Corridor 2 impacts are not an estimate, but actual project impacts from the Tier II EIS.

c) Currently definable estimates. These impacts would most likely increase proportionally with field delineation along the entire corridor.

Based on the above description of changes in wetland impacts between the Tier I FEIS and Tier II DEIS, it can be reasonably concluded that potential impacts within Corridors 1 and 3 would have increased proportionately with the preferred Corridor 2 impacts had the level of identification and analysis been consistent for all corridors.

4.2 Least Environmentally Damaging Practicable Alternative (LEDPA)

As described above, the proposed project is being analyzed under a two-tiered environmental process, with a Tier I FEIS and a Tier II DEIS having been completed. The Tier I FEIS was issued in April 1999, and a Record of Decision (ROD) was issued in June 1999. The ROD identified the Corridor 2 Alternative as the preferred alternative and concurred that it was the LEDPA.

The Tier II DEIS analyzes a single Build Alternative, within Corridor 2 (preferred alternative). The Federal Highway Administration (FHWA) and Washington State Department of Transportation (WSDOT) have taken steps to avoid and minimize impacts to the aquatic ecosystem.

4.2.1 Preliminary Design Avoidance and Minimization

During preliminary design, it was determined that the mainline alignment did not meet current design standards. Five different alignments were evaluated. The preferred alignment shifted the mainline away from Hylebos Creek in order to meet state and Federal design standards. This shift also resulted in a reduction of wetland and floodplain impacts in the corridor segment between SR 509 and I-5. This redesign resulted in the avoidance of nine wetland areas and a reduction of 6.9 acres of wetland impacts, see Table 4-5.

Table 4-5: Comparison of Tier I and Tier II Wetland Impacts Between SR 509 and I-5

Wetland	Size (Acres)	Tier I Corridor Impacts (Acres w/400 ft Corridor)	Tier II Corridor Impacts (Acres)
AA	0.57	0.57	0.00
BB	0.84	0.84	0.00
CC	0.13	0.01	0.00
DD	0.66	0.66	0.00
EE	0.12	0.12	0.00
FF	1.14	0.25	0.00
GG	0.52	0.27	0.00
HH	1.51	0.20	0.00
LL	1.21	1.21	0.38
MM	3.22	3.22	0.18
OO	0.32	0.11	0.00
TOTAL	10.24	7.46	0.56

The majority of Corridor 2 floodplain impacts in Tier I were associated with Hylebos Creek (SR 167 Tier I EIS Figure 4-18). Elevating the freeway on structure in the segment adjacent to Hylebos Creek minimized impacts to this floodplain area. The shift in the alignment in Tier II resulted in avoiding Hylebos Creek floodplain areas (SR 167 Tier II EIS Figure 3.2-1).

Near the Valley Avenue Interchange, it was determined that the Tier I mainline alignment did not meet design standards for horizontal stopping sight distance. The redesign of the alignment allowed placement between the meanders of Wapato Creek. This revised alignment in the vicinity of Valley Avenue also allows for the project to establish an approximately 300-foot riparian buffer around Wapato Creek, as part of the Riparian Restoration Proposal.

Wetland impacts were minimized to the greatest extent practicable. As the design development process continued, additional opportunities for avoidance and minimization were incorporated and are described below.

4.2.2 Mainline Avoidance and Minimization

Streams

The proposed project crosses four streams: Wapato Creek, Hylebos Creek, Surprise Lake Drain, and the Puyallup River. All crossing structures will span the associated stream with the possible exception of the Puyallup River Bridge, minimizing in-water construction. Table 4.1 summarizes the structures (bridges and culverts) that will cross waterbodies in the Preferred Alternative.

Two undersized bridges on Hylebos Creek at 8th Street East and 62nd Avenue East will be removed. An approximately 600-linear-foot section of the existing Hylebos Creek adjacent to I-5 will be left in place, providing off channel habitat

opportunities. Six undersized crossings will be removed and two culverts will be replaced on Wapato Creek, near the Valley Avenue Interchange. These improvements will serve to minimize permanent impacts within the floodplain.

The relocation of Hylebos Creek and Surprise Lake Drain will also minimize any future permanent impacts to these waterbodies. Relocation will create a stream channel that is longer, has more meanders, improved substrate, and provides better aquatic habitat than currently exists in this location.

Potential impacts to aquatic environments associated with bridge construction and replacement and culvert installation can be minimized to the greatest extent possible through the use of approved performance measures. Best Management Practices (BMPs) for bridge removal are described in detail in the Biological Assessment. In addition, potential impacts from bridge construction can be avoided and minimized by development and implementation of the TESC plan and a Spill Prevention Control and Countermeasure (SPCC) plan. The TESC is a working document that details BMPs that will be used during construction to prevent erosion and control sedimentation. During the construction of the project, erosion and sediment control BMPs will be continuously monitored and the TESC plan modified in response to changing site and weather conditions. The SPCC plan specifies the procedures, equipment, and materials used to prevent and control spills of contaminated soil, petroleum products, contaminated water, and other hazardous substances.

Wetlands

The project has minimized impacts to wetlands to the greatest extent practicable at the current level of design. Due to relatively flat terrain and shallow groundwater, it would not be possible to meet the purpose and need of this transportation project without impacts to wetlands within the Puyallup River Valley.

As shown in the SR 167 Tier II DEIS, a conventional stormwater pond system meeting Ecology standards would require a minimum of approximately 24 acres of ponds associated with the Valley Avenue Interchange. The relatively flat terrain and shallow groundwater in this area would require the construction of large, bermed ponds. It would be very difficult to find locations for these ponds that did not impact additional existing wetland areas and Wapato Creek. A Riparian Restoration Proposal (RRP) has been prepared for the Valley Avenue Interchange for stormwater flow control, which could avoid a potential two acres of wetland impacts that would be associated with a conventional stormwater pond system. For more information about RRP, see Chapter 3.2.

4.2.3 Interchange Options Avoidance and Minimization

In addition to avoiding and minimizing impacts to aquatic ecosystems within the mainline, the project team developed a number of interchange design options.

54th Avenue Interchange

At 54th Avenue East, the preferred Loop Ramp Option had the least amount of wetland impacts. This option minimizes impacts to Wetland JJ, resulting in an impact reduction of approximately half an acre (Figure 2-2).

Valley Avenue Interchange

An analysis of wetland impacts at Valley Avenue indicated that the Freeman Road Option has the least amount of wetland impacts. The project team reevaluated Valley Avenue Interchange options, in an effort to confirm wetland impacts and identify measures to minimize impacts. The project team determined that bridging Wapato Creek and Wetland QQ as part of the preferred Valley Avenue Option, a span of approximately 100 feet, would reduce wetland impacts by half an acre (Figure 2-6). Wetland QQ is a Category II wetland, and avoiding this wetland reduces the project's Category II wetland impacts to 0.8 acre, 2 percent of overall wetland impacts.

In addition, the project team determined that an adjustment to the design of the Freeman Road Option was necessary in order to avoid a 4(f) historic resource on Freeman Road. Widening Freeman Road on one side will impact Wetland A7, increasing wetland impacts by 0.16 acre at this option (Figure 2-12). This reevaluation revised wetland impacts associated with the Valley Avenue Interchange such that the variance between options is statistically insignificant.

Future development of the area due to the commercial/industrial zoning of agricultural lands also has the potential to change the wetland impact analysis. A reevaluation of wetland impacts prior to start of construction, should capture land use changes that will affect current delineated wetlands within the project area.

Other Environmental Factors

Other environmental factors necessary to determine overall project impacts included wetland buffer impacts, wildlife habitat impacts, stream crossings (aquatic habitat), and floodplain impacts. Stream crossing impacts (aquatic priority habitat) are based on a 50-foot riparian buffer impact at the crossing. High precedence was given to minimizing displacements of current residences and businesses and to avoiding impacts to cultural resources, including sites of Tribal importance. In addition, precedence was also given to avoiding floodplains and the relative opportunities associated with the interchange options to improve and restore aquatic and riparian habitats. The environmental factors prioritized as part of determining the preferred interchange option at Valley Avenue are described in Chapter 2.

The analysis of environmental and other factors demonstrated that the preferred Valley Avenue Option is the most practicable alternative.

SR 161 Interchange

No wetland impacts are associated with this interchange.

4.2.4 Future Avoidance and Minimization Opportunities

FHWA and WSDOT will also continue to evaluate potential opportunities to incorporate additional avoidance and minimization efforts as project design approaches completion. Future avoidance and minimization measures may include (but are not limited to):

- Minor changes to design alignment;
- Using steeper fill slopes;
- Using retaining walls to eliminate fill slopes;
- Using culverts to hydrologically connect wetlands bisected by the highway;
- Using a bridge design that spans the Puyallup River, avoiding the placement of piers within the river.

4.2.5 Beneficial Aspects of the Project

The RRP will provide a riparian buffer area to Hylebos Creek between 8th Street East and I-5 to address stormwater flow control. The RRP will also be applied to the relocated sections of Hylebos Creek and Surprise Lake Drain, as well as to Wapato Creek. The implementation of riparian restoration will restore or enhance riparian resources (including associated wetlands) within the project area.

The use of riparian restoration will both stabilize streambanks and help reverse the trend of human encroachment into riparian areas. The plan will include removing structural encroachments into the floodplain and flood prone areas adjacent to Hylebos Creek. The riparian buffer will extend from 300 to 600 feet wide and will link to several existing wildlife corridors. Existing wildlife corridors include the 110-acre Milgard Restoration Site, 860 acres in Federal Way along the West Fork of Hylebos Creek, 260 acres along the East Fork of Hylebos Creek, and 220 acres associated with Surprise Lake.

There are several additional benefits of the RRP, in terms of protecting or rehabilitating Lower Hylebos Creek, Surprise Lake Drain, and Wapato Creek.

- Studies have shown that urban streams with intact riparian buffers (≥ 100 feet) are healthier than urban streams with degraded buffers (Steedman 1988; Horner et al. 1996; and Jones et al. 1996).
- RRP would stabilize streambanks with native riparian vegetation and by increasing the amount of large woody debris (LWD) in the stream, which would prevent channel erosion.
- A major problem, as described in the limiting factors analysis (Kerwin 1999), is directly or indirectly related to a lack of riparian buffers and LWD. RRP would convert these impacted streams back to more naturally functioning streams.

- Aquatic habitat would be improved by RRP and aid in salmon recovery. The relocation of Surprise Lake Drain would create much needed over-winter rearing habitat for juvenile salmon.
- Water quality in Lower Hylebos Creek and Surprise Lake Drain could be improved by RRP. The riparian buffers would filter non-point sources of pollutants from surface runoff before they discharge to the creeks. Riparian buffers filter sediment, trash, and debris from floodwaters. Also, forested buffers provide shade, which reduces summer temperatures and increases dissolved oxygen.
- Flow control would be provided by RRP. The proposal would improve floodplain storage and hyporheic flow. Also, reconvertng developed lands back to forested conditions would reduce surface runoff from those areas, and increase infiltration and aquifer recharge.

The full extent of flow control benefits would not be estimated until the final design is established and the Hydrological Simulation Program Fortran model results are analyzed. The estimate of floodplain storage would vary with time, because the channels would once again be allowed to migrate. As new channels would be created during flood events and old channels abandoned, riparian wetlands and backwater channels would be formed.

The RRP would substantially increase wetland functions in the Hylebos and Wapato Creek sub-watersheds. Currently, Wetland 9 is a large area dominated by reed canarygrass. Wetland T is farmed. The wetlands near Wapato Creek are currently disturbed by grazing and farming practices. These existing wetlands in the RRP would function to better provide floodwater storage and water quality enhancement. An analysis of potential wetland enhancements is provided in Table 4-6.

An undetermined amount of additional wetlands would also likely be created in the process of stream stabilization in the riparian areas by restoring hydrology. In addition, buffers at wetland sites adjacent to Hylebos Creek, Surprise Lake Drain, and Wapato Creek would also be enhanced under the riparian restoration proposal.

The RRP would also have beneficial effects on the agricultural wetlands and riparian areas adjacent to Wapato Creek and Surprise Lake Drain. This would be accomplished by acquiring some agricultural lands and removing structures and impervious surfaces, and filling ditches and severing drain tiles and pipes that increase runoff (for example, in the vicinity of Wetland T). Through their acquisition, these lands would be conserved rather than converted to commercial or industrial development, and the riparian areas could become wetland and wetland buffer areas.

Table 4-6: Existing Wetlands Enhanced by Riparian Restoration Proposal

Wetland	RRP Area (acres)	Existing Wetland Area (acres)	Remaining RRP Area (acres)
Hylebos Creek Sub-Watershed			
9		44.9	
Y		0.8	
T		6.9	
AA		0.5	
BB		1.0	
CC		0.1	
DD		0.5	
Estimated Total		114	
Wapato Creek Sub-Watershed			
PP		1.5	
QQ		0.5	
RR		0.5	
UU		2.3	
V		1.0	
Estimated Total		62.5	
Project Total	176.5	60.5	116

Water quality in Hylebos and Wapato Creeks could directly benefit from reduced input of fertilizer, herbicides, insecticides, and other chemicals used in farming. The RRP would improve the functions in farmed wetlands by allowing them to revert back to a variety of wetland types. The Surprise Lake Drain RRP will convert an area of active farmland, which the City of Fife has zoned for industrial and commercial development.

4.3 Conclusion

Based on the above discussion, impacts to the aquatic ecosystem will be avoided and minimized to the greatest extent possible. Compensatory mitigation, as detailed in the *SR 167 Conceptual Mitigation Plan* (WSDOT 2005), will provide mitigating measures for any unavoidable permanent project impacts to waters of the United States. The project design has been adjusted to the greatest extent possible, to minimize impacts to project vicinity stream systems and wetlands. Once final impacts through complete design are identified, a Final Mitigation Plan will be prepared to provide compensation to stream and wetland impacts.

Based on the described efforts to avoid and minimize impacts to aquatic ecosystems in both the Tier I and Tier II EIS process, it can be concluded that the current Build Alternative, with preferred interchange options, is LEDPA.

Chapter 5

Section 4(f) Evaluation

Tier II Final EIS

SR 167

Puyallup to SR 509

5.1 Introduction

The Washington State Department of Transportation (WSDOT) is planning the completion of the SR 167 freeway between the SR 509 freeway in the city of Tacoma and SR 161 (North Meridian Street) in north Puyallup. The project would be constructed within Pierce County, Washington, in the cities of Fife, Puyallup, Edgewood, Milton, and Tacoma. The new freeway would replace the existing SR 167 arterial route between the I-5 Bay Street interchange and Puyallup via River Road and North Meridian. The freeway is designed as four lanes, plus inside High Occupancy Vehicle (HOV) lanes to be constructed between I-5 and SR 161 at a future date. Figure 5-1 is a project vicinity map; Figures 5-2 and 5-3 identify the 4(f) resources evaluated in this report that are within the proposed corridor.

5.1.1 Section 4(f) Resources

Section 4(f) of the Department of Transportation Act of 1966, codified in Federal law at 49 U.S.C. §303, declares that “[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that “[t]he Secretary [of Transportation] may approve a transportation program or project ... requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if -

1. There is no feasible and prudent alternative to using that land.
2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.”

“Use” of a Section 4(f) property is usually considered to occur when land from a 4(f) resource is permanently incorporated into a transportation facility or when there is a temporary occupancy of land from a 4(f) resource which results in an adverse effect upon the resource contrary to the Section 4(f) statutory intent to preserve these properties. However, use of a Section 4(f) resource is not limited to property or easement acquisition under the statute.

“Constructive use” under Section 4(f) is defined as project proximity impacts (e.g. noise, access, vibration, aesthetic, ecological intrusion) which are so severe that they “substantially impair” or diminish the activities, features, or attributes that qualify a resource for protection under section 4(f). The Federal Highway Administration (FHWA) has determined that the threshold for constructive use is proximity impacts which substantially impair the function, integrity, use, access, value or setting of a park, recreation area, waterfowl or wildlife refuge, or historic site.

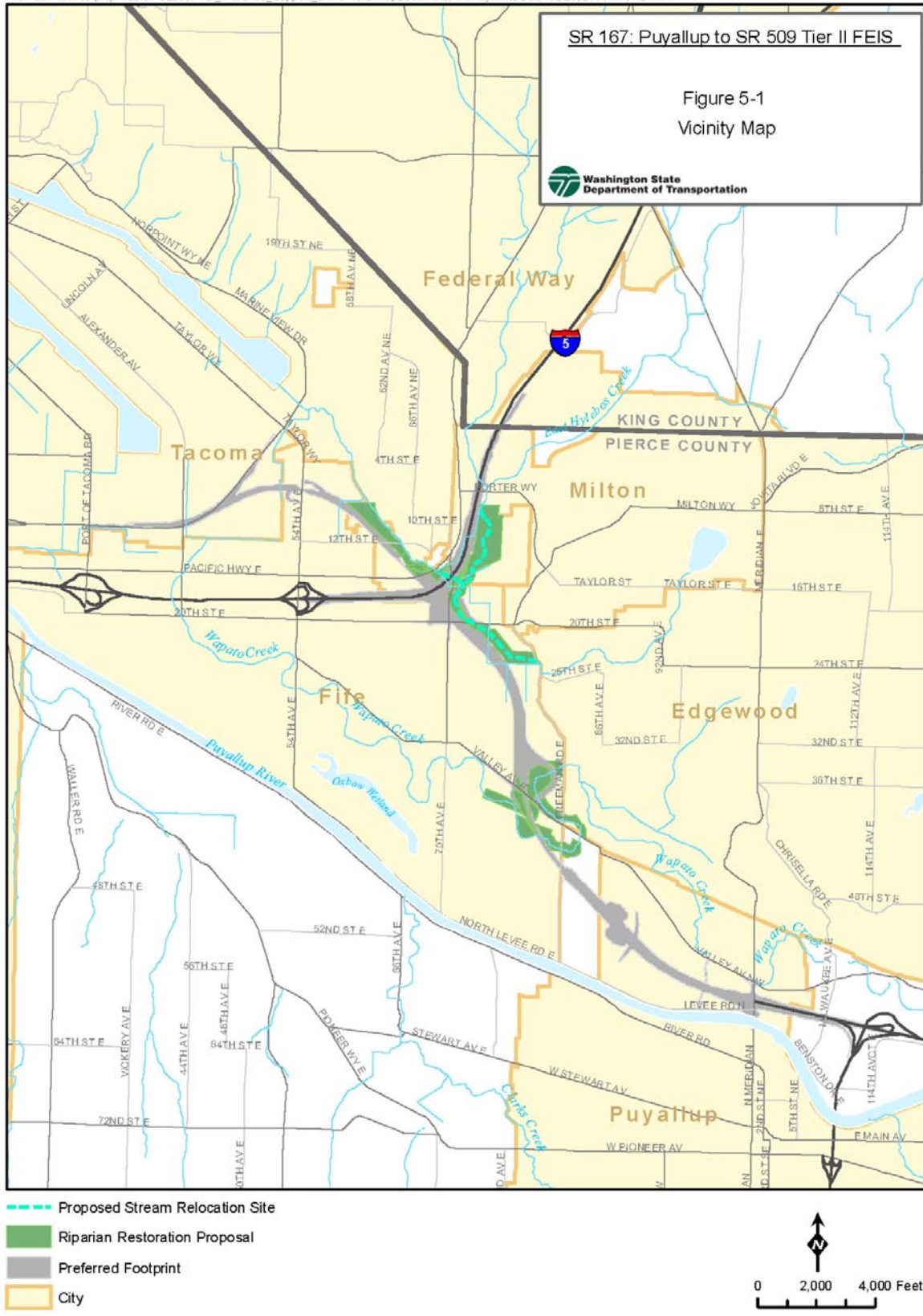


Figure 5-2
Historic 4 (f) Resources



NRHP STRUCTURE
NO. 27-4114
7717 Valley Avenue East, Firwood, WA 98424



NRHP STRUCTURE
NO. 27-4160
3423 Freeman Road, Fife, WA 98371



NRHP STRUCTURE
NO. 27-4125
7001 20th Street East
Fife, WA 98424



NRHP STRUCTURE
NO. 27-4154
6803 20th Street East
Tacoma, WA 98424

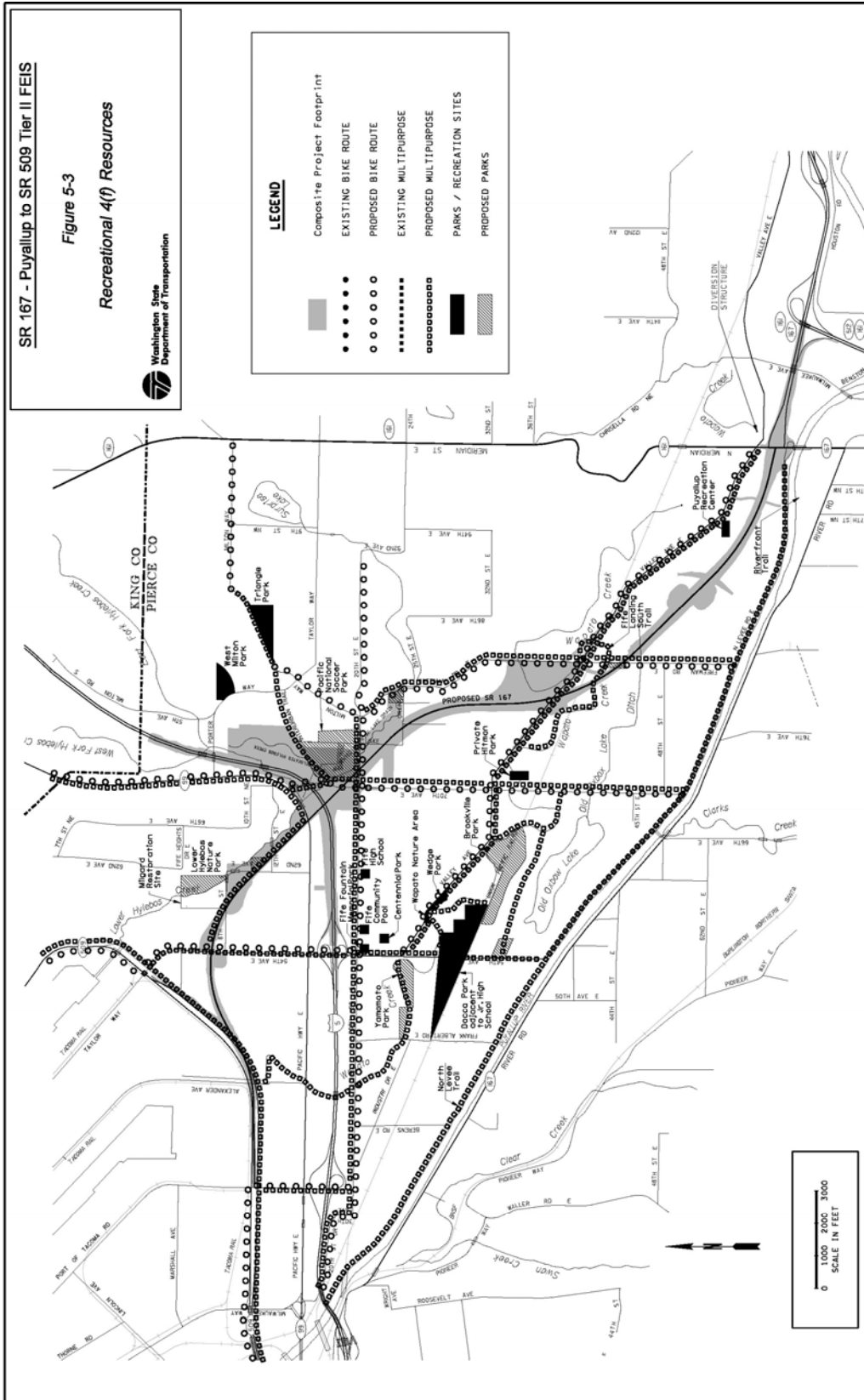
0 1000 2000
SCALE IN FEET

Figure 5-3
Recreational 4(f) Resources



LEGEND

- Composite Project Footprint
- EXISTING BIKE ROUTE
- PROPOSED BIKE ROUTE
- EXISTING MULTIPURPOSE
- PROPOSED MULTIPURPOSE
- PARKS / RECREATION SITES
- PROPOSED SITES



Supporting information must demonstrate that there are unique problems or unusual factors involved in the use of alternatives that avoid use of 4(f) resources or that the cost, social, economic, and environmental impacts, or community disruption resulting from such alternatives reach extraordinary magnitudes or result in unique problems.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs which use lands protected by Section 4(f).

5.1.2 Section 6(f) Resources

Recreation resources that are acquired or improved with Land and Water Conservation Fund monies are also protected under Section 6(f) of the Land and Water Conservation Fund Act as stated in the FHWA Technical Advisory T6640.8A:

Section 6(f) directs the Department of the Interior (National Park Service) to assure that replacement lands of equal value, location, and usefulness are provided as conditions to approval of land conversions. Therefore, where a Section 6(f) land conversion is proposed for a highway project, replacement land will be necessary. Regardless of the mitigation proposed, the draft and final Section 4(f) evaluations should discuss the results of coordination with the public official having jurisdiction over the Section 4(f) land and document the National Park Service position on the Section 6(f) land transfer, respectively.

There are no Section 6(f) resources impacted by this project.

5.2 Description of the Proposed Action

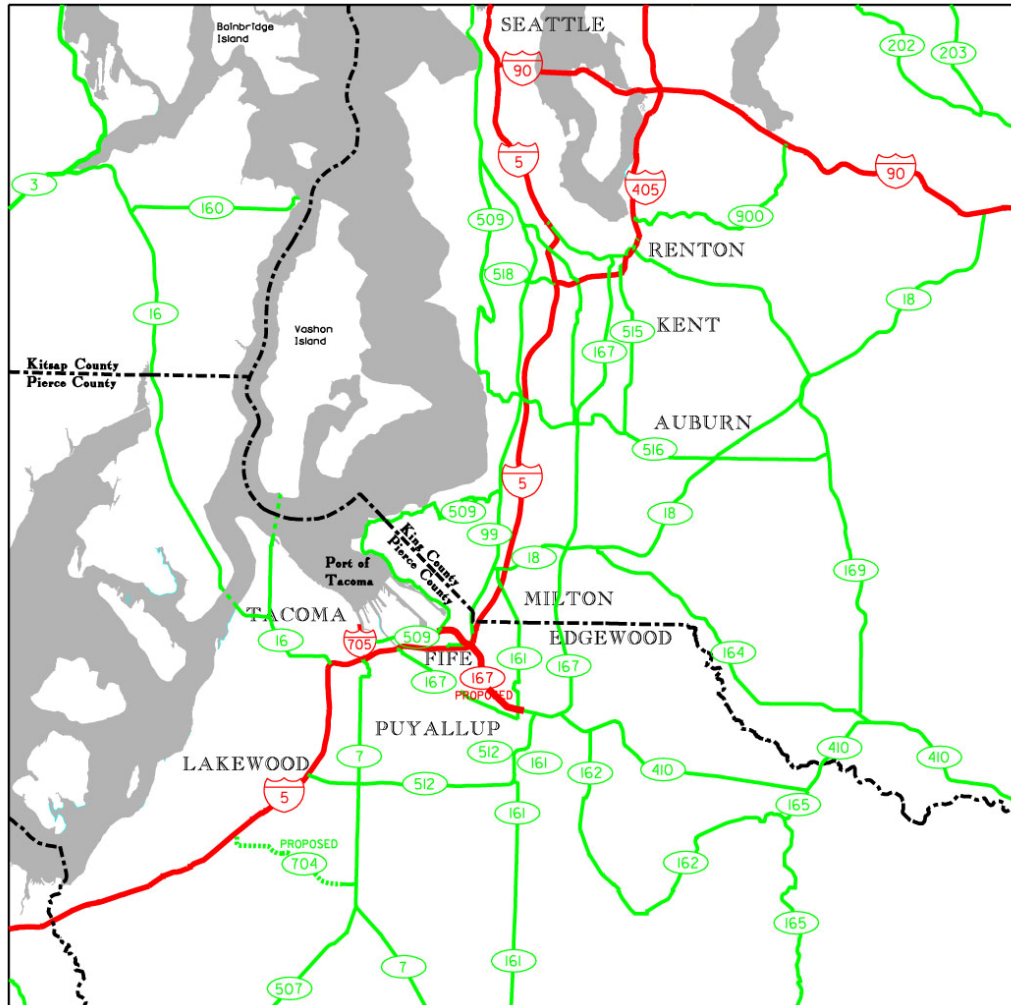
5.2.1 Project Background

In the 1950s, a regional highway plan was developed which included SR 167 from Renton to I-5. After issuance of a Design Report and Access Report, work on the project in the Puyallup Valley was halted in the late 1970s because of uncertainty regarding ownership of the Puyallup Tribal lands in the area. In the late 1980s the SR 167 freeway was completed from I-405 in Renton to SR 512 in Puyallup. The tribal ownership issue was resolved in 1989, allowing the SR 167 extension planning to move forward. In 1990 the Washington State Legislature provided funds for the completion of the SR 167 project.

At the beginning of the EIS preparation in 1990, FHWA and WSDOT decided to tier the process into two steps as permitted in the federal guidelines under the National Environmental Policy Act (NEPA). The Tier I FEIS would evaluate different corridor options and select a preferred corridor and interchange locations. The Tier II FEIS would result in selection of a preferred design and evaluation of interchange options within the selected corridor. In both cases, the selection process involved evaluating the environmental consequences of

different alternatives and identifying ways to avoid, minimize, or mitigate the environmental impacts.

Regional Freeway Network



NEPA regulations at 23 CFR §771.135(o) address the analysis required by Section 4(f) in a tiered EIS:

(1) When the first-tier, broad-scale EIS is prepared, the detailed information necessary to complete the section 4(f) evaluation may not be available at that stage in the development of the action. In such cases, an evaluation should be made on the potential impacts that a proposed action will have on section 4(f) land and whether those impacts could have a bearing on the decision to be made. A preliminary determination may be made at this time as to whether there are feasible and prudent locations or alternatives for the action to avoid the use of section 4(f) land. This preliminary determination shall consider all possible planning to minimize harm to the extent that the level of detail available at the first-tier EIS stage allows. It is recognized that such planning at this stage will normally be limited to ensuring that opportunities to minimize harm at subsequent stages in the development process have not been precluded

by decisions made at the first-tier stage. This preliminary determination is then incorporated into the first-tier EIS.

(2) A section 4(f) approval made when additional design details are available will include a determination that: (i) The preliminary section 4(f) determination made pursuant to paragraph (o)(1) of this section is still valid; and (ii) The criteria of paragraph (a)¹ of this section have been met.

5.2.2 Tier I FEIS and Record of Decision

Development of the Tier I DEIS began in 1990 with a public review process. The Tier I EIS evaluated three corridors and a no build alternative after initially considering seven preliminary alternative corridor locations. The Tier I DEIS was published in June of 1993 and a public hearing was held on July 15, 1993. Subsequently, FHWA required WSDOT to prepare a Major Investment Study, completed in October 1995, which evaluated the effectiveness of four alternatives. The three corridor alternatives presented in the Tier I EIS avoided then identified 4(f) resources. Alternative 2 had the best mix of features for avoiding, minimizing, and mitigating environmental impacts while still meeting the purpose and need for the project. Therefore, Alternative 2 was selected as the preferred corridor in the Tier I FEIS and was the basis for the Build Alternative studied in the Tier II DEIS. The Tier I FEIS was published in April 1999 and the Record of Decision (ROD) was issued by FHWA in June 1999.

5.2.3 Tier II DEIS

The Tier II EIS continues the environmental review process begun in Tier I under both NEPA and the State Environmental Policy Act. The Tier II DEIS was circulated for public review in February 2003. It included the complete description of the proposed facility and the resulting impacts to cultural resources and the environment, conceptual mitigation plans resulting from those impacts, and identified all necessary environmental permits. Copies of the Tier II DEIS are available for review at local libraries or by request from WSDOT.

One prehistoric site and four Craftsman style homes eligible for the National Register of Historic Places (NRHP) were identified in the Tier II DEIS. Subsequent to public review, it was determined that additional analysis of the corridor was necessary. Elements of the project, such as a proposed wetland mitigation site (comprising of approximately 200 acres) and areas for the proposed Park and Ride facilities were researched and one additional historic property, a dairy farm, was identified. On June 15, 2004, the Department of Archaeology and Historic Preservation (DAHP) concurred that 64 surveyed

¹ 23 C.F.R. 771.135(a)(1) The Administration may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:

- (i) There is no feasible and prudent alternative to the use of land from the property; and
- (ii) The action includes all possible planning to minimize harm to the property resulting from such use.

(2) Supporting information must demonstrate that there are unique problems or unusual factors involved in the use of alternatives that avoid these properties or that the cost, social, economic, and environmental impacts, or community disruption resulting from such alternatives reach extraordinary magnitudes.

resources are not eligible for the NRHP, and 5 historical resources and 1 archeological site were determined to be eligible for the NRHP. Those historical 4(f) resources are described in this Section 4(f) evaluation.

5.2.4 Purpose and Need

The purpose of the proposed project is to

- Improve regional mobility of the transportation system;
- Serve multimodal local and port freight movement and passenger movement between the Port of Tacoma, the new SR 509 freeway, and the I-5 corridor and the Puyallup termini of SR 167, SR 410, and SR 512;
- Reduce congestion and improve safety;
- Provide improved system continuity between I-5 and the SR 167 corridor;
- Maintain or improve air quality in the corridor to ensure compliance with the current State Implementation Plan and all requirements of the Clean Air Act.

The existing non-freeway segment of SR 167 from I-5 to the Puyallup area is on surface streets and includes a circuitous route through Puyallup, via River Road and North Meridian Street. The high levels of congestion at intersections and the frequency of intersecting driveways contribute to relatively high accident ratios compared to statewide averages. Traffic projections for the year 2030 indicate the capacity problems at intersections will increase if action to complete the freeway is not taken.

Trucks transporting freight currently travel through the city of Fife via Valley Avenue East, 70th Avenue East, and 54th Avenue East, or climb existing steep grades on SR 18 near I-5. Several intersections along these routes operate at over-capacity conditions during peak traffic, resulting in traffic delays and congestion. The Port of Tacoma projected truck traffic to and from the Port to double from 300,000 to 600,000 trucks per year by the year 2014 (Tier I FEIS, 1999). Anticipated problems include more congestion-related delays in freight transport and incompatibility of heavy truck use on residential surface streets creating unsafe conditions.

5.3 Alternatives and Options

Several corridor alternatives and a no action alternative were evaluated in the Tier I EIS. Corridor 2, which was selected as the preferred alternative, provided a corridor within which a new limited access freeway connecting SR 509 to SR 167 near Puyallup and interchanges at I-5 and Valley Avenue could be configured.

The Tier II EIS proposes two alternatives, a no build and a build alternative.

5.3.1 No Build Alternative

Under the “no build” alternative, the SR 167 freeway will terminate at North Meridian (SR 161), and the non-freeway SR 167 will continue to I-5 via North Meridian and River Road where it will terminate at the Portland Avenue/Bay Street interchange in Tacoma. The corridor would remain in the present state except for minor improvements and maintenance. Hylebos Creek and Surprise Lake Drain will not be relocated. Riparian restoration will not occur on Hylebos Creek, Surprise Lake Drain, or Wapato Creek. Pierce County and the cities of Fife, Tacoma, Puyallup, Milton, and Edgewood will continue with their programmed and planned improvements to the local transportation system. SR 167 Tier II DEIS Section 3.14, Transportation, identifies some of the roadway projects that are planned. The types of projects include widening roads, signalizing intersections, adding bicycle and pedestrian facilities, developing park and ride facilities, and improving capacity.

WSDOT will also continue making improvements to its facilities in the study area under the No Build Alternative. These facilities include SR 509, SR 705, I-5, SR 99, SR 161, SR 512, and the existing SR 167. The types of improvements include adding HOV lanes, adding collector/distributor lanes, improving on and off ramps, adding transportation demand management systems, and upgrading drainage systems.

5.3.2 Build Alternative

The build alternative consists of a four-lane freeway (four general purpose lanes) with two HOV lanes between I-5 and SR 161. The build alternative includes freeway-to-freeway connections with SR 509, SR 167, and I-5. Also, it includes new local access interchanges at 54th Avenue East and Valley Avenue and completion of the SR 161 interchange. As part of the SR 161 interchange, the existing eastern bridge over the Puyallup River will be replaced and the existing western bridge will be widened. The Build Alternative also results in the relocation of a part of Hylebos Creek and Surprise Lake Drain. The relocated channel designs will reduce flooding and improve fish and wildlife habitat. A riparian restoration area is proposed for existing Hylebos Creek between SR 99 and 8th Street, for the relocated Hylebos Creek and Surprise Lake Drain east of I-5, and at Wapato Creek near Freeman Road and Valley Avenue.

A conceptual stormwater treatment plan has been developed for the project.

Mainline Description

The proposed SR 167 begins as a four-lane limited access highway where it connects to the existing SR 509 at the Port of Tacoma Road/SR 509 Interchange. The location of the connection and design features are dictated by the location of SR 509 and the SR 167 alignment as approved in the Tier I EIS. The two-lane southbound SR 167 will directly connect to the southbound lane of SR 509. The two-lane northbound SR 509 will directly connect to the two-lane northbound SR 167. There will be single-lane ramps from southbound SR 167 to SR 509 North Frontage Road and from northbound SR 167 to SR 509 South Frontage Road.

As part of the SR 509 connection, one new bridge over Alexander Avenue will be built. This bridge will span Wapato Creek and the South Frontage Road. The

existing railroad crossing of SR 509 will be relocated. A new railroad bridge over Wapato Creek will be constructed south of the South Frontage Road.

The four-lane mainline alignment continues easterly on embankment until it crosses 54th Avenue East in the vicinity of 8th Street East. An interchange providing access to and from the east is proposed at 54th Avenue East. Two interchange options were developed and are discussed below. The mainline continues on an embankment from 54th Avenue East until just past 8th Street East where the mainline separates and northbound lanes ascend on an elevated structure while southbound lanes remain on embankment until after crossing 12th Street East. Local access is maintained as mainline SR 167 crosses 12th Street East on structure.

Both northbound and southbound lanes cross SR 99 on separate elevated structures continuing on to the freeway-to-freeway connection with I-5. The archeological site is in the vicinity of these structures.

Bridges over 54th Avenue East and 12th Street East will be constructed. An existing culvert at the 12th Street East crossing of Hylebos Creek will be replaced with a structure. Riparian restoration along Hylebos Creek will also occur. It will include the removal of residential and commercial buildings near 8th Street East and 62nd Avenue East, the removal of 8th Street East and 62nd Avenue East, east of the new alignment, and the relocation of a drainage ditch. The proposed Lower Hylebos Nature Park, as shown on Figure 5-3, is in the vicinity of the proposed riparian restoration area and the existing Milgard Restoration Site.

Due to complexity of I-5 interchange and limited solutions for these freeway-to-freeway connections, only one design option could be developed to reasonably meet the needs at this location. The interchange will consist of three elevated levels of roadway structures extending up to 80 feet above ground. The SR 167 mainline would be elevated on structure over 12th Street East, Pacific Highway (SR 99), Interstate 5, proposed relocated 20th Street East and 70th Avenue East. Two historic residences are in the vicinity of the proposed changes to existing 20th Street East and 70th Avenue East.

Hylebos Creek will be relocated as part of mitigation for the fill of Hylebos Creek due to improvements to I-5. The creek will be relocated to the field east of I-5 from its current location adjacent to I-5. Relocation will begin where the creek enters the current I-5 right-of-way (ROW) upstream from the proposed interchange and will extend downstream to where it passes underneath SR 99, approximately 4,010 linear feet of channel.

A riparian restoration plan has been developed as part of the project's conceptual stormwater treatment plan that will provide a riparian buffer area around the existing and relocated Hylebos Creek. It will also provide a separated non-motorized path from 54th Avenue East to SR 99. The required 200- to 400-foot stream channel and riparian buffer area intersects with and is adjacent to Interurban Trail and the planned Pacific National Soccer Park.

Surprise Lake Drain will also be relocated as part of the I-5 interchange improvements. South of I-5, Surprise Lake Drain will be relocated and restored to a more natural alignment. The existing Surprise Lake Drain channel, which

currently bisects the planned Pacific National Soccer Park, will be moved to agricultural fields east of the new SR 167 mainline (Figure 5-3).

Riparian restoration, part of the project's conceptual stormwater treatment plan, is proposed along Wapato Creek at Valley Avenue Interchange. Restoration activities include riparian plantings, fill removal, impervious surface removal from the floodplain, and the potential removal of six undersized crossing structures. The planned Fife Landing South Trail is currently proposed to follow Wapato Creek in the vicinity of the project's planned restoration activities.

The mainline continues to the southeast parallel with Valley Avenue with two general purpose lanes in each direction and one HOV lane in each direction. Washington State Patrol truck weigh station facilities are proposed for each direction of travel east of the Valley Avenue interchange. The mainline would pass to the south of the Puyallup Recreation Center. WSDOT is proposing another cross connection underneath SR 167 with the preferred Urban interchange option for SR 161. Three design options have been developed for consideration at this interchange. The mainline continues towards the terminus at the existing SR 161/SR 167 interchange.

There are two existing bridges over the Puyallup River that carry SR 161 traffic. The southbound traffic travels over a concrete structure (western bridge) constructed in 1971. The northbound traffic travels over a steel structure (eastern bridge) constructed in 1951. The concrete bridge has a pier within the ordinary high watermark of the river while the steel bridge spans the river. The steel bridge is approximately 3 feet lower than the concrete bridge. Neither bridge meets current design standards.

As part of the SR 161/SR 167 interchange improvements, the existing steel bridge will be removed and replaced with a bridge that may span the Puyallup River. The project currently estimates a maximum of four piers for the new bridge and will be located within the ordinary high water mark of the river. The concrete bridge will be widened approximately seven feet to provide shoulders and a bike lane. The Riverfront Trail currently passes under the steel and concrete Puyallup River bridges.

Interchange Descriptions

There are three interchanges with multiple design options under consideration. They are at 54th Avenue East, Valley Avenue, and SR 161 (North Meridian Street).

54th Avenue East Partial Interchange

There are two options for the partial interchange at this location. In both options, the ramps are single lane and provide only southbound off and northbound on access to SR 167. Connections will be provided for bicycle route continuity. There are no 4(f) resources in the vicinity of this proposed interchange.

Valley Avenue Interchange

Three design options were developed for this interchange location. For each, the SR 167 mainline is elevated over Valley Avenue, Union Pacific Railroad, Wapato Creek, and Freeman Road. Under all three options, WSDOT will widen

Valley Avenue from two lanes to five lanes from the northbound off ramp to the intersection of Freeman Road East. There are two historic residences in the vicinity of this proposed interchange.

SR 161 / SR 167 Interchange

An existing connection here provides the southern terminus for the freeway segment of SR 167 between Puyallup and Renton. With the proposed SR 167, this connection will become a full interchange. Three design options have been developed. In each design option, the SR 167 mainline will be elevated over SR 161 (North Meridian). In all three options, the existing steel bridge over the Puyallup River (northbound SR 161) will be replaced. The existing concrete bridge (southbound SR 161) will be widened. There are no 4(f) resources in the vicinity of this proposed interchange.

See Section 2.5.2 for more information about the build alternative and the interchange descriptions.

5.4 Description of Section 4(f) Resources

Section 4(f) resources include historic sites and publicly owned parks, recreation areas, and wildlife and waterfowl refuges. The proposed action will not require the use of any wildlife and waterfowl refuges or existing public parks.

5.4.1 Historic Resources

Historic resources are subject to protection under Section 4(f) regulations if they are on or eligible for listing on the NRHP. Determinations of eligibility were made based on recommendations in the Cultural Resources report prepared to satisfy Section 106 requirements. The State Historic Preservation Officer (SHPO) concurred on June 15, 2004, that there are four National Register Criteria for Evaluation that an eligibility determination is based on: association with significant events (Criterion A); association with significant people (Criterion B); possession of significant design or construction (Criterion C); and association with information important in prehistory or history (Criterion D).

Section 4(f) applies to all archaeological sites on or eligible for inclusion on the National Register and which warrant preservation in place (including those discovered during construction). Section 4(f) does not apply if FHWA, after consultation with the SHPO and the Advisory Council on Historic Preservation, determines that the archaeological resource is important chiefly because of what can be learned by data recovery (even if it is agreed not to recover the resource) and has minimal value for preservation in place.

The Tier II DEIS (pages 3-314, 3-315) described one archaeological site along SR 99 in the vicinity of the I-5 interchange portion of the project as potentially eligible for the NRHP. It also described 56 historic properties that were inventoried, with 5 appearing eligible for the NRHP. At the time the DEIS was published in February 2003, eligibility had not yet been determined by the SHPO. Subsequently more sites were surveyed bringing the total to 70, with one additional potentially eligible for the NRHP. SHPO concurred with the agency eligibility determinations. (See Appendix H.)

There is potential for additional archeological sites to be discovered during construction. In this case, where preservation of the resource in place is warranted the Section 4(f) process will be expedited. Also, the evaluation of feasible and prudent alternatives will take account of the level of investment already made. The review process, including the consultation with other agencies should be shortened, as appropriate. An October 19, 1980, memorandum with the Heritage Conservation and Recreation Service (now National Park Service) provides emergency procedures for unanticipated cultural resources discovered during construction.

On June 15, 2004, the SHPO concurred that the following resources (Table 5-1) were eligible for listing in the NRHP, therefore making them potentially subject to protection under Section 4(f) regulations:

Table 5-1: Historic Resources Eligible for the NRHP

DAHP ¹ Number	Parcel Number ²	Address	Description
45PI488	(not disclosed)	Along SR 99	Archaeological site
27-4154	P168	6803 20th St. E.	Residence
27-4125	P202	7001 20th St. E.	Residence
27-4114	P239	7717 Valley Ave. E.	Residence
27-4160	P490	3423 Freeman Rd.	Residence
Fife-A-1	(Baggenstos Farm)	N. Levee Rd.	Farmstead

¹Department of Archaeology and Historic Preservation

²Assigned by WSDOT

Site 45PI488 - This archaeological site is on a privately owned vacant lot located along SR 99. Based on the results of shovel testing performed in October 2000 and January 2001, the site appears to be confined to the southeast portion of the parcel. Limited testing produced two fragments of a formed tool, a charcoal sample, and lithic scatter. The site is considered significant under Criterion D, for it is likely to yield information important to Puyallup River Valley prehistory. It was determined, after consultation with SHPO, that this site has minimal value for preservation in place. Therefore, the archaeological site is not subject to protection under Section 4(f) regulations. This site is not shown on the vicinity map or a site plan in order to protect its integrity.



Site 27-4154 – This private residence is located at 6803 20th Street East. Built around 1940, this gable-front bungaloid cottage is in excellent condition and retains its architectural integrity. In addition, its gardens and overall setting further enhance its Craftsman aesthetic. It was determined eligible for the NRHP under Criterion C (Figures 5-2 and 5-4).



Site 27-4125 – This private residence is located at 7001 20th Street East. It was constructed around 1930, and is a one and one-half story bungalow with a gull-wing dormer and a shed-roof dormer. It retains excellent architectural integrity and is in good to fair physical condition. It was determined eligible for the NRHP under Criterion C (Figures 5-2 and 5-4).



Site 27-4114 – Another private residence, this resource is located at 7717 Valley Avenue E. Built around 1900, this one and one half story bungalow with gull-wing style gable roof has excellent structural integrity, but is in only fair physical condition. It was determined eligible for the NRHP under Criterion C (Figures 5-2 and 5-5).



Site 27-4160 – Built in 1902, this Craftsman style two-story private residence is located at 3423 Freeman Road. It has excellent exterior architectural integrity and is in excellent physical condition. It was determined eligible for the NRHP under Criterion C (Figures 5-2 and 5-5).



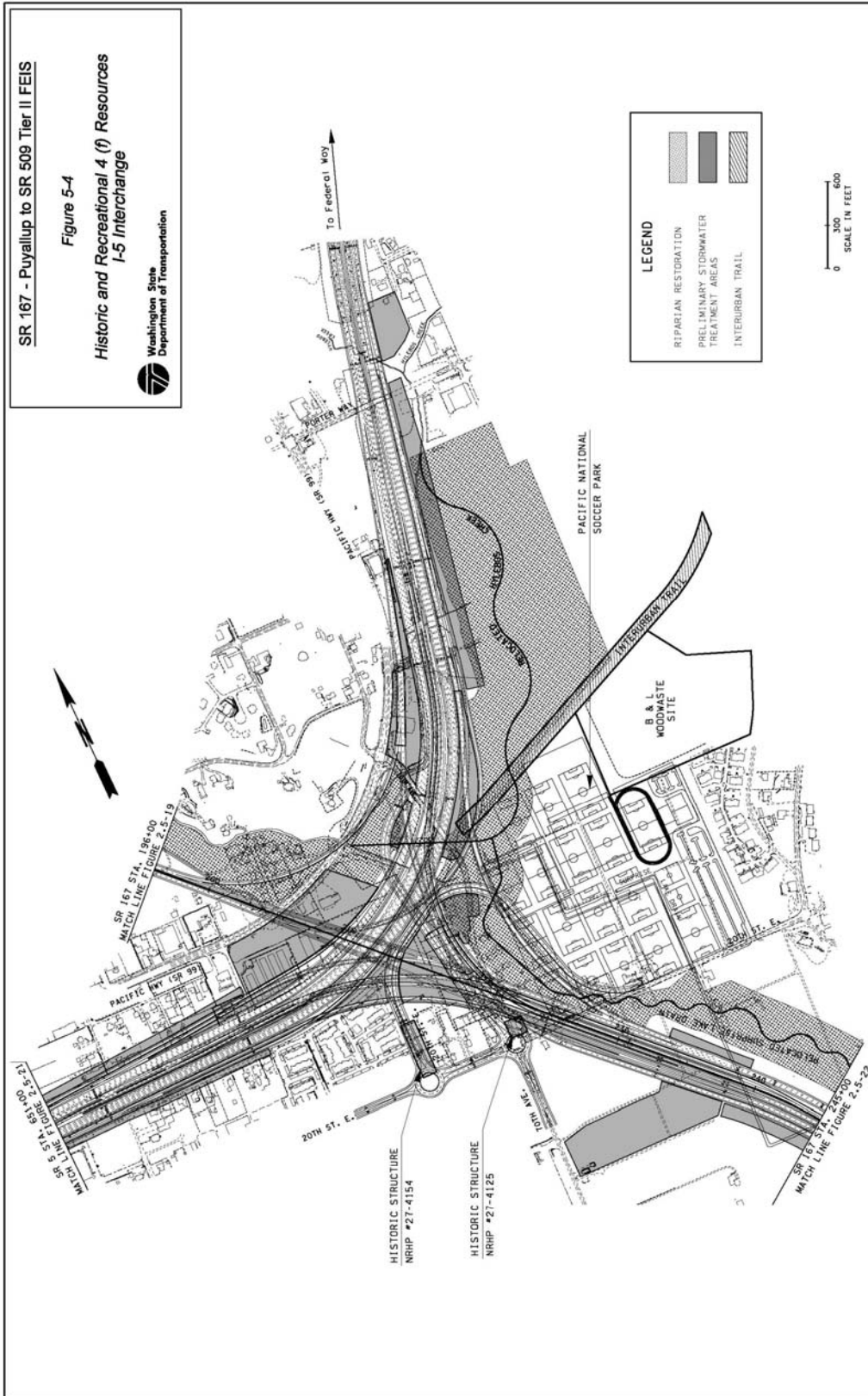
Site Fife-A-1 – This property, known as the Baggenstos Farm, is a complex of buildings located at the proposed wetland mitigation site on N. Levee Rd. The buildings, dating to around 1920, include a farmhouse, vehicle garages, and a large barn that adjoins a dairy barn, loafing shed, and milk house. All buildings other than the garages are presently abandoned. The farmhouse retains good integrity of materials and appearance, but has lost its former association with dairy farming. The other buildings have also lost their historic association and function, and exhibit poor integrity. However, this group of buildings still retains a visibly recognizable association with early farming. It was determined eligible for the NRHP under Criterion A.

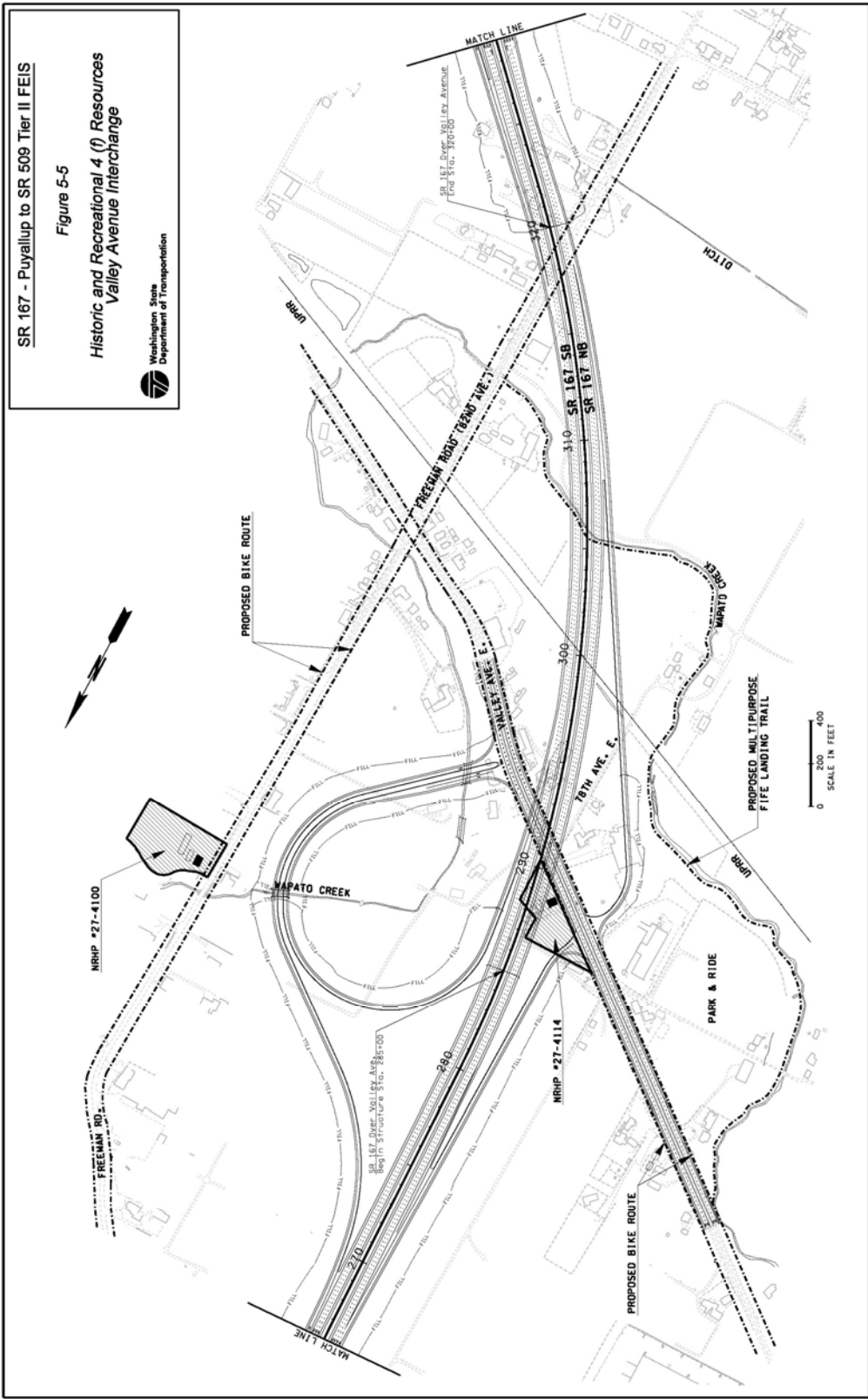


SR 167 - Puyallup to SR 509, Tier II FEIS

Figure 5-4

Historic and Recreational 4 (f) Resources
I-5 Interchange



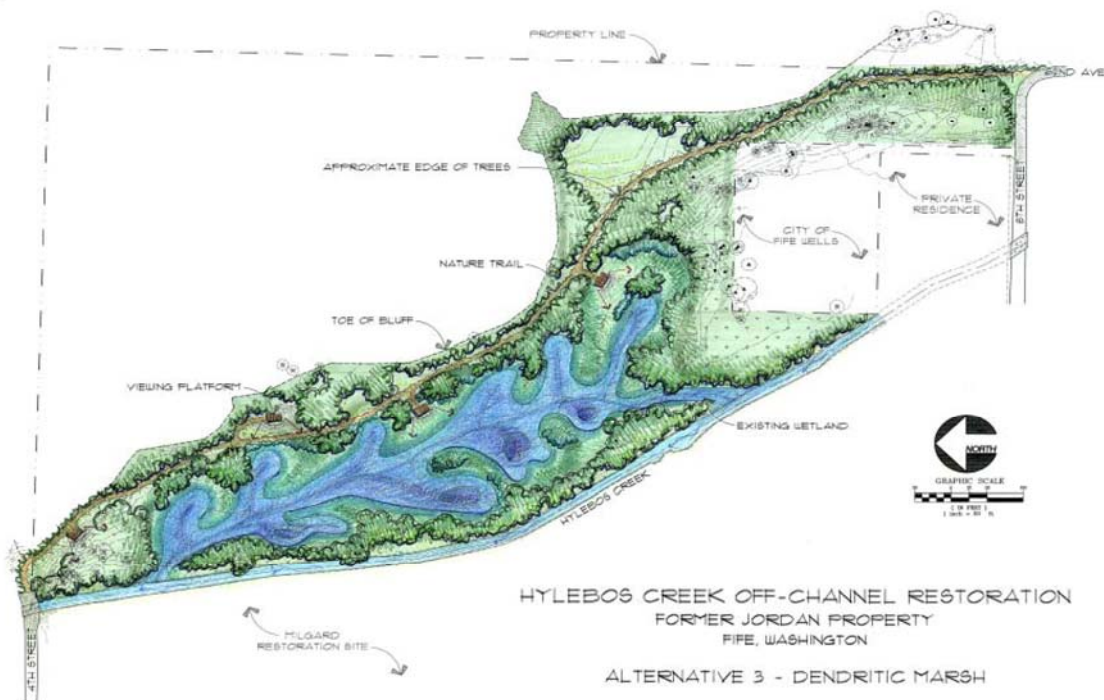


SR 167 - Puyallup to SR 509 Tier II FEIS
 Figure 5-5
 Historic and Recreational 4 (f) Resources
 Valley Avenue Interchange
 Washington State
 Department of Transportation

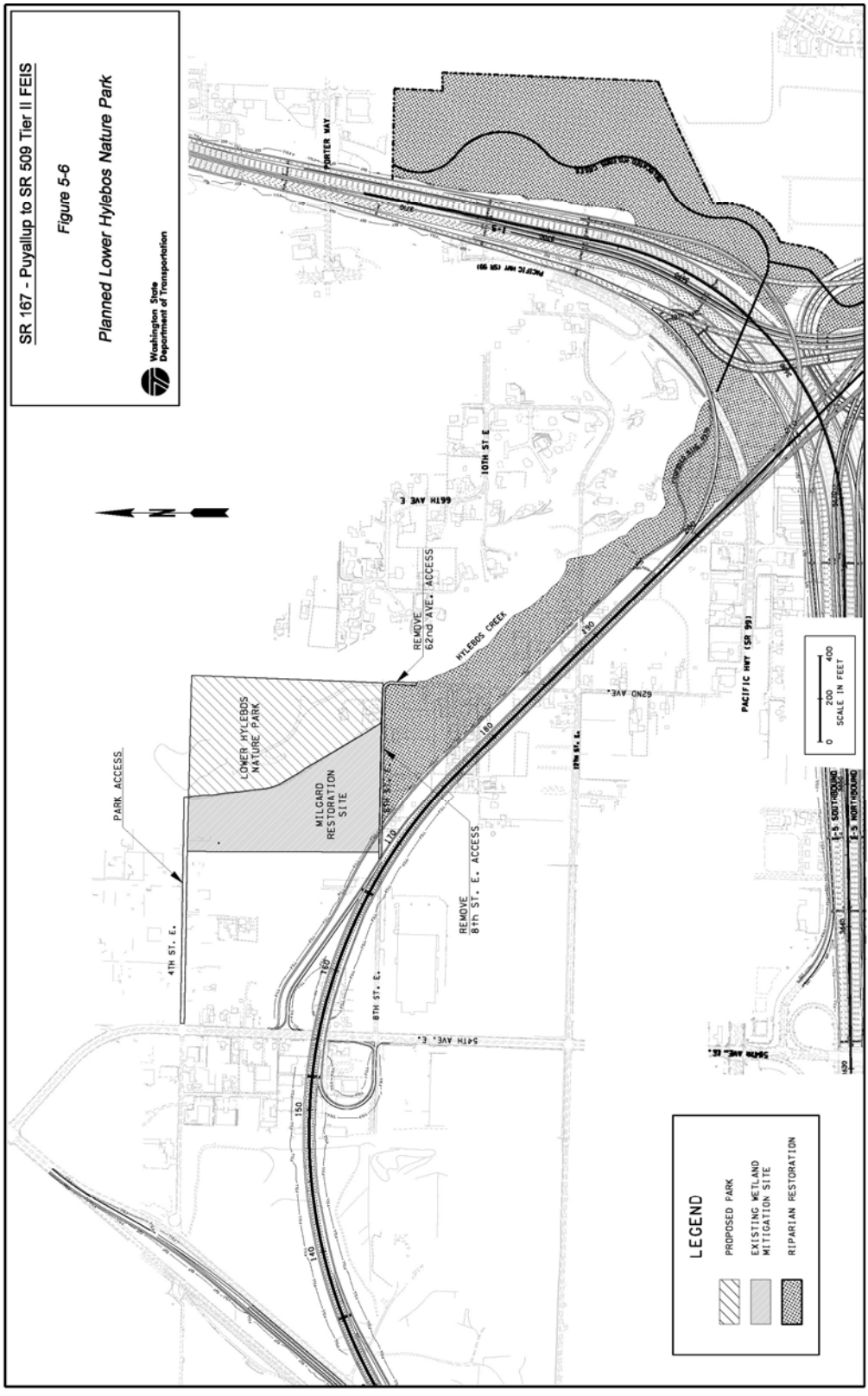
5.4.2 Recreational Resources

The Tier II FEIS describes the existing and proposed parks and recreation facilities in the study area. The following resources have been proposed or identified within the project corridor.

Lower Hylebos Nature Trail – The City of Fife, together with the Commencement Bay Natural Resources Trustees, Pierce County, and the NOAA National Marine Fisheries Service (NOAA Fisheries), have a proposal to design and construct a restoration project adjacent to a tidally influenced reach of Hylebos Creek. The City of Fife owns the site and development of the site is limited to the usable 7 acres of a 15.3-acre parcel, the remainder being steep cliffs. The proposed restoration project will create off-channel habitat for juvenile salmonids and native plant vegetation. The 4(f) recreational resource is the nature trail, including viewing platforms and interpretive signs, that will be added to provide public access and educational opportunities, and, when completed, will be part of the City of Fife park system.



NOAA Fisheries is the lead agency for construction at this site. The City of Fife will operate and maintain the site after completion of construction. The construction program will include parking at the south entrance, near the intersection of 62nd Avenue and 8th Street East (Figure 5-6).



SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 5-6

Planned Lower Hylebos Nature Park



Planned Pacific National Soccer Complex – As early as the year 2000, the City of Fife developed plans for a city owned and run soccer facility. This planned facility would include, at a minimum, 12 lighted soccer fields, training facilities, a specially surfaced field for players with mental or physical disabilities, a headquarters for the Washington State Youth Soccer Association, and 500 to 600 parking spaces. Several locations were analyzed, including a site off North Levee Road and the preferred location on the east side of I-5, just north of 20th Street East and east of 70th Avenue East. The development of this complex is a joint project of the City of Fife, the Washington Youth Soccer Association, and the Tacoma-Pierce County Junior Soccer Association. The City of Fife currently owns the preferred site, and the associations will build the facilities. Pierce County has partnered with both the City of Fife and the City of Milton to provide parking for both this planned facility and the planned improvements to the Interurban Trail. Funding for this project is contingent on providing the minimum of 12 fields.

The City of Fife initially purchased a 41-acre site off North Levee Road in March of 2001. The North Levee Road site is outside the project footprint. Further analysis performed by the City of Fife of the site determined that the original land was too costly to develop and too remote from the commercial district and I-5. The estimated cost of utility extension and access improvements was \$8 million. The city is currently evaluating offers for the sale of this property, and the property was analyzed in the *SR 167 Conceptual Mitigation Plan* (CH2M HILL and Montgomery Water Group, Inc. [MWG], 2004) as an alternative wetland mitigation site.

The preferred 54-acre site adjacent to I-5 was identified by the City of Fife in late 2002. Initial plans were presented to the public in June 2003 and showed a combination of turf and grass soccer fields on three levels along with associated buildings and parking (Figure 5-4.) Located next to flood-prone Hylebos Creek, the site will be tiered to accommodate flood control. The lower level would flood often during the winter during off-season. The second level would also flood but not as frequently, and the third level, turf fields, would remain dry. The City of Fife has purchased the property, hired a design firm, and is hoping to begin phased construction as early as 2006.

As a planned facility there is no current usage, but the City of Fife has estimated as high as 50,000 families per month will access the site once operational and open to the public. The soccer complex site is also adjacent to the southern terminus of the planned Interurban Trail.

Planned Interurban Trail – The City of Milton purchased the abandoned Puget Sound Electric rail-bed as a multi-use bicycle/pedestrian trail route, and hired a consultant to develop it. They hope to begin construction on a 10- to 12-foot paved path with 2-foot gravel shoulders in 2006. This 33-acre trail begins by I-5 north of 20th Street East and east of 70th Avenue East, adjacent to the City of Fife planned Pacific National Soccer complex, and proceeds northeasterly for approximately three miles (Figures 5-4 and 5-7).



As a planned facility, there is no estimate of the number of users per year. Construction would be in three phases, potentially starting near the proposed I-5 interchange for the SR 167 project

This property will be improved using Washington Wildlife and Recreation Program Funding administered under the Washington State Office of the Interagency Committee (IAC)². By IAC policy, should a sponsor (the City of Milton) convert any portion of the project to a non-recreational use, that conversion must be approved by IAC. The conversion policy can be found in IAC Manual 7 Funded Projects, page 10, March 17, 2004.

If a portion of the trail will be converted, the City of Fife would be required to replace what was converted at their own cost with a replacement of equivalent recreational value, location, and use. Depending on the size of the conversion, it may require IAC Board approval. The City of Fife would be required to go through the conversion process as outlined in the manual listed above. To briefly summarize the process, all alternatives to the conversion must be considered. There must be justification to support the proposed replacement, as well as site plans for the conversion site and proposed replacement site.



Riverfront Trail – This existing City of Puyallup multi-use trail extends along the south levee of the Puyallup River from the Milwaukee Avenue Bridge westward to the vicinity of 4th Street NW. It is 10 to 12 feet wide, paved, and passes beneath the two SR 167 Puyallup River bridges on its own structure. Current usage is estimated at 20 persons per day, if a public agency acquires the property for ROW. (Figure 5-8). The Puyallup Tribe of Indians currently owns the land within the planned trail.

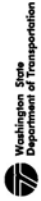
Planned North Levee Trail – This planned City of Fife trail is shown in the *Comprehensive Parks, Recreation, and Open Space Plan* as located on North Levee Road, extending from Freeman Road northwest to the I-5 bridge over the Puyallup River with a connection to 20th Street East. Trails on transportation rights-of-way are not usually subject to Section 4(f) protection, but as a planned facility some parts of the trail may extend beyond the public street system. Portions of the trail that are proposed along Wapato Creek could be subject to Section 4(f) protection (Figure 5-3).

Puyallup Recreation Center – The recreation center consists of two adjacent facilities, a 25,000-square-foot indoor recreation center, and a 16-acre park with three multi-use softball/baseball fields and an overlying soccer field. Also included are a children’s playground and passive area, and a walking/jogging trail (Figure 5-3).

² The Office of the Interagency Committee is a state agency that serves the *Interagency Committee for Outdoor Recreation (IAC)* and the *Salmon Recovery Funding Board*. The agency's staff, under the guidance of a director appointed by the Governor, implement policies and programs established by the two Boards, the Legislature, and the Governor.

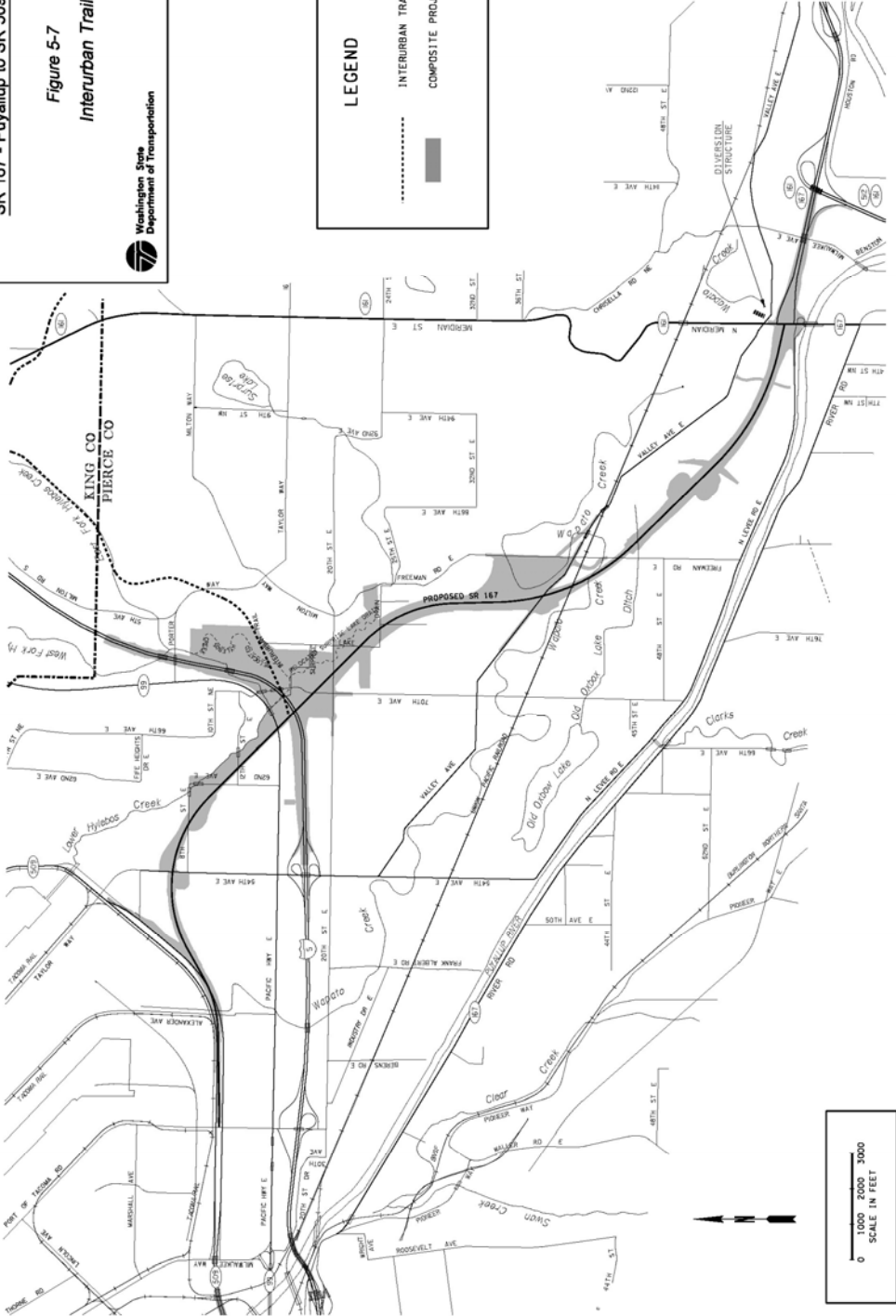
SR 167 - Puyallup to SR 509 Tier II FEIS

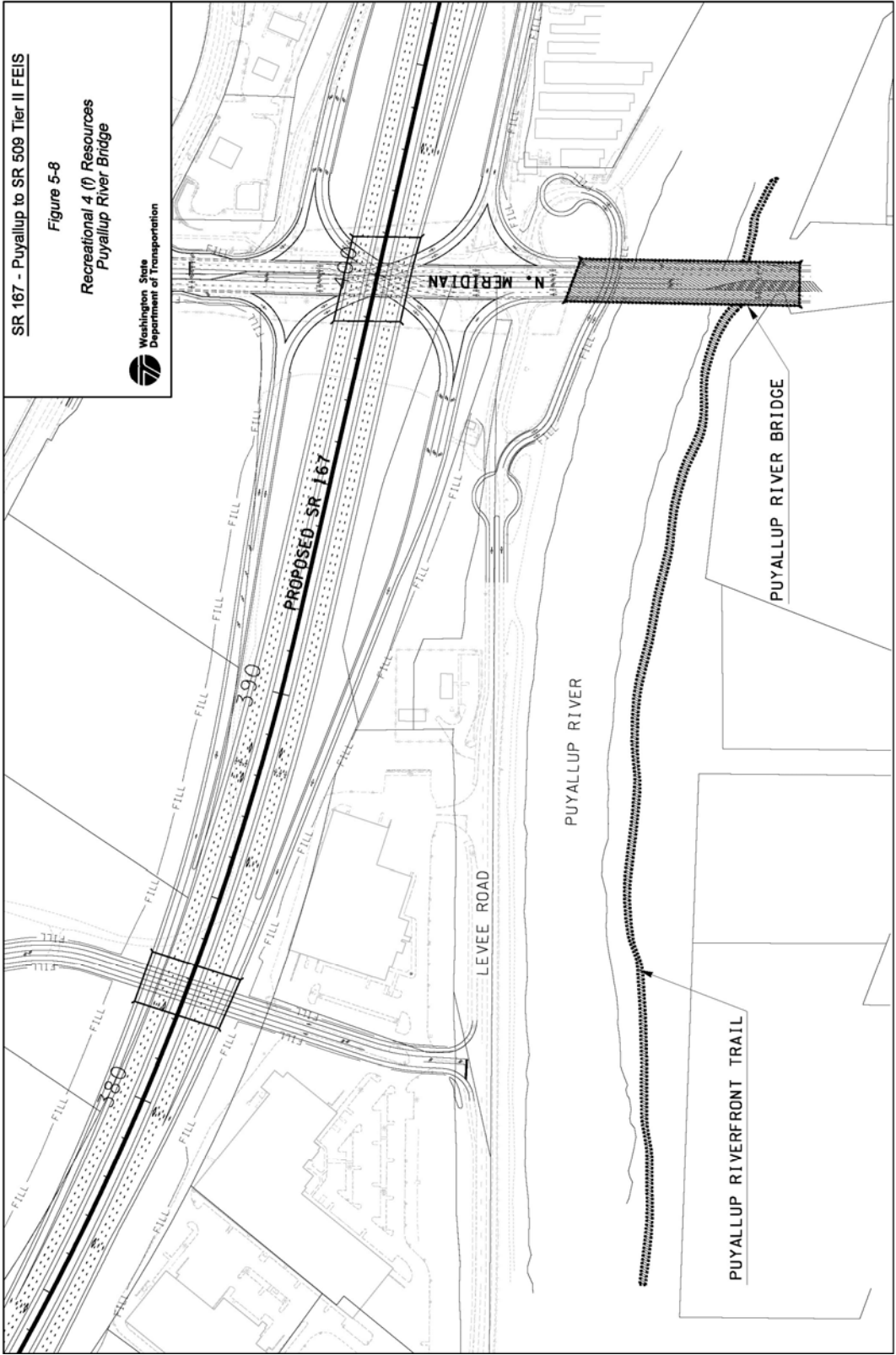
Figure 5-7
Interurban Trail



LEGEND

- INTERURBAN TRAIL
- COMPOSITE PROJECT FOOTPRINT

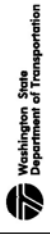




SR 167 - Puyallup to SR 509 Tier II FEIS

Figure 5-8

Recreational 4 (f) Resources
Puyallup River Bridge



5.5 Other Park, Recreational Facilities, Wildlife Refuges, and Historic Properties Evaluated Relative to the Requirements of Section 4(f)

The purpose of this discussion is to address Section 4(f) requirements relative to other park, recreation facilities, wildlife refuges, and historic properties in the project vicinity. The Build Alternative does not result in a use of these other Section 4(f) resources. The discussion of each resource either documents (1) why the resource is not protected by the provisions of Section 4(f) or (2) if it is protected by Section 4(f), why the build alternative does not cause a Section 4(f) use by (a) permanently incorporating land into the project, (b) temporarily occupying land that is adverse to the preservationist purposes of Section 4(f), or (c) constructively using land from the resource.

There are no wildlife and waterfowl refuges impacted by this project.

Some 70 historic properties within the area of potential effect were surveyed, with only those listed above being found eligible for the NRHP and therefore subject to Section 4(f) protection.

The following additional existing or planned recreation facilities are within the general vicinity of the project:

- Wapato Creek Trail
- Wapato Pointe PUD Trail
- Autumn Grove Trail
- Fife Landing Trail
- Fife Landing Trail Addition
- Fife Landing South Trail

Fife Landing South Trail – This trail extension, shown in the City of Fife Comprehensive Plan 2002 Update, would follow Wapato Creek, crossing proposed SR 167 south of Valley Avenue and west of Freeman Road (Figure 5-5). As a planned facility, no estimate of the number of users is available. The Puyallup Tribe currently owns the land within the planned trail. Currently, no public agency owns the proposed trail corridor needed for ROW. Therefore, the Planned Fife Landing South Trail is not a 4(f) facility.

The remaining five existing and proposed trails listed above are all outside of the impact area of the project. Therefore, the provisions of Section 4(f) are not triggered.

5.6 Description of Use

5.6.1 Historic Resources

Of the five resources eligible for protection under Section 4(f), the project will require use of three historic residences (Table 5-2).

Table 5-2: 4(f) Use – Historic Resources Eligible for the NRHP

Parcel Number ¹	DAHP ² Number	Address	Section 4(f) Use	Description
P168	27-4154	6803 20th St. E.	Yes – demolition	Residence
P202	27-4125	7001 20th St. E.	Yes – demolition	Residence
P239	27-4114	7717 Valley Ave. E.	Yes – demolition	Residence
P490	27-4160	3423 Freeman Road	No	Residence
(Baggenstos Farm)	Fife-A-1	N. Levee Rd.	No	Farmstead

¹Assigned by WSDOT

²Department of Archaeology and Historic Preservation

Site 27-4154 – Under the preferred build alternative, there would be a use of this historic residence. The property is directly within the proposed relocation of 20th Street East and construction of a roundabout. It is proposed that the structure be offered for sale to a buyer willing to relocate the structure. The structure would be demolished if no qualified buyer was identified in one year.

Site 27-4125 – Under the preferred build alternative, there would be a use of this historic residence. The property is within the proposed I-5 interchange structures. It would also be adversely affected by the proposed relocation of 70th Avenue East with associated roundabout at the corner of 70th Avenue East and 20th Street East. It is proposed that the structure be offered for sale to a buyer willing to relocate the structure. The structure would be demolished if no qualified buyer was identified in one year.

Site 27-4114 – Under the preferred build alternative, there would be a use of this historic residence. Proposed widening of Valley Avenue East will adversely affect the property. The residence would be demolished by the proposed realignment of Valley Avenue with Valley Avenue Realignment interchange option. The Freeman Road and Valley Avenue (preferred) interchange options would require use of the property as well. The building would be under the proposed structure for mainline SR 167 and on the inside of the northbound SR 167 off-ramp, limiting access and increasing noise impacts to the residence.

Under the preferred Valley Avenue interchange option, the structure could be offered for sale to a buyer willing to relocate the structure. The structure would be demolished if no qualified buyer was identified in one year.

Site 27-4160 – Under the preferred build alternative, no use, nor any constructive use, is expected of this historic residence. Although interchange options include widening of Freeman Road on the front (west) side of the site, the project will be designed to avoid any property acquisition.

Noise impacts were assessed in the Tier II DEIS and noise modeling near the site indicates noise levels will remain under 63-dBA under future buildout conditions with the proposed project. A noise wall for this area was determined to be not feasible and not reasonable because it is not possible to achieve a 7-dBA reduction. Visual impacts will be avoided, as the property front on Freeman Road currently has an extensive hedge system. In addition, the project proposes to install riparian plantings in the property directly across from the site on Freeman Road. These plantings of a riparian forest combined with an interchange off-ramp that is not elevated, will minimize the visual impacts from the project.

Site Fife-A-1 (Baggenstos Farm) – Under the preferred build alternative, there would not be a use of this historic farm. WSDOT will design the compensatory wetland mitigation site to avoid any identified 4(f) resource.

5.6.2 Recreational Resources

Of the seven recreational resources eligible for 4(f) protection, the project will require use of a planned facility and a multi-use trail (Table 5-3).

Table 5-3: Section 4(f) Use – Recreational Resources Eligible for 4(f) Protection

Recreational Resource	Location	Section 4(f)Use	Description
Planned Lower Hylebos Nature Park (Trail)	Adjacent to Milgard Restoration Site	No	Multi-use trail
Planned Pacific National Soccer Park	I-5 Interchange	Yes – land acquisition	Soccer facility
Interurban Trail	I-5 Interchange	Yes – land acquisition	Multi-use trail
Riverfront Trail	Puyallup River Bridge	No	Multi-use trail
Planned North Levee Trail	N. Levee Rd.	No	Multi-use trail
Puyallup Recreation Center	WSP Weigh Stations	No	Community recreation center

Planned Lower Hylebos Nature Trail – The 4(f) recreational resource is the nature trail, including the viewing platforms and interpretive signs. Under the preferred build alternative, access to this proposed trail will be limited by the removal of 8th Street East and 62nd Avenue East. There is no required use of this proposed trail. FHWA and WSDOT met with the City of Fife on May 8, 2003, and June 2, 2004, to discuss access issues for this proposed restoration project. The City of Fife has stated that a change in the location of proposed parking (at 8th Street East) would require an amendment to the city’s Shoreline Permit although an alternative access point to this site, 4th Street East, exists. In addition, NOAA Fisheries and its partners (the U.S. Army Corps of Engineers [COE]) do not currently support changing the location of access to the site. Access to this proposed trail exists through 4th Street East, therefore, there will be no constructive use of this 4(f) facility. FHWA and WSDOT will continue to work closely with the City to address parking and access needs as project design is finalized.

Planned Pacific National Soccer Complex – Based on the project footprint of the proposed I-5 Interchange, relocation of 20th Street East, and the relocations

of Hylebos Creek and Surprise Lake Drain with associated buffers as shown in the February 2003 Tier II DEIS and a preliminary design drawing from the City of Fife depicting a potential 18 soccer fields at the complex site (Figure 5-4). Through minimization measures and coordination with the City of Fife, use of these soccer fields has been limited to 6 of the currently designed 18 soccer fields (Figure 5-13).

Interurban Trail – The relocation of Hylebos Creek, mitigation for stream fill, would require use of approximately two to three acres at the southerly terminus of the trail (Figures 5-4 and 5-7).

Riverfront Trail – This existing trail beneath the two SR 167 Puyallup River bridges will require access to the path be limited during construction, for safety reasons. The ownership of the trail would not change; there will be no adverse change to the function of the trail; and no land would be acquired from the trail. FHWA, WSDOT, and the City of Puyallup are committed to work cooperatively in identifying an acceptable interim route for the trail during the course of construction. (See Appendix H.)

Noise impacts in the vicinity of the Riverfront Trail were assessed in response to comments received on the SR 167 Tier II DEIS. Existing noise levels range from 65 to 71 dBA. Noise modeling indicated that future conditions without the project will cause noise levels to increase from 2 to 9 dBA. Future build out with the project will cause noise levels to increase an additional 1 dBA. Although the projects contributions to noise impacts are minimal, a noise wall along the south shoulder of SR 167 between Milwaukee Avenue East and SR 167/161 was found to be both feasible and reasonable. Noise mitigation will be provided at this location. Visual impacts are not anticipated at this site, as there will be no substantive change to the trail area from the project. Therefore, there is no constructive use of the site.

Planned North Levee Trail – This planned trail is proposed to run adjacent to one of the proposed wetland mitigation sites in the *SR 167 Conceptual Mitigation Plan* (WSDOT 2005). Part of the wetland mitigation proposal at this site includes breaching of the Puyallup River dike and N. Levee Rd. to provide hydraulic connectivity for the wetlands being established. WSDOT has not identified a preferred mitigation site(s), therefore there is no use of this planned trail by the project at this time. Should that change in the future, a separate 4(f) evaluation will be circulated.

Puyallup Recreation Center – There would be no ROW acquisition from the center, so no Section 4(f) land would be permanently used by being incorporated into a transportation facility. There would be no access impacts, as access for the center is from the local street system on the opposite side from the highway. The Tier II DEIS and the studies performed in support of it did not indicate any impacts that would affect the function or use of this facility. The aesthetics in the vicinity of the recreation center may be somewhat impacted. The roadway will become a dominant element within the rural setting adjacent to the baseball fields. The lights from cars at night will detract from current views. Mitigation proposed includes use of architectural or vegetative screening to block the view of traffic and planting the embankment side slopes.

The noise study prepared in support of the Tier II DEIS (Parsons Brinkerhoff 2001) indicated noise at the recreation center would increase from 52 dBA to 70 dBA, which is a substantial increase from the existing and no build conditions. The FHWA noise abatement criterion for active recreation areas is 67 dBA. Construction of a noise wall at that location was found to be feasible because a 10-foot-high wall, 2,400 feet long, would provide a 7 dBA-reduction in noise for the Recreation Center. However, it was determined to be not reasonable under established WSDOT criteria.

In a letter dated October 2005 (see Appendix H), the U.S. Department of Interior (DOI) requested that a “scaled-down” version of the 2400-foot-long wall (determined to be not reasonable under established WSDOT criteria) be considered to achieve as much noise reduction as possible. Further analysis was necessary to honor this request.

In November 2005, WSDOT conducted the additional noise analysis at the Recreation Center as requested by DOI. The results of this analysis show that, except for a few outfielders on the baseball field closest to the proposed roadway, most of the Recreation facility would experience noise levels in the 62 to 63 dBA range. Traffic noise below 67 dBA does not interfere with normal conversation. Therefore, most of the users in the center of the ball fields and in the park and playground area would be able to carry on a normal conversation without raising their voices. Placing a noise wall along WSDOT right-of-way, on the edge of the ball fields, would not benefit the majority of the users who are more than 300-400 feet away from the roadway.

Based on the results of the additional noise analysis described above and a meeting with DOI, FHWA, and WSDOT, it was determined that there was not a constructive use of the recreational facility and it would experience noise levels below FHWA’s criteria of 66 dBA.

WSDOT presented these noise analysis findings to the Recreation Center officials in February 2006 and asked them how they felt this would affect the activities at their facility. They did not feel that the future traffic noise would affect their activities. On February 10, 2006, the City of Puyallup Parks and Recreation Department sent WSDOT a letter stating that the future roadway noise will not substantially impair the activities at their Recreation Center. This letter is included in Appendix H, page H-4.

5.7 Avoidance Alternatives

5.7.1 No Build Alternative

The No Build Alternative, while it will avoid impacts to all 4(f) resources, does not satisfy the purpose and need of the project, which is to improve regional mobility, serve freight and passenger movement, reduce congestion and improve safety, improve system continuity between I-5 and the SR 167 freeway, and maintain or improve air quality.

5.7.2 Tier I

The design of a new freeway that would connect existing SR 167 (where it connects with North Meridian in Puyallup) to I-5 and, ultimately, SR 509 is limited to an area between the Puyallup River to the south and Fife Heights (steep slopes) to the north. This narrow section of the Puyallup River Valley is completely within the external boundary of the Puyallup Tribal Reservation and contains a number of tribal trust properties. The Puyallup Tribe has voiced strong opposition to any corridor alternative that requires the use of tribal trust lands. Designs for this new freeway must also factor in existing environmental resources such as Wapato Creek, Oxbow Lake, Surprise Lake Drain, and Hylebos Creek; wetlands (over 107 acres of wetlands delineated by the project in this area); and associated floodplains. Furthermore, design options for an interconnection with I-5 are limited to the two existing interchanges (Port of Tacoma and 54th Avenue East) and one potentially new interchange around 70th Avenue East.

With these limitations in mind, corridor alternatives that would provide the necessary connections within this short segment were evaluated. Tying the proposed SR 167 Extension freeway into the existing I-5 / 54th Avenue East Interchange was never considered a viable option. That interchange and adjoining surface streets are built-out and operating at maximum capacity. The I-5 / 54th Avenue East Interchange, and the signalized 54th Avenue East intersections with 20th Street East and Pacific Highway were all operating at a Level of Service "F" in 1990. Impacts to this industrial/commercial area would require extensive displacement and relocation costs. Several 4(f) recreational resources such as Yamamoto Park, Fife Community Pool, Centennial Park, Wapato Nature Area, Wedge Park, and Dacca Park would be difficult to avoid. Up to 40 known historic 4(f) resources exist within this corridor path.

Rebuilding the entire system, adding additional traffic to this system, and designing a corridor that avoids all 4(f) resources while still meeting the purpose and need of the project was not feasible and was not prudent. Therefore, all corridor alternatives that would connect with the existing I-5 at 54th Avenue East were rejected. None of the corridor alternatives completely avoid 4(f) resources.

This left a total of nine corridor alternatives which were further analyzed. The remaining alternatives were subjected to an initial screening analysis based on several criteria detailed below and were presented for public review.

Use of 4(f) Protected Resources

Eastern Washington University Archaeological and Historical Services (AHS) performed the cultural resources analysis for the SR 167 Tier I FEIS. Background research included consultation with personnel at the DAHP in Olympia prior to 1993. Findings included three properties recorded by Pierce County and an ethnographically documented Puyallup winter village. As confirmed in the Cultural Resource Investigations for the Washington State Department of Transportation SR 167: Puyallup to SR 509 Project, Pierce County, Washington, AHS May 2004, and the June 15, 2004, SHPO concurrence, the three recorded properties (George Hoertrich Electrical Shop, the Golden Rule Motel, and the Firwood School Gymnasium) do not meet the National Register Criteria.

However, a number of recreational 4(f) resources were identified, including the Fife Community Pool, the proposed Nisqually Delta/Mount Rainier Trail, the proposed Wapato Creek Nature Trail, the Puyallup Recreation Center, and various bike trails.

Tribal Trust Lands

Corridor alternatives that would minimize impacts to Tribal Trust Lands were carried forward. Acquisition of Tribal Trust Lands would be entirely dependent on whether the Puyallup Tribe is a willing seller of their entrusted property and the tribe clearly indicated its opposition to such a sale.

Avoidance of Wetlands, Streams, and Floodplains

Corridor alternatives that would have substantially greater impacts to wetlands, streams, or floodplains were determined to be not feasible or prudent. Any impacts to these resources require a permit from the COE, per Section 404. The permitting agency clearly indicated that only alternatives that avoided or minimized impacts to these resources would meet permit requirements.

Of the nine corridor alternatives, six alternatives would impact tribal trust lands while at the same time having substantially greater impacts to aquatic resources such as wetlands, streams, and floodplains. In addition, all of these alternatives would impact 4(f) resources. Due to these increased environmental impacts, the opposition of the Puyallup Tribe to use of tribal trust properties, and the impact to additional 4(f) resources, these corridor alternatives are not feasible and prudent avoidance alternatives.

Only three corridor alternatives avoided all of the then identified 4(f) resources, including the then proposed Riverfront Trail, proposed Wapato Creek Nature Trail, North Levee Bike Route, and the Puyallup Recreation Center, as shown in Figure 5-9.

Pursuant to 23 CFR §771.135(o)(2), the three remaining corridor alternatives in Tier I were reviewed based on additional design details and identified 4(f) resources. Figure 5-10 shows the overlay of the three Tier I corridor alternatives and current identified 4(f) resources.

Tier I Corridor Alternative 1

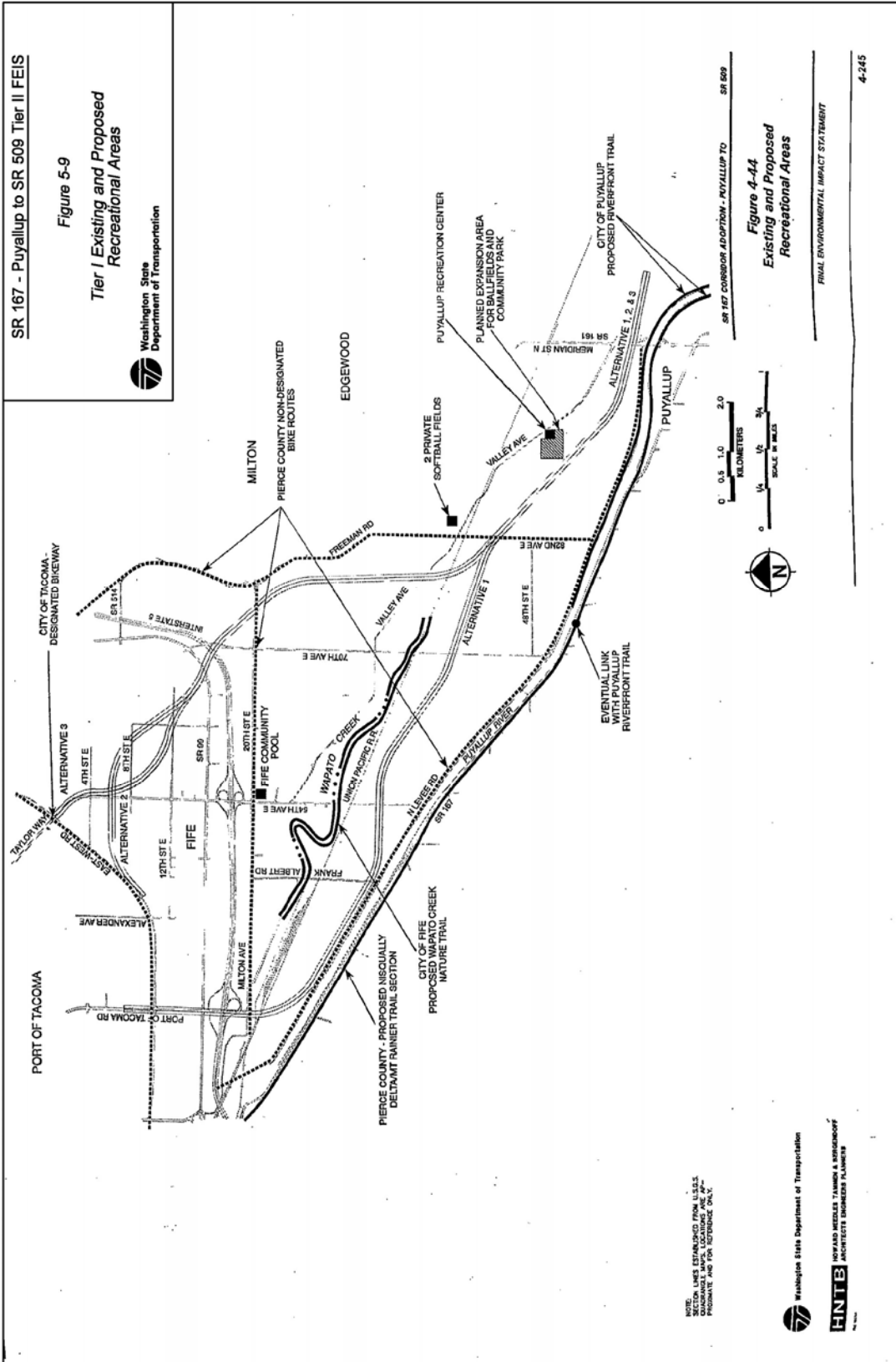
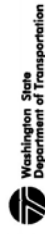
Based on the current analysis of 4(f) facilities, the following historic and recreational 4(f) resources would require a use by Corridor Alternative 1:

- Historic 4(f) resource: the Baggenstos Farm (Fife A-1)
- Recreational 4(f) resources:
 - Planned park adjacent to 54th Avenue East
 - Planned North Levee Trail
 - Existing Autumn Grove trail

All potential historic 4(f) resources may not have been identified for this corridor, as the cultural resource survey performed for the Tier II document was limited to the preferred Tier 1 Corridor Alternative 2.

Figure 5-9

Tier I Existing and Proposed Recreational Areas



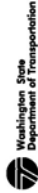
NOTE: LINES DERIVED FROM U.S. GEOLOGICAL SURVEY 1:25000 SCALE QUADRANGULAR MAPS. LOCATIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.



Figure 4-44 Existing and Proposed Recreational Areas

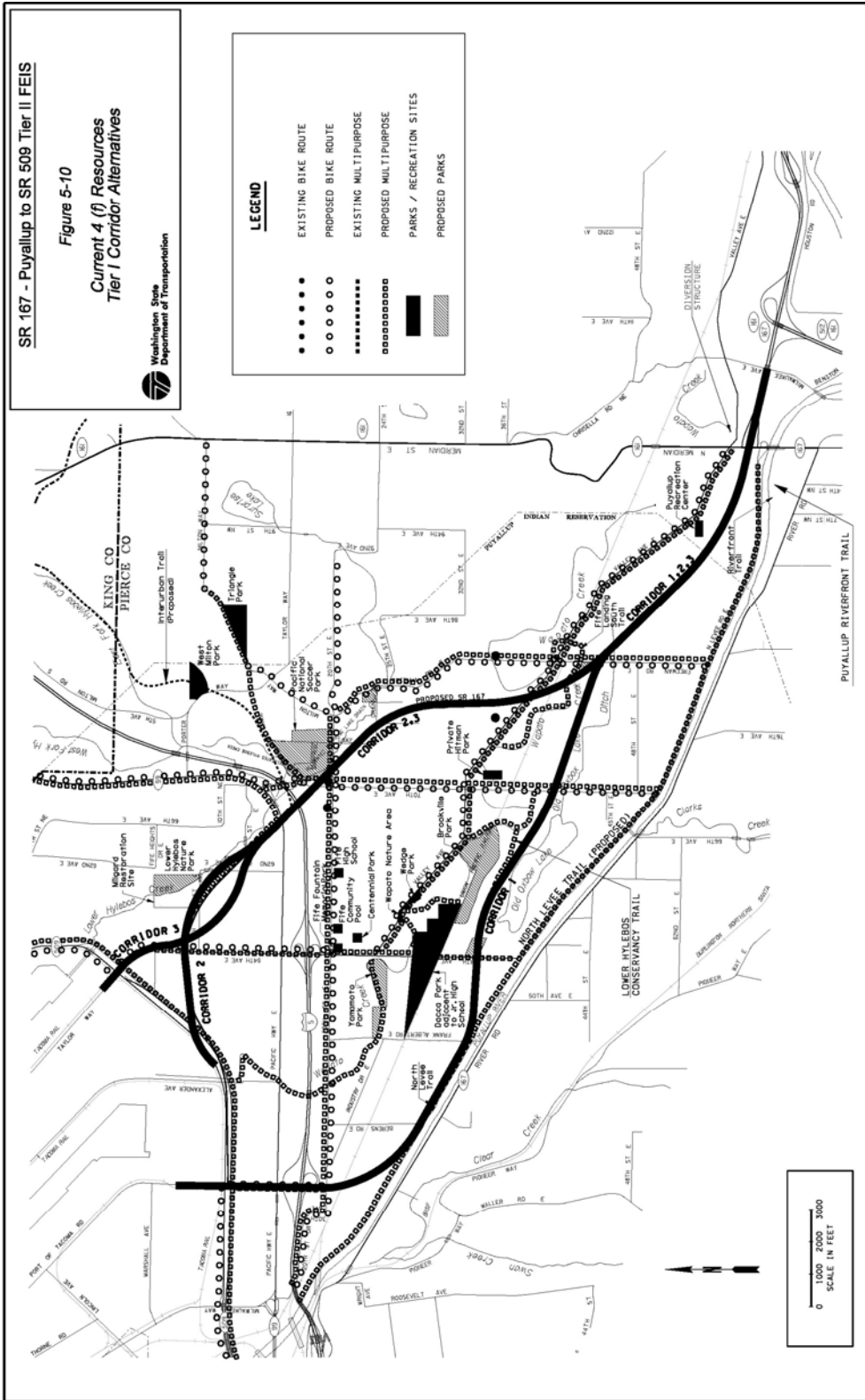
FINAL ENVIRONMENTAL IMPACT STATEMENT

Figure 5-10
Current 4 (f) Resources
Tier I Corridor Alternatives



LEGEND

- EXISTING BIKE ROUTE
- ○ ○ ○ ○ PROPOSED BIKE ROUTE
- EXISTING MULTIPURPOSE
- ○ ○ ○ ○ PROPOSED MULTIPURPOSE
- ■ ■ ■ ■ PARKS / RECREATION SITES
- ▨ ▨ ▨ ▨ ▨ PROPOSED PARKS



Corridor Alternative 1 is not a prudent alternative due to the following factors:

1. Impacts to Tribal trust lands: Corridor Alternative 1 would bisect one of the few remaining large Tribal trust properties for the Puyallup Tribe of Indians, and was not supported by them (Figure 5-11). A number of project related issues remained unresolved with the Puyallup Tribe of Indians, including visual, noise, and traffic impacts to Tribal trust lands, but the Puyallup Tribe of Indians clearly indicated would only support a corridor alternative which avoided all Tribal trust lands. Commitments to the Puyallup Tribe of Indians are in Appendix K of the SR 167 Tier I EIS and the Tier I ROD.
2. Wetlands: Wetland impacts were reanalyzed as part of the *404(b)(1) Alternatives Analysis*, WSDOT July 2004. A 220-foot corridor width had been applied in estimating wetland impacts for the Tier I document. Refinement of the corridor in Tier II revised the footprint of the project such that impacts were evaluated within an approximately 400-foot area, to accommodate interchange options and park and ride facilities. Application of a 400-foot-wide zone to the analysis of wetland impacts substantially increases the amount of impacts associated with Corridor Alternative 1.

Also, although Tier I wetland impacts were based on wetland inventories³, one partially delineated wetland⁴ would be impacted by Corridor Alternative 1 which also increased impacts. Table 5-4 shows the revised wetland impact analysis.

Table 5-4: Revised Estimated Tier I Corridor Wetland Impacts

Corridor Alternative ^a	Segments	Tier I FEIS Wetland Impacts	Revised Estimated Wetland Impacts
Corridor 1	A & E	14.55	>37.89 ^c
Corridor 2	A, B, & C	7.44	32.9 ^b
Corridor 3	A, B, & D	15.98	>44.08 ^c

a) Corridor Alternative from the Tier I EIS.

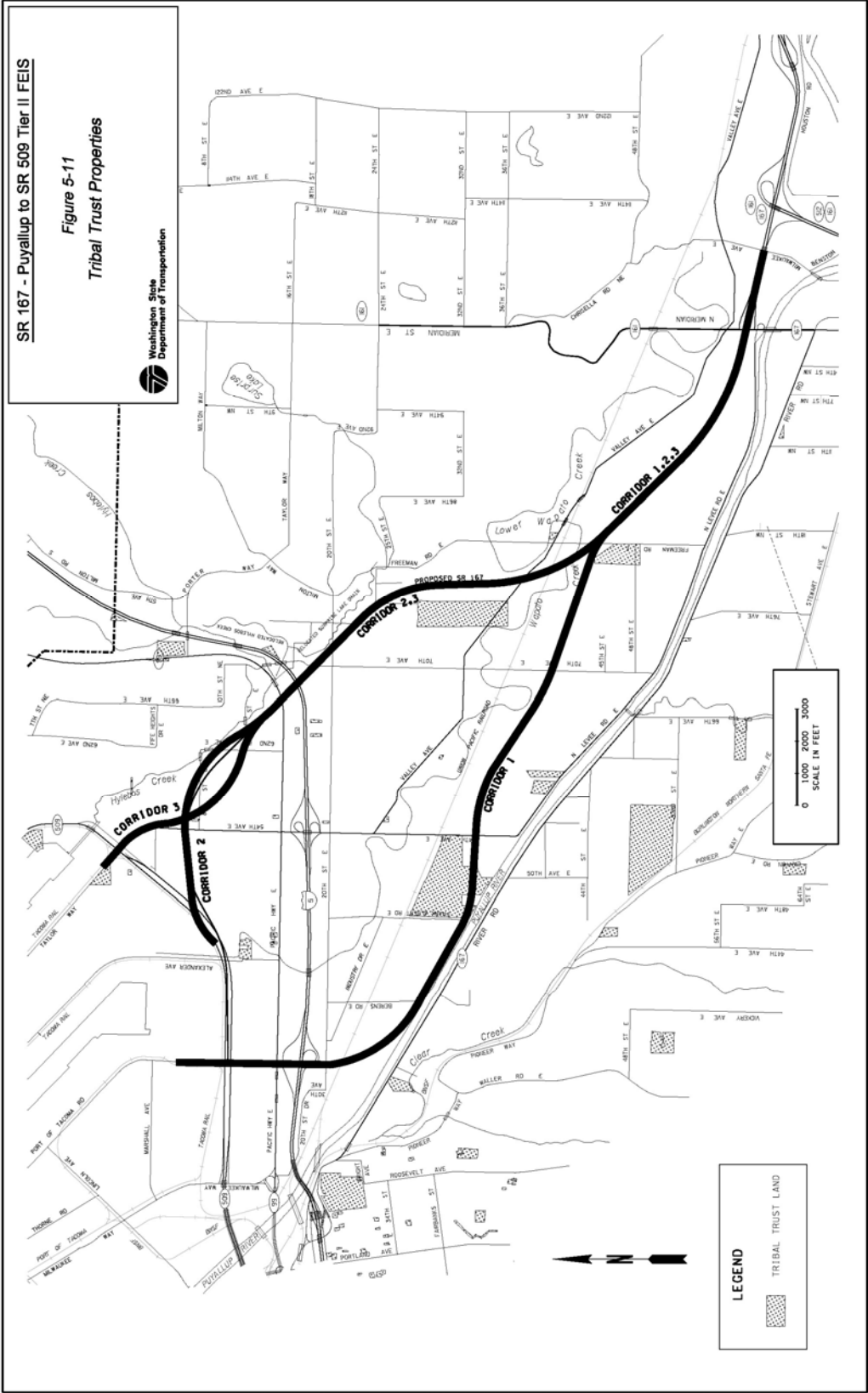
b) Corridor 2 impacts are not an estimate, but actual project impacts from the Tier II EIS.

c) Currently definable estimates. These impacts would most likely increase proportionally with field delineation along the entire corridor.

Corridor Alternative 1 would also limit mitigation opportunities in the Puyallup River basin, as the corridor would impact the Union Pacific Railroad Site, which has a high potential for mitigating all of the projects impacts for wetland fill activities.

³ U.S. Fish and Wildlife National Wetland Inventory maps, along with the Pierce County, City of Fife, and City of Puyallup wetland inventory maps were used to identify wetlands in the project area in Tier I.

⁴ Wetlands were delineated in accordance with the COE *Wetland Delineation Manual* (Environmental Laboratory, 1987). Not all wetlands were completely delineated (i.e. all boundaries and buffer areas identified), just wetlands within the project footprint.



3. Floodplain impacts: The levy system on the Puyallup River is currently failing due to excessive buildup of sediment and the determination by the COE that dredging the sediment is no longer a supportable practice. A study is underway to determine the new boundaries of the floodplain in the Puyallup River Basin. Corridor Alternative 1, with its proximity to the Puyallup River, would be within the extended 100-year floodplain. Designing the roadway within this extended floodplain would be very difficult and potentially costly, as determining what the impacts of the failing levy system would have to facilities in the proximity of the Puyallup River are not currently available.
4. Floodplain benefits: Corridor Alternative 2 includes the relocation of Hylebos Creek. This relocation will address current and future projected increased flooding of I-5 in the vicinity of the city of Fife (Fife Curve). Corridor Alternative 1 would not require the relocation of Hylebos Creek.

Tier 1 Corridor Alternatives 2 and 3

Corridor Alternative 2 and 3 differ only between SR 509 and the I-5 Interchange. Therefore, all 4(f) resources affected by the preferred alternative would also be used by Corridor Alternative 3. Corridor Alternative 3, as shown in Table 5-4, would have the most substantial wetland impact of the corridor alternatives. With 44 acres of wetland impacts, the project would fail to receive the necessary permits to construct the project. Specifically, Corridor Alternative 3 would fail to meet the requirements for Section 404, specifying a design that is the Least Environmentally Damaging and Practicable Alternative (LEDPA).

There are no corridor alternatives meeting the purpose and need of this project that would avoid 4(f) resources based on the current analysis of 4(f) resources. Corridor 1 would use three recreational resources and Corridors 2 and 3 would use two recreational resources. Although one, as opposed to three, historic resources has been identified for Corridor 1, additional historic resources are document in the vicinity of Corridor 1. In addition, Corridor Alternatives 1 and 3 are not feasible and prudent avoidance alternatives due to their impacts to wetlands and the determination by the COE that these alternatives are not LEDPA.

5.7.3 Tier II

In the Tier II analysis, the preferred Corridor Alternative 2 design was refined and interchange options were developed as described in the previous section, Alternatives and Options. Avoidance alternatives associated with the interchanges are discussed below.

I-5 Interchange

After the ROD for the Tier 1 EIS was approved by FHWA, the mainline alignment of SR 167 had to be redesigned because geometric design standards were not met. For the mainline redesign, five different centerline-only options were developed for SR 167 between SR 509 to just south of the I-5 Interchange. All these options met the current design standards and changed the I-5 crossing from a horizontal curve to a tangent section.

Avoidance of the Planned Pacific National Soccer Facility

State and Federal guidelines require a minimum distance of 1 mile between interchanges. Because of the location of Hylebos Creek and the geography of the area in this vicinity, it is not possible to place this interchange any further north than 0.8 miles from the 54th Avenue East I-5 Interchange. In addition, any redesign of the SR 167 mainline to the north would continue to require use of the Interurban Trail. Based on these factors, it is neither feasible nor prudent to relocate the mainline to the north in an attempt to avoid the planned Pacific National Soccer Facility.

Avoidance of Historic Resources

The proposed I-5 interchange location is also limited by the two historic 4(f) resources on 20th Street East on the south/west side of the alignment. Avoidance of these two historic resources would require the relocating the interchange at least 300 feet, which would not meet standards for placement of interchanges to the south. In addition, relocating the proposed I-5 Interchange closer to the existing 54th Avenue East Interchange would impact a commercial area of the city of Fife. As shown in the picture below, the majority of the impacts would be associated with an apartment complex with 241 units, with one through three bedrooms. This complex has a requirement to fill 20 percent of the complex with low income families. The apartment complex reported 90 percent occupancy in 2001. Displacing these families would increase displacement impacts associated with the I-5 Interchange by 217 to 241 Multi-Family Units, an impact of extraordinary magnitude. Therefore, redesigning the mainline to avoid these 4(f) resources is neither feasible nor prudent.



SR 167 Bridge Over Existing 20th Street East

SR 167 will have a direct impact on 20th Street East. Maintaining 20th Street East in its current alignment would avoid the historic 4(f) resource, Site No. 27-4154. Extending the structure for the I-5 Interchange to provide continued access for this local road was evaluated.

In order to accommodate required bridge clearance for this existing roadway, the I-5 Interchange would be required to be elevated to four levels. This option was evaluated in the *Value Engineering Study Report, SR 167 and I-5 Interchange*, October 2000.

Residents in the Fife Heights area expressed concern based on visual impacts from the elevated structures. At three levels, the I-5 interchange will be approximately 80 feet high; adding a fourth level to the I-5 interchange will add approximately 26 to 30 feet of height. Visual and audible impacts for these residents would occur if a four-level interchange was developed (Figure 5-12).

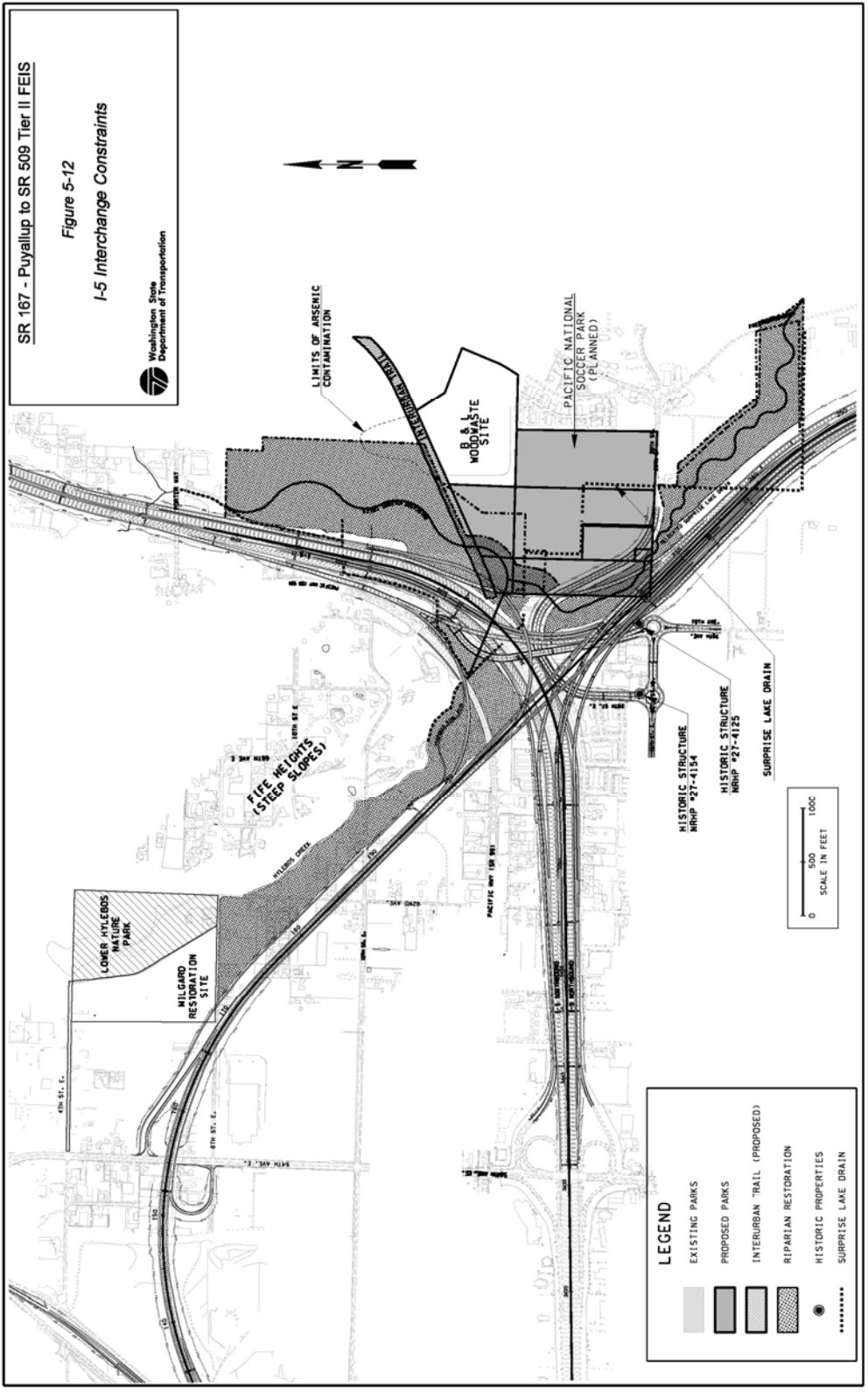
Cost estimates for additional structures necessary to mitigate poor soil conditions and other seismic risk factors for a four-level interchange would be \$87.5 million more than a three-level interchange, due to poor soil stability. Although it is feasible that a four-level structure could be designed for the proposed I-5 interchange, it is not prudent due to an additional construction cost of extraordinary magnitude. Therefore, it was determined that both 70th Avenue East and 20th Street East should be realigned in order to keep the total interchange at three levels.

Placement of the relocation of 20th Street East is limited by design factors, such as the distance between the two-lane roundabouts associated with the 20th Street East and 70th Avenue East relocations. If the relocation was shifted to the west, a large apartment complex described above would be impacted requiring extensive relocations as well as high real estate costs. The apartment complex also contains 48 Section 8, low-income units. Impacts to the apartment complex would include environment justice impacts, due to those low-income facilities. In addition, none of the potential designs for 20th Street East would avoid all 4(f) resources. Therefore, it is not prudent to bridge existing 20th Street East or relocate 20th Street East to the west.

Relocation of Hylebos Creek

The planned Pacific National Soccer Park is impacted by the proposal to relocate Hylebos Creek. Existing Hylebos Creek, between the existing 70th Avenue East bridge and the first existing I-5 crossing, would be filled as part of the northbound I-5 widening. Leaving the creek in the existing location but inside a closed pipe, would not be acceptable to permitting agencies. Impacts to the creek affect 2,050 linear feet of stream bed. Closed pipes of any substantial length are an effective block to aquatic species, such as salmonids. Therefore, a closed pipe could not be installed in the existing location.

Relocating the creek further to the west side of proposed I-5 widening would not provide enough riparian buffer to meet City of Fife Critical Area Ordinances. The channel would need to be linear and potentially armored, which would impact the creek instead of improve it. Furthermore, this area is needed to provide water quality treatment for mainline I-5 and the southbound I-5 to SR 167 off ramp. This is because I-5 in the vicinity of the proposed interchange drains all highway runoff to the west with no other options to channel the stormwater elsewhere.



Crossing I-5 at the preferred location provides the fewest impacts to Hylebos Creek and optimizes flood conveyance. The proposed design will reduce existing and future flooding problems in the vicinity, according to a study prepared for WSDOT (MGS et al., 2004). Portions of I-5 in this vicinity were flooded during the 1990 and 1996 floods. WSDOT is evaluating the I-5 profile in an effort to keep the new I-5 crossing of Hylebos Creek above the floodwater. WSDOT is limited on how high the I-5 profile could be elevated because of the height limitations on the interchange structures due to foundation considerations, and the additional structural costs resulting from extending bridge lengths in response to raising the I-5 profile. Therefore, the relocated stream channel will be designed to successfully address both existing and future flooding of I-5.

FHWA and WSDOT considered locating the new Hylebos Creek crossing in the vicinity of the existing 70th Avenue East Bridge. This would reduce the channel length required for the relocation, minimize impacts to a sewer main, and minimize impacts to the Soccer Complex.

However, this option would not function as efficiently for flood conveyance as the preferred option, potentially resulting in flooding of the new I-5 freeway bridge over Hylebos Creek, and would not resolve the existing problems of flooding over I-5 lanes.

Also, if the Hylebos crossing was moved further north, it would impact the crossing of Surprise Lake Drain. If the Surprise Lake Drain crossing is moved further north, then this stream will impact the Interurban Trail and Soccer Complex. If a connection to relocated Hylebos Creek is not provided, then six bridges (two northbound, two southbound and two HOV) at I-5 would be required instead of three. This will add at least \$10 million to the construction cost of the project, as well as major long-term traffic disruptions on mainline I-5 during construction.

Relocating Hylebos Creek further north would also have greater ecological impacts to Hylebos Creek because of the construction of relocated 70th Avenue East and the southbound I-5 to northbound 167 off-ramp. For the reach between the existing SR 99 and 70th Avenue East bridges, the remaining riparian buffer for Hylebos Creek would be reduced to essentially zero on the north and about 100 feet to the south. These buffers are deficient by any scientific standard, including the City of Fife's Critical Areas Ordinance, and the Integrated Streambank Protection Guidelines, which is the WSDOT standard for best available science. This option would also eliminate the wildlife linkage with the Surprise Lake Tributary, and require separate I-5 crossings for this tributary stream. WSDOT would not likely acquire permits for this work.

Surprise Lake Drain Relocation

The Planned Pacific National Soccer Facility is located within the ditched system of Surprise Lake Drain. The project has proposed to relocate Surprise Lake Drain as part of the mitigation for fill of Surprise Lake Drain by the mainline section of SR 167. In the DEIS, the relocation of Surprise Lake Drain would be located to the east of relocated 20th Street East. The relocation as originally proposed, and the riparian buffer (at least 150 feet wide), would impact the planned soccer facility, requiring use of 12 of 18 proposed soccer fields (approximately 40 of 54 acres) (Figure 5-4).

Through coordination with the City of Fife, FHWA and WSDOT redesigned both the relocation of 20th Street East and the relocation of Surprise Lake Drain. This redesign, though limited by roadway curvature standards for 20th Street East and regulatory buffers for Surprise Lake Drain, minimizes use of the soccer facility such that the City of Fife will be able to design 12 soccer fields in the remaining area (Figure 5-13).

Valley Avenue Interchange

The SR 167 corridor alignment in the vicinity of Valley Avenue is limited by a historic and recreational 4(f) resource to one side, and a historic 4(f) resource on the other side.

One historic resource, a residence, is beneath the structure of the mainline alignment as it bridges Valley Avenue. This residence would be located between the structure of mainline SR 167 and the proposed off-ramp from northbound SR 167 to Valley Avenue.

The following factors confine the alignment near this site:

- Design requirements: a shift of the corridor to avoid 4(f) resources would require the mainline corridor alignment to shift at least 300 feet either east or west of the proposed alignment.
- Geographical limitations to the east of Freeman Road: The corridor alignment cannot be shifted to the east due to cliffs adjacent to Freeman Road.
- Tribal trust lands: Shifting the alignment west would substantially impact six tribal trust properties. One tribal trust property also exists to the east of the alignment (Figure 5-11).
- Crossings of Wapato Creek: The current alignment limits crossings of Wapato Creek to one mainline crossing. Shifting the alignment either east or west would increase mainline crossings by at least one.



5.8 Measures to Minimize Harm

5.8.1 Historic Resources

As outlined in the Memorandum of Agreement (MOA) (see Appendix H), the residences will be offered for sale, based on the buyer's ability to move the residence to a different location. If the house does not sell within a year, photo-documentation will occur and the residences will be demolished.

5.8.2 Recreational Resources

Lower Hylebos Nature Park

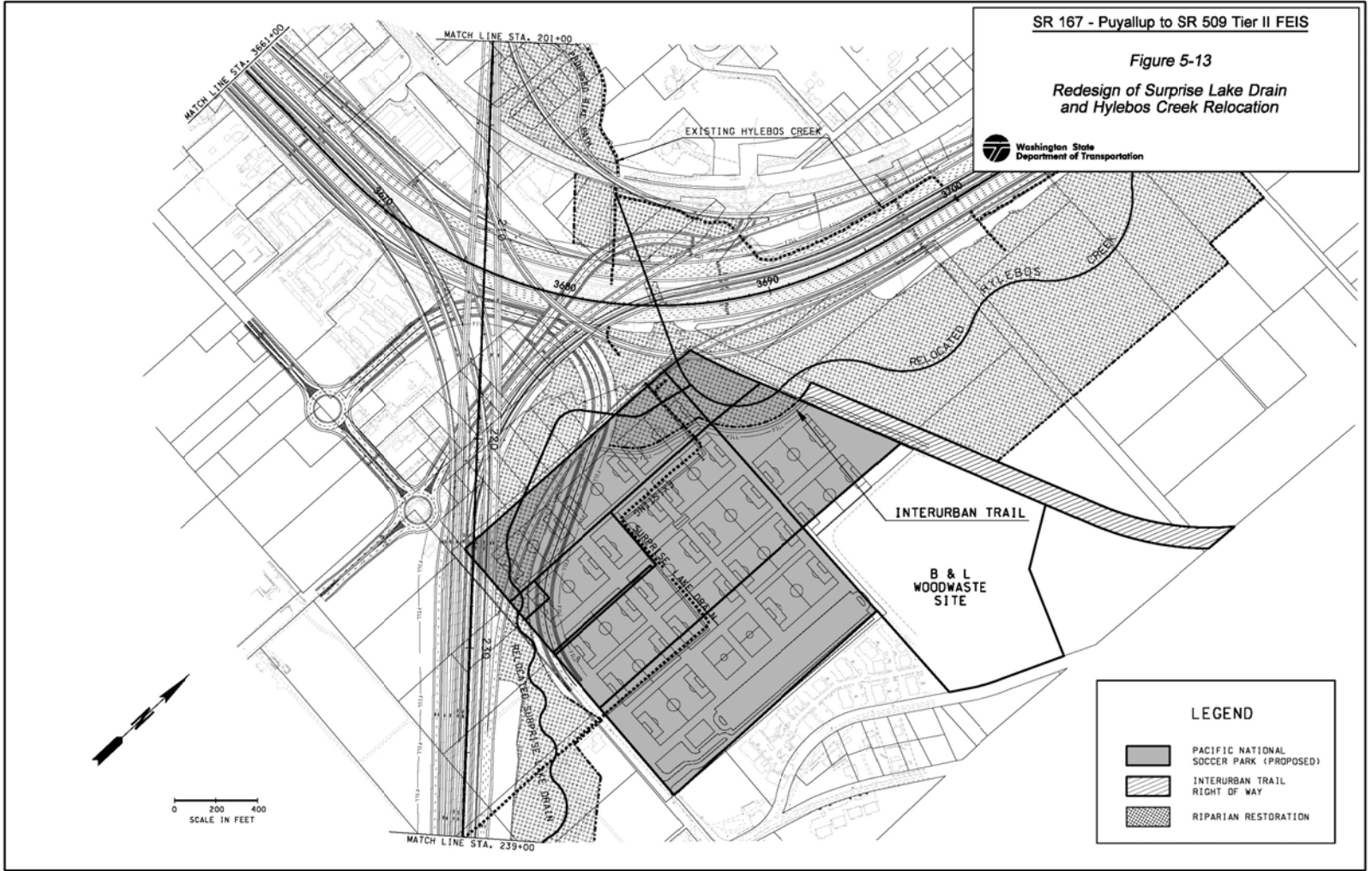
Access to the site, including parking, will be coordinated with the City of Fife. Discussions to date have covered improvements to 4th Street East and the possibility of constructing a pedestrian bridge across Hylebos Creek.

Planned Pacific National Soccer Park

The City of Fife was aware of the highway design at the time they proposed and acquired the soccer complex property, and presentations made to the public of the complex design in June 2003, showed the proposed highway project relative to the proposed layout of soccer fields and associated site improvements. Through meetings with the City of Fife, FHWA and WSDOT prepared an alternative design of the I-5 interchange, which reduced impacts to the planned soccer complex such that 12 fields are possible at this site (Figure 5-13). This meets the minimum requirements for the City of Fife for funding of this facility.

The SR 167 Project has incorporated elements into the design of the project that will benefit the planned Pacific National Soccer Park. The *Analysis of the SR 167 Extension and Riparian Restoration Proposal in the Hylebos Watershed* (MGS et al., 2004) included stormwater runoff from the soccer complex. The project proposal to relocate Surprise Lake Drain from its current ditched location and create a riparian zone around the relocation area will directly benefit the planned soccer facility. The benefits of this relocation would also include reducing flood impacts to the planned Pacific National Soccer Park.

Because funding for construction of SR 167 is not secured at this time, and the City is currently developing the master plan for the soccer complex, FHWA and WSDOT are committed to continue working with the City of Fife as the plans for both the relocation of Surprise Lake Drain and Hylebos Creek with associated regulatory buffers are refined. Final measures to minimize harm to the soccer complex will be determined once construction funding for SR 167 has been secured. Mitigation, if necessary, will be provided for any required use of the developed soccer facility.



Interurban Trail

The project will accommodate the Interurban Trail and re-establish the public access connection to the trail in the vicinity of 70th Avenue East and I-5 (Figure 5-13). The relocated portion of the trail will be ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife's trail system. Any additional facilities, such as parking that are developed for the trailhead of the Interurban Trail by the City of Milton, if use is required, will also be addressed. A conversion package will be put together detailing that all practical alternatives to the conversion have been evaluated and rejected; the fair market value of the land to be converted and the replacement land; that the replacement land is of reasonably equivalent recreation or habitat utility and location; and that the replacement land meets eligibility requirements, prior to construction of SR 167.

In addition, the *Analysis of the SR 167 Extension and Riparian Restoration Proposal in the Hylebos Watershed* (MGS et al., 2004) also determined that flood impacts to the Interurban Trail will be limited to the 100-year storm event with the project's proposal to relocate Hylebos Creek and establish the riparian corridor.

5.9 Coordination

From the beginning of the planning process around 1990, a considerable effort has been made to include a wide assortment of groups and individuals as resources. A Steering Committee (which became a Partners Committee in Tier II) is comprised of representatives from the City of Puyallup, Port of Tacoma, City of Tacoma, City of Edgewood, FHWA, City of Fife, City of Milton, Pierce County, Pierce Transit, Puyallup Tribe, Puget Sound Regional Council, and WSDOT. A citizen's Advisory Committee was made up of citizens from the various jurisdictions who are affected by or interested in the project. Stakeholder interviews were held to solicit the opinions of representatives of the various jurisdictions. Design workshops were held with outside agencies to solicit their ideas about the project. A Value Engineering Study was conducted which looked at 67 options for the design of the I-5/SR 167 interchange. At least four open houses were held to present the project to the public and gather their input. Meetings have also been held with the Tacoma Chamber of Commerce, Edgewood Business Association, Puyallup River Watershed Council, and other businesses, developers, city councils, and local homeowners.

As part of the 404 Merger Agreement process, FHWA and WSDOT regularly met with the National Marine Fisheries Service, COE, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Washington State Department of Ecology, and Washington State Department of Fish and Wildlife representatives.

Specific to the Section 4(f) resources, FHWA and WSDOT has closely coordinated with the SHPO, the cities of Fife, Puyallup, and Milton, Pierce County, and the Puyallup Tribe. A series of meetings was held in the spring and summer of 2004 with the cities and county for the expressed purpose of exploring joint development for the Pacific National Soccer Complex and Interurban Trail, providing access to the City of Fife Lower Hylebos Nature Park, and mitigating construction impacts to the Puyallup Riverfront Trail.

FHWA and WSDOT also met with the Department of Interior–National Park Service and the Puyallup Parks and Recreation Department to discuss noise impacts for the Puyallup Recreation Center.

The MOA prepared to satisfy Section 106 requirements has been developed in cooperation with the SHPO and will be filed with the Advisory Council on Historic Preservation at the conclusion of the consultation. By circulation of this draft Section 4(f) Evaluation, comments will be sought from the U.S. Department of the Interior as required in 23 CFR §771.135(i).

Agency correspondence and the draft MOA comprise Appendix H.

5.10 Conclusion

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from historic resources (6803 20th Street East, 7001 20th Street East, and 7717 Valley Avenue East) and recreational resources (Pacific National Soccer Park and the Interurban Trail, and the proposed action includes all possible planning to minimize harm resulting from such use.

Appendices

Tier II Final EIS

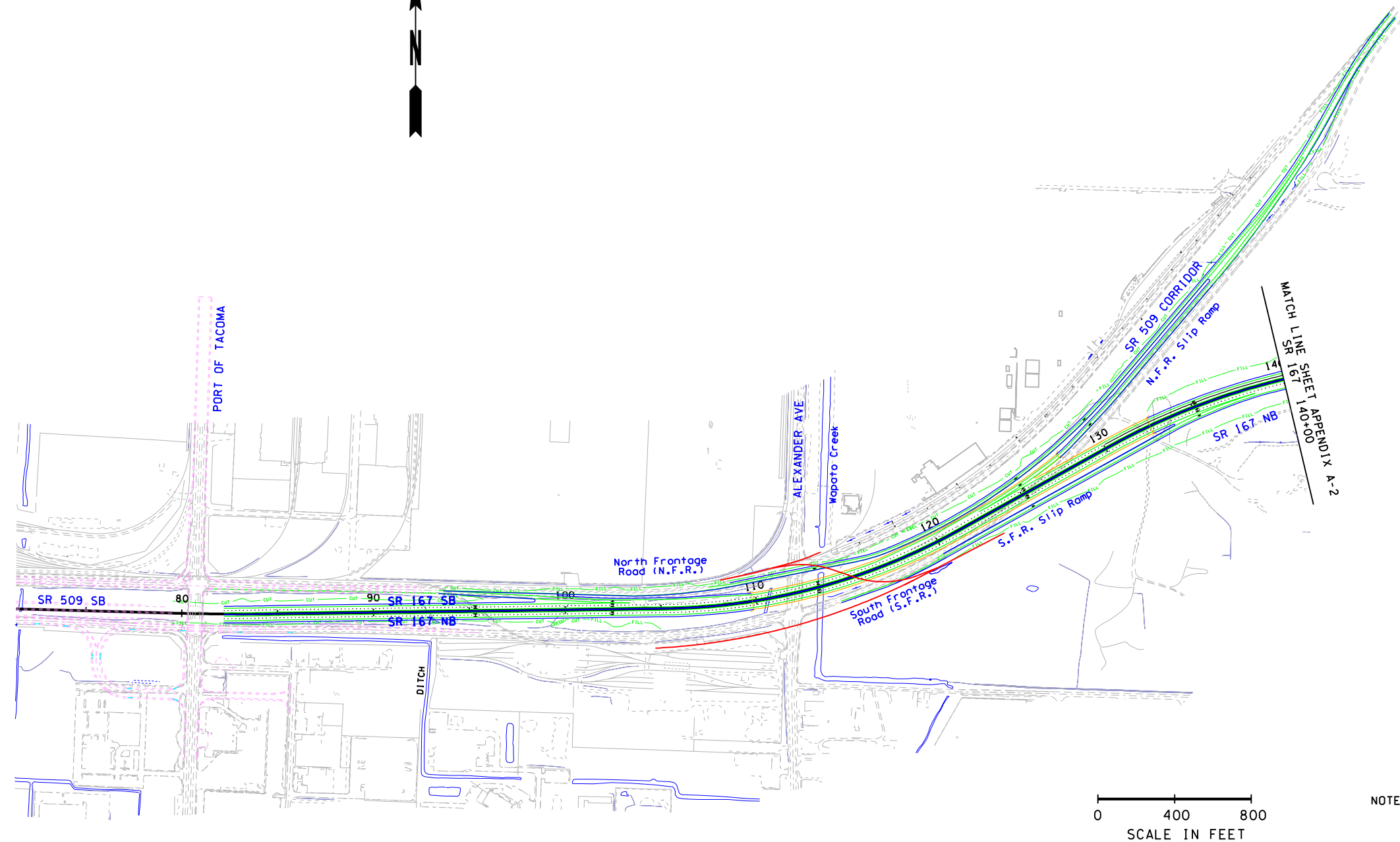
SR 167

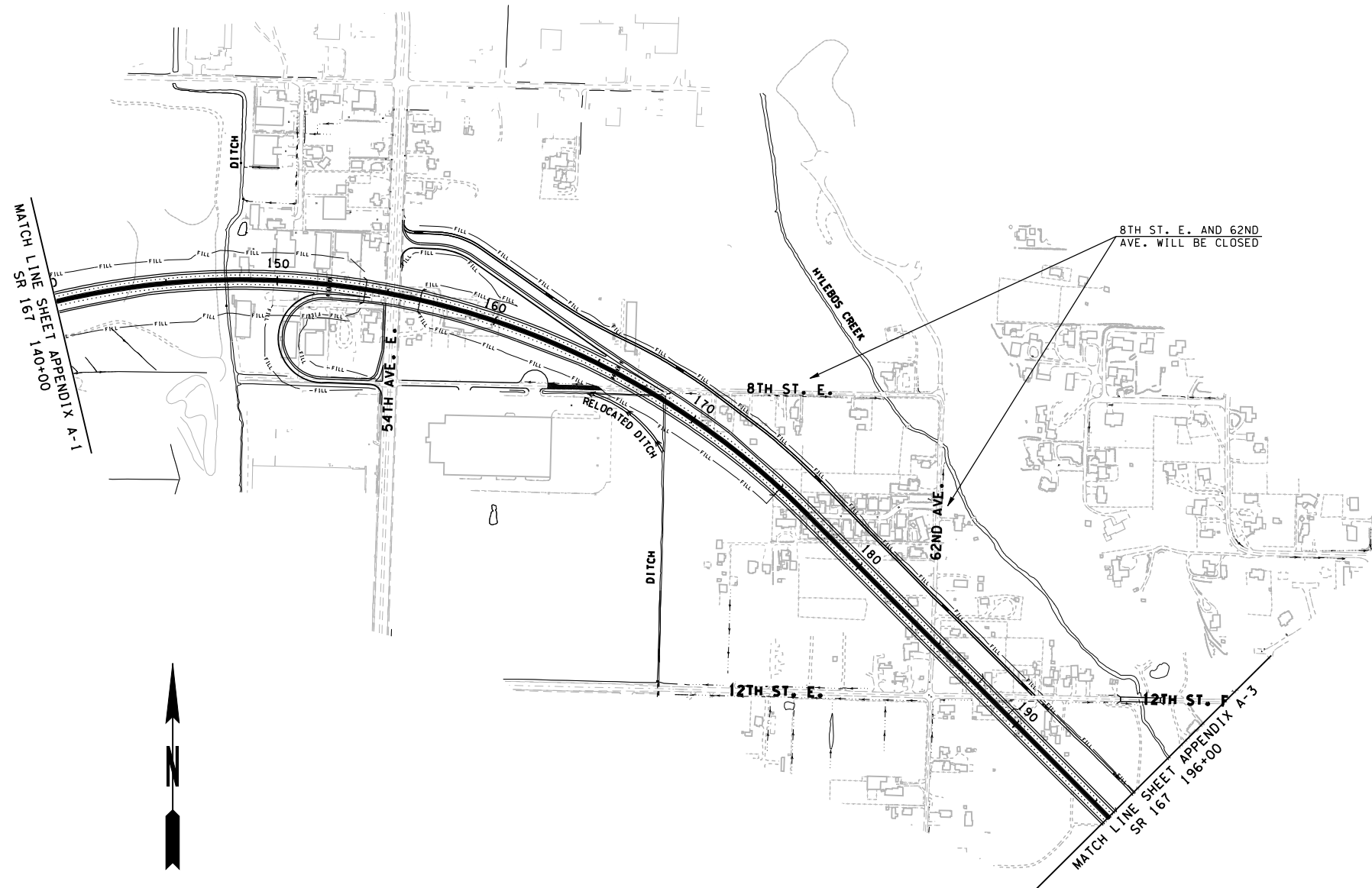
Puyallup to SR 509

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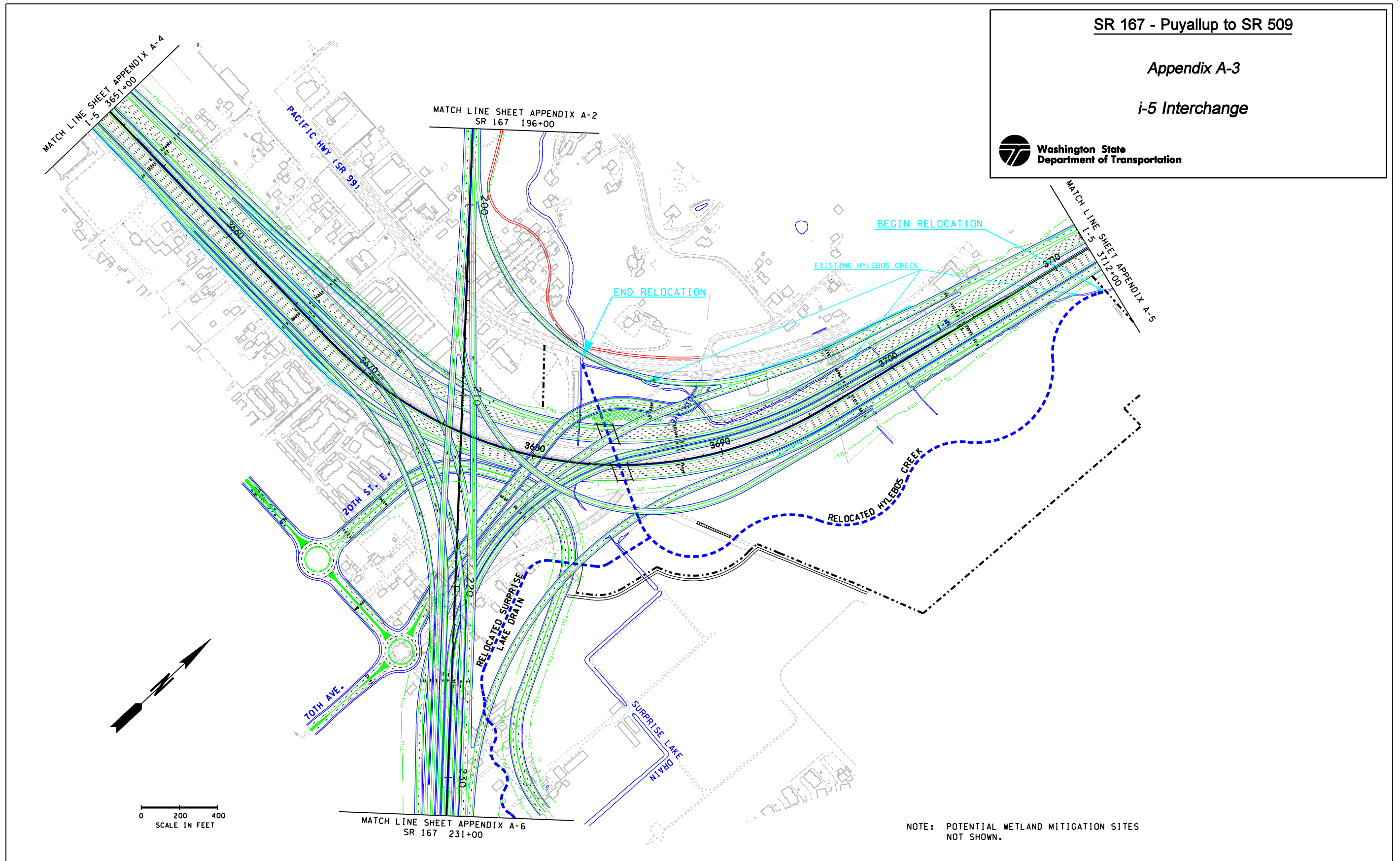
Appendix A Figures of the Preferred Alternative

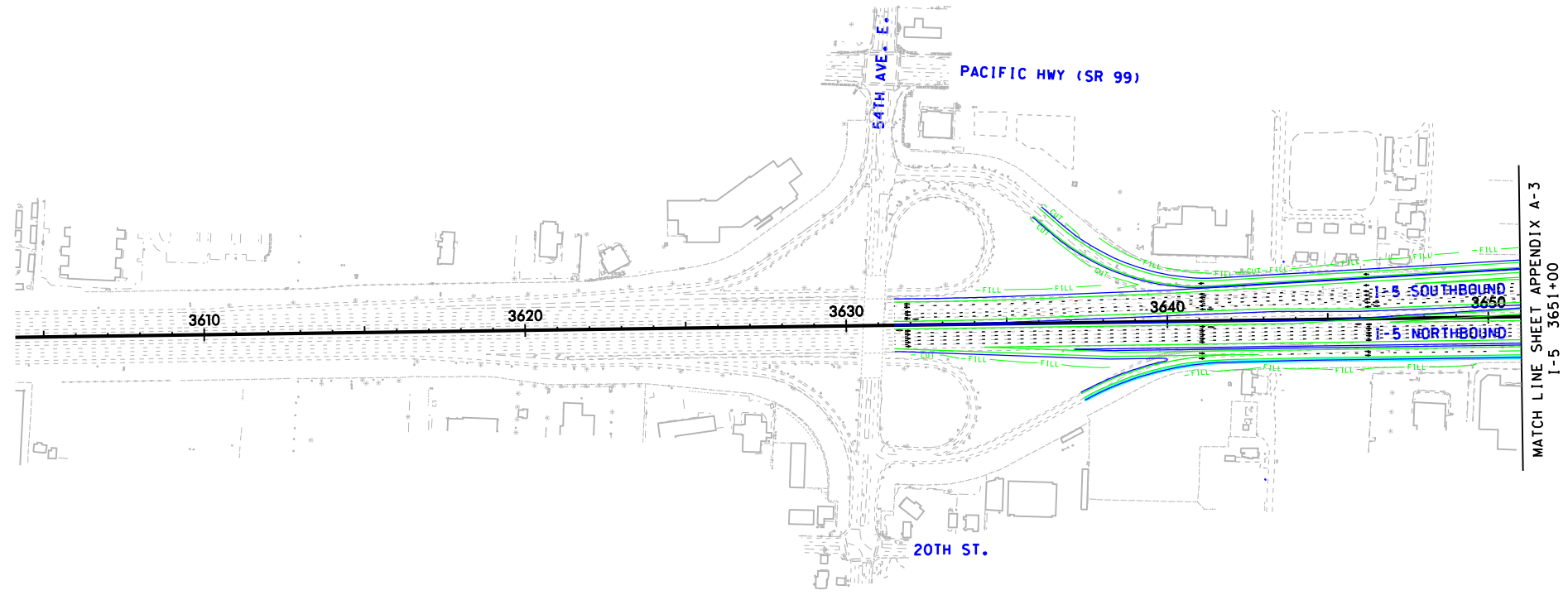
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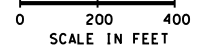


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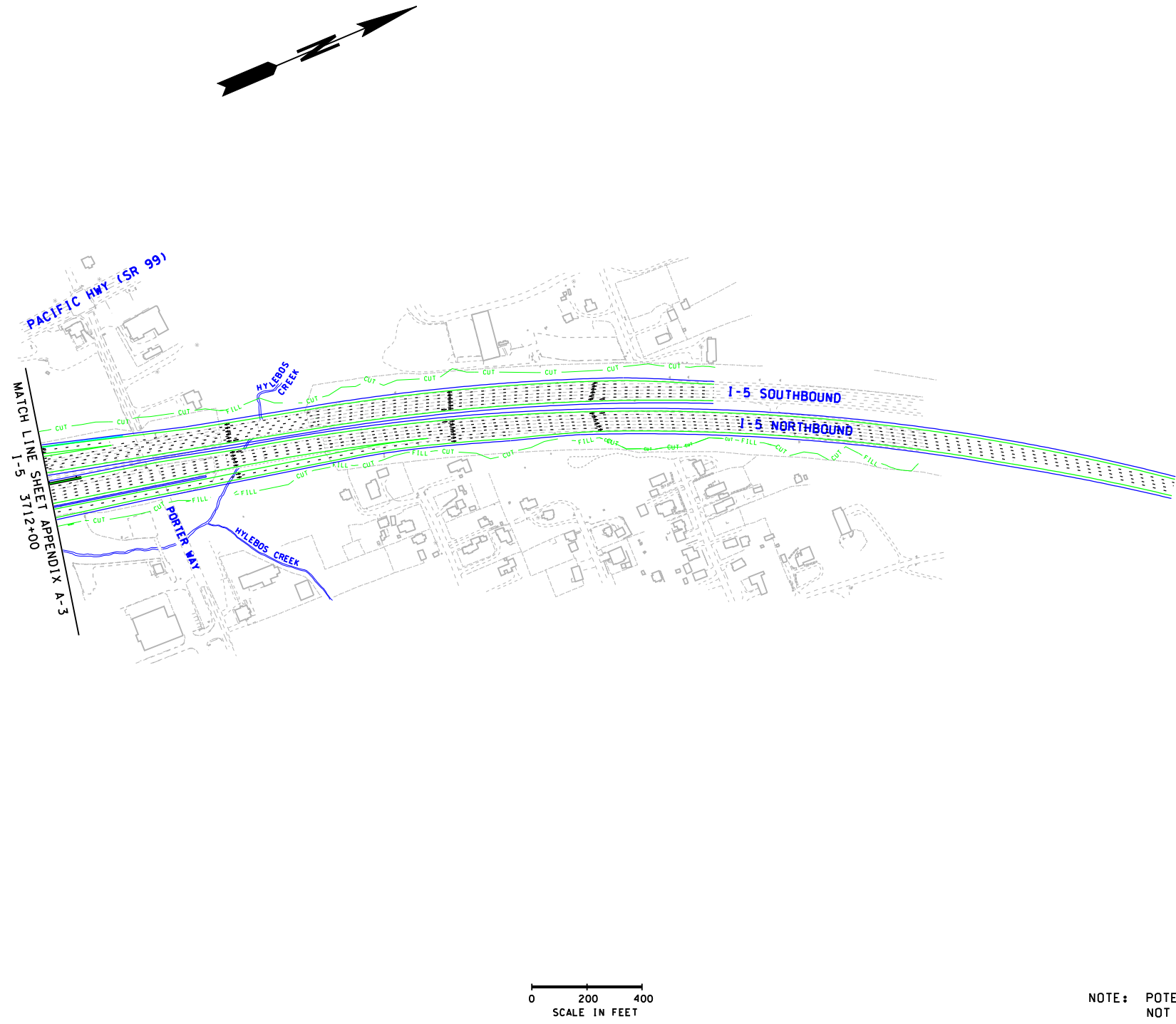




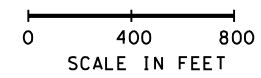
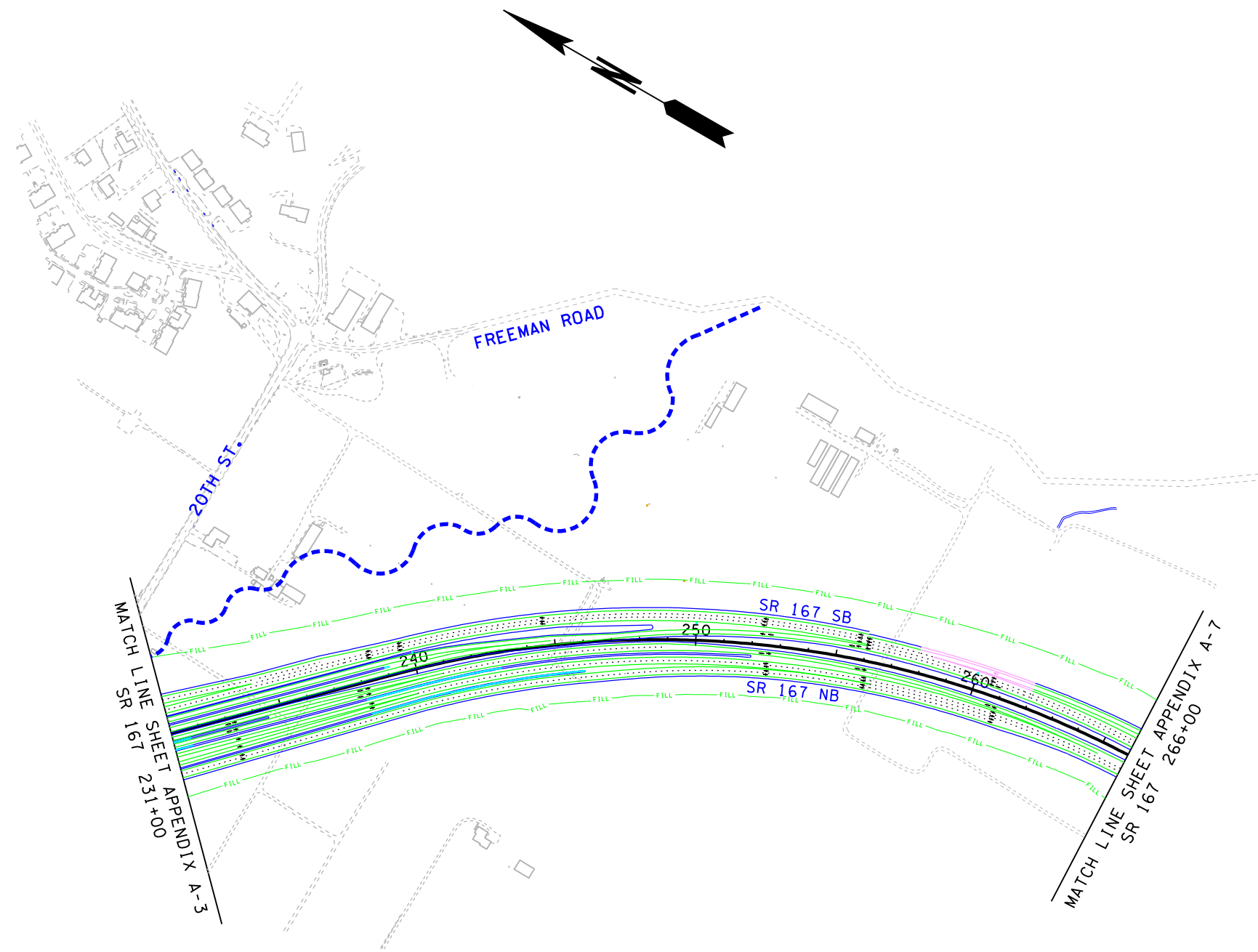
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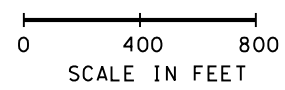
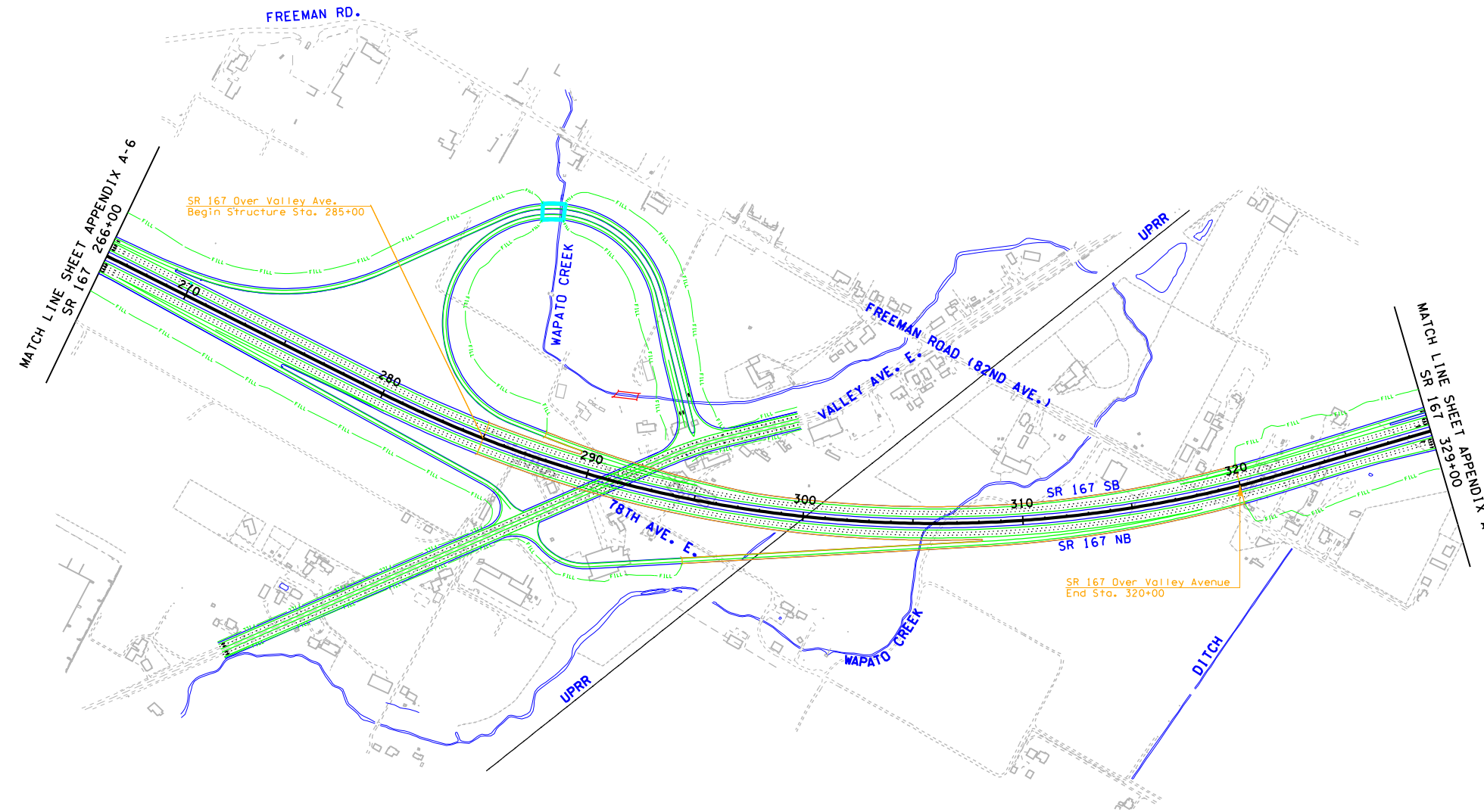
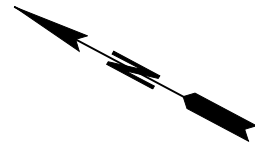
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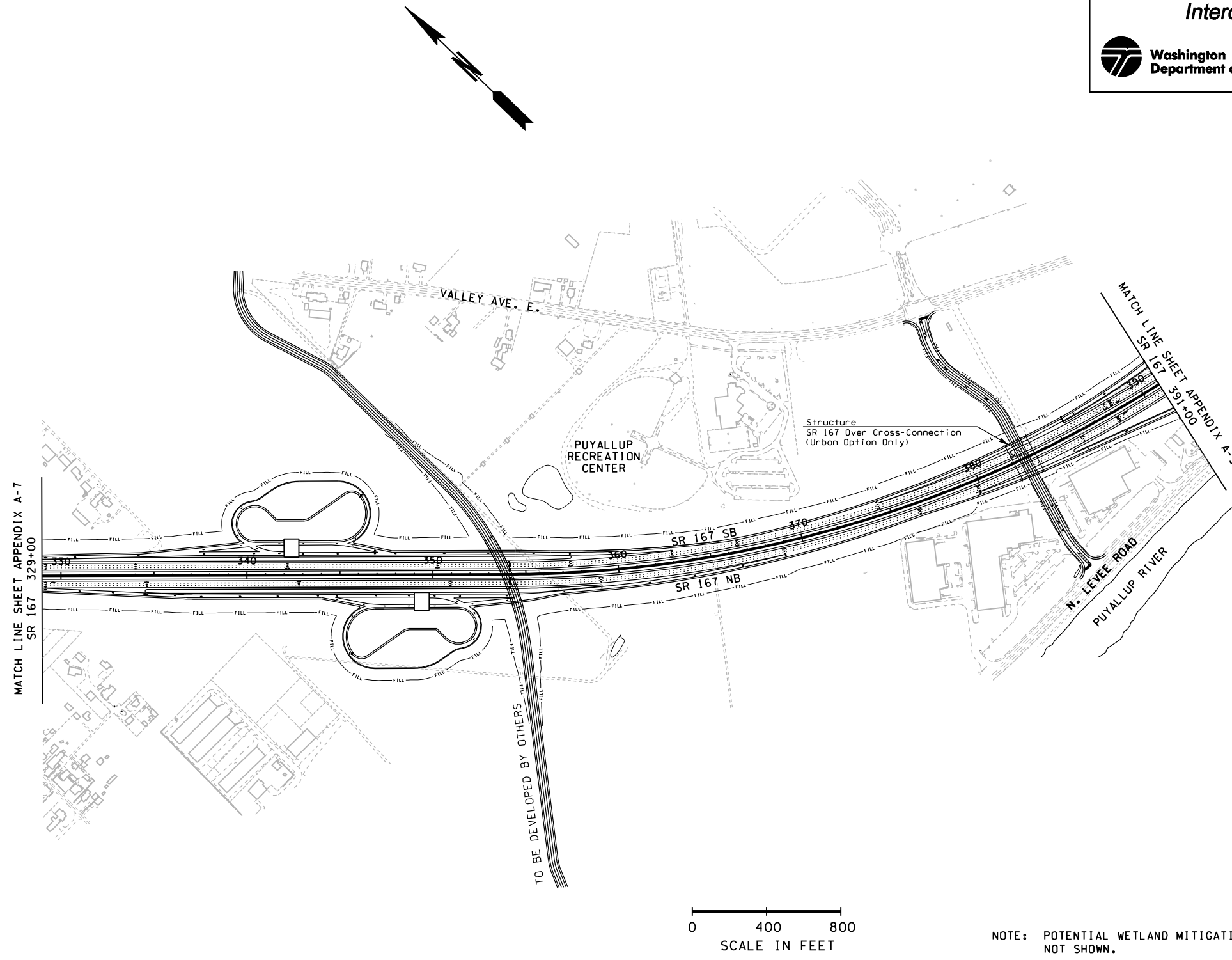
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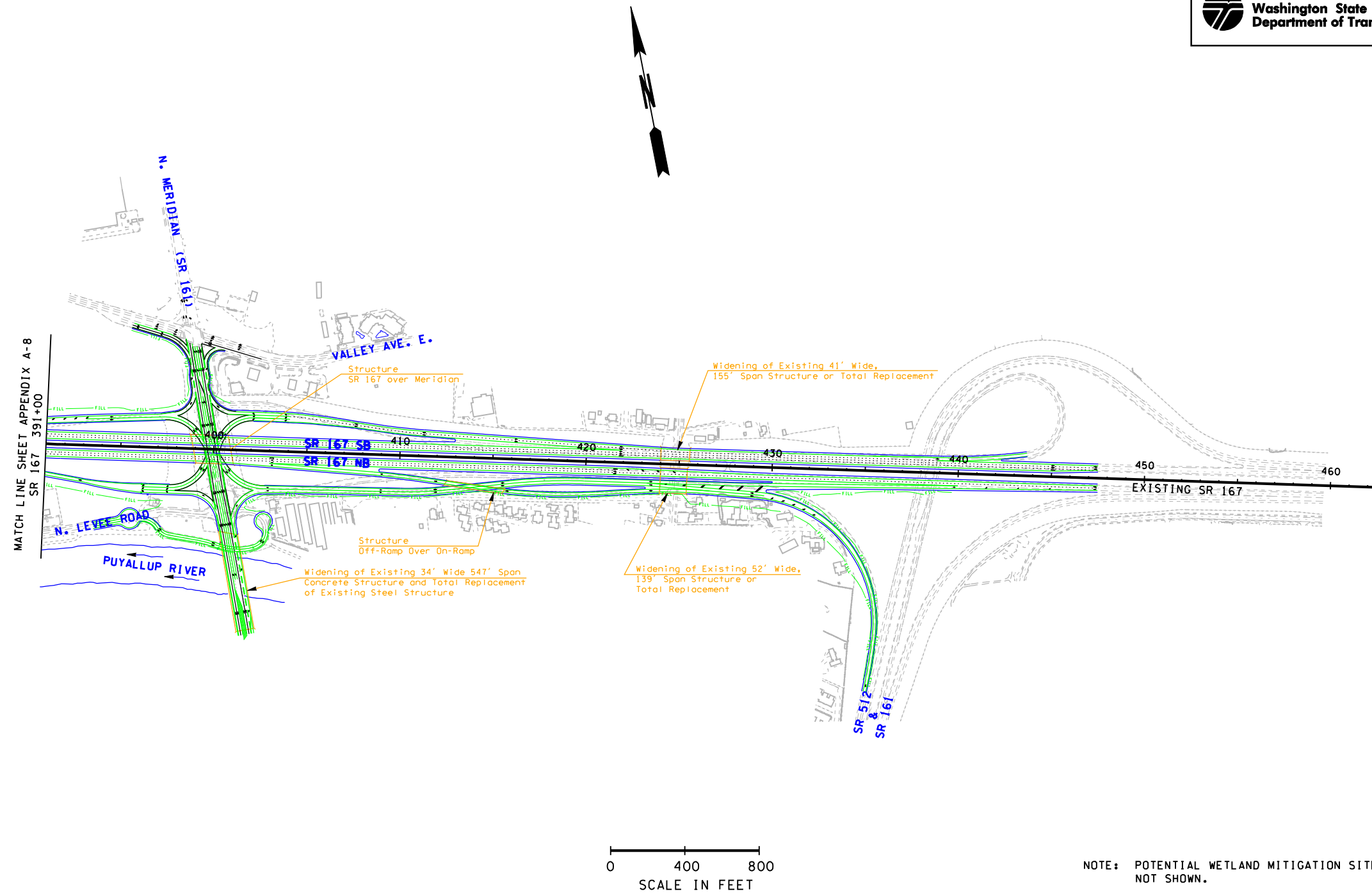


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Appendix B

List of Discipline Studies and Preparers

Air Quality

Parsons Brinckerhoff, September 2001, *State Route 167: State Route 509 to Puyallup Air Quality Technical Report*.

Cultural Resources

Charles T. Luttrell, Archaeological and Historical Services, Eastern Washington University, December 2001, Revised May 2004, *Cultural Resource Investigations for the Washington State Department of Transportation's SR 167: Puyallup to SR 509 Project, Pierce County, Washington Discipline Report (Short Report DOT01-14)*.

Displacement and Relocation

Don McCulloch & George Kovich, WSDOT, Olympic Region Transportation and Planning Office, July 2002, Revised November 2004, *SR 167 Tier 2 EIS Displacement and Relocation Discipline Report*.

Energy

Lawrence M. Jacobson, WSDOT, Olympic Region, October 2001, *SR 167, Puyallup to SR 509 Tier 2 EIS Final Energy Discipline Report*.

Hazardous Materials

Allison Ray, WSDOT, Environmental Affairs Office, September 2001, and April 2004 supplement, *SR 167 – Tier 2 Hazardous Materials Discipline Study Pierce County, Washington*.

Land Use, Socioeconomics, and Environmental Justice / Farmland

Don McCulloch and George Kovich, WSDOT, Olympic Region Transportation and Planning Office, July 2002, Revised November 2004, *SR 167 Tier 2 EIS Land Use/Farmland/Social-Economic/Environmental Justice Discipline Report*.

Noise

Parsons Brinckerhoff, April 2002, *State Route 167: State Route 509 to Puyallup Noise Technical Report*.

Jim Laughlin, WSDOT, Northwest Region Environmental Office, April 2004, *SR 167, SR 509 to Puyallup, Final Noise Wall Memo*.

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Pedestrian & Bicycle Facilities

T. J. Nedrow, WSDOT, Olympic Region Transportation Planning Office, December 2001, *SR 167 Extension Puyallup to Port of Tacoma Tier II EIS Pedestrian & Bicycle Facilities Discipline Report*.

Traffic Report

Steve Kim, WSDOT, Olympic Region Traffic Office, December 2001, *SR 167 Tier II EIS Traffic Report*.

Visual Quality

Ken Schlatter, WSDOT, Olympic Region Environmental & Hydraulic Services, October 2001, *SR 167 Puyallup to SR 509 Final Visual Quality Report*.

Water Resources

Steve Thompson & Joel Gjuka, WSDOT, Olympic Region Environmental & Hydraulic Services and Environmental Affairs Office, January 2002, *SR 167 – Tier II Water Resources Discipline Study Pierce County, Washington*.

Joy Michaud, EnviroVision Corp., April 2005, *SR 167 Water Resource Discipline Study*.

———, March 13, 2006, *SR 167 Extension: Project Impacts to City Wellheads, Technical Memorandum*.

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Wetlands

Eric Russell, WSDOT, Olympic Region Environmental & Hydraulic Services, October 2001, *SR 167 Tier 2 EIS Wetlands Discipline Report*.

Hans Ehlert, CH2M HILL and WSDOT Olympic Region EHS, April 2005, *State Route 167 Tier II EIS Wetlands Discipline Report*.

Wildlife, Fisheries, Threatened and Endangered Species

Eric Gower and Carl Ward, WSDOT, Olympic Region Environmental & Hydraulic Services, March 2002, *State Route 167 Tier II EIS Fish and Wildlife Discipline Report*.

Cindy Callahan, David Evans and Associates, Inc., and WSDOT Olympic Region EHS, May 2005, *State Route 167 Tier II EIS Wildlife, Fish, Threatened and Endangered Species Discipline Report*.

Final EIS – Preparers

Ron Bockelman, David Evans and Associates, Inc.
Cindy Callahan, David Evans and Associates, Inc.
Rae Bennett, WSDOT, Olympic Region SR 167 Project Office
Michelle Elling, WSDOT, Olympic Region Environmental & Hydraulic Services
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Megan Hall, FHWA Washington Division

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Chapter 3.

3.0 Introduction

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3.1 Study Area

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This Glossary includes the definitions of the terms that are used extensively within this document. The definition herein is specific to how the term is used within the FEIS document and not necessarily a standard dictionary definition.

Access

Access is a means of entering or leaving a public road, street, or highway with respect to abutting property or another public road, street, or highway.

Access Control

Access Control is regulating and limiting public and private access to Washington State highways, as required by state law.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) of 1990 is a civil rights law that identifies and prohibits discrimination based on disability. The ADA requires public entities such as WSDOT to design new facilities or alter existing facilities, including sidewalks and trails, so that they are accessible to people with disabilities.

Alignment

Alignment is the centerline of a road, including horizontal and vertical elements, located within the bounds of a corridor.

Alternative

For purposes of an Environmental Impact Statement (EIS), an alternative is a proposed transportation action, usually described in terms of location and mode that is evaluated against the purpose and need of the project. An EIS usually includes a *No-build* or *No-action* alternative, and one or more build alternatives.

Average Daily Traffic (ADT)

ADT is the average daily traffic on a roadway for the design year under consideration.

Build Alternative

The Build Alternative consists of a four-lane freeway (four general purpose lanes, two lanes in each direction) with one HOV lane in each direction between I-5 and SR 161. The Build Alternative includes freeway-to-freeway connections with SR 509, SR 167, and I-5. Also, it includes new local access interchanges at 54th Avenue East and Valley Avenue, and completion of the SR 161 interchange. As part of the SR 161 interchange, the existing eastern (northbound) bridge over the Puyallup River will be replaced and the existing western bridge will be widened.

The Build Alternative also results in the relocation of a part of Hylebos Creek and Surprise Lake Drain. The relocated channel designs will reduce flooding and improve fish and wildlife habitat. A riparian restoration area is proposed for existing Hylebos Creek between SR 99 and 8th Street East, for the relocated Hylebos Creek and Surprise Lake Drain east of I-5, and at Wapato Creek near Freeman Road and Valley Avenue.

Bike Lane

A bike lane is a portion of the highway or street identified by signs and/or pavement markings reserved for bicycle use.

Citizen's Advisory Committee (CAC)

A committee of property owners, business owners, local jurisdictions, and farmers that advises project staff on local issues and concerns within the project area, and assists with improving outreach and communication efforts. This committee meets at key milestones during the project.

Channelization

Channelization is the separation or regulation of traffic movements into delineated paths of travel to facilitate the safe and orderly movements of vehicles, bicycles, and pedestrians. Painted or plastic markings on the pavement are normally used to delineate travel paths.

Clear Zone

The clear zone is the total roadside buffer area, starting at the edge of the traveled way, available for use by errant vehicles. This area may consist of a shoulder, a slope, and/or clear run-out area.

Corridor

A corridor is a strip of land, possibly of varying widths, between two termini within which an alignment is placed and traffic, topography, environment, and other characteristics are evaluated.

Cumulative Impacts (Effects)

Cumulative effects result from the incremental effect of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes the other actions.

Direct Impact

Direct impacts from a project are those that occur at the same place and same time as the project. They are generally predictable and associated with the project actions.

Discipline Report (DR)

WSDOT prepares a DR for each environmental subject area for an EIS by conducting field studies, reviewing published data, analyzing project impacts, recommending mitigation, and publishing the results in a technical report. The DRs are the basis for the sections in a DEIS and FEIS, but include information in much greater detail.

Divided Highway

Divided highways separate traffic traveling in different directions with medians, physical barriers, or differing elevations.

Embankment

Embankment is a structure of earth or gravel that is raised to form the foundation for a road.

Environmental Impact Statement (EIS)

The National Environmental Policy Act (NEPA) requires that environmental impacts be considered in federal decisions. NEPA requires an EIS be prepared for major projects that have the potential for significant impacts. A NEPA EIS also provides the documentation required by the Washington State Environmental Policy Act (SEPA).

Footprint

Footprint is an outline of the physical limits of the area impacted by the construction of a roadway, roadway structure, and related facilities, usually described by the limits of clearing, grading, grubbing, excavating, and filling.

Freeway

A freeway is an access-controlled, divided highway that has two or more lanes in each direction. Many freeways widen to incorporate more lanes as they enter urban areas. Access is controlled through the use of interchanges. The type of interchange depends on the kind of intersecting roadway (surface street, rural road, another freeway, urban arterial, etc.).

High Occupancy Vehicle (HOV)

An HOV is a vehicle that carries a specified minimum number of persons, usually two or more. HOVs include buses, vans, transit, and all other vehicles that meet the minimum occupancy requirements except vehicles (trucks) in excess of 10,000 pounds gross vehicle weight.

HOV Lane

An HOV lane is for the exclusive use of HOV vehicles as defined above. Motorcycles are also allowed in HOV lanes.

Impervious

Impervious surfaces are hard surfaces that prevent or retard water from soaking into soil, thereby increasing the rate or volume of stormwater runoff.

Indirect Impact

Indirect impacts are defined by the Council on Environmental Quality as impacts that are “caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR Section 1508.8).” Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate and related effects on air and water and other natural systems including ecosystems.

Intelligent Transportation Systems (ITS)

ITS are a subset of Transportation System Management and apply advanced technologies in communications and computer science to optimize the safety and efficiency of the existing transportation network. Methods that provide surveillance, control, and driver information are part of ITS.

Interchange

An interchange is a system of interconnecting roadways, in conjunction with ramps and one or more grade separations, which allows traffic to move freely from one roadway to another without crossing another line of traffic.

Interstate System

The Interstate System is a network of routes selected by the state and the FHWA under the terms of the federal aid acts as being important to the development of a national transportation system.

Lane

A lane is a strip of roadway used for a single line of vehicles.

Lead Agency

The Washington State Division of FHWA is the lead federal agency for the project, and they provide guidance and oversight to WSDOT. The Olympic Region of WSDOT leads the planning and environmental analysis phase.

Level of Service (LOS)

LOS is a qualitative measure that describes operational conditions within a traffic stream. This includes factors of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Limited Access Highway

Limited access highways restrict the locations where traffic may enter the roadway. Driveways and side streets do not connect directly to a limited access highway.

Major Investment Study (MIS)

An MIS is conducted when major transportation projects would require substantial capital outlay and/or investment of public funds. The goal of an MIS is to determine the effectiveness of the proposed project alternatives in providing solutions to identified transportation problems combined with a cost benefit analysis to determine the best use for public funds. The MIS for the SR 167 Extension project began in November 1994 and was completed in October 1995. The MIS evaluated the effectiveness of four alternatives.

Median

The median is a physical barrier or landscaping area that separates two directions of traffic of a highway.

Mitigation Measure

A mitigation measure is a procedure, action, method, structure, or facility that avoids, minimizes, reduces, or eliminates a project's adverse effects or impacts to the environment.

Mitigation Sequencing

Mitigation Sequencing is a stepwise process for eliminating or reducing adverse effects and compensating for those that cannot be avoided. For example, the required order for mitigating potential wetland effects is: avoid impacts, minimize impacts, enhance existing degraded wetlands, create new wetlands, and preserve nearby high quality or unique wetlands.

Net Environmental Benefit Analysis (NEBA)

The Net Environmental Benefit Analysis (NEBA) is an analytical method used to evaluate the success of environmental mitigation measures. This method compares the benefits and costs associated with alternative actions that affect the environment. For the SR 167 project, ecological services were estimated for stream channel, riparian wetland, and riparian upland habitats within the area of the Riparian Restoration Proposal.

No Build Alternative

Under the No Build Alternative, the SR 167 freeway will terminate at North Meridian (SR 161), and the non-freeway SR 167 will continue to I-5 via North Meridian and River Road where it will terminate at the Portland Avenue/Bay Street interchange in Tacoma. The corridor will remain in the present state except for minor improvements and maintenance.

Noise Barrier (Wall)

A noise barrier or wall reduces the effects of traffic noise levels to the adjoining areas. There are two basic types of noise barriers: (1) an earth berm, and (2) a noise wall which can be made of concrete, masonry, metal, wood, glass, and heavy plastic. The evaluation of the intensity of the noise, characteristics of adjacent landforms and structures, and distance to sensitive receptors determine the height, type of material, and whether a proposed noise barrier might be an earth berm, wall, or both.

Option

An option is one of a set of design configurations within the build alternative against which screening criteria is applied.

Park-and-Ride Lot

A Park-and-Ride lot provides parking for people who wish to transfer from private vehicles to public transit or car/van pools. These lots are intended to increase highway efficiency, reduce energy demands, and increase highway safety by reducing traffic congestion.

Partners Committee

The following organizations are members of the Partners Committee: FHWA, WSDOT, Pierce County, Port of Tacoma, Puyallup Tribe of Indians, Puget Sound Regional Council, Pierce Transit, and the cities of Puyallup, Tacoma, Edgewood, Fife, and Milton. The Partners Committee holds regular meetings to provide suggestions and recommendations related to the project.

Pedestrian Facilities

Improvements provided for the benefit of pedestrian travel such as sidewalks, highway shoulders, walking and hiking trails, shared use paths, pedestrian grade separations, and crosswalks.

Preferred Alternative

The Tier I EIS process selected three alternative corridors and a no build alternative for detailed evaluation after initially considering seven preliminary alternative corridor locations. Alternative 2 had the best mix of features for avoiding, minimizing, and mitigating environmental impacts. These impacts included conversion of farmland, housing/business displacements, disruption of drainage patterns, loss of wetlands, and impact to tribal trust lands. Therefore, Alternative 2 was selected as the environmentally preferred alternative (corridor) in the Tier I FEIS.

Project (SR 167 Extension Project)

The proposed project completes the State Route (SR) 167 freeway by building four miles of new six-lane divided facility from its current terminus in Puyallup at SR

161 through the Puyallup River valley connecting to Interstate 5 (I-5) near the 70th Avenue under-crossing. The project will also include a two-mile four-lane divided highway section from SR 509 near the Port of Tacoma to I-5 and SR 167 at the common interchange near 70th Avenue.

Project Stakeholders

Stakeholders include anyone that lives in, uses, or has jurisdiction in the project area. For this project they include: citizens and landowners; businesses and corporations; local cities and Pierce County; state and federal regulatory and resource agencies; Puyallup Tribe of Indians organizations; and interest groups like Friends of the Hylebos Wetlands, Tahoma Audubon Society, and Tacoma Wheelman's Bicycle Club.

Puyallup Tribe of Indians

The Puyallup Tribe of Indians is part of the Puget Sound Salish Indian culture. Tribal relations with the U.S. Government began in 1854. Soon thereafter, the Treaty of Medicine Creek established the Puyallup Reservation. A council of elected tribal members now governs the Puyallup Tribe under the constitution and bylaws established in 1934.

Ramp

A ramp is a short roadway connecting a main line of a freeway with another facility for vehicular use such as a local road or another freeway.

Record of Decision (ROD)

FHWA and WSDOT carefully consider all comments received after an FEIS is issued. They then decide which alternative to select. A Record of Decision (ROD) documents this decision, as well as mitigation and environmental commitments once a build alternative is selected. Issuance of this document by FHWA and WSDOT completes the NEPA and SEPA process.

Tier I Record of Decision (ROD)

On June 9, 1999, FHWA published the Tier I ROD and concluded that the selected alternative (Alternative 2) was the least environmentally damaging practicable alternative. According to the Tier I ROD, implementation of the preferred alternative would include all mitigation measures described in the Tier I FEIS.

Riparian

Riparian is the term used to describe streambanks and adjacent areas along rivers and streams.

Riparian Restoration Proposal (RRP)

The flat topography, high water table, and history of floods in the project area indicate that the use of conventional stormwater ponds would need to be supplemented by additional measures to achieve stormwater management and environmental protection goals. The Riparian Restoration Proposal (RRP) is an innovative approach to stormwater management for this project. The RRP will achieve stormwater management and environmental protection goals by removing existing fill and structures from the floodplain and providing other environmental benefits in terms of wetland enhancement and habitat improvements for fish and wildlife. Some conventional stormwater management facilities are needed, even with RRP.

Riparian Restoration Proposal (RRP) Technical Advisory Group (TAG)

The US Fish and Wildlife Service, NOAA National Marine Fisheries Service, US Army Corps of Engineers, Washington State Departments of Fish and Wildlife and of Ecology, the Puyallup Tribe of Indians, and Friends of the Hylebos Wetlands (a local environmental group) assist FHWA and WSDOT in developing the RRP and have been designated as the Technical Advisory Group (TAG) for the SR 167 Extension project.

Roadway

Roadway is the portion of a highway, including shoulders, for vehicle use. A divided highway has two or more roadways.

Roundabout

A roundabout is a circular intersection at which all traffic moves counterclockwise around a central island.

Scoping

At the beginning of a transportation project, scoping is the process of identifying the environmental issues to be studied in a NEPA EIS. Agency and public input is required to complete scoping.

Section 106

The Section 106 process of the National Historic Preservation Act of 1966 is designed to identify and resolve potential conflicts between historic preservation concerns and federal actions. Implementing regulations focus on preservation options, including avoidance, rehabilitation, modified use, marking, and relocation. Data recovery is often performed for unavoidable effects.

Section 4(f)

Section 4(f) originated in the U.S. Department of Transportation Act of 1966, which declared that special effort should be made to preserve the natural beauty of

the countryside and public parks and recreation lands, wildlife and waterfowl resources, and historic sites.

Signatory Agency Committee (SAC)

The state and federal agencies meet quarterly to discuss projects like the SR 167 Extension as part of the Signatory Agency Committee. Aquatic resources are the primary focus of this committee. Concurrence is obtained from the signatory agencies at three key points in the NEPA process.

Shoulder

The shoulder is the portion of the roadway contiguous with the traveled way, primarily for the accommodation of stopped vehicles, emergencies, lateral support of the traveled way, and pedestrian use.

Study Area

The SR 167 Extension project study area begins at the Port of Tacoma Road and extends in a southeasterly direction to the SR 512/SR 167 interchange. The study area extends north and east of the proposed SR 167 to the hillsides above the floodplain of the Puyallup River, encompassing the Hylebos Basin. To the south and west, the study area extends to the Puyallup River.

Tier I and Tier II EIS

In 1990 the Federal Highway Administration (FHWA) and WSDOT decided to divide the SR 167 Extension project NEPA process into two steps (tiers) as permitted in the federal guidelines. The first tier (Tier I) evaluates different corridor options and selects a preferred corridor. The second tier (Tier II) evaluates and selects a preferred design alternative within the selected corridor. In both cases, the selection process involves evaluating the environmental consequences of different alternatives and identifying ways to avoid, minimize, or mitigate the environmental impacts.

Tier I EIS: The Tier I Environmental Impact Statement (EIS) process for the SR 167 Extension project began in 1990 and analyzed the location and environmental aspects of different corridor options. A Tier I Draft EIS (DEIS) was published in June of 1993 and a public hearing was held on July 15, 1993. Following the public hearing and DEIS review period in July 1993, FHWA required WSDOT to prepare a Major Investment Study (MIS). Ultimately, the Tier I Final EIS (FEIS) was published in April 1999. Tier I concluded in June 1999 with a Record of Decision (ROD) that determined that Alternative 2 was environmentally preferred corridor.

Tier II EIS: The Tier II EIS process began on July 13, 1999, with project scoping. FHWA and WSDOT prepared a Study Plan and formed an Interdisciplinary Team (IDT) to guide the development of the Tier II EIS. The Study Plan was completed in June 2000 and identified the environmental areas to be studied in the Tier II EIS. In February 2003, FHWA and WSDOT issued the Tier II DEIS for public comment. Public Hearings were held March 18 and 20. The Tier II FEIS responds to public comments on the DEIS and provides supplemental information.

Traffic Barrier

A traffic barrier is a longitudinal barrier including bridge rail or an impact attenuator which is used to redirect vehicles from hazards located within an established design clear zone; prevent median crossovers; prevent errant vehicles from going over the side of a bridge structure; and protect workers, pedestrians, and bicyclists from vehicular traffic.

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) includes various strategies to encourage more efficient travel patterns and behaviors. TDM strategies provide multiple benefits including reduced traffic congestion, road and parking facility cost savings, user financial savings, increased road safety, increased travel choice (especially for non-drivers), increased equity, reduced pollution, and energy savings.

Transportation System Management (TSM)

Transportation System Management (TSM) are closely related to facility infrastructure design, operations and efficiencies, and serve to improve the flow improve of traffic by constructing new facilities to move passengers efficiently within the existing corridor, implementing roadway design improvements and providing the motorist sufficient advance information to make route or conveyance choices, as well as managing daily problems on the highway. Intelligent Transportation Systems (ITS) are a subset of TSM.

Traveled Way

The traveled way is the portion of the roadway intended for the movement of vehicles exclusive of shoulders and lanes for parking, turning, and storage for turning.

Value Engineering

Value Engineering is the systematic application of recognized techniques by a multi-disciplined team to: identify the function of a product or service and establish a worth for that function; generate alternatives through creative thinking; provide the function(s) needed to accomplish the original purpose; and assure lowest overall cost without sacrificing safety, necessary quality, or environmental attributes.

Weigh Station

A weigh station is a roadside facility for of weighing and inspecting oversize and overweight vehicles. Weighing facilities or stations are needed to protect state highways from overweight vehicles, to conduct vehicle safety inspection, and to obtain truck data for planning and research.

Wetland

The U.S. Army Corps of Engineers defines a wetland by the presence of three criteria: moisture, soil-type, and hydrophytic (water-bearing) vegetation. In most cases these criteria must be present before an area can be classified as a wetland. The Washington State Department of Ecology further rates wetlands in four categories based on their sensitivity to disturbance, rarity, functions they provide, and whether or not they can be replaced. Category I: Wetlands that have the highest quality with functions and values too difficult to be replaced. Category II: Wetlands that provide high levels of some functions and are difficult but not impossible to replace. Category III: Wetlands that provide a moderate level of functions and have been disturbed in some ways. Category IV: Wetlands with the lowest levels of functions and are often heavily disturbed. These are good candidates for replacement or improvement.

Please Note: Definitions for many words used in this FEIS document can also be found in the Abbreviations and Acronyms section, page aa-i in the FEIS front matter.

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Federal Agencies

Advisory Council on Historic Pres. W Office of Review
Bureau of Indian Affairs
Dept. of Interior/Environ. Policy & Compliance
Dept. of Interior/Fish & Wildlife/Ecological
EPA – Washington D.C.
EPA – Seattle
Federal Emergency Management Administration
National Oceanographic and Atmospheric Administration (Fisheries)
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Coast Guard

State Agencies

Eastern Washington University, Archaeological and Historical Services
Washington State Department of Community Development
Washington State Department of Ecology
Washington State Department of Fish & Wildlife
Washington State Department of Natural Resources
Washington State Department of Trade and Economic Development
Washington State Department of Archaeology and Historic Preservation
Washington State Patrol

Local Jurisdictions

Pierce County
City of Edgewood
City of Federal Way
City of Fife
City of Milton
City of Puyallup
City of Tacoma

Indian Tribes

Muckleshoot Indian Tribe
Puyallup Tribe of Indians
Confederated Tribes and Bands of the Yakama Indian Nation

Other Agencies

Pierce Transit
Sound Transit
Puget Sound Clean Air Agency
Puget Sound Regional Council
Port of Tacoma

Congressional Legislator 9th District

Representative Adam Smith

State Legislators 25rd District

Senator Jim Kastama

Representative Sarah Casada

Representative Dave Morell

State Legislators 27th District

Senator Debbie Regala

Representative Ruth Fisher

Representative Jeannie Darneille

State Legislators 30th District

Senator Tracey Eide

Representative Mark Miloscia

Representative Maryann Mitchell

Libraries

City of Tacoma Library – Main Library

Pierce County Library System – Milton Branch

Pierce County Library System – South Hill

Puyallup Public Library

Washington State Library

Others

Friends of the Hylebos Wetlands (Chris Carrel)

CAC Members

Char Barry (Property Owner)

Ron Duris (Farmer/Drainage)

Leonard Feind (Milton Access)

Ray Hixon (Area Traffic/Safety)

Denise Barry Logan (Firwood Property Owner)

Phillip Jesse (Resident)

David P. Mahlman (Resident)

Boris Stefanoff (Fife Parks Board)

Lynn Wallace (Business/Freight Mobility)

Allen Zulauf (Puyallup Watershed Council)

Bob Myrick (Trails/bikes/pedestrians)

Nat Luppino (NW Fruit & Produce, Inc.)

P.K. MacDonald (Fife Chamber of Commerce)

Partners Committee

Michael Zachary (Port of Tacoma)

Raul Ramos (Puyallup Tribe of Indians)

Pete Beaulieu (Puget Sound Regional Council)

Chuck Ivie (Pierce County)

Allison Smith (Port of Tacoma)

Marlo De Rosia (City of Milton)

Steve Shanafelt (City of Tacoma)
Russ Blount (City of Fife)
Dave Lorenzen (City of Edgewood)
Tina Lee (Pierce Transit)

Utilities

AT&T Broadband (Aaron Cantrel)
City of Milton (Richard Bronson)
Puget Sound Energy (Cheryl Paras)
Qwest (Joy Bateman)
Pierce County - Dept of Public Works/Utilities (Stuart Kip Julin)
Tacoma Power (Thad Glassy)
Click Network (Fred Luco)
City of Tacoma - Public Works/Utility Services Division (Daniel Handa)
McChord Pipeline (George Hills)
Tacoma Water (Mike Dalin)
City of Puyallup (Tom Heinecke)
Port of Tacoma (David Myers)
Olympic Pipeline (Kathy Reed)
Union Pacific Railroad (S.V. McLaughlin)
City of Fife (Art Gregg)

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The Washington State Department of Transportation (WSDOT) has well-established design, construction, and operation practices to minimize or avoid adverse impacts on the environment from highway projects. This appendix describes the current anticipated measures that the Federal Highway Administration (FHWA) and WSDOT will include in the project to mitigate anticipated adverse effects. Mitigation measures will be refined as the design is advanced.

General

The proposed SR 167 Extension project has been analyzed under a two-tiered environmental process, with the completion of Tier I Final EIS (FEIS) and a Tier II FEIS. The Tier I FEIS was issued in April of 1999 and a Record of Decision (ROD) was issued in June of 1999. This Tier II Commitments List addresses commitments from the Tier I ROD as well as commitments in the Tier II FEIS.

WSDOT maintains a web site for the SR 167 Tier II EIS project (<http://www.wsdot.wa.gov/projects/SR167/TacomoEdgewood>), which is updated monthly. The web site contains the history of the project, what is currently being worked on, specific design options, and WSDOT contacts. The web site will remain active for the duration of the project.

Tribal Coordination

WSDOT and FHWA worked closely with the Puyallup Tribe of Indians regarding issues identified during the development of the Tier II FEIS. FHWA and WSDOT are committed to maintaining an open line of communication with the Puyallup Tribe of Indians throughout the design and construction phases of this project.

Water Resources (Waterways, Hydrology, Water Quality, Hydrogeology, and Floodplains)

WSDOT and FHWA will adhere to all relevant regulations and obtain required permits, and mitigating measures will be implemented.

Construction

A Temporary Erosion and Sediment Control Plan (TESC) and Spill Prevention Control and Countermeasures (SPCC) Plan will be prepared and implemented during the project construction, as required by the WSDOT *Highway Runoff Manual* (WSDOT, 2004). As a minimum, the plans will include the following construction best management practices:

- Erosion control measures for cut and fill slopes

- Sediment control measures, particularly for work near streams
- Temporary erosion protection measures for disturbed areas
- Reseeding and stabilization for cut and fill slopes as necessary
- Reseeding and/or replanting of temporarily impacted areas with appropriate native seed mixes/species to the greatest extent possible
- Confining fuels, oils, and other potential contaminants within a berm or barrier when staging areas cannot be located outside of frequently flooded areas
- Limiting fueling and vehicle maintenance near water bodies and sensitive areas
- Identifying proper construction equipment maintenance, cleaning, and access locations
- Requiring proper hazardous and conventional waste disposal
- Scheduling and timing appropriate for the season
- Monitoring and maintaining erosion control BMPs

In addition to the TESC and SPCC Plans, the following project-specific measures will minimize effects on water resources during construction:

- A Stormwater Pollution Prevention Plan (SWPPP) will be fully implemented before, during, and after construction.
- Alternative construction techniques that minimize or avoid dewatering (e.g., sheet piling, cased piers, driven piling, spread footings) will be evaluated.
- A temporary Hylebos Creek diversion channel will be constructed while the creek remains in its existing streambed. Measures to minimize streambank erosion in the temporary channel will be employed.
- Trees and shrubs when present adjacent to the alignment will be preserved provided that roadway clear-zone and sight distance requirements are met.

Operation

Public Water Supply Systems

- An effort to identify other area wells has been undertaken for the FEIS and additional research will be done before this project is constructed.

- Wells that lie directly beneath the project footprint will be decommissioned in accordance with state laws. Water rights transfers and/or new water rights will be obtained from Ecology prior to decommissioning the wells.
- A drinking water well for the City of Fife is on a parcel that is fenced and located on high ground within the proposed riparian restoration area. If access can be provided without jeopardizing the function of the riparian buffer in this area, then consideration will be given to exempting the well and associated buildings from the Riparian Restoration Proposal (RRP). If this is not the case, other mitigation will be negotiated with the City of Fife.

Floodplains

A number of measures (MGS et al., 2004) to reduce flood elevations at the 20th Street East bridge and/or northbound I-5 bridges will be considered during final design. These hydraulic measures include:

- Widening the culvert at 12th Street East;
- Creating an approximately 100-foot-wide off-channel, depressed floodplain (bench cut) adjacent to the south side of Hylebos Creek from SR 99 to 12th Street East;
- Widening the channel immediately downstream of 12th Street East to smooth the transition from the new box culvert to the existing channel;
- Removing debris and maintaining invert elevation of the channel under SR 99.

Embankments and structures will be designed, to the extent practicable, to pass maximum flood flows without substantial change to that experienced today. If necessary, additional flood storage will be provided. A final mitigation plan addressing floodplain mitigation measures will be developed prior to construction.

Waterways

- An approximately 2,000-linear-foot section of Hylebos Creek adjacent to I-5 will be filled due to the construction of the SR 167 I-5 Interchange. This interchange will also require the fill of approximately 1,000 linear feet of Surprise Lake Drain. To compensate for the channel and buffer lost to embankment fill, two new stream channel sections will be constructed.
- Approximately 4,000 linear feet of new Hylebos Creek channel will be constructed and over 87 acres of riparian zone will be preserved.
- The entire section of the Surprise Lake Drain channel, from its confluence with the mainstem of Hylebos Creek to the crossing at Freeman Road, will be restored to improve the quality and condition

of the stream, and to provide flood control and habitat benefits. This amounts to approximately 5,340 linear feet of new channel. Additionally, 29 acres of adjacent riparian area will be protected.

- Stream relocation work will begin with constructing the new channel. The timing of stream relocations will be planned to minimize impacts to fish and other aquatic organisms and to avoid relocating streams to locations that could be disturbed by construction activities.
- The new stream banks will be revegetated with native trees and shrubs to provide future shading and bank stabilization.
- Large woody debris (LWD) will be placed to increase bank stability, allow for the development of pools for refugia, provide favorable substrate for invertebrate colonization, and provide instream cover and shade.
- One of the stream crossings at the Valley Avenue Interchange (preferred) will be designed to span both Wapato Creek and adjacent wetlands to further avoid wetland impacts.
- The new stream crossing of Fife Ditch will be designed to result in no long-term impact to water quality.
- If practicable, proposed bridges or culverts over Hylebos Creek, Surprise Lake Drain, and Wapato Creek (including the wetlands associated with Wapato Creek) will completely span these waterbodies, minimizing in-water work.
- An undersized bridge and bank armoring will be removed at the 8th Street East crossing. An additional undersized bridge will be removed at the 62nd Avenue East crossing, just upstream of the 8th Street East crossing.
- New stream crossings will be designed to pass the 100-year storm event at a minimum. When practicable, these structures will support natural stream processes by minimizing channel constriction and riprap placement.
- WSDOT will continue to keep the drainage districts informed of plans associated with stream relocations and invite them to participate in development of the specific plans.

Stormwater Treatment

- Stormwater generated from the highway will be treated to meet flow and water quality control requirements as described in the most current WSDOT *Highway Runoff Manual*.

- Enhanced treatment for removal of dissolved metals will be provided for those highway surfaces that exceed the traffic volume threshold established in the most current WSDOT *Highway Runoff Manual*.
- Stormwater from the project will be treated for water quality. One or more of the following methods may be used:
 - Biofiltration swales
 - Deep fill infiltration
 - Landscaped fill slopes with composted soils
 - Constructed wetlands
 - Ponds
 - RRP
- The RRP will convert approximately 189 acres of existing farmlands and residences into a riparian landscape by removing encroachments (buildings, roads, culverts and other infrastructure) from the land. The riparian area will be planted with native vegetation. The Riparian Restoration Proposal areas will be preserved as a mix of riparian wetlands, buffers and riparian uplands for the purpose of stormwater flow control.
 - The Hylebos Creek RRP includes approximately 4000 feet of new stream channel and approximately 87 acres of riparian improvements.
 - The Surprise Lake Drain RRP includes approximately 5340 feet of new channel and approximately 29 acres of riparian improvements.
 - The Wapato RRP includes an approximately 9000-linear-foot-long continuous riparian buffer along both sides of the stream, except for a section adjacent to Valley Avenue. The RRP would result in an approximately 300-foot-wide corridor through which Wapato Creek would flow, totaling approximately 73 acres.
- The project will remove six crossings on Wapato Creek and replace up to three crossings at the Valley Avenue interchange. When practicable, these structures will support natural stream processes by minimizing channel constrictions, provided that the existing profile on Freeman Road is not affected.
- A Technical Advisory Group (TAG) will identify recommendations for the ultimate design as well as maintenance and monitoring for the RRP. The TAG will begin by reviewing the goal and objectives of the RRP previously developed and preparing a work plan and schedule that will be used to direct the team. Meetings will be held regularly to share technical information at key points in the planning and design process, to provide project updates, and to gather technical input on important project elements. The intent is to work together toward consensus on the final design, including maintenance and monitoring plans.

- The TAG will be involved throughout design and permitting of the project. The TAG will be informed of construction progress of the RRP and will be informed if any unanticipated issues arise during construction of the RRP.
- The TAG includes agencies such as FHWA, WSDOT, United States Fish and Wildlife Service, the NOAA National Marine Fisheries Service (NOAA Fisheries), the U.S. Army Corps of Engineers (COE), the Washington State Department of Fish and Wildlife, the Washington State Department of Ecology (Ecology), members of the Pierce County Water Program, the Puyallup Tribe of Indians, and the Friends of the Hylebos Wetlands (a local environmental group), who will all be invited to attend the RRP design process and development of maintenance and monitoring requirements.
- The goal of the RRP, as authored by the RRP Technical Advisory Group on June 20, 2005, is to provide stormwater flow control management and compensatory mitigation for stream channel impacts through the creation, restoration, and enhancement of self-sustainable native riparian and in-stream habitat in the Hylebos Creek and Surprise Lake Tributary sub-basin and the Wapato Creek sub-basin. The following objectives meet this goal:
 - Avoid and minimize construction related impacts
 - Allow connectivity of riparian habitat
 - Provide for fluvial processes including natural sediment transport, channel migration, debris passage and LWD placement and recruitment
 - Prevent streambank erosion from damaging infrastructure
 - Prevent increases in flood related property damage
 - Allow ecological interaction with terrestrial habitat
 - Enhance native plant diversity and control invasive plant species
 - Restore natural hydrologic processes
 - Reduce surface water contamination
 - Enhance fish and wildlife habitat function
 - Enhance macro-invertebrate diversity
 - Encourage community-based stewardship of the RRP

Groundwater

Initial geotechnical investigation was done to characterize existing soil conditions to understand hydraulic conductivity. It is anticipated that monitoring wells will be installed on both sides of the completed embankment to monitor groundwater. Additional field testing of vertical and horizontal flows under embankments is planned prior to construction.

Wetlands

Construction

WSDOT and FHWA will continue to consult with the project cooperating agencies, the COE, and the City of Fife through the permitting and construction phase of this project.

WSDOT and FHWA are examining opportunities to support watershed restoration activities as alternative mitigation. WSDOT will pursue partnerships with other agencies, the Tribe, and non-profit groups interested in the Hylebos and Wapato Creek watersheds. WSDOT is pursuing all funding opportunities for enhancing mitigation.

WSDOT will coordinate wetland mitigation site design with the TAG if wetland mitigation sites adjacent to the RRP areas are selected. WSDOT will coordinate wetland mitigation site design with Friends of Hylebos Wetlands for mitigation sites that may be selected within the Hylebos Watershed.

Avoidance and Minimization Efforts

Wetland impacts have been minimized to the greatest extent practicable based on preliminary design. FHWA and WSDOT will strive to incorporate additional minimization measures as project design is completed. Potential opportunities to incorporate additional avoidance and minimization measures may include (but are not limited to):

- Making minor changes to design alignment;
- Using steeper fill slopes;
- Using retaining walls to eliminate fill slopes;
- Using culverts to hydrologically connect wetlands bisected by the highway;
- Using a bridge design that spans the Puyallup River, avoiding the placement of a pier within the river.

Wetland Delineations

- Before initiating permitting or preparing a final wetland mitigation plan, WSDOT intends to reevaluate all wetlands affected by this project, including revisiting wetland delineation and categorizations over three years old.
- Prior to construction, the COE will review the final wetland delineation and categorization in the field.
- Guidance on ditches resulting from the recent U.S. Supreme Court decision (referred to as the Talent decision) has recently become available. Therefore, before initiating permitting, these areas will be

examined to determine if they are jurisdictional under the Clean Water Act Section 104 Program.

Final Mitigation Plan

- A final wetland and stream fill mitigation plan will be developed for this project. The final mitigation plan will compensate for any unavoidable impacts on wetlands and buffers.
- WSDOT will select one or more preferred wetland mitigation site after the ROD is issued and before permitting and a final mitigation plan are completed.
- The general criteria used to identify and evaluate potential wetland mitigation sites in the Conceptual Mitigation Plan (May 2005) will continue to be used in the final mitigation plan. The criteria are:
 - Watershed focus
 - Replacement of functions and values lost
 - Habitat connectivity
 - Reliable hydrology
 - Undeveloped condition
 - Uncontaminated
 - Stakeholder support
 - Satisfies regulatory requirements
- Off-channel habitat potential will be identified at the sites. Off-channel habitat for fish is the top limiting factor in the Puyallup River watershed.

Operation

None proposed.

Wildlife, Fisheries, and Threatened and Endangered Species

Construction

- Current federal laws affecting fish and wildlife include NEPA/SEPA, the Endangered Species Act (ESA), the Federal Fish and Wildlife Coordination Act, the Magnuson-Stevens Act, and the Migratory Bird Treaty Act. Current state laws affecting fish and wildlife include the Revised Code of Washington (HPA) requiring Hydraulic Project Approval (HPA), the Salmon Recovery Planning Act, and the Salmon Recovery Funding Act. All pertinent laws will be considered and complied with during further design and construction. WSDOT will comply with the State Salmonid Recovery Plan, being finalized jointly by several state agencies. WSDOT will work closely with these agencies during mitigation planning.

During design, WSDOT will continue to use all practicable means to minimize impacts to habitats. These efforts may include, but not be limited to:

- Using retaining walls (to prevent fill from entering aquatic habitats);
- Using structures to avoid impacts;
- Refining the alignment by making additional minor shifts to avoid or minimize impact to wetlands or other important habitats;
- Adding low-cost wildlife crossings and using over-sized culverts or clear-spanning structures at appropriate locations;
- Installing culverts at stream crossings that will comply with the project HPAs and will, at minimum, be designed to withstand the 100-year flood event;
- Timing in-water work to avoid adult salmon, bull trout, and steelhead migration, juvenile out-migration, and alevin emergence.

The segment of Hylebos Creek that will be abandoned and filled will be surveyed for presence of freshwater mussels prior to construction. Any freshwater mussels present in the filled segment of Hylebos Creek will be relocated. If it is necessary to relocate mussels during channel filling and new channel creation, monitoring should ensure relocated mussels are not being stressed or smothered by sedimentation or flushed downstream during high flows.

The project would be constructed in stages, sometimes with concurrent work on more than one stage. This work will be coordinated to minimize cumulative impacts of fisheries resources to the greatest extent possible. Coordination with USFWS and NOAA Fisheries would continue as the project is prepared for bid and construction in conformance to the requirements of the ESA. FHWA and WSDOT will ensure that the Biological Assessment (BA) (September 2005) conclusions are not affected by any change in ESA species designation or any change in the use of the action area by threatened or endangered species.

WSDOT and FHWA will apply the minimization measures and performance standards from the BA and comply with the Terms and Conditions from the Biological Opinion (BO) when it is approved by the USFWS and NOAA Fisheries.

In order to ensure the protection of T&E and MBTA species, a biologist knowledgeable in the species of plants and wildlife protected by ESA and the MBTA would survey proposed work areas prior to construction. If any protected species are found, WSDOT would consult with NOAA Fisheries, USFWS, and WDFW as to the best methods to protect and/or relocate them. Monitoring would continue throughout the construction phase to maintain compliance. Also, mitigation designed to offset

wetland impacts would also benefit migratory birds. Approximately 50 acres of new wetlands would be developed as a result of the proposed project.

Air Quality

Construction

A Fugitive Dust Plan will be prepared by the contractor prior to construction to comply with Puget Sound Clean Air Agency (PSCAA) regulations. This plan will include mitigation measures that will be utilized as appropriate to minimize PM₁₀, deposition of particulate matter, emissions of carbon monoxide and ozone precursors, as well as other mobile source air toxics during construction. These measures include:

- Spraying exposed soil with water or other dust palliatives;
- Covering all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck);
- Providing wheel washers to remove particulate matter that would otherwise be carried offsite by vehicles;
- Removing particulate matter deposited on paved, public roads;
- Minimizing delays to traffic during peak travel times;
- Placing quarry spill aprons where trucks enter public roads;
- Graveling or paving haul roads;
- Planting of vegetative cover as soon as possible after grading;
- Minimizing unnecessary idling of on-site diesel construction equipment;
- Locating diesel engines, motors, or equipment away from existing residential areas;
- Locating staging areas away from school buildings and playgrounds;
- Utilizing efficient street sweeping equipment at site access points and all adjacent streets used by haul trucks;
- Limiting hours of operation near sensitive receptor areas and rerouting the diesel truck traffic away from sensitive receptor areas;
- Coordinating construction activities with the Puyallup Recreation Center and other sensitive receptor locations.

Puget Sound Clean Air Agency is recommending a voluntary low sulfur diesel fuel program in the state of Washington. The requirement to use ultra low sulfur diesel fuel at the time of construction will be considered depending upon sufficient availability and comparable cost with other diesel.

Operation

- This project will comply with applicable Environmental Protection Agency (EPA) requirements for controlling mobile source air toxics.

Noise

Construction

- The contractor will be required by WSDOT to perform noise-generating activities in the daytime, except when it is essential to carry out such activities in the night.
- WSDOT contractors will adhere to local noise ordinances. If nighttime work is necessary, WSDOT and the contractor will apply for a variance to the noise ordinance from local agencies.

Operation

- A noise barrier will be included in the final design of the preferred Urban Interchange option, which receives most of its noise from traffic on SR 167, SR 512, and SR 161.
- WSDOT and FHWA have committed to the Puyallup Tribe of Indians to provide landscaped noise abatement structures along 48th Street East to mitigate noise impact to residences on Tribal trust land
- WSDOT and FHWA will assist the Puyallup Tribe of Indians in locating new businesses to minimize noise and visual impacts attributable to SR 167 and by sharing noise study data and advising the Tribe about quiet locations, landscaping, and mitigation measures.
- WSDOT will retrofit the houses on Tribal trust land near Valley Avenue with storm windows as mitigation to minimize noise impacts.

Energy

Construction

None proposed.

Operation

None proposed.

Hazardous Materials

Construction

There are multiple buildings that will be demolished during the construction of the preferred alternative and/or widening of existing I-5 right-of-way (ROW). It is possible that some of the structures to be acquired by WSDOT may contain Asbestos Containing Materials (ACM) and Lead Based Paint (LBP). Prior to acquisition, WSDOT will conduct an initial site assessment for each property for potential contamination.

WSDOT and FHWA anticipate that building demolitions will primarily generate non-hazardous construction debris with the exception of ACM and LBP. Such structures will be sampled and analyzed to determine the appropriate disposal facility. Mitigation of ACM includes removal and disposal prior to demolition.

Lead-contaminated paint chips and debris could be generated during demolition of the steel bridge on the SR 161 crossing of the Puyallup River. The project will ensure no loose material or debris enters the water through the use of a containment system.

Underground storage tanks (USTs) will be addressed during project planning. A magnetometer survey will be conducted prior to construction if a UST is suspected on site, and all removal and site assessment activities will follow Ecology's Underground Storage Tank Statute and Regulations (Chapter 90-76 RCW, Chapter 173-360 WAC).

FHWA and WSDOT will determine the appropriate strategy to prevent contamination of Hylebos Creek from the B&L Woodwaste site during final design, in collaboration with the EPA and Ecology.

Visual

Construction

None proposed.

Operation

Landscape related mitigation measures will be done in accordance with the Roadside Classification Plan (WSDOT 1996).

Public Services and Utilities

Construction

- WSDOT will determine the locations of utilities within the construction zone during the design phase. Before construction begins, utility impacts will be closely evaluated and a determination made on whether or not to relocate the utility facilities.

- WSDOT will coordinate with the utility owners, such as the Olympic Pipeline, McChord Pipeline Company, Puget Sound Energy, QWEST, Tacoma Public Works, and the cities of Fife and Milton, to minimize impacts to their utilities.
- Construction activities will be coordinated with the Union Pacific Railroad, the Burlington Northern Santa Fe Railroad, Tacoma Rail, and the Port of Tacoma to minimize disruption of rail operations through the project construction areas.
- Impacts to fire, emergency, and police services during construction will be limited to temporary disruptions of service routes within the construction zone. Service providers affected by construction will be notified in advance of the construction period. Police departments, fire and emergency response services, school districts, and solid waste providers will be notified of construction schedules, access restrictions, and possible detour routes prior to access modification.
- Affected businesses and residents will be notified of construction activities in advance (including any necessary closures and detours), and reasonable efforts will be made to minimize traffic disruptions and access revisions during construction.

Operation

None proposed.

Land, Use, Socioeconomics, and Environmental Justice

Construction

- As the design proceeds, opportunities to minimize the impact on existing land uses will be examined.
- Property owners, whose land will need to meet right-of-way requirements, will be compensated at the full current market value in accordance with the Uniform Relocation Act.

Operation

None proposed.

Farmland

Construction

- Consultation and coordination with affected farmers will be conducted to ensure that disruptions to farming are minimized and adequate advanced notice of potential disruptions is given. WSDOT will work individually with each farmer to develop circulation options for movement of farm equipment and to provide access to fragmented acreage.

- WSDOT and FHWA will attempt to provide access to local farmers from local streets by way of access roads and/or easements.
- East of the Puyallup Recreation Center, a developer is proposing to build a crossing over the SR 167 mainline. The crossing would connect Valley Avenue to North Levee Road. This crossing would accommodate the size and type of tractors used in the fields. Providing access to the crossroad from the fields would allow for the continued farming of acreage on either side of the roadway. If this crossing is not already in place at the time of construction, WSDOT will determine the alternative mitigation for farmland impacts during the design stage.

Operation

None proposed.

Displacement, Disruption, and Relocation

Construction

- Affected businesses and residences will be notified of construction activities in advance (including any necessary closures and detours), and reasonable efforts will be made to minimize traffic disruptions and access revisions during construction.
- Displacements, disruptions, and replacements will be considered during the selection of sites for detailed wetland mitigation design.
- Some displacements may be avoided through final design measures, including the use of retaining walls and other modifications resulting in reduced ROW requirements. These will be determined during final design.
- The contractor will be required to follow approved work zone traffic control plans and contract specifications that minimize disruption impacts from construction activities.
- Where ROW acquisition is needed, the acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. In addition, Chapters 8.08, 8.25, and 8.26 of the Revised Code of Washington govern the process of acquiring property for ROW.

Operation

None proposed.

Transportation

Construction

Staging, detours and temporary traffic control measures are developed during the final design of the project. All plans will meet Federal standards contained in the Manual for Uniform Traffic Control Devices. The timing and extent of closures and/or detours will be determined in the design phase of the project. The detour routing plan will also analyze effects of rerouted traffic on detour routes and develop an operations plan to mitigate the effects of the increases in traffic.

To the extent possible, traffic disruptions from adjacent local improvement projects will be coordinated to minimize delay on the surface streets. I-5 freeway lane closures will be limited to nighttime periods of low traffic volumes.

WSDOT will continue to coordinate the design in this area with all of the affected local agencies as the design progresses. WSDOT currently utilizes the following specific strategies for Transportation Demand Management (TDM) and will continue to use or enhance these TDM strategies at project completion:

- Worksite commute trip reduction
- Rideshare information and assistance
- Effective land use zoning and planning
- Regional and local transit service
- Park and ride lots

Transportation System Management elements that will be incorporated as feasible and per design standard are as follows:

- Signage improvements
- Motorist information systems
- Access control
- HOV lanes
- Channelization improvements
- Signal improvements including synchronization
- Transit system improvements
- Interchange improvements

- Ramp metering
- Traffic camera surveillance
- Traffic incident management

Operation

An Intelligent Transportation System (ITS) may be implemented for this project in accordance with the WSDOT Olympic Region ITS Implementation Plan.

Pedestrian and Bike Facilities

Construction

Work zone traffic control plans will take into account non-motorized route continuity needs including public notification and provisions for safe detour routes wherever reasonable. Any detour route for non-motorized traffic indicated on the Traffic Control Plans will be physically reviewed. The existing surfaces will be repaired within the project limits to accommodate the special needs of non-motorists.

Operation

FHWA and WSDOT recognize the importance of working collaboratively with both Pierce County and the City of Fife on the Pacific National Soccer Park and with the City of Milton on the Interurban Trail. FHWA and WSDOT will also work closely with the City of Fife to address impacts to the Lower Hylebos Nature Park, potentially including access and parking.

WSDOT and FHWA intend to accommodate non-motorized transportation modes in the project area using best practice design. A separate multiuse path is planned north of SR 167 approximately from 54th Avenue Interchange to SR 99. The connection of SR 509 and SR 167 will provide for continued bike and pedestrian travel on the existing facilities of SR 509.

Roadway shoulder improvements will be made to SR 99 at the shared use path terminus north to 70th Avenue East. Shoulder width will be widened to not less than 5 feet and sidewalks and curbs will be considered to control motorized access and provide for safe pedestrian travel on this regionally recognized bike route.

In 2003, the City of Fife purchased 54 acres in the vicinity of the I-5 interchange for the purpose of developing a soccer park. The City of Milton Interurban Trail is located in the same area. WSDOT and FHWA will make every effort to minimize impacts to these properties.

The project will accommodate the Interurban Trail and re-establish the public access connection to the trail in the vicinity of 70th Avenue East

and I-5. The relocated portion of the trail will be ADA accessible—a separated Class I or II non-motorized path linking to the City of Fife trail system. Design modifications to the (Interurban Trail) trailhead connection will be provided with the realignment of 70th Avenue East. Mitigation, if necessary, will be provided for any required use of the developed soccer facility.

FHWA and WSDOT policy is to accommodate non-motorized transportation modes in the study area using best practice design. Towards this goal, FHWA and WSDOT follow a number of general project mitigation measures regarding bicycles and pedestrians:

- Local access roadways within the right-of-way of the SR 167 interchanges will be designed to the local jurisdiction's design standards and often will include paved shoulders and/or sidewalks for bicyclists and pedestrians.
- Local roadways and ramp intersections will, as traffic volumes warrant, be signalized, to include pedestrian crosswalks and activated signal systems.
- Local comprehensive plans will again be reviewed prior to completion of contract plans for construction. This effort will address non-motorized route continuity both at the local level and within the project, consistency, and local jurisdiction coordination. Any such local plans affected by the project and determined to have been completed, progressed to design or construction phase will be evaluated and appropriate measures taken to address impacts.

Geotechnical Analysis

A complete geotechnical investigation will be part of the final design of SR 167.

Cultural Resources

Construction

As design progresses, efforts will be made to avoid or minimize the impact to cultural and historic resources including the Carson Chestnut Tree and cultural resources associated with ancient ground surfaces.

The Tier I ROD called for design efforts that attempted to save the Carson Chestnut Tree. Accordingly, all options at the SR 161 / SR 167 Interchange were designed to avoid this historic tree, which has been nominated for listing on the Washington Heritage Register. Efforts to minimize any additional detrimental impacts to the Carson Chestnut Tree will be made during design and construction.

Additional cultural resource studies will be conducted at wetland mitigation sites identified for final design. An Archaeological

Monitoring Plan, detailing personnel and methodologies for locating buried cultural resources potentially associated with ancient ground surfaces, will be developed during final design. The Puyallup Tribe of Indians will be consulted prior to any ground disturbing activity in the Valley Avenue Interchange area.

Operation

A Memorandum of Agreement (MOA) was developed in consultation with FHWA, SHPO, the Advisory Council on Historic Preservation, and the Puyallup Tribe of Indians to address adverse effects of the project to the archeological site and four historic structures. If any unanticipated archeological resources (resources above and beyond those identified in the Cultural Resource Survey) are discovered during construction, appropriate action will be taken including notifying and coordinating with the Puyallup Tribe of Indians. The MOA stipulates that FHWA will ensure that the following measures are carried out:

1. WSDOT will plant riparian vegetation on the outer edges of the proposed ramp curve nearest the 3423 Freeman Road historic property to minimize visual effects.
2. Historic Property Recordation: WSDOT will consult with the SHPO regarding appropriate large-format photo documentation to be consistent with Department of Archaeology and Historic Preservation Level 2 standards of historic properties (7001 20th Street East, 6803 20th Street East, and 7717 Valley Avenue East) in the area of potential effect.
3. NRHP-eligible buildings will be offered for sale for a minimum of one year to any buyers willing to move the structures.
4. The project will have no adverse effect upon prehistoric site 45PI488, contingent upon WSDOT:
 - (a) Spanning the site with a bridge whose piers are constructed outside the known boundaries of the site;
 - (b) Monitoring construction for cultural resources in the vicinity. Should cultural resources or human remains be discovered during bridge construction, procedures will be followed per below (items 5 and 6).
5. Review of Effects Determination: During final design and prior to construction of the undertaking, FHWA will review the eligibility determinations to
 - (a) Determine if eligible properties retain the qualities that make them eligible for the National Register of Historic Places;

- (b) Determine if non-eligible properties obtained qualities that would make them eligible for the National Register of Historic Places (i.e. greater than 50 years old).
6. Amendment of the Agreement: If any of the consulting parties to this Agreement determine that the terms of the Agreement cannot be met or believe a change is necessary, they will immediately request the signatory parties to consider an amendment or addendum which will be executed in the same manner as the original Agreement. A copy of the amended Agreement will be filed with the ACHP, pursuant to 36 CFR 800.6(c)(7).

The City of Fife will be notified prior to the purchase of the historic properties subject to protection under Section 106 of the National Historic Preservation Act.

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Appendix G Draft EIS Comments and Responses

Comments on the DEIS were received in various formats. Oral comments provided during open houses in Puyallup and Fife were transcribed. Written comments also were received at these meetings. Comment letter was the most frequent format used by agencies and organizations. Many letters with similar comments were submitted by citizens advised of the opportunity by Friends of the Hylebos Wetlands. Email also was as common format for submitting comments. A comment petition was signed by 161 residents in Edgewood.

WSDOT assigned a code to all comments received. The first three characters identifies the commentor, with the first character identifying the category. Category codes are

B	Businesses
C	Citizens
F	Federal Agencies
G	Groups and Organizations
L	Local Agencies (e.g., Cities and Port)
S	State Agencies
T	Tribes and Tribal Members

The final three digits of the comment codes are sequentially assigned to the individual comment for which a response was prepared. For example, B01-001 is the code for the first comment (001) received from the first business (B01). Matching codes were assigned to the respective responses.

The remainder of this appendix presents the comments and associated responses. Original comment documents were digitally scanned and are graphically marked with the assigned comment code. Transcriptions of all handwritten comments are included in the appendix to show WSDOT's reading of the comment. With few exceptions, the response by FHWA and WSDOT to a comment is presented either on the same page as the comment, or on the facing page.

This appendix also includes comments and responses on the Draft Section 4(f) Evaluation that was prepared after the DEIS. The Final Section 4(f) Evaluation found in Chapter 5 of this FEIS incorporates these comments and responses.

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PACE MINI-STORAGE COMPANIES

DEVELOPMENT • MANAGEMENT

RECEIVED

APR 02 2003

March 21, 2003

TUMWATER DESIGN

Neal Campbell
WSDOT Design Project
Engineer
6639 Capital Blvd S.
Suite 362
Tumwater, WA 98501

Dear Neil,

Over the last several years I have met with you personally, as well as many of your associates regarding the 167 expansion and I attended the forum on March 18 to review the current options. I did try to speak with you at that time but you were always surrounded, so I felt it was better to begin this discourse with letting you know some of the realities of how these proposals will impact my facility. Unfortunately, all three options will, in time, destroy my business.

Mini-storages have almost become commodities. The major differentiating factor is ease of access. This is the accepted criterion in the industry. Before purchasing the land where Puyallup mini-storage now exists, I spent months visiting potential sites, and selected this site based on this criterion with the initial size and subsequent enlargement factored in. All three options now have the road dead-ending at my property, with some convoluted egress and ingress. With a 10% vacancy/turnover rate per month, within short order we will no longer be in business.

Your real estate division has told me that prior to any monetary offer regarding our property, an appraisal of our property with the system 'as is' and an appraisal as it 'would be' after the expansion would need to be performed. The most reliable way to determine fair market value is what a willing buyer would pay and what a willing seller would accept at any given time. Last year three of the major mini-storage chains approached me on purchasing my facilities. Public Storage purchased three of the four facilities, the unpurchased one being Puyallup mini-storage. Neither Public Storage nor the other two major bidders would consider purchasing this property once I disclosed the preliminary expansion designs. Although I was not in the market to sell the facility, this demonstrates the inherent problem in finding a willing buyer.

In March 2001 I received an appraisal way in excess of \$5 million. Fair price today, discounting the 167-expansion plan, is in excess of \$6 million.

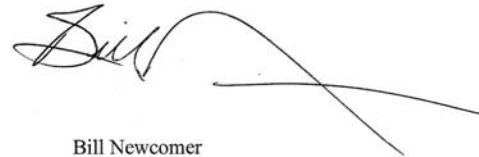
1401 N. MERIDIAN • PUYALLUP, WA 98371 • (253) 848-8644 • FAX: (253) 841-0877

Currently I am in a state of limbo. I cannot sell the property, I cannot make long-term plans for the property, nor can I make long-term plans for my personal life.

Neil, considering the market price of the facility, you might want to revisit the option of creating a direct access from Meridian. Another option discussed previously was to run 167 directly through the facility. Both of these options would help salvage 14 years of hard work and a potential monetary disaster for me.

Please contact me so we can discuss these options. I look forward to hearing from you.

Sincerely,



Bill Newcomer

RESPONSE B01-001

Several options were studied with various levels of impact to the property. With the replacement of the Puyallup River Bridge steel structure, access to the property will need to be modified because of changes involving the North Meridian roadway profile. A relocated access will be provided and the storage property will not be land-locked. We will continue to communicate with you regarding any access issues for the property.

B01-001

B01-001



McCHORD PIPELINE CO.



3001 Marshall Avenue
Tacoma, WA 98421
(253) 593-6085

A Subsidiary of U.S. Oil & Refining Co.

RECEIVED

MAR 03 2003

TUMWATER DESIGN

February 27, 2003

Neal Campbell
WSDOT Project Manager
P.O. Box 47446
Olympia, WA 98504-78446

SUBJECT: SR167, PUYALLUP TO SR509 DRAFT EIS COMMENTS

Dear Mr. Campbell:

McChord Pipeline Co. appreciates the opportunity to provide comment on this project. Our 6" pipeline is routed to the west of Port of Tacoma Road and would not be impacted by the SR167 Project as it is presently represented in the EIS. Should the scope increase to a point that work is being performed near the Erdahl Ditch area to the west of Port of Tacoma Road, McChord Pipeline Co. would need to be involved to ensure protection of the pipeline. We would like to be included in further communications on this project as it progresses. If you have any questions please do not hesitate to contact me at (253) 680-3247.

Sincerely,

McChord Pipeline Co.

George Hills, P.E.
Chief Engineer

Cc: AJC, JPW

P.O. Box 2255/Tacoma, Washington 98401-2255
Telephone (253) 593-6085 Fax: (253) 272-2495

RESPONSE B02-001

We will be sure to communicate with you regarding any portion of your pipeline, well in advance of any construction activity. We will continue to have dialogue with your company and others that have easements in the project area.

B02-001

BARRY W. KAIMAKIS, D.D.S., P.S.

RECEIVED
APR 07 2003
TUMWATER DESIGN

1305 4th AVENUE, SUITE 516
SEATTLE, WA 98101-2401
Telephone (206) 621-0455
Fax (206) 682-9916

March 31, 2003

City of Edgewood City Council

Dear Council,

It has been brought to my attention, by my property manager, Mary Harper, that the city of Edgewood is considering different road construction options. Mrs. Harper has made me aware of the different routes the council is considering. As owner of Cherrywood Manor Mobile Home Park, I feel I should have a voice in these options.

Cherrywood Manor Mobile Home Park is a senior park located at 8412 38th street East Puyallup. Most of the tenants are over 65 and have resided here for many years. They have come to enjoy the peace and tranquility that this park and suburbia has provided.

I know I speak for the tenants when I say that we are opposed to any type of "progress" that might change the quality of our lifestyle. Of the three options presented the valley avenue option is the only viable option that should be considered. The other two options would involve possibly displacing some of the residents in Cherrywood, This we find unacceptable. Many of these homeowners could not afford to move. As owner, I have tried to keep expenditures to a minimum so therefore my tenants would not be greatly affected.

I would hope the council would consider these thought prudently before acting.

Respectfully,

Barry W. Kaimakis, DDS

RESPONSE B03 -001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

B03-001

Yoshioka Farms LLC
7217 20th St. East
Tacoma, WA 98424
Ph.253-922-5307

March 14, 2003

Washington State Department of Transportation
6639 Capitol Blvd. Suite 302
Tumwater, WA 98504-7446

RE. Public Hearing on SR 167

After reviewing the Tier II DEIS for SR167, page 1-22 of the introduction, I would like to comment on the property/right of way paragraph.

I own and farm on land that is in the footprint of the proposed SR167 at the proposed junction of SR167 and I-5. I also own and farm land south of 20th Street in Fife, which is in the footprint of SR167.

My concern for my property is the hardship that the State of Washington is putting upon me in the proposed shadow of SR167. Fife is rapidly becoming industrialized and commercialized in this area. With industrialization and commercialization, land values have escalated significantly in the past three years. Pierce County is appraising us landowners at a very high rate of taxable evaluation. The only way that we landowners can escape the tax burden is to sell the land to a user who can afford to pay the high taxable value. We are currently farming the land and farm crops cannot justify the tax bill that comes to us every year.

For the past five years we have been trying to merchandise our lands to the industrial and commercial sector. After disclosure of the proposed SR167, all of the interested developers and end users have "divorced us" and have purchased or optioned land in other parts of the Pierce or Thurston County. The main reason the developers have left is because our land is in the shadow of SR167. No company will build on a freeway pathway with the threat that the state will later condemn the property for highway use and bank financiers will not lend capital for development projects that may have an imminent freeway go through the project due to corridor uncertainties. Meanwhile, our tax bills still keep on coming.

According to the DEIS, SR167 has been in planning stages since the 1970's. We land owners have been patiently waiting for the final corridor to be adopted so that we can go on with our lives without the negative ramifications of SR167 over our heads. Now, in 2003, many of us landowners are aging and SR167 terminates at the same junction as it did in the 1980's. We landowners would like to see the exact corridor determined and ROW purchased by the state of Washington DOT so that we can merchandise the remainder of our real estate holdings that are outside the SR167 footprint. With the SR167 footprint determination, the industrial community will know exactly what real estate would be available for development and we landowners can go on with our lives without the uncertain and negative impacts of SR167.

B04-001

My family's landholdings in the SR167 corridor are:

Under Yoshioka Farms tax parcels:

R0420082059

R0420082019

R0420082001

R0420082004

Robert T. Yoshioka: managing member Yoshioka Farms LLC

s

Under Farmland Associates tax parcels

R420082002

R420053006

Robert T. Yoshioka: Farmland Associates GP

s

My neighbor, Ben and Sachiko Yoshida have the very concerns as I on the SR167 issues. He is an 86 year old retired farmer that is being heavily taxed on his real estate that is located in the Freeway corridor. His property tax parcels are listed below.

Ben and Sachiko Yoshida's property:

R0420053005

R0420082036

R0420082005

R0420082010

Ben Yoshida

7107 20th St. East

Fife, WA 98424

s

The Kajimura Family, another retired farm family, have the same concerns as a number of us. They have real estate holdings located on the SR167 corridor and cannot do anything with the property due to the same reasons as described on the page 1 of this letter. Their property parcels are listed below:

R0420171005

R0420171058

R0420171700

R0420171036

Tadashi Kajimura

3602 Freeman Rd East

Fife, WA 98424

s

Thank you letting me have the opportunity to add to EIS for the SR167 Project. If you need to contact me for anymore input, I will be available.

Sincerely,

Robert T. Yoshioka

RESPONSE B04-001

As you have noted, the final “footprint” of the SR 167 Extension project has not been determined. The location, dimensions, and access points for the affected parcels are not all known at this time and won’t be determined until the project design is advanced to a near final stage. At this time, WSDOT is using a prioritization process for determining which properties to purchase for the SR 167 Extension project because we do not have enough funding at this time to buy all of the property needed for the project. We are concentrating most of our property acquisition in and around those areas that will need to be constructed first according to our staging strategy for the project. We are currently buying undeveloped and non-businesses properties from willing sellers following our prioritized list. We will continue to purchase property using this prioritization process until existing allocated funds are exhausted. The Legislature has appropriated funding for this project through June 2009. When the Record of Decision (ROD) for the Final EIS is approved by FHWA (currently scheduled for early 2007), the acquisition process should remain the same for all practical purposes, however, WSDOT will then have the authority to condemn property under eminent domain law.

RESPONSE B05-001

The inclusion of a park-and-ride lot located near the SR 161 interchange as part of the SR 167 project is part of a commitment to Pierce Transit and other affected agencies. WSDOT has made the commitment to purchase land for two park-and-ride lots in the corridor. Development and funding of the park-and-ride lots will need to be an ongoing discussion between Pierce Transit, FHWA, WSDOT and other affected agencies.



Investment
Development
Management

Suite 1300 Norton Building
801 Second Avenue
Seattle, Washington 98104-1581
Fax: (206) 264-3007
(206) 464-5252

June 13, 2003

Mr. Neal Campbell, P.E.
Washington Department of Transportation – Olympic Region
6639 Capital Boulevard, Suite 302, Tumwater
PO Box 47446
Olympia, WA 98504-7446

Re: Request for Entry
Park and Ride lot plan for SR-167 Extension

Dear Mr. Campbell:

Thank you for returning my call concerning this project. This letter is in response to your request for entry to our property dated May 29th, 2003 for purposes of conducting an archeological investigation for the Tier II EIS. Your request for access is denied. The following is an explanation of our position.

The Park in Puyallup is a master planned business park that was developed in conjunction with plans for the eventual extension of SR 167. The property was annexed into the city in 1983 together with a comprehensive EIS for allowance of general commercial uses. The history of the property includes negotiation and deeding of SR 167 right of way to the State through the Park in order for both the State of Washington and Puyallup Land, the park owners, to develop plans with some certainty about the road extension. This discussion occurred with no mention or intention of a “Park and Ride” feature which apparently has been added since these dedications.

Puyallup Land is not interested in allowing a Park and Ride on their property. We have developed plans for our land. We have begun permitting one of our planned buildings on the parcels you have designated for study. Development of this parcel is integral to our business success.

Page 1 of 2

RECEIVED
JUN 17 2003
TUMWATER DESIGN

B05-001

In addition, the city of Puyallup supports the Park as an urban growth area and relies on its development for job growth and economic development. Removal of this parcel for a parking lot hardly seems justified in light of this.

B05-001

I respectfully request the withdrawal of consideration by the State for a Park and Ride lot on our property. We oppose such a use and will not allow further study of this use on our property.

Sincerely,

Wayne E. Reisenauer
Wayne E. Reisenauer
Managing Director
Northwest Building LLC

Enclosures

Cc: Mr. Tom Utterback, City of Puyallup (w/enc.)
Ken Weiner, Esquire (w/enc.)

Page 2 of 2

SR 167 Extension Open House Oral Comments, 3/18/03

1 BE IT REMEMBERED that on Tuesday, March 18,
2 2003, at the Fife High School, 5616 20th Street East,
3 Fife, Washington, commencing at 6:00 p.m., before LESLIE
4 J. THOMPSON, CCR, Notary Public in and for the State of
5 Washington, the following proceedings were had, to wit:

6 <<<< >>>>

7 ORAL COMMENTS

8 BILL NEWCOMER: I'm Bill Newcomer, and I'm one
9 of the two owners of Puyallup Mini Storage. I'm the
10 managing partner of a limited liability company which owns
11 Puyallup Mini Storage.

12 And after looking at the options, none of them will
13 work, the low Diamond, the medium diamond, or the Urban.
14 They take away the access to the mini storage. We bought
15 it simply because of the access and the drive-by traffic.
16 The way they're routed on every single one of them is
17 confusing, and we will lose customers.

18 Mini storages have 8 to 10 percent vacate, people
19 that move out every single month. It's a transient-type
20 business. With that amount of people moving out, and the
21 access being changed the way that it is being proposed,
22 we'll be lucky to have half that many move in. So within
23 a couple of years our business will be out of business.
24 We'll be out of business.

25 Besides that, we're routing customers to outlying

2

Dixie Cattell & Associates (360) 352-2506

C01-001

RESPONSE C01-001

Several options were studied with various levels of impact to the Mini-storage property. With the replacement of the Puyallup River Bridge steel structure, access to this property will need to be modified because of changes involving the North Meridian roadway profile. A relocated access will be provided and the storage property will not be land-locked. We will continue to communicate with you regarding any access issues for the property.

RESPONSE C02-001

If it is necessary to acquire your property for the SR 167 Extension project, then the property purchase will occur in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970. Currently, WSDOT is using a prioritization process for determining which properties to purchase for the SR 167 Extension project because we do not have enough funding at this time to buy all of the property needed for the project. We are concentrating most of our property acquisition in and around those areas that will need to be constructed first according to our staging strategy for the project. We are currently buying undeveloped and non-businesses properties from willing sellers following our prioritized list. We will continue to purchase property using this prioritization process until existing allocated funds are exhausted. The Legislature has appropriated funding for this project through June 2009. When the Record of Decision (ROD) for the Final EIS is approved by FHWA (currently scheduled for early 2007), the acquisition process should remain the same for all practical purposes, however, WSDOT will then have the authority to condemn property under eminent domain law.

RESPONSE C03-001

Since the DEIS was distributed, maintenance measures including yard care and repair of broken or vandalized items have been implemented on all properties purchased in the corridor to prevent them from deteriorating and becoming "blights" in the neighborhoods until they are demolished for construction.

SR 167 Extension Open House Oral Comments, 3/18/03

1 could navigate around there. It just would not work, just
2 wouldn't work.

3 KERRY HANCHAI: We're Sirisak and Kerry Hanchai.
4 And we're just outside the buy-out for the relocation for
5 this new project. The property that we own borders on the
6 side of Hylebos Creek, and they will be purchasing all
7 land from the other side, which will run the freeway next
8 to our house.

9 My son is asthmatic, and we cannot have the pollution
10 of the freeway right next to our house. We must be bought
11 out for health relocation or health reasons. It won't
12 work.

13 Or else scrap the whole damn thing.

14 LARRY PEUGH: My name is Larry Peugh, P-e-u-g-h.
15 I live at 6305 12th Street East. I'm in the direct path
16 of the current EDIS statement, I guess is how you say it.

17 I have a concern. I've been coming to these meetings
18 for 12 years, and it seems like all we see is more
19 pictures, and nothing gets done. However, in the last six
20 months the state has purchased two pieces of property
21 adjoining mine, and my major concern is that they don't
22 plant or do anything but board them up, which makes it a
23 blight in the neighborhood.

24 And I want to state that that seems typical of the
25 way DOT does things in this state. So I'm very unhappy

C02-001

C03-001

4

Dixie Cattell & Associates (360) 352-2506

1 with what's going on, with the current system and the way
2 they operate. I would not even -- I didn't vote for the
3 last gas tax increase because I don't like the way DOT
4 does things, and it doesn't appear like it's getting any
5 better.

6 That's my statement.

7 DELL HOWELL: From what I can find out is my
8 name is in the book for the buy-out. I've got three lots
9 and two lots that are on the border of the Hylebos Creek
10 in that book. But my house is on Lot 3, on Parcel 3. So
11 my question is are they going to buy my house, or are they
12 just going to try to buy those two lots that are on the
13 creek.

14 TRISTA HOWELL: We're not going to sell the
15 house or the lots without --

16 DELL HOWELL: Yeah. I mean, because it's all
17 tied into the --

18 TRISTA HOWELL: It's all one piece.

19 DELL HOWELL: It's all mortgaged, so it's all
20 one together in the mortgage. I don't think the bank
21 would even let me sell two lots if I wanted to. It's tied
22 into the house. So yeah, I mean, that's --

23 TRISTA HOWELL: That's it.

24 DELL HOWELL: If they're going to buy part of
25 it, they need to buy all of it and include the house and

5

Dixie Cattell & Associates (360) 352-2506

RESPONSE C04-001

WSDOT will consider purchasing all adjoining properties under one ownership.

C04-001

1 all.

2 ANNALEE OGLE: My name is Annalee Ogle. I live
3 at less than a quarter mile away from where the freeway is
4 going to go off of, let's see, it's -- this is the first
5 one that's determined between when where 167 stops now and
6 Freeman. I live between there.

7 The freeway is going to end up being less than a
8 quarter mile away from my home. And I was wondering, I
9 need to make a statement as to the noise, and that's going
10 to be affected -- affecting my house. The property value
11 of my home after the freeway is in I'm sure is probably
12 going to go down because -- my serenity.

13 What else? And I want to make sure that the
14 pollution from the roadway does not affect my home or
15 flooding, my backyard or my home. It gets pretty swampy
16 there right now without any more affect from roadway
17 surface coming in there. That's about it.

18 Oh, and the options, the Valley Avenue option for --
19 it was either you can use Freeman or Valley, and the
20 Valley option was the best one that will affect the least
21 amount of people's homes, and it won't affect the low
22 income housing off of Valley Avenue. That's it.

23 YOSHIKO TANABE: My name is Yoshiko Tanabe, and
24 I own some property on -- that 7404 20th Street East
25 Tacoma.

6

Dixie Cattell & Associates (360) 352-2506

RESPONSE C05-001

The project will incorporate approximately 73 acres of riparian habitat surrounding Wapato Creek in the vicinity of Freeman Road, which will help address flooding in this area. A noise analysis was done for this area, also, and impacts to your home from noise are not expected because the future level would not exceed the federal noise abatement criteria (NAC). For more information, see section 3.6.6 Noise of the FEIS.

RESPONSE C05-002

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

C05-001

C05-002

1 And we have sent a letter -- right?-- explaining our
2 situation. But we just wanted to express our concerns,
3 because the project is so far in to the future, and we're
4 really -- we might not make it. And it's very hard with
5 the taxes and the LID that's coming up, it's very hard for
6 us to pay for everything.

7 And oh, what else was I going to say. I realize that
8 this is something that you have no control over, but we
9 would certainly appreciate it if you would consider put --
10 you know, purchasing our properties as soon as possible to
11 alleviate some of our financial problems. And because of
12 this project, it has kept the sale of our property in
13 limbo for over three years, and you know, we really need
14 to have a decision on to, you know, the final freeway
15 construction, because nobody wants to buy.

16 And so that's what we're -- that's the predicament
17 we're in. And we don't have many years left.

18 Do you want to say something?

19 FUMIYE TANABE: My name is Fumiye Tanabe. I
20 live at 20th Street. I, the farm that we have is I own
21 the frontage, and then she has the ten acres out in the
22 back, and my son has the other ten acres, so we are all
23 one.

24 And we cannot sell the property, but -- and we'd like
25 very much to be able to sell or -- because it is a farm.

7

Dixie Cattell & Associates (360) 352-2506

RESPONSE C06-001

If it is necessary to acquire your property for the SR 167 Extension project, then the property purchase will occur in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970. Currently, WSDOT is using a prioritization process for determining which properties to purchase for the SR 167 Extension project because we do not have enough funding at this time to buy all of the property needed for the project. We are concentrating most of our property acquisition in and around those areas that will need to be constructed first according to our staging strategy for the project. We are currently buying undeveloped and non-businesses properties from willing sellers following our prioritized list. We will continue to purchase property using this prioritization process until existing allocated funds are exhausted. The Legislature has appropriated funding for this project through June 2009. When the Record of Decision (ROD) for the Final EIS is approved by FHWA (currently scheduled for early 2007), the acquisition process should remain the same for all practical purposes, however, WSDOT will then have the authority to condemn property under eminent domain law.

C06-001

1 My son is running the farm this year, but he says he can
2 not farm any more, and it's just a very sad, sorry
3 situation that we are in. I -- and for myself, I would
4 like to move away from the farm that I am on and move into
5 a place where I can -- do not have to do yard work so much
6 every day.

7 And as Rachel says, we have -- property tax is just
8 tremendous. Next year to have to pay the LID, which is
9 another tremendous item. I don't know how long I can keep
10 paying all this, and so I would like to certainly see the
11 farm be purchased by the state if they are going to
12 purchase it. I would like the whole property to be
13 purchased.

14 And that's about all I can say. It is all that she
15 says, and then I thought I would like to add on just the
16 thoughts of mine. That's about all I can say. I hope
17 things all work out.

18 ANNE PERCIVAL: My name is Anne Percival. I
19 prefer the Valley Avenue option for the interchange for
20 the freeway.

21 COLLEEN WISE: That's it? Okay.

22 ANNE PERCIVAL: Because it would impact us in
23 Edgewood a lot less than the other options, and we need to
24 preserve our land in Edgewood. That's why we
25 incorporated.

RESPONSE C07-001

If it is necessary to acquire your property for the SR 167 Extension project, then the property purchase will occur in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970. Currently, WSDOT is using a prioritization process for determining which properties to purchase for the SR 167 Extension project because we do not have enough funding at this time to buy all of the property needed for the project. We are concentrating most of our property acquisition in and around those areas that will need to be constructed first according to our staging strategy for the project. We are currently buying undeveloped and non-businesses properties from willing sellers following our prioritized list. We will continue to purchase property using this prioritization process until existing allocated funds are exhausted. The Legislature has appropriated funding for this project through June 2009. When the Record of Decision for the Final EIS is approved by FHWA (currently scheduled for early 2007), the acquisition process should remain the same for all practical purposes, however, WSDOT will then have the authority to condemn property under eminent domain law.

C07-001

RESPONSE C08-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

C08-001

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COLLEEN WISE: I'm commenting on the Valley Avenue option as being the preferred option since it does not remove or change the boundaries for Edgewood in any way, which the other options cause some difficulties with Edgewood and possibly displacing the citizens that currently live on the edge of Freeman Road and Valley. They have wonderful little communities down there, and there are some businesses, and we don't want to see those lost. That's a revenue issue.

The other option that takes the interchange off of Valley Avenue cuts off Edgewood and changes our boundary lines, and we don't need that kind of problem at this time. It's not appropriate for Edgewood to lose that kind of land area and revenue that we -- since we're already in a budget crunch anyway.

So we would prefer the Valley Avenue option, and we'd appreciate if that could occur. Thank you.

(Proceedings concluded.)

9

Dixie Cattell & Associates (360) 352-2506

RESPONSE C09-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

C09-001



Comments

State Route 167 Extension from Puyallup to State Route 509 (Fife)

AREA: Corner of 54th + Pac Hwy. Interchange. At the Mitzels Rest., there should be a right turn only so traffic from the overpass can go directly north on Pac Hwy.

C10-001

TRANSCRIBED COMMENT C10-001

AREA: Corner of 54th & Pac Hwy Interchange at the Mitzels Rest., there should be a right turn only so traffic from the overpass can go directly north on Pac. Hwy.

RESPONSE C10-001

WSDOT will look at the possibility of adding a right turn lane at this location during final design.



Comments

State Route 167 Extension from Puyallup to State Route 509 (Fife)

Fife Open House

Instead of just looping 20th Ave. E under the new 167-I-5 N connector, Add an entrance ramp to the 167 NB connector from 20th & divert 40% of the 20th traffic coming down from Milton & Edgewood. Use THE relocated 70th (WB) to add a ramp access for 167-I-5 S. connector and divert another 40% of the 20th traffic coming down from Milton & Edgewood.

C11-001

Also, need exit ramps from 167 for 70th/20th traffic, in FIFE - BEFORE CONNECTING TO I-5 OR OTHER WEST.

TRANSCRIBED COMMENT C11-001

Instead of just looping 20th Ave. E under the new SR 167-I-5 N connector, add an entrance ramp to the 167 NB connector from 20th & divert 40% of the 20th traffic coming down from Milton and Edgewood. Use the relocated 70th (WB) to add a ramp access for SR 167-I-5 S. connector and direct another 40% of the 20th traffic coming down from Milton and Edgewood. Also, need exit ramps from 167 for 70th/20th traffic, in Fife - before connecting to I-5 or other west.

RESPONSE C11-001

The possibility of providing local access at the I-5 interchange was examined as part of the alternative and interchange option analysis. Access to I-5 by residents of Milton would remain unchanged (existing 54th Avenue I-5 Interchange) due to limitations with the design of this complex interchange. SR 167 will provide alternative access for some residents in the area at the Valley Avenue Interchange.

3-18-03



Comments

State Route 167 Extension from Puyallup to State Route 509 (Fife)

Fife Open House

PEDESTRIAN AND BICYCLE PLANNING SHOULD FOLLOW 509-99 STYLE - ~~DIVIDED~~ -

SHOULDER RIDING IS NOT ACCEPTABLE

THERE ARE NO SAFE ROUTES FROM SUMNER TO TACOMA. THIS PROJECT SHOULD AFFORD FOR ~~THE~~ CORRECTING THAT

I WILL DO WHAT I CAN TO MAKE SURE THE CITIES ~~HAVE~~ SUBMIT NON-MOTORIZED PLANS WITH ASHTO TERMINOLOGY

CHUCK MORRISON

Or send comments to:

Neal Campbell WSDOT Design Project Engineer

5531 FRANCES AVENUE, TACOMA, WASHINGTON 98422-1422

TRANSCRIBED COMMENT C12-001

Pedestrian and bicycle planning should follow 509-99 style - divided. Shoulder riding is not acceptable. There are no safe routes from Sumner to Tacoma. This project should afford for correcting that. I will do what I can to make sure the cities submit non-motorized plans with ASHTO terminology.

RESPONSE C12-001

A bike lane is proposed on the shoulder of SR 167 from SR 161 (Puyallup/Sumner area) to I-5. A separate path is proposed from 54th Street East to highway 99. We have noted your concerns in the pedestrian and bike section (3.15.6).



Comments

State Route 167 Extension from Puyallup to State Route 509 (Fife)

Fife Open House

Jeff Peterson and I discussed a better route for pedestrians and bicycles trying to cross I-5 from the Interurban trail. They would cross 20th in a cross walk with a signal on demand. A separate non-motorized trail would take them under three overpasses and hook around and rise up to the west side of 70th and cross over on a designated bike/ped lane. This would be a lot safer (and cheaper) than routing bicycles and traffic around two roundabouts.

John A. Felby 2910-91 Ave. E Edgewood, WA 98371

Or send comments to:

TRANSCRIBED COMMENT C13-001

Jeff Peterson and I discussed a better route for pedestrian and bicycles trying to cross I-5 from the interurban trail. They would cross 20th in a cross walk with a signal on demand. A separate non-motorized trail would take them under three overpasses and hook around and rise up to the west side of 70th and cross over on a designated bike/ped lane. This would be a lot safer (and cheaper) than routing bicycles and traffic around two roundabouts.

RESPONSE C13-001

Thank you for your comments. We will consider your recommendations as we proceed with the final design of relocated 20th Street East and 70th Avenue.

C12-001

C13-001

SR 167



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

The website labels the project "Tacoma to Edgewood Freeway Construction". This road will not go to Edgewood or through Edgewood. It will go from 509 to Puyallup.

I prefer the "Valley Avenue Option". Pierce Co. taxpayers spent millions on the Valley Ave. project several years ago. It doesn't make financial sense to re-align Valley Ave. viaduct.

The Freeman Rd. option will deliver trucks & noise to a mobile home park neighborhood on Freeman Rd. This is a bad choice.

From the zoning map it appears Fife has zoned for warehouses & commercial in the valley near the Valley Ave/Freeman Rd area. Edgewood has zoned residential. The road & related impacts need to be contained in the proximity of the Fife warehouse area. The Edgewood neighborhoods should be protected from noise & congestion impacts as much as possible.

Please use the Valley Ave. Option for the Freeman Rd/Valley Ave area of the 167 extension project.

Or send comments to:

Neal Campbell
WSDOT Design Project
Engineer
6639 Capitol Blvd S,
Suite 302
Tumwater, WA 98501

360-570-6602
Fax 360-570-6630

e-mail:
campben@wsdot.wa.gov

Elaine Lewis
10417 13th St Ct E
Edgewood 98372

C14-001

TRANSCRIBED COMMENT C14-001

The website labels the project "Tacoma to Edgewood Freeway Construction." This road will not go to Edgewood or through Edgewood. It will go thru 509 to Puyallup.

I prefer the "Valley Avenue Option." Pierce Co. taxpayers spent millions on the Valley Ave. project several years ago. It doesn't make financial sense to realign Valley Ave. viaduct.

The Freeman Rd. Option will deliver truck and noise to a mobile home park neighborhood on Freeman Road. This is a bad choice.

From the zoning map it appears Fife has zoned for warehouses and commercial in the valley near the Valley Ave/Freeman Rd area. Edgewood has zoned residential. The road and related impacts need to be contained in the proximity of the Fife warehouses area. The Edgewood neighborhoods should be protected from noisier congestion impacts as much as possible. Please use the Valley Ave. Option for the Freeman Rd/Valley Ave. area of the 167 extension project.

RESPONSE C14-001

The project title for the FEIS is "SR 167 Puyallup to SR 509," the website will maintain the title "SR 167 Tacoma to Edgewood" as this is the title associated with our current funding package. The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.



Comments

State Route 167 Extension from Puyallup to State Route 509 (Fife)

Fife Open House

I prefer option 2 Freeman option

Ruth Cole

3308 Freeman

922-7884

C15-001

TRANSCRIBED COMMENT C15-001

I prefer Option 2 Freeman Option.

RESPONSE C15-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.



Comments

State Route 167 Extension from Puyallup to State Route 509 (Fife)

Fife Open House

Comments concerning house at 1414-67th AVE EAST - NEXT TO FISCHLINS -

OWNER WAS HELEN SCHLUMPF, WHO PASSED AWAY (2000). HOUSE IS NOW IN ESTATE OF HELEN SCHLUMPF + RENTED TO A NIECE, EXECUTOR IS JACOB SCHLUMPF (922-6558). WE WOULD LIKE TO SELL SINCE IT IS NOW IN THE ESTATE - WOULD BE CLEAN SALE,

Or send comments to:

Neal Campbell WSDOT Design Project Engineer 6639 Capitol Blvd S, Suite 302 Tumwater, WA 98501

360-570-6602 Fax 360-570-6630

e-mail: campben@wsdot.wa.gov

BUT IN FUTURE THE ESTATE SHOULD BE CLOSED - THEN THERE WOULD 4 OWNERS + 4 HEIRS FROM FIFTH BROTHER - WOULD THEN POSSIBLY BE 8 OWNERS.

William L. Schlumpf 3414-70th AVE E (FIFE) 922-8737

C16-001

TRANSCRIBED COMMENT C16-001

Comments concerning house at 1414-67th Ave E next to Fischlins. Owner was Helen Schlumpf, who passed away (2000). House is now in estate of Helen Schlumpf and rented to a niece. Executor is Jacob Schlumpf (922-6558). We would like to sell since it is now in the estate - would be clean sale. But in future the estate should be closed - then there would 4 owners and 4 heirs from the fifth brother - would then possibly be 8 owners.

RESPONSE C16-001

WSDOT will continue to pursue funding for right-of-way purchases so that properties such as the one you describe can be purchased.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

PROPOSED PLAN BLOCKS THE
INTERURBAN TRAIL ACCESS TO 70TH
AVE. WE NEED A DIRECT LINK
TO AVOID BICYCLES IN THE ROUND-ABOUTS.
WSDOT ENGINEER PETERSON SUGGESTED
A BICYCLE/PEDESTRIAN (ONLY) LINK BETWEEN
20TH ST AND 70TH AVE IN ORDER TO AVOID
ROUNDABOUTS. THIS LOOKS LIKE A
GOOD ALTERNATIVE.

C17-001

MILTON LOFLIN
COUNCIL MEMBER
CITY OF MILTON
1000 LAUREL ST
MILTON, WA 98354
MILTELOF@MSN.COM

TRANSCRIBED COMMENT C17-001

Proposed plan blocks interurban trail access to 70th Ave. We need a direct link to avoid bicycles in the roundabouts. WSDOT engineer suggested a bicycle/pedestrian (only) link between 20th St and 70th Ave in order to avoid roundabouts. This looks like a good alternative.

RESPONSE C17-001

The project will accommodate the Interurban Trail and re-establish the public access connection to the trail in the vicinity of 70th Avenue East and I-5. The relocated portion of the trail will be ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife's bicycle and pedestrian facilities.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

LOOKS GOOD — TIME TO GET STARTED.
FIFE & VALLEY HAS NEEDED TO GET
FREED FROM THE TRUCKS COMING
OUT OF PORT FOR YEARS!! LETS
DO IT!

C18-001

TRANSCRIBED COMMENT C18-001

Looks good—time to get started. Fife & Valley has needed to get freed from the trucks coming out of the Port for years!! Let's do it!

RESPONSE C18-001

Thank you for your support.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

I just want to make sure
it is known that there is an
arsenic pile in the flood plain
and Milton wells are in the same
area. Fife Way No. of 20th

C19-001

TRANSCRIBED COMMENT C19-001

I just want to make sure it is known that there is an arsenic pile in the flood plain and Milton wells are in the same area. Fife Way No. of 20th.

RESPONSE C19-001

The contamination of soil and groundwater associated with the B&L Woodwaste site has been investigated and the EIS has been revised (see section 3.8 Hazardous Materials and section 3.2 Hylebos Relocation and Riparian Restoration Proposal) to consider this information.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

What about the noise pollution/air
pollution issue?

Have there been any studies to determine
the potential effects to the environment in
this regard?

If so, what is being done to reduce the
impact on the area?

* This is a major issue that will have a
direct impact on quality of life for the
people in this area (Milton/Edgewood/Fife).

Please address this before continuing on
with this project!

Thank you

Heather Tague
Milton Resident
253-922-5852

Or send comments to:

C20-001

TRANSCRIBED COMMENT C20-001

What about the noise pollution/air pollution issue? Have there been any studies to determine the potential effects to the environment in this regard? If so, what is being done to reduce the impact on the area? This is a major issue that will have a direct impact on quality of life for the people in this area (Milton, Edgewood, Fife). Please address this before continuing on with this project!

RESPONSE C20-001

Air and noise pollution have been studied as part of the EIS process. Please see revised sections 3.5 Air Quality and 3.6 Noise which describe the studies performed to determine noise and air pollution from this project.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

*It is very hard to be in Limbo while
The decisions are made - we don't
know whether we will be living next to
a freeway construction zone or ~~not~~ be bought out
Right now it makes it impossible to
make decisions about moving, improving
our home, etc. Please make a decision!*

C21-001

TRANSCRIBED COMMENT C21-001

It is very hard to be in limbo while the decisions are made – we don't know whether we will be living next to a freeway construction zone or be bought out. Right now it makes it impossible to make decisions about moving, improving our home, etc. Please make a decision!

RESPONSE C21-001

If it is necessary to acquire your property for the SR 167 Extension project, then the property purchase will occur in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970. Currently, WSDOT is using a prioritization process for determining which properties to purchase for the SR 167 Extension project because we do not have enough funding at this time to buy all of the property needed for the project. We are concentrating most of our property acquisition in and around those areas that will need to be constructed first according to our staging strategy for the project. We are currently buying undeveloped and non-businesses properties from willing sellers following our prioritized list. We will continue to purchase property using this prioritization process until existing allocated funds are exhausted. The Legislature has appropriated funding for this project through June 2009. When the Record of Decision (ROD) for the Final EIS is approved by FHWA (currently scheduled for early 2007), the acquisition process should remain the same for all practical purposes, however, WSDOT will then have the authority to condemn property under eminent domain law.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

I work at Puyallup Mini-Storage. None of the three options will work.

I rent trucks and storage units.

Currently I tell customers to make a right into our driveway after the bridge.

Most of the time people are on cell phones. Now I would have to give such complicated directions they would just go elsewhere.

We like to make it simple.

I won't get commissions and will be out of a job.

Alice Zimmerman
1401 N. Meridian
Puyallup 98371

C22-001

TRANSCRIBED COMMENT C22-001

I work at Puyallup Mini-Storage. None of the three options will work. I rent trucks and storage units. Currently, I tell customers to make a right into our driveway after the bridge. Most of the time people are on cell phones. Now I would have to give such complicated directions they would just go elsewhere. We like to make it simple. I won't get commissions and will be out of a job.

RESPONSE C22-001

Several options were studied with various levels of impact to the Mini-storage property. With the replacement of the Puyallup River Bridge steel structure, access to the property will need to be modified because of changes involving the North Meridian roadway profile. A relocated access will be provided and the storage property will not be land-locked. The Mini-storage business would be able to continue operation similar to the way it has in the past. We will continue to communicate with the property owner regarding any access issues for the property.

Or send comments to:

Neal Campbell
WSDOT Design Project
Engineer
6639 Capitol Blvd S,
Suite 302
Tumwater, WA 98501

360-570-6602
Fax 360-570-6630

By Pierce County Drainage District Number 21

Thank you for a copy of the EIS. It greatly aided us in making our comments.

It appears that you have looked in detail to the impacts of storm water and the drainage of the area. Our lifetime familiarity with the actual conditions and systems gives us some concerns that may not appear in your modeling.

We feel that the two drainage systems in our district, Wapato Creek, and the Firwood ditch, (you refer to it as the old Ox bow ditch) may not have the capacity under heavy and continuous rains to handle the runoff from your project without additional storm water facilities and down stream enhancements. We suggest you do complete downstream analysis of both systems in a continuous rain event and see what additional impact your system adds.

There are some culverts in Wapato creek that need replacement as well as a culvert bottleneck on the west side of 70th in the Firwood Ditch.


From a perspective of storm water run off and environmental impacts **we strongly urge you to utilize the Freeman road option on the Valley Ave. Interchange.** The benefits of the culvert replacements and narrow bridge removals will improve drainage.

We are concerned about the cumulative effect of SR 167 combined with the Meridian widening. Our district handles a great deal of water from Edgewood and the situation will only get worse with time and the compounding of these two projects. Pierce County in their SFM studies of the area proposed building a big retention pond adjacent to Wapato creek between Freeman and Valley. This was without factoring in SR 167 and Meridian. Please consider doing this on the land you will have on the west side of Freeman between the exit and the creek. We also suggest you look at obtaining the land on the south side of Wapato creek (West of Freeman) and adding additional retention pond there.. This could serve as local wetland and wildlife mitigation as well.

We would appreciate it if you would add us to your notification and material send out list.

Thank you for your efforts on this project and we all hope to see it come to fruition.

Sincerely,


John A. Dekeyser Senior Commissioner
Pierce County Drainage District # 21
7901 48th street East
Fife, WA 98424
253-922-9961

C23-001

C23-002

C23-003

RESPONSE C23-001

The project has conducted stormwater, drainage and flood plain analyses including hydrologic modeling of the Hylebos sub-basin (MGS et al. 2004). This comprehensive study analyzed the project's effects on hydrology, channel hydraulics, and geomorphology to assure that we address the impacts of the project on the watershed. Water resources and wetlands impacts were analyzed per sub-basin, and sections 3.2 and 3.3 of the FEIS were updated to include this information. We have developed a Conceptual Mitigation Plan that describes compensatory mitigation measures, and includes preliminary monitoring information. In addition to the RRP for Hylebos Creek and Surprise Lake Drain in the SR 167/I-5 interchange area, we will also include Riparian Restoration for Wapato Creek as stormwater flow control. The project will incorporate approximately 73 acres of riparian habitat surrounding Wapato Creek in the vicinity of Freeman Road. A number of culverts have been also identified for removal or replacement in the Wapato Basin and are described in subsections 3.2.7 & 3.2.9 Water Resources of the FEIS.

RESPONSE C23-002

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

RESPONSE C23-003

The project will incorporate approximately 73 acres of riparian habitat surrounding Wapato Creek in the vicinity of Freeman Road for stormwater flow control. The Riparian Restoration Proposal (RRP) will help address flooding in this area. Although additional water quality and quantity treatment will need to be developed at this interchange location, we currently believe additional treatment facilities can be located within the SR 167 footprint. Please see section 3.2 Water Resources for the revised information concerning Wapato Creek.



Comments

THE SOONER THE BETTER! TOO MANY TRAFFIC PROBLEMS. THERE'S NOT ENOUGH FARM LAND LEFT ANYWAY.

C24-001

State Route 167 Extension from Puyallup to State Route 509 (Fife)



Comments

I will start by saying that of all the options of the three that are in my area, the Valley Ave. Option I feel is the one if this must go through is the one that will impact the fewest people and the wildlife in the area with the Wapato Creek. The other two being the Freeman Road and the Valley Ave. Realignment are taking a lot of homes of many people not wanting this. The Valley Ave. Realignment of course is the one I most do not like as it would go directly through my home! I have lived there only since 1984 when it was the lord that after a divorce of 10 1/2 years, he gave me my two children and the home at 4022 84th Ave Ct E to be our home and to raise my children and now my grand children, we have the creek in our back yard and the birds, ducks and so much more. This is not something I want to have taken from me and my children or any of the other people in that area.

C25-001

State Route 167 Extension from Puyallup to State Route 509 (Fife) Open House

Or send comments to: Neal Campbell WSDOT Design Project Engineer 6639 Capitol Blvd S, Suite 302 Tumwater, WA 98501 360-570-6602 Fax 360-570-6630 e-mail: campben@wsdot.wa.gov

TRANSCRIBED COMMENT C24-001

The sooner the better! Too may traffic problems. There's not enough farmland left anyway.

RESPONSE C24-001

Thank you for your support.

TRANSCRIBED COMMENT C25-001

I will start by saying that of all of the options of the three that are in my area, the Valley Avenue Option I feel is the one if this must go through is the one that will impact the fewest people and the wildlife in the area with the Wapato Creek. The other two being the Freeman Road and the Valley Ave. Realignment are taking a lot of homes of many people not wanting this. The Valley Ave. Realignment of course is the one I most do not like, as it would go directly through my home! I have lived there only since 1984 when it was the lord that after a divorce of 10 1/2 years, he gave me my two children and the home at 4022 84th Ave Ct E to be our home and to raise my children and now my grand children. We have the creek in our backyard and the birds, ducks and so much more, this is not something I want to have taken from me and my children or any of the other people in that area.

RESPONSE C25-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

Mini-storage survive + flourish by 'drive-by' business.

Not one of the three options sited for Puyallup Mini-storage meet this criteria.

All options have access only by a road that dead-ends at the facility.

There is no drive-by business, hence relegating us to a business which will become defunct in short order.

Del Pemberton
401 North Mevedax
Puyallup, Washington 98371

Or send comments to:

Neal Campbell
WSDOT Design Project

C26-001

TRANSCRIBED COMMENT C26-001

Mini-storages survive and flourish by 'drive-by' business. Not one of the three options sited for Puyallup Mini-Storage meet this criteria. All options have access only by a road that dead-ends at the facility. There is no drive-by business hence relegating us to a business which will become defunct in short order.

RESPONSE C26-001

Several options were studied with various levels of impact to the Mini-storage property. With the replacement of the Puyallup River Bridge steel structure, access to the property will need to be modified because of changes involving the North Meridian roadway profile. A relocated access will be provided and the storage property will not be land-locked. The Mini-storage business would be able to continue operation similar to the way it has in the past. We will continue to communicate with the property owner regarding any access issues for the property.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

I LOOK FORWARD TO A CONNECTION TO FINALLY BE MADE! HOPEFULLY WE WILL "GET REAL" AND STEP UP & FUND IT.

THANK YOU FOR YOUR EFFORTS.

C27-001

TRANSCRIBED COMMENT C27-001

I look forward to a connection to finally be made! Hopefully we will "get real" and step up and FUND IT. Thank you for your efforts.

RESPONSE C27-001

Thank you for your support.



State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

Comments

3/18/2003

THE ROUTE PRESENTLY BEING SHOWN IS
TOO EXPENSIVE AND IS NOT THE BEST ROUTE.
WHERE IS THE BEST ROUTE? ALONG THE
RIVER AND CONNECTING TO PORT OF TACOMA ROAD.

I'VE BEEN TOLD THAT THE EPA HAS NIXED
THAT ROUTE, MAYBE IT'S TIME TO ELIMINATE
THE EPA.

THE RIVER ROUTE COULD PROBABLY BE
FUNDED, BUT THE PRESENT ROUTE WILL
NEVER BE FUNDED, QUIT WASTING TIME
AND MONEY TRYING TO CONVINCE US THAT THE
PRESENT ROUTE CAN BE JUSTIFIED.

ROBERT V NELSON
P.O. Box 1827
MILTON, WA 98354

C28-001

TRANSCRIBED COMMENT C28-001

The route presently being shown is too expensive and is not the best route. Where is the best route? Along the river and connecting to Port of Tacoma Road. I've been told that the EPA has nixed that route, maybe it's time to eliminate the EPA. The river route could probably be funded, but the present route will never be funded. Quit wasting time and money trying to convince us that the present route can be justified.

RESPONSE C28-001

The preferred corridor alternative was determined with regulatory agency and tribal support in 1999. Alternative 2 from the Tier I EIS was the environmentally preferred corridor with the least amount of impact to adjacent properties (please see the SR 167 Tier I FEIS and Record of Decision). As the environmentally preferred alternative, it will meet the objectives of the regulatory agencies to minimize impacts to the environment and consequently will be easier to construct and obtain funding.



State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

Comments

You have spent \$7,000,000 and
all you have is pictures of
dreams and still you are studying!

When will you have more than pictures?

We don't have anything to show except
we're down \$7,000,000 for just pictures.

C29-001

Or send comments to:

Neal Campbell
WSDOT Design Project
Engineer
6639 Capitol Blvd S,
Suite 302
Tumwater, WA 98501

360-570-6602
Fax 360-570-6630

e-mail:
campben@wsdot.wa.gov

Willem Worde

TRANSCRIBED COMMENT C29-001

You have spent \$7,000,000 and all you have is pictures of dreams and still you are studying! When will you have more than pictures? We don't have anything to show except we're down \$7,000,000 for just pictures.

RESPONSE C29-001

This FEIS represents a significant milestone in the process to reach a formal decision about proceeding with final design and construction of the project. We anticipate that the FEIS process will be complete in the fall of 2006.

Subject: SR167 extension versus the Interurban
From: "MILT E LOFLIN" <MILTELOF@msn.com>
Date: Wed, 19 Mar 2003 21:28:33 -0800
To: <mderosia@cityofmilton.net>
CC: <johnanddottieselby@att.net>, <suave51@juno.com>, <DRKerlin@aol.com>, <emailbob@att.net>, <kasay@cityofmilton.net>, <lensand@mindspring.com>

Marlo,

The WSDOT meeting last night to present the tier II EIS for the SR 167 extension had good news and bad. Unfortunately, more bad than good.

Some of the good news was that there was mention of a bicycle and pedestrian element in the design. The first EIS had no mention at all. That means they are thinking, a little, about non-motorized transportation.

The other bit of good news is that on the north side of I-5 they planned a separate bicycle/pedestrian trail for a few thousand feet. It appeared to follow the Hylebos creek. The eastern end appeared to link to 70th Avenue as an I-5 crossing point. This will be a completely new trail as far as I know. I am not aware of any previous plan for such a trail, but new or not, it is good news.

On the south side of I-5 there was a double dose of bad news. Affecting the interurban trail adversely was their plans to re-channel Hylebos creek to the east, re-channel the Surprise Lake output stream to the east, and put a U-loop in 20th Street prior to 70th Avenue. These changes combined to block the western end of the interurban trail from reaching 70th. To get to 70th under their plan, one would have to go onto 20th, loop under the morass of ramps, circle through the western round-about, travel to the eastern round-about, circle it and then proceed on 70th. I cannot imagine a family, on a bicycle outing with their kids, being comfortable mixing with this traffic. This plan effectively kills reasonable family use of that portion of the interurban as a link to possible southbound trails or to cross I-5.

And speaking of mixing with traffic, the other bad news was that on SR 167 south of I-5, they were planning to accommodate bicycle traffic by allowing bikes to ride on the shoulder of the highway, alongside 60 MPH traffic. Frankly, that is absurd as a plan to accommodate non-motorized traffic.

The extension of SR 167, because it crosses right over the western end of the interurban, is an opportunity, a huge, once in a lifetime opportunity to provide reasonable connectivity to the trail. I had hoped that Fife, Pierce County, and WSDOT would share that view and work together to provide trail accommodations for the interurban at least from Valley Avenue, and better, to the Puyallup River Trail, the planned major trail link coming out of Tacoma. So far, that combined effort has not materialized.

I know you have occasional contact with WSDOT, ENTRANCO, Fife, and Pierce County. Feel free to make my concerns known to them.

Thank you for your continued efforts to develop the interurban trail!!!!

RESPONSE C30-001

The project will accommodate the Interurban Trail and retain the public access connection to the trail in the vicinity of 70th Avenue East and I-5. The relocated portion of the trail will be ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife's bicycle and pedestrian facilities. We have noted your concerns about the proposed bike lane on the shoulder of SR 167 in the pedestrian and bike section (3.15.6) of the FEIS.

C30-001

SR 167 Extension Open House Oral Comments, 3/20/03

1 BE IT REMEMBERED that on Thursday, March 20,
2 2003, at the Puyallup High School, 105 7th Street SW,
3 Puyallup, Washington, commencing at 6:00 p.m., before
4 LESLIE J. THOMPSON, CCR, Notary Public in and for the
5 State of Washington, the following proceedings were had,
6 to wit:

7 <<<< >>>>

8 ORAL COMMENTS

9 DOUG WORDEN: I'd like to put in one for our
10 neighbor, whose English is not good.

11 Young owns the corner store on Valley and Freeman,
12 and in using the -- if the Valley Avenue realignment
13 option goes through, it doesn't touch his property, so his
14 property would not be bought. However, it would make a
15 cul-de-sac close to his store, and 90-some percent of his
16 business comes down Valley, which would stop.

17 He is open about 92 hours a week now to make a
18 living, and he could no longer make a living in his store
19 if this option is gone through -- goes through.

20 We've been told that his property could not be bought
21 in this case, and so he would have to go to court in order
22 to get reimbursement for his lost business. So he is
23 definitely against it.

24 PHILLIP JESSE: I'm Phillip Jesse, Citizens
25 Advisory Committee member.

2

C31-001

Dixie Cattell & Associates (360) 352-2506

RESPONSE C31-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

1 I received a phone call about two weeks ago from a
2 lady whose name I either didn't write down or I don't have
3 with me who was concerned about the Valley Avenue
4 interchange, that intersection or that portion. And she
5 mentioned herself and other people near her that will be
6 greatly affected by it.

7 And of the three sort of options, there's not
8 building it; then there's the, it's called the Valley
9 Avenue option, and the Freeman Road option. There's three
10 options. Let me just go verify that. There's the no
11 build, the Valley Avenue option, and the Freeman Road
12 option. And of the three, Freeman Road is the worst
13 option for them. Freeman Road is basically vacated in
14 that area, and there's a number of small businesses and
15 homes right there that, with old people and so on and so
16 forth that would have difficulty.

17 So that's what I wanted to report on.

18 PADDY WORTHINGTON: I'm curious about why a
19 noise wall was not studied by our house that is going to
20 be affected by all this.

21 MS. BENNETT: You'll need to give your address
22 probably.

23 MR. WORTHINGTON: We're right on Milwaukie
24 Avenue right next to the freeway, 6014 Milwaukie Avenue
25 East.

C32-001

RESPONSE C32-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

C33-001

RESPONSE C33-001

The noise study was updated in February 2004. An additional noise wall was evaluated along the south shoulder of SR 167 between Milwaukee Avenue East and SR 167. This wall was found to be feasible and reasonable and will be included in the project. For more information, see section 3.6.6 of the FEIS.

1 Anything to add?

2 MRS. WORTHINGTON: No.

3 MR. WORTHINGTON: And that bridge makes big
4 bumps when the trucks go over it, and it really, like,
5 shakes our house.

6 MS. BENNETT: Which bridge?

7 MR. WORTHINGTON: The overpass, the 167 overpass
8 that's already there, the existing one.

9 MS. BENNETT: Is that the one at Milwaukie?

10 MR. WORTHINGTON: Milwaukie, right.

11 Shouldn't there be something about compression brake
12 signs up there on the freeway with all the residential
13 area around Milwaukie and 167.

14 I think that's good.

15 JOHN POWERS: John F. Powers. My address is
16 8411 29th Street Court East, Edgewood, 98371.

17 My statement is I would prefer, I believe, the
18 diamond low version of the interchange at the northern
19 edge of Puyallup with 161. And I would prefer the Valley
20 Avenue option of the interchange at the intersection of
21 Freeman and Valley.

22 I would appreciate it if there is some kind of sound
23 mitigation done along the side of the freeway. Even if
24 you just plant some shrubs, at least think you're doing
25 something. And it also helps to take care of the runoff,

4

Dixie Cattell & Associates (360) 352-2506

RESPONSE C33-002

C33-002

We will consult with WSDOT's Bridge Preservation Program as we begin the widening design of the existing bridge. We will incorporate any bridge improvement measures recommended by the Bridge Preservation Office.

RESPONSE C34-001

C34-001

The Urban Interchange and the Valley Avenue Interchange Options will be carried forward into design. These options have less overall environmental impacts than the other options. Please see section 2.6.5 for more information about the preferred SR 161/SR 167 Interchange Option.

RESPONSE C34-002

C34-002

A noise wall in the vicinity of the Valley Avenue Interchange was analyzed, and it did not meet current noise mitigation criteria. If vegetation is used for noise mitigation, it needs to be at least 100 feet wide and fairly dense to provide any audible noise reduction. We will incorporate plantings in accordance with WSDOT's Roadside Classification Plan.

1 which you're going to have to take care of.

2 Something that I have heard from others in our city
3 is the need to obtain the right-of-way immediately for
4 this project because of the rapidly escalating cost of
5 land and warehouses primarily that -- and other businesses
6 that will be developed in the area where this is to be.
7 That would -- that would tend to stem the increase in
8 costs that -- the inflationary cost of the project. And I
9 think that is very important to the -- not just to me in
10 particular, but all the residents of the state of
11 Washington.

12 I would like to suggest that DOT consider not doing
13 some smaller projects in order to fund this. If we can
14 only fund \$200 million dollars a year this would be a
15 nine-year project, so where do we get \$200 million
16 dollars? We get it from ten \$20-million-dollar projects.
17 I think that it's worth it, and I think that the state
18 needs to realize that this is an economic, a tremendous
19 economic benefit to the state, not just to the people
20 around here, and that it will pay itself back much faster
21 if we complete it as early as possible.

22 (Proceedings concluded.)

23
24
25
5

Dixie Cattell & Associates (360) 352-2506

RESPONSE C34-003

If it is necessary to acquire your property for the SR 167 Extension project, then the property purchase will occur in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970. Currently, WSDOT is using a prioritization process for determining which properties to purchase for the SR 167 Extension project because we do not have enough funding at this time to buy all of the property needed for the project. We are concentrating most of our property acquisition in and around those areas that will need to be constructed first according to our staging strategy for the project. We are currently buying undeveloped and non-businesses properties from willing sellers following our prioritized list. We will continue to purchase property using this prioritization process until existing allocated funds are exhausted. The Legislature has appropriated funding for this project through June 2009. When the Record of Decision (ROD) for the Final EIS is approved by FHWA (currently scheduled for early 2007), the acquisition process should remain the same for all practical purposes, however, WSDOT will then have the authority to condemn property under eminent domain law.

C34-003

C34-004

RESPONSE C34-004

We have a commitment to deliver WSDOT's entire program and can not delete several other funded projects in favor of another project.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509

Puyallup
Open House

*Intersection of Milwaukee Ave ³⁴ Frontage road
running East ⁴⁴ West toward Meridian Ave.
how come you overlooked the Noise Measurement
⁴⁴ Modeling Locations Fig 3.6-1*

*CURTIS ROBINSON 6020 MILWAUKEE AVE
Paddy Worthington 6014 Milwaukee Ave E.
Bill MacArthur 6008 Milwaukee Ave E.*

C35-001

TRANSCRIBED COMMENT C35-001

Intersection of Milwaukee Ave. and Frontage Road running east and west toward Meridian Ave. How come you overlooked the noise measurement and modeling locations? Fig. 3.6-1

RESPONSE C35-001

The noise study was updated in February 2004 and an additional wall was evaluated along the south shoulder of SR 167 between Milwaukee Avenue East and SR 167. This wall was found to be feasible and reasonable and will be included as part of this project. Please see section 3.6.5 of the FEIS.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509

Puyallup
Open House

*Why was there no Noise Wall
Modeling done between Meridian
and SR 512*

*Heidi Worthington
Paddy Worthington*

C36-001

TRANSCRIBED COMMENT C36-001

Why was there no noise wall modeling done between Meridian and SR 512?

RESPONSE C36-001

The noise study was updated in February 2004 and an additional wall was evaluated along the south shoulder of SR 167 between Milwaukee Avenue East and SR 167. This wall was found to be feasible and reasonable and will be included as part of this project. Please see section 3.6.5 of the FEIS.

The preferred interchange is the Fife option as the other ones impact the surrounding area extensively,
Our first preference is that the freeway not go down the center of the valley at all.
Choosing an area already impacted by traffic would be preferable.

Doug and Sharon Worden
8319 Valley Ave. E
Edgewood, WA 98371

C37-001

RESPONSE C37-001

The Tier I FEIS established the preferred corridor alternative. The preferred corridor alternative was selected with agency and tribal support in 1999. Please see the SR 167 Tier I FEIS and Record of Decision.



Comments

State Route 167
Extension
from
Puyallup to
State Route 509

SR 161 Interchange - Urban Option
Valley Avenue Interchange / Valley Ave. Option
Valley Ave Interchange
I-5 Interchange okay -
54th Ave Interchange - Half Diamond
SR-509 Connection - Proposed
Like Roundabouts

C38-001

TRANSCRIBED COMMENT C38-001

SR 161 Interchange - Urban Option
Valley Avenue Interchange - Valley Ave. Option
I-5 Interchange okay
54th Ave. Interchange - Half Diamond
SR 509 Connection - Proposed
Like roundabouts

RESPONSE C38-001

Thank you for your comments. The preferred options that will be carried forward are the Urban Option, the Valley Avenue Option, and the Half Diamond Option, as described in section 2.6 of the FEIS.



State Route 167
Extension
from
Puyallup to
State Route 509

Puyallup
Open House

Comments

I like the relocated Hylebos Creek option. We need to support smart proposals like this that spend money to enhance both transportation and habitat corridors.

C39-001

Look closely at enhancing all ways of connecting green belts and area trails for pedestrian and bicycle commute options.

C39-002

Thanks!
Terex Van Assche
31108 11th Place SW
Federal Way, WA
98023
Friends of Hylebos Creek

TRANSCRIBED COMMENT C39-001

I like the relocated Hylebos Creek option. We need to support smart proposals like this that spend money to enhance both transportation and habitat corridors.

RESPONSE C39-001

Thank you for your support.

TRANSCRIBED COMMENT C39-002

Look closely at enhancing all ways of connecting greenbelts and area trails for pedestrian and bicycle commute options.

RESPONSE C39-002

We will consider your recommendations as we proceed with design of the project. The proposed Riparian Restoration Proposal would connect with many existing open spaces within the project area. Also, see response C 30-001 above.



State Route 167
Extension
from
Puyallup to
State Route 509

Puyallup
Open House

Comments

Good job on the riparian plan. This should be beneficial to everyone.

C40-001

TRANSCRIBED COMMENT C40-001

Good Job on the Riparian Plan. This should be beneficial to everyone.

RESPONSE C40-001

Thank you for your support.

-----Original Message-----
From: Kathie Redford
To: campben@wsdot.wa.gov
Sent: 3/28/2003 5:18 AM
Subject: Freeway Extension

Dear Mr. Campbell,

At one time in the past I remember reading an article in the Tacoma paper that talked about this freeway extension project and I think that it said something about a tie-in with the traffic flow coming off Canyon Road on south hill. I believe that another road was proposed that would link in with Canyon at its intersection with Pioneer Way then run northeasterly across the valley over a new bridge at Clark's Creek (to replace the existing steel structure) and tie in with this new freeway extension somewhere in the neighborhood of 70th Ave. I don't see any of this in the plan and I am unable to open up the "options" page of the extension website to see if that is part of the plan, or at least in the not too distant future. Any information regarding this would be appreciated.

Regards,

Dennis A. Redford

--- Kathie Redford
--- dakredford@earthlink.net <mailto:dakredford@earthlink.net>
--- EarthLink: The #1 provider of the Real Internet.

RESPONSE C41-001

Traffic volumes from the Canyon Road project were included in the traffic modeling for this project. For more information, please see section 3.14.1 of the FEIS.

C41-001

-----Original Message-----
From: Craig Wright
To: campben@wsdot.wa.gov
Sent: 3/28/2003 9:31 AM
Subject: Proposed SR 167

Neil,

I have just read about a proposed SR 167 extension that is in the works. All I wish to comment on is that I hope that before the extension is complete, is that SR167 between SR517 and I405 is modified to handle the large increase of traffic that would be created by this extension.

As of now my commute between Puyallup and Kent, takes about 40-45 minutes. New home construction in Orting, Puyallup, Sumner, and Bonney Lake I would think is one of Pierce County's largest growing areas with most of this population commuting North onto SR167. This is only to get worse under existing conditions, not including the increased traffic that would be created by this extension.

Last, I have had experience with Toll lanes (being a Southern California transplant) with using the 91 Freeway between Anaheim and Corona, and the Foothill corridor Toll Roads between Corona and Orange County and have a positive experience. The 91 Freeway did cross between Orange and Riverside Counties. Could such a project occur between Sumner and Renton?

Thank you for your time and I look forward to learning more about this project.

Regards,
Craig

Craig Wright
Seattle Bike Supply
7620 S. 192nd St.
Kent, WA 98032
1-425-251-1953

C42-001

C42-002

RESPONSE C42-001

The proposed SR 167 extension will ease congestion on local roads. The increase in traffic on the existing SR 167 freeway between Puyallup and I-405 will be minimal.

RESPONSE C42-002

WSDOT is currently considering implementing a plan for high occupancy toll (HOT) lanes on SR 167 between Renton and Auburn allowing drivers to pay a toll for use of the future HOV lanes. However, HOT lanes are not proposed as part of this project.

-----Original Message-----
From: Peter Rimbo
To: campben@wsdot.wa.gov
Sent: 3/27/2003 8:14 PM
Subject: SR-167 DEIS COMMENTS

Mr. Neal Campbell
Project Manager
WSDOT Turnwater Design Office
P.O. Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell,

We are writing to you today to provide our comments on the Draft Environmental Impact Statement (DEIS) for the proposed SR 167 project. Specifically, we are concerned because the proposed SR 167 corridor is located in the Hylebos Creek Watershed (as close as 250 feet from the creek), home to a variety of wildlife including Chinook salmon and Bull trout; both considered threatened species under the Endangered Species Act. Wildlife and their habitats are directly at risk due to increased flooding, water pollution, and other impacts that would be caused by the SR 167 project. However, we feel the DEIS does not thoroughly assess potential environmental impacts that could be reasonably expected from highway construction project as large as this.

We believe to properly design the SR 167 project to protect Hylebos Creek and adequately mitigate resulting impacts, the Department of Transportation must conduct a more thorough environmental assessment. Please include the following in the Final Environmental Impact Statement:

- *
Size of proposed restoration area, length of stream channel restoration, and restoration methods proposed.
- *
Analyses of direct, secondary, and indirect impacts and combined effects on the environment.
- *
Analyses of impacts combined with reasonably anticipated growth

1

C43-001

and major development projects planned.

*

Fisheries assessment of conditions and impacts for salmon species (and life stages) native to Hylebos Creek.

*

Specific impacts to low flow conditions on Hylebos Creek.

*

Description of major pollutants expected to be generated, amounts expected to enter the creek, and how their effects.

We support the Riparian Restoration Proposal as restoration of the natural floodplain is the only way to manage the SR 167 stormwater impacts on the lower Hylebos Creek. We should not be building stormwater ponds in a floodplain, because they just will not work as they will only waste money and worsen flooding. Restoring stream and wetland habitat in the Lower Hylebos Creek watershed as part of the SR 167 project will help restore the once abundant Hylebos Creek salmon runs. The Washington Department of Transportation should strive for a project that not only meets transportation goals, but also enhances the environment of the Hylebos Creek Watershed.

Thank you for taking our comments and placing them in the Public Record.

Sincerely,

Peter and Naomi Rimbo
19711 241st Ave SE
Maple Valley, WA 98038-8926
<mailto:primbos@attbi.com> primbos@attbi.com

RESPONSE C43-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources, 3.3.8 Wetlands, and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns.

C43-001

-----Original Message-----

From: Kurt Sontag [mailto:kurt1sontag@yahoo.com]
Sent: Saturday, March 29, 2003 2:49 PM
To: campben@wsdot.wa.gov
Cc: chinook@hylebos.org
Subject: Proposed SR 167 Project

To whom it may concern at the Washington Department of Transportation in regards to the SR 167 Highway Draft Environmental Impact Statement. It is of utmost importance that these six points below are taken into consideration.

1. Support The Riparian Restoration Proposal. Restoring the natural floodplain is the only way to manage SR 167 stormwater in lower Hylebos Creek. Restoring lower Hylebos stream and wetland habitat will leave a positive legacy for future generations.
2. Provide details about the size of the proposed restoration area, length of stream channel restoration and the restoration methods proposed.
3. You must fully address direct impacts to the environment and the ways in which those impacts will act together to affect the environment. Currently, the DEIS addresses project impacts in a linear, piecemeal fashion which understates the actual environmental impacts.
4. Strengthen the "cumulative impacts analysis." Under the National Environmental Policy Act, the EIS must describe how the proposed project will affect the environment in combination with planned growth and other developments in the surrounding area.
5. Characterize conditions and impacts for both different salmon species and different life stages for each salmon species. Several species that were overlooked such as freshwater mussels, pacific Lamprey, river otter and beaver must be identified.
6. Address impacts to low flow conditions and to provide a full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek and how they will affect Hylebos Creek.

03/31/03

Sincerely,

Kurt Sontag

RESPONSE C44-001

C44-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

WSDOT PROJECTS

PROJECT INFO.

- [Project Home](#)
- [History](#)
- [Design Options](#)
- [Schedules](#)
- [Public Involvement](#)
- [Documents](#)

SR 167, EXTENSION (SR 509 to SR 161)



VALLEY AVE. INTERCHANGE - FREEMAN ROAD OPTION

Existing ~~Option 1~~ **Option 2** ~~Option 3~~ View Visualizations

[Back to Vicinity Map](#)

How can I get more information?

For detailed information about the SR 167 Extension project, contact:
Project Engineer [Neal Campbell](#)
WSDOT Turnwater Design Office
PO Box 47446
Olympia, WA 98504-7446
Phone: 360-570-6602, or toll-free 888-323-7732
E-mail: campben@wsdot.wa.gov

This option 2 would be the best option for the area and community.

Melvin R. Hawar

*Parcel # 04200 84014
ML Emerald Limited Partnership
PO, Box 1045
Tacoma, WA 98401-1045*

3/26/03 5:45 PM

C45-001

RESPONSE C45-001

The Valley Avenue Interchange Option has the least overall environmental impacts and will be carried forward into design because this option has the least overall impacts. Please also see responses to comments G01-001 through G01-049.

-----Original Message-----

From: Derek Dexheimer [mailto:dex3703@eskimo.com]

Sent: Monday, March 31, 2003 9:07 PM

To: campben@wsdot.wa.gov

Subject: comments on SR 167 Highway Draft Environmental Impact Statement

I am writing to express concerns regarding the proposed project to extend SR 167 to Interstate 5 in northern Pierce county. As a resident of Federal Way, I have a keen interest in the health of the Hylebos Creek and its associated wetlands, especially in terms of providing a nurturing environment for endangered salmon.

The current DEIS is a good start. It contains a progressive stormwater management and restoration proposal that has the potential to dramatically improve the Hylebos' riparian habitat. Unfortunately, the DEIS is deficient in its assessment of the project's environmental impacts, as it does not fully account for the most likely environmental damage caused by the project.

My specific comments are:

- The Riparian Restoration Proposal is good, as it will lead to a more natural floodplain that will best manage 167 runoff and leave a positive legacy for future generations. However, detailed information regarding the size of the proposed restoration area, the length of stream channel to be restored, and the methods used for restoration must be provided in order for the public to judge if the Proposal is truly beneficial.

- The DEIS must address environmental impacts in a synergistic manner. How do individual elements combine into a true system of environmental threats and opportunities for the Hylebos?

- The DEIS cumulative impact assessment must be expanded. Not enough detail is devoted to how the project and current restoration proposals will affect the environment in combination with anticipated growth and other developments in the immediate area.

- The impact of the 167 project on Hylebos fauna must be clearly delineated. This pertains to each salmon species and each life stage within each species, as well as several ignored organisms such as freshwater mussels, Pacific lampreys, beavers and otters.

- Low flow conditions must be thoroughly addressed. Also, a complete catalog of pollutants and their quantities anticipated to be introduced into the Hylebos must be provided.

Thank you in advance for your hard work in creating an environmentally responsible project. A thorough environmental plan will only benefit the area and allow the Hylebos to once again become a fertile salmon spawning waterway.

Sincerely,
Derek Dexheimer
33011 28th Ave SW
Federal Way, WA 98023

RESPONSE C46-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

C46-001

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APR 02 2003

TUMWATER DESIGN

5551 South 300th Place
Auburn, WA 98001-2324
1 April 2003
253-529-8970

Neal Campbell
Project Engineer
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell:

As a working member of the Friends of Hylebos Wetlands, I am concerned about the proposed SR 167 corridor that would negatively impact Hylebos Creek. I fully support the Riparian Restoration Project to restore the natural floodplain and manage stormwater from SR 167 in lower Hylebos Creek.

Please characterize conditions and impacts on salmon species especially. Salmon numbers in Hylebos have declined in recent years; I saw none at my site this year.

Also, please address the impacts of pollutants likely to be generated by this project and take care to include these in the Draft Environmental Impact Statement. I am currently part of the Water Monitoring of Hylebos Creek to discover whether pollution may account in part for salmon declines.

Thank you for your consideration

Sincerely yours,
Thomas J. Sernka
Thomas J. Sernka

C47-001

RESPONSE C47-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

RESPONSE C48-001

This comment number was inadvertently skipped; there is no comment number C48-001.

7/1/03
Dear Mr. Campbell
Have you had a chance to visit Hylebos Creek?
It seems important to see this note in advance!
and thank you in advance!

Help Hylebos Creek: Write Now!
Letters must be sent before April 14, 2003!
A sample letter is available by calling Friends of the Hylebos at #253-929-1519 or email at chinook@hylebos.org

Background on the Hylebos Creek
The proposed SR 167 corridor will be sited near Hylebos Creek in some cases as close as 250 feet. The project poses environmental threats to Hylebos Creek's salmon and wildlife habitat through increased flooding and water pollution. The good news is that the proposed SR 167 corridor is located within a highly degraded portion of the Hylebos Creek Watershed. This presents an opportunity to use the legally required environmental mitigation from SR 167 to restore Hylebos Creek salmon habitat.

The Draft Environmental Impact Statement
The Draft Environmental Impact Statement contains a progressive stormwater management proposal that (if done correctly) would result in significant restoration of the lower Hylebos Creek. This would involve land acquisition, removal of structures and fill, and restoration of a functioning riparian system and floodplain which can achieve substantial salmon and wildlife habitat restoration.

However, the DEIS falls short when it comes to thoroughly assessing environmental impacts of the proposed project!!! A weak environmental analysis will lead to a design that doesn't adequately protect the environment and mitigation that isn't sufficient to offset actual environmental damage caused by the project.

6 Things to Include in Your Letter:

- 1. Tell DOT** you support **The Riparian Restoration Proposal**. Restoring the natural floodplain is the only way to manage SR 167 stormwater in lower Hylebos Creek. Restoring lower Hylebos stream and wetland habitat will leave a positive legacy for future generations.
- 2. Ask DOT** to provide details about the size of the proposed restoration area, length of stream channel restoration and the restoration methods proposed.
- 3. Tell DOT** that the DEIS must fully address direct impacts to the environment and the ways in which those impacts will act together to affect the environment. Currently, the DEIS addresses project impacts in a linear, piecemeal fashion, which understates the actual environmental impacts.
- 4. Ask DOT** to strengthen the "cumulative impacts analysis." Under the National Environmental Policy Act, the EIS must describe how the proposed project will affect the environment in combination with planned growth and other developments in the surrounding area.
- 5. Tell DOT** to characterize conditions and impacts for both different salmon species and different life stages for each salmon species. Several species that were overlooked such as freshwater mussels, pacific Lamprey, river otter and beaver must be identified.
- 6. Ask DOT** to address impacts to low flow conditions and to provide a full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek and how they will affect Hylebos Creek.

Send Letters Before April 14 to:
Neal Campbell, Project Engineer
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446
campben@wsdot.wa.gov

Friends of the Hylebos Wetlands, PO Box 24971, Federal Way, WA 98093

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APR 02 2003
TUMWATER DESIGN

264/352-765
P.O. Box 4864 - Seattle 98104-0864
Laura & Ted Armstrong

C49-001

TRANSCRIBED COMMENT C49-001

Dear Mr. Campbell,
Have you had a chance to visit Hylebos Creek? It seems important to read this note. We appreciate your time and thank you in advance!
Laura & Ted Armstrong

RESPONSE C49-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

-----Original Message-----

From: ShellFWA@aol.com [mailto:ShellFWA@aol.com]
Sent: Thursday, April 03, 2003 4:34 PM
To: campben@wsdot.wa.gov
Subject: Highway 167 extension plan

Dear Mr. Campbell-

I have a few concerns about the 167 extension plan. I am a citizen of Fife and I am concerned about the affects it will have on the health of hylebos creek. Hylebos creek is already struggling to maintain it's two speics of threatened fish, (bull trout and chinook), I have an AAS in forestry/water quality so I am familiar with the stream ecosystem, insects, ripain zones, storm water runoff, etc.

Regarding the DEIS for the project, how does it fully concur with the riparian restoration proposal? Please provide me with details about the restoration plan, (include length of channel restoration, methods, and proposed cost). I have been involved in wetland restoration for almost a year so I am familiar with the amount of labor and maintenance. Please fully address impacts to the environment, and the overall affects of these impacts combined.

What will be the effect on salmon runs and water quality in combination with future growth and development? And also, please characterize conditions and impacts to the chinook and bulltrout in all stages of life. There were a few species that seemed to be overlooked in the report, such as; fresh water mussels, pacific lamprey, river otter, and beaver. Please include the conditions for these species and possible affects on them caused by the project.

Please include impacts to low flow conditions, and a list of major pollutants, the amount projected to enter the creek, and the affect those pollutants could have on the creek (salmon, bull trout, water quality).

Thank you,
Shelley Fravel

RESPONSE C50-001

Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

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APR 07 2003

TUMWATER DESIGN

March 25, 2003

Mr. Neal Campbell
Project Manager
WSDOT Turnwater Design Office
PO Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell,

Debra Gray *I just want to love Hylebos Creek*
As a resident of [insert community here] and a member [insert community organization as appropriate] I am offering the following comments on the Draft Environmental Impact Statement for the proposed SR 167 project.

As you know, the proposed SR 167 corridor is located in the Hylebos Creek Watershed in some cases as close as 250 feet from the creek. The Hylebos Creek is home to a variety of wildlife including Chinook salmon and Bull trout; both considered threatened species under the Endangered Species Act. The wildlife and their habitats are at risk due to increased flooding, water pollution and other impacts that would be caused by the SR 167 project. However, the Draft Environmental Impact Statement does not thoroughly assess potential environmental impacts that could be reasonably expected from such a large highway construction project as this.

In order to properly design the SR 167 project to protect Hylebos Creek and adequately mitigate for project impacts, the Washington Department of Transportation must conduct a more thorough environmental assessment. At a minimum, the following should be included in the Final Environmental Impact Statement:

- 1 Specific details about the size of the proposed restoration area, length of stream channel restoration and restoration methods proposed.
- 2 A full analysis of the projects direct, secondary and indirect impacts and their combined effects on the environment.
- 3 A full cumulative impacts analysis that addresses the impacts of the proposed project in combination with reasonably anticipated growth and major development projects planned during the life of the project.
- 4 Revised fisheries assessments that characterize conditions and impacts for the different salmon species native to Hylebos Creek and the different life stages for each species. Wildlife and fisheries analysis must also include analyses of conditions and impacts to Hylebos' freshwater mussels, Pacific Lamprey, river otter and beaver populations.
- 5 Specific impacts to low flow conditions on Hylebos Creek.
- 6 A full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek and how they will affect Hylebos Creek.

Finally, I strongly support the Riparian Restoration Proposal. The restoration of the natural floodplain is the only way to manage the SR 167 stormwater impacts on the lower Hylebos Creek. Building stormwater ponds in a floodplain will not work! They will only waste money

C50-001

C51-001

and worsen flooding. Further, restoring stream and wetland habitat in the Lower Hylebos Creek watershed as part of the SR 167 project will help restore the once abundant Hylebos Creek salmon runs. The Washington Department of Transportation should strive for a project that not only meets transportation goals, but also enhances the environment of the Hylebos Creek Watershed.

Yours sincerely,



RESPONSE C51-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

March 25, 2003

Mr. Neal Campbell
Project Manager
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

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APR 07 2003
TUMWATER DESIGN

Dear Mr. Campbell,

As a resident of Bonney Lake, WA and a member of Friends of the Hylebos Wetlands, and Rainier Audubon Society, I am offering the following comments on the Draft Environmental Impact Statement for the proposed SR 167 project.

As you know, the proposed SR 167 corridor is located in the Hylebos Creek Watershed in some cases as close as 250 feet from the creek. The Hylebos Creek is home to a variety of wildlife including Chinook salmon and Bull trout; both considered threatened species under the Endangered Species Act. The wildlife and their habitats are at risk due to increased flooding, water pollution and other impacts that would be caused by the SR 167 project. However, the Draft Environmental Impact Statement does not thoroughly assess potential environmental impacts that could be reasonably expected from such a large highway construction project as this.

In order to properly design the SR 167 project to protect Hylebos Creek and adequately mitigate for project impacts, the Washington Department of Transportation must conduct a more thorough environmental assessment. At a minimum, the following should be included in the Final Environmental Impact Statement:

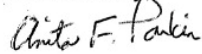
- Specific details about the size of the proposed restoration area, length of stream channel restoration and restoration methods proposed.
- A full analysis of the projects direct, secondary and indirect impacts and their combined effects on the environment.
- A full cumulative impacts analysis that addresses the impacts of the proposed project in combination with reasonably anticipated growth and major development projects planned during the life of the project.
- Revised fisheries assessments that characterize conditions and impacts for the different salmon species native to Hylebos Creek and the different life stages for each species. Wildlife and fisheries analysis must also include analyses of conditions and impacts to Hylebos' freshwater mussels, Pacific Lamprey, river otter and beaver populations.
- Specific impacts to low flow conditions on Hylebos Creek.
- A full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek and how they will affect Hylebos Creek.

Finally, I strongly support the Riparian Restoration Proposal. The restoration of the natural floodplain is the only way to manage the SR 167 stormwater impacts on the lower Hylebos Creek. Building stormwater ponds in a floodplain will not work! They will only waste money

C52-001

and worsen flooding. Further, restoring stream and wetland habitat in the Lower Hylebos Creek watershed as part of the SR 167 project will help restore the once abundant Hylebos Creek salmon runs. The Washington Department of Transportation should strive for a project that not only meets transportation goals, but also enhances the environment of the Hylebos Creek Watershed.

Yours sincerely,



Anita F. Parkin
18308 74th St. E.
Bonney Lake, WA 98390
anitafp@aol.com

RESPONSE C52-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

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APR 04 2003
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Faulene K. Main
P.O. Box 98492
Tacoma, WA 98498
Home: (253) 588-6010
Work: (253) 537-9512

April 2, 2003

Neal Campbell, Project Engineer
WSDOT Tumwater Design Office
P.O. Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell:

Subject: SR167 Corridor and Hylebos Creek

I am writing this letter today because of my concern regarding the proposed SR 167 Corridor portion that will be sited near Hylebos Creek. The project poses environmental threats to Hylebos Creek's salmon and wildlife habitat through increased flooding and water pollution.

I am happy to learn and support The Riparian Restoration Proposal that would legally require environmental mitigation from SR 167 to restore Hylebos Creek salmon habitat which presents a unique opportunity for the WSDOT to restore and correct an area that is already highly degraded through land acquisition, removal of structures and fill, and restoration of a functioning riparian system and floodplain which can achieve substantial salmon and wildlife habitat restoration.

Please make provision in the DEIS to

- 1. Restore the natural floodplain in the only way that will manage SR 167 stormwater in lower Hylebos Creek restoring lower Hylebos stream and wetland habitat to leave a positive legacy for future generations.**

C53-001

af
Ned

- 2. Provide details about the size of the proposal restoration area, length of stream channel restoration and the restoration methods proposed.**
- 3. Fully address direct impacts to the environment and the ways in which those impacts will act together to affect the environment.**
- 4. Strengthen the “cumulative impacts analysis” including how the proposed project will affect the environment in combination with planned growth and other developments in the surrounding area.**
- 5. Characterize conditions and impacts for both different salmon species and different life stages for each salmon species, i.e. freshwater mussels, pacific Lamprey, river otter and beaver.**
- 6. Address impacts to low flow conditions and to provide a full description of the major pollutants expected to be generated by this project and the amounts expected to enter the creek and how they will affect the creek.**

Thank you in advance for taking the care and consideration this project deserves.


Faulene K. Main

C53-001

C53-001

RESPONSE C53-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

-----Original Message-----

From: Jean Amick [mailto:jeanseattle@earthlink.net]
Sent: Wednesday, April 02, 2003 9:37 PM
To: campben@wsdot.wa.gov
Subject: 167

WSDOT
ATTN: Neal Campbell

Please support the Riparian Restoration Proposal to manage 167 stormwater.

Also, I would appreciate a full description of the major pollutants expected to be generated by the 167 corridor project, their amounts and how they will affect Hylebos Creek.

Thank you,
Jean

Jean Amick
3008 E Laurelhurst Dr NE
Seattle WA 98105
Ph 206-525-7065 Fx 206-524-8260
jeanseattle@earthlink.net

C54-001

RESPONSE C54-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

April 3, 2003

Mr. Neal Campbell, Project Engineer
WSDOT Tumwater Design Office
P.O. Box 47446
Olympia, WA 98504-7446

RECEIVED
APR 07 2003
TUMWATER DESIGN

Dear Mr. Campbell:

I am writing about the DEIS for the Riparian Restoration Proposal for managing stormwater from SR 167 flowing into Hylebos Creek. I support the proposal enthusiastically. However, the DEIS falls short when it comes to thoroughly assessing environmental impacts of the proposed project.

DOT needs to provide details about the size of the proposed restoration area, the length of stream channel restoration and the proposed restoration methods. The current DEIS addresses project impacts in a linear, piecemeal fashion which understates the actual environmental impacts. How do the impacts act in concert to affect the overall environment?

The "Cumulative Impacts Analysis" is not thorough enough. Under the National Environmental Policy Act, the EIS must describe how the proposal and the final project will affect the environment in combination with planned growth and other developments in the surrounding area.

A more detailed characterization needs to be done for different salmon species and different life stages for each salmon species. In addition, several species were overlooked and need to be included. Some of these species are freshwater mussels, Pacific Lamprey, river otter and beaver.

C55-001

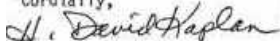
Finally, the DEIS does not address impacts to low flow conditions. This should be included. A further omission has to do with major pollutants. There should be a full description of the major pollutants expected to be generated by this project, the amounts expected to enter Hylebos Creek and how the pollutants will ultimately affect Hylebos Creek.

With the above requested modifications, the DEIS will be acceptable. Otherwise, the ultimate design will not protect the environment. Mitigation must be sufficient to offset actual environmental damage caused by the project. The items included herein will be sufficient to provide a significant stormwater management proposal that will be a major contributor to the restoration of lower Hylebos Creek.

Increased flooding and water pollution must be avoided. The legally required mitigation will be a major factor in improving this highly degraded portion of the Hylebos Creek Watershed.

Thank you for your attention to this request.

Cordially,



H. David Kaplan
30240 27th Avenue South
Federal Way, WA 98003-4212

(253) 941-3819
cc:Friends of the Hylebos Wetlands

RESPONSE C55-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

Dear Mr. Campbell,

4/3/03

I am a friend of Hylebos Creek. I am aware that the proposed SR 167 corridor will impact the creek. Therefore, please note: I ask you to:

1) I support the Riparian Restoration Proposal

2) Provide details re: size + type of restoration

3) Fully address direct + cumulative impacts to the environment

4) Strengthen the cumulative impacts analysis

5) Describe impacts for different salmon species throughout their life stages

6) Address impacts to low flow conditions + fully describe major pollutants expected to be generated by this project + how much will enter the creek w/ what effects.

I thank you for your consideration

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APR 07 2003

TUMWATER DESIGN



Ms. Linda N. Olson
1515 Longfellow Ave. NE
Tacoma, WA 98422-1209

Yours truly,

Linda Olson

C56-001

TRANSCRIBED COMMENT C56-001

I am a friend of Hylebos Creek. I am aware that the proposed SR 167 corridor will impact Hylebos Creek. Therefore please note: I ask you to:

- 1) I support the Riparian Restoration Proposal
- 2) Provide details re: size and type of restoration
- 3) Fully address direct and cumulative impacts to the environment
- 4) Strengthen the cumulative impacts analysis
- 5) Describe impacts for different salmon species throughout their life stages
- 6) Address impacts to low flow conditions and fully describe major pollutants expected to be generated by this project and how much will enter the creek with what effects.

Thank you for your consideration.

RESPONSE C56-001


Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

RECEIVED
 APR 04 2003
 TUMWATER DESIGN

4417N 335A
 Tacoma, Wa
 98407

Dear Sirs:

I would like you to protect the Hylebos Creek from the SR 167 Corridor. Our salmon have enough problems already. What a shame if more damage is done to them. You have the golden opportunity to restore the degraded habitat in the Hylebos Creek watershed so I support the Riparian Restoration Proposal. Could you please send me some details of this proposal? Among other items I would like to know



C57-001

how big the proposed restoration area is & how you would intend to restore it

Wetlands are the cradle of life. Not only will salmon be effected by what you do but also other wildlife including otters, beavers, shellfish & lampreys.

C57-001

Finally I would like to ask you what the major pollutants would be generated by this ill-thought out project.

Thank you for your attention to my concerns. Future generations will have reason to thank too if you protect Hylebos.

Sincerely,
 Maxine J Shury

TRANSCRIBED COMMENT C57-001

I would like you to protect the Hylebos Creek from the SR 167 Corridor. Our salmon have enough problems already. What a shame if more damage is done to them. You have the golden opportunity to restore the degraded habitat in the Hylebos Creek watershed so I support the Riparian Restoration Proposal. Could you please send me some details of this proposal? Among other items I would like to know how big the proposed restoration area is and how you would intend to restore it. Wetlands are the cradle of life. Not only will salmon be effected by what you do, but also other wildlife including otters, beavers, shellfish and lampreys. Finally I would like to ask you what major pollutants would be generated by this ill-thought out project. Thank you for your attention to my concerns. Future generations will have reason to thank too if you protect Hylebos.

RESPONSE C57-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

-----Original Message-----

From: Marty Fortin [mailto:fortin@myhome.net]
Sent: Friday, April 04, 2003 3:36 PM
To: campben@wsdot.wa.gov
Subject: Hylebos creek comments

Hello

I received a flyer asking me to write to you about the Draft EIS for the Hylebos Creek project. I assume you will get plenty of letters urging you to address the six points outlined in the Friends of Hylebos publication.

I only ask that you follow the legal procedures required by the EPA, Ecology, et. al. to avoid excessive time, effort, and money spent on defending your work in a legal action that many activists groups seek as a last resort.

Best wishes,

Marty Fortin

C58-001

RESPONSE C58-001

Thank you for your support. The Final EIS fulfills the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA) requirements for this project.

-----Original Message-----

From: Duane Grindstaff [mailto:d.grindstaff@attbi.com]
Sent: Saturday, April 05, 2003 1:37 PM
To: campben@wsdot.wa.gov
Subject: Riparian Restoration Proposal

Dear Mr. Campbell:

As a supporter of the Riparian Restoration Proposal, I know that to manage SR 167 stormwater the natural floodplain of lower Hylebos Creek must be restored. The direct impacts to the environment and the way those impacts act together must be addressed. Please consider impacts on all species throughout all stages of their life cycles for the project.

Duane Grindstaff

C59-001

RESPONSE C59-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

Mr. Neal Campbell
Project Manager
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

RECEIVED

APR 07 2003

TUMWATER DESIGN

April 5, 2003
3315 No. Visser St.
Tacoma, WA 98407

Dear Mr. Campbell,

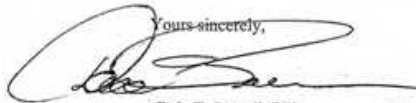
As a resident of Tacoma and a member Taboma Audubon Society and Puget Sound Anglers I am offering the following comments on the Draft Environmental Impact Statement for the proposed SR 167 project.

As you know, the proposed SR 167 corridor is located in the Hylebos Creek Watershed in some cases as close as 250 feet from the creek. The Hylebos Creek is home to a variety of wildlife including Chinook salmon and Bull trout; both considered threatened species under the Endangered Species Act. The wildlife and their habitats are at risk due to increased flooding, water pollution and other impacts that would be caused by the SR 167 project. However, the Draft Environmental Impact Statement does not thoroughly assess potential environmental impacts that could be reasonably expected from such a large highway construction project as this.

In order to properly design the SR 167 project to protect Hylebos Creek and adequately mitigate for project impacts, the Washington Department of Transportation must conduct a more thorough environmental assessment. At a minimum, the following should be included in the Final Environmental Impact Statement:

- Specific details about the size of the proposed restoration area, length of stream channel restoration and restoration methods proposed.
- A full analysis of the projects direct, secondary and indirect impacts and their combined effects on the environment.
- A full cumulative impacts analysis that addresses the impacts of the proposed project in combination with reasonably anticipated growth and major development projects planned during the life of the project.
- Revised fisheries assessments that characterize conditions and impacts for the different salmon species native to Hylebos Creek and the different life stages for each species. Wildlife and fisheries analysis must also include analyses of conditions and impacts to Hylebos' freshwater mussels, Pacific Lamprey, river otter and beaver populations.
- Specific impacts to low flow conditions on Hylebos Creek.
- A full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek and how they will affect Hylebos Creek.

Finally, I strongly support the Riparian Restoration Proposal. The restoration of the natural floodplain is the only way to manage the SR 167 stormwater impacts on the lower Hylebos Creek. Building stormwater ponds in a floodplain will not work! They will only waste money and worsen flooding. Further, restoring stream and wetland habitat in the Lower Hylebos Creek watershed as part of the SR 167 project will help restore the once abundant Hylebos Creek salmon runs. The Washington Department of Transportation should strive for a project that not only meets transportation goals, but also enhances the environment of the Hylebos Creek Watershed.

Yours sincerely,


Dale E. Powell, RPh

dpowell98407@harboret.com

RESPONSE C60-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

C60-001

RECEIVED

APR 04 2003

TUMWATER DESIGN

MR. CAMPBELL,

I AM WRITING IN SUPPORT OF THE RIPARIAN RESTORATION PROPOSAL OF HYLEBOS CREEK.

I AM APPEALING TO YOUR WISDOM TO DO THE CORRECT THING WHEN DEALING WITH THE NATURAL RESOURCES OF SUCH A VALUABLE AREA, AND TO BE AWARE OF ITS EFFECTS ON THE FUTURE GENERATIONS OF HUMANS & WILDLIFE.
Betty Jones

APRIL 03
Betty L. Jones
5519 Mathias Rd. E.
Graham, WA 98338

C61-001

TRANSCRIBED COMMENT C61-001

I am writing in support of the Riparian Restoration Proposal of Hylebos Creek. I am appealing to your wisdom to do the correct thing when dealing with the natural resources of such a valuable area, and to be aware of it's effects on the future generations of humans and wildlife.

RESPONSE C61-001

Thank you for your support.

Beverly Webber
1701 Utah Ct
Milton WA 98354
253-838-1730

Neal Campbell, Project Engineer
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

April 5, 2003

Re: Draft Environmental Impact Statement for State Route 167

Dear Mr. Campbell,

Living in Milton near the lower Hylebos creek and having an interest in my city and nearby communities I would like to comment on the proposed SR 167 corridor that is sited near the Hylebos Creek.

I support the Riparian Restoration Proposal. I feel the natural floodplain is the only way to manage SR 167 stormwater in the lower Hylebos Creek. In our every deliberation, we must consider the impact of our decisions on current and future generations.

We need to strengthen the "cumulative impacts analysis." Under the National Environmental Policy Act, the EIS must describe how the proposed project will affect the environment in combination with planned growth and the developments in the surrounding areas.

I would like to know more details about the size of the proposed restoration area, length of stream channel restoration and the restoration methods proposed.

The DEIS must fully address all direct impacts to the environment and the ways in which those impacts will act together to affect the environment.

Respectfully,

Beverly Webber
Beverly Webber

RESPONSE C62-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

RECEIVED

APR 08 2003

TUMWATER DESIGN

C62-001

April 8, 2003

Dear Mr. Campbell,

My name is Lisa Palmer and I am an environment-conscious individual. I support the Riparian Restoration Proposal as the only way to manage SR 167 stormwater in lower Hylebos Creek.

I ask the DOT to provide details about the size of the proposed restoration area, length of stream channel restoration and the restoration methods proposed.

The Draft Environmental Impact Statement must fully address direct impacts to the environment and the ways in which these impacts will act together to affect the environment. The current DEIS actually understates the actual environmental impacts. Please strengthen the "cumulative impacts analysis."

The DOT needs to characterize conditions and impacts for both different salmon species and different life stages for each salmon species. Several species were overlooked such as freshwater mussels, pacific Lamprey, river otter and beaver, and they must be identified.

Also, please address impacts to low flow conditions and to provide a full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek, and how they will affect Hylebos Creek.

Thank you so much for your time and consideration of these important matters.

Sincerely,

Lisa H. Palmer
13801 13th Avenue Court East
Tacoma Washington 98445
(253) 531-5316

C63-001

C63-001

TRANSCRIBED COMMENT C63-001

My name is Lisa Palmer and I am an environment-conscious individual. I support the Riparian Restoration Proposal as the only way to manage SR 167 stormwater in lower Hylebos Creek

I ask the DOT to provide details about the size of the proposed restoration area, length of stream channel restoration and the restoration methods proposed.

The Draft Environmental Impact Statement must fully address direct impacts to the environment and the ways in which those impacts will act together to affect the environment. The current DEIS actually understates the actual environmental impacts. Please strengthen the "cumulative impacts analysis."

The DOT needs to characterize conditions and impacts for both different salmon species and different life stages for each salmon species. Several species were overlooked such as freshwater mussels, pacific Lamprey, river otter and beaver, and they must be identified.

Also, please address impacts to low flow conditions and to provide a full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek, and how they will affect Hylebos Creek.

Thank you so much for your time and consideration of these important matters.

RESPONSE C63-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

April 8, 2003

Mr. Neal Campbell
Project Manager, WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell,

I am a resident of Federal Way and for the past 18 years have volunteered with the Friends of the Hylebos to protect and enhance the health of Hylebos Creek and its network of wetlands. Please review my comments on the Draft Environmental Impact Statement for the proposed SR 167 project.

As you are aware the proposed 167 corridor will be sited near Hylebos Creek in the Fife Valley. Citizen groups have worked so hard to restore the habitat and health of the upper and lower watershed, on Hylebos Creek and in the Hylebos Waterway. I do not want this project to jeopardize the progress they have made!

I would like a commitment from DOT to be a partner in restoring the health of the watershed by moving forward with the Riparian Restoration Proposal. I am a strong supporter of the Riparian Restoration Proposal. A natural system approach is the only way to manage the stormwater impacts on the lower Hylebos Creek and still maintain a healthy environment for fish and wildlife.

In reviewing the DEIS for the project I feel that WDOT must do a more thorough environmental assessment to be included in the Final Environmental Impact Statement. The design for the 167 project should protect Hylebos Creek and adequately mitigate all the impacts of the project. At a minimum the following should be included in the final EIS.

- Provide more specific details about the size of the proposed restoration area, length of the stream channel restoration and restoration methods.
- Fully address the impacts of the project on the environment both direct and indirectly.
- Revise the fisheries assessments that characterize conditions and impacts to include all the salmon species found in Hylebos Creek and the different life stages for each species. Wildlife and fisheries analysis must include analyses of conditions and impacts to Hylebos freshwater mussels, Pacific Lamprey and river otter populations.
- More specific impacts of low stream flow conditions.
- Describe the pollution impacts. What pollutants are expected to be generated by this project, in what amounts? What measures will be used to prevent contamination of the stream system?

This project has exciting opportunities for protection and enhancement of the entire watershed! As a Stream Team volunteer it has been exciting for me to see spawning salmon on the upper Hylebos Creek at Brooklake on S. 356th Street in Federal Way for the past three years. I ask DOT to be a partner in restoring and enhancing the health of Hylebos Watershed with the SR167 project.

Respectfully,


Adele Freeland
5150 SW 326th Place
Federal Way WA 98023

RECEIVED
APR 10 2003
TUMWATER DESIGN

RESPONSE C64-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

C64-001

April 9, 2003

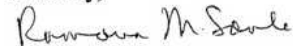
Neal Campbell, Project Engineer
WSDOT Tumwater Design Office
P.O.Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell:

I am writing to let you know that I support the Riparian Restoration Proposal, so that the environment will be protected in the proposed SR 167 corridor. The Hylebos Creek area is a local treasure in this area that must be preserved.

Thank you for your attention.

Sincerely,


Ramona M. Soule
P.O. Box 54099
Redondo, WA98054-0099

RECEIVED
APR 10 2003
TUMWATER DESIGN

C65-001

RESPONSE C65-001

Thank you for your support.

April 10, 2003

Mr. Neal Campbell
Project Manager
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell,

I am a resident of Federal Way and an active member of Friends of the Hylebos. I am both a lawyer and a biologist. I have spent many hours volunteering in the Hylebos Creek watershed – removing invasive species, planting native plants, and helping with the legal aspects of protecting, preserving, and improving this delightful and important regional resource. Given my keen interest in the Hylebos, I am offering the following comments on the Draft Environmental Impact Statement for the proposed SR 167 project. These comments are essentially those provided to me by Friends of the Hylebos. But I have carefully reviewed them and give them my full support. Please consider these comments.

As you know, the proposed SR 167 corridor is located in the Hylebos Creek Watershed in some cases as close as 250 feet from the creek. The Hylebos Creek is home to a variety of wildlife including Chinook salmon and Bull trout; both considered threatened species under the U.S. Endangered Species Act. The wildlife and their habitats are at risk due to increased flooding, water pollution and other impacts that would be caused by the SR 167 project. However, the Draft Environmental Impact Statement does not thoroughly assess potential environmental impacts that could be reasonably expected from such a large highway construction project as this.

In order to properly design the SR 167 project to protect Hylebos Creek and adequately mitigate for project impacts, the Washington Department of Transportation must conduct a more thorough environmental assessment. At a minimum, the following should be included in the Final Environmental Impact Statement:

- Specific details about the size of the proposed restoration area, length of stream channel restoration and restoration methods proposed.
- A full analysis of the projects direct, secondary and indirect impacts and their combined effects on the environment.
- A full cumulative impacts analysis that addresses the impacts of the proposed project in combination with reasonably anticipated growth and major development projects planned during the life of the project.
- Revised fisheries assessments that characterize conditions and impacts for the different salmon species native to Hylebos Creek and the different life stages for each species. Wildlife and fisheries analysis must also include analyses of conditions and impacts to Hylebos' freshwater mussels, Pacific Lamprey, river otter and beaver populations.
- Specific impacts to low flow conditions on Hylebos Creek.

C66-001

Mr. Neal Campbell
April 10, 2003
Page 2

- A full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek and how they will affect Hylebos Creek.

Finally, I strongly support the Riparian Restoration Proposal. The restoration of the natural floodplain is the only way to manage the SR 167 stormwater impacts on the lower Hylebos Creek. Building stormwater ponds in a floodplain will not work! They will only waste money and worsen flooding. Further, restoring stream and wetland habitat in the Lower Hylebos Creek watershed as part of the SR 167 project will help restore the once abundant Hylebos Creek salmon runs. The Washington Department of Transportation should strive for a project that not only meets transportation goals, but also enhances the environment of the Hylebos Creek Watershed.

Yours sincerely,

J. Alan Clark, J.D.
34516 27th Ave. SW
Federal Way, WA 98023-3075

Also:
Department of Biology
Box 351800
University of Washington
Seattle, WA 98195-1800

RESPONSE C66-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

C66-001

To: Neal Cambell, Project Engineer
WSDOT Tumwater Design Office
From: John and Thelma Sacklin
Re: Hylebos Creek and proposed SR167

We have been supportive of our State's efforts to restore salmon habitats and have learned that each small improvement adds to the overall gain. Now it appears there is a new and rare opportunity for more gains through the Hylebos Creek salmon and wild life habitat improvement and protection effort by locals. This new "chance" can come from coordinated planning with the proposed SR167 rightaway. However improved habitat success, beyond those of individual teams, requires a comprehensive vision of a new Riparian Restoration Proposal. We and many others will support such a plan and we urge DOT to broaden their DEIS to a Riparian plan that can also include future growth in the area.

Another concern we have is the environment threat from SR167 stormwaters, for it is known that these waters are polluted with chromium, copper, lead, and hydrocarbons (oil, rubber, antifreeze) chemicals that can poison fish spawning beds. We think any revised DEIS needs to assure that such stormwaters bypass the pristine wetlands of Hylebos Creek. We look forward to additional information on SR167 and Hylebos wetlands.

e-mail jsacklin@iopener.net

John and Thelma Sacklin
312 13th St. SW
Puyallup, WA 98371-5770

RECEIVED
APR 10 2003
TUMWATER DESIGN

C67-001

RESPONSE C67-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

-----Original Message-----

From: johndandsuzy [mailto:johndandsuzy@ncplus.net]
Sent: Thursday, April 10, 2003 5:54 PM
To: campben@wsdot.wa.gov
Subject: Hylebos Creek

Hello. I would like to voice my concerns regarding the upcoming SR 167 corridor revision. First of all I want to say I do support the Riparian Restoration Proposal because it is logical, it makes sense and it is simple. However, I am concerned about some of the impacts that the DEIS will have on the Hylebos Creek project.

Those of us that are concerned would like to know what the impacts to the environment will be. Please don't give us the explanation in a lot of beaurocratic rhetoric. We're not a bunch of tree huggers with lack of education. We are genuinely concerned with what this may entail to salmon, Lamprey, otters, beavers and the environment in general. Also, what would be the impacts to low flow conditions and what pollutants will be involved when this project is in full swing. How much/many of these pollutants will enter the creek and what will be their permanent damage to the ecosystems. And please be honest in your explanation. How will all of this affect the environment in combination with the planned growth and, of course, other developments within the surrounding areas?

I would like to say, in closing, that I for one am not one that needs to have everything made just a little more "convenient" for me. I like the idea that sometimes I have to drive slow because of rush-hour traffic. I don't mind it if I have to drive the extra miles to get to a store, (as it is I can't drive a country mile without running into a Chevron or Exxon, etc). I don't want or need it all, constantly, every day of the week at my beck and call. There are some things in life that we should be able to share with the ones that were here about three hundred million years before us and I for one am proud to be able to share that little bit that's left, with them! Please don't take it all away for the sake of profit, convenience and stature. Some of us out here don't mind being a little inconvenienced if it means that we can hear a certain bird calling to it's mate, or to be able to witness the spawning of a fish. Please don't always take it all away. Thank you. Suzy Meyer, pobox143 Wauna WA 98395.

RESPONSE C68-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

-----Original Message-----

From: Bob Paradise [mailto:thesportguy@hotmail.com]
Sent: Saturday, April 12, 2003 8:01 PM
To: campben@wsdot.wa.gov
Subject: Hylebos

Dear Mr. Campbell,

We are writing to you in regards to the Hylebos waterway in Tacoma.

This is an exciting time for this waterway. With the proposed SR167 corridor near Hylebos Creek, you can help restore the health of Hylebos.

After about 100 years of environmental destruction in the Tacoma tide flats, you can take a small, but wonderful, step in the right direction. Please support the Riparian Restoration Proposal. Let's do right by the environment and make this a project we can be proud of.

Thank you.

Sincerely,

Robert and Alison Paradise
Gig Harbor, WA

RESPONSE C69-001

Thank you for your support.

C68-001

C69-001

-----Original Message-----

From: Gary Ostlund [mailto:choochoogoo@msn.com]
Sent: Saturday, April 12, 2003 9:25 PM
To: campben@wsdot.wa.gov
Subject: Hylebos Creek/SR 167

Please carefully consider the 6 concerns of the Friends of the Hylebos Wetlands. We support the Riparian Restoration Proposal. Thank you,

C70-001

Gary O. Ostlund (GOO)
choochoogoo@msn.com

RESPONSE C70-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

-----Original Message-----

From: JudyTurpin@aol.com [mailto:JudyTurpin@aol.com]
Sent: Saturday, April 12, 2003 4:23 PM
To: campben@wsdot.wa.gov
Subject: Comments regarding proposed SR 167 /161-509 linkage project DEIS

I am particularly interested in protecting Hylebos both during the project and after its construction. A number of us in the Federal Way community have had an interest in the West Hylebos wetlands and the stream system that connects it to the Hylebos waterway and Commencement Bay. This stream has been adversely impacted in the past by highway and commercial construction. The project at hand could either contribute to restoration if an adequate riparian restoration program is fully implemented or it could further degrade the system. The aquatic and wetland habitats in the project area should be protected and restored keeping in mind the requirements of all species and life stages. WSDOT should strive to prevent future harm and redress the harm that it has done in the past when it constructed projects that did not adequately deal with fish passage, impacts on the hydrology of the project area or increased sedimentation.

C71-001

There are a number of areas in which the DEIS could be improved as a document to inform decision makers. More details regarding the riparian restoration effort could be provided, and a more complete cumulative effects analysis could be added that doesn't downplay project interaction with growth pressures in the area. This EIS should clearly identify potential direct, secondary and cumulative impacts and clearly identify the mitigation measures to fully respond to those impacts with an emphasis on protecting the important natural features which tie the upland freshwater system to Puget Sound through this project area.

Judith Turpin
3002 SW 300th Place
Federal Way, WA 98023
253-838-3466

RESPONSE C71-001

Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

RECEIVED
APR 11 2003
TUMWATER DESIGN

APR 5/03

WSDOT
Olympia WA

att Mr Neal Campbell
Re Hylebos Creek

I am interested in Hylebos
State Park and the Hylebos
Creek. I walk in nice weather
in the Park and enjoy the
outdoors.

Your help in preserving or
enhancing the Hylebos
would be appreciated by
the writer

Yours very truly
Tom A. Ewing

TRANSCRIBED COMMENT C72-001

I am interested in Hylebos State Park and the Hylebos Creek. I walk in nice weather in the park and enjoy the outdoors.

Your help in preserving or enhancing the Hylebos would be appreciated by the writer.

RESPONSE C72-001

C72-001

Thank you for your support.

April 8, 2003

Mr. Neal Campbell
Project Manager
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

Dear Mr. Campbell,

As a resident of [insert community here] and a member [insert community organization as appropriate] I am offering the following comments on the Draft Environmental Impact Statement for the proposed SR 167 project.

As you know, the proposed SR 167 corridor is located in the Hylebos Creek Watershed in some cases as close as 250 feet from the creek. The Hylebos Creek is home to a variety of wildlife including Chinook salmon and Bull trout, both considered threatened species under the Endangered Species Act. The wildlife and their habitats are at risk due to increased flooding, water pollution and other impacts that would be caused by the SR 167 project. However, the Draft Environmental Impact Statement does not thoroughly assess potential environmental impacts that could be reasonably expected from such a large highway construction project as this.

In order to properly design the SR 167 project to protect Hylebos Creek and adequately mitigate for project impacts, the Washington Department of Transportation must conduct a more thorough environmental assessment. At a minimum, the following should be included in the Final Environmental Impact Statement:

- Specific details about the size of the proposed restoration area, length of stream channel restoration and restoration methods proposed.
- A full analysis of the projects direct, secondary and indirect impacts and their combined effects on the environment.
- A full cumulative impacts analysis that addresses the impacts of the proposed project in combination with reasonably anticipated growth and major development projects planned during the life of the project.
- Revised fisheries assessments that characterize conditions and impacts for the different salmon species native to Hylebos Creek and the different life stages for each species. Wildlife and fisheries analysis must also include analyses of conditions and impacts to Hylebos' freshwater mussels, Pacific Lamprey, river otter and beaver populations.
- Specific impacts to low flow conditions on Hylebos Creek.
- A full description of the major pollutants expected to be generated by this project, the amounts expected to enter the creek and how they will affect Hylebos Creek.

Finally, I strongly support the Riparian Restoration Proposal. The restoration of the natural floodplain is the only way to manage the SR 167 stormwater impacts on the lower Hylebos Creek. Building stormwater ponds in a floodplain will not work! They will only waste money and worsen flooding. Further, restoring stream and wetland habitat in the Lower Hylebos Creek watershed as part of the SR 167 project will help restore the once abundant Hylebos Creek salmon runs. The Washington Department of Transportation should strive for a project that not only meets transportation goals, but also enhances the environment of the Hylebos Creek Watershed.

Yours sincerely,

W.A. Marton

RECEIVED
APR 11 2003
TUMWATER DESIGN

RESPONSE C73-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

C73-001

RECEIVED

APR 15 2003

TUMWATER DESIGN

3214 No. 27th
Tacoma, wa. 98407
4/11/03

Neal Campbell
Project Engineer
WS-DOT Tumwater Design Office
Olympia, wa. 98504

Dear Sir:

I am writing to express my support for the Riparian Restoration Proposal for the proposed SR 167 corridor near Hylebos Creek. Restoring the natural floodplain is the only way to manage stormwater. I am also urging DOT to fully address direct impacts to the environment and strengthen the "cumulative impacts analysis" to describe how the project will affect the environment in combination with planned growth and other developments surrounding the area. Addressing impacts to low flow conditions, providing a full description of expected pollutants,

C74-001

and looking at impacts for different salmon populations at different stages of life and all species to be impacted - all of these actions are essential to a thorough environmental impact of the proposed project.

C74-001

Sincerely,
Neal Hegets

TRANSCRIBED COMMENT C74-001

I am writing to express my support for the Riparian Restoration Proposal for the proposed SR 167 corridor near Hylebos Creek. Restoring the natural floodplain is the only way to manage stormwater. I am also urging DOT to fully address direct impacts to the environment and strengthen the 'cumulative impacts analysis' to describe how the project will affect the environment in combination with planned growth and other developments surrounding the area. Addressing impacts to low flow conditions, providing a full description of expected pollutants and looking at impacts for different salmon populations at different stages of life and all species to be impacted. All of these actions are essential to a thorough environmental impact of the proposed project.

RESPONSE C74-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

RECEIVED

4-12-03

APR 15 2003

TUMWATER DESIGN

DEAR MR CAMPBELL:

SORRY FOR THE OLD FASHIONED APPROACH TO LETTER WRITING, NO COMPUTERS, NO E-MAIL, JUST PAPER AND PENCIL. I AM A 35 YEAR RESIDENT IN THE "SPRING VALLEY AREA" OF FEDERAL WAY (NORTH OF THE PIERCE COUNTY LINE TO 356TH ON THE NORTH AND BETWEEN I-5 AND US 99, I AM A LONG TIME MEMBER OF THE FRIENDS OF THE HYLEBOS WETLAND AND WAS A C-A-C MEMBER OF KING COUNTY'S HYLEBOS DRAINAGE PLAN. IT WAS CONCLUDED THAT THE MILTON, FIFE, PIERCE COUNTY PORTION OF THE HYLEBOS WOULD BE ONE OF THE MOST DIFFICULT TO MANAGE.

IN ADDITION WE HAVE A SIGNIFICANT TRACT OF LAND ON THE NORTH FORK OF THE HYLEBOS CREEK. WE HAVE APPROX 600 FEET OF CREEK FRONTAGE AND ALSO CONSTRUCTED A WILDLIFE CONSERVATION POND UNDER A KING COUNTY PERMIT. THE MAJOR PURPOSE OF THE POND (WHICH IS CONNECTED TO THE HYLEBOS CREEK) IS TO PROVIDE SHELTER TO THE YOUNG CHINOOK AND COHO SALMON. THINGS WORKED WELL FOR SEVERAL YEARS AND WE HAD MANY VISITORS TO OBSERVE OUTSTANDING RUNS OF SALMON. HOWEVER I-5 REARED ITS UGLY HEAD AND WE HAD EXCESSIVE SILTATION FROM HIGHWAY RUNOFF AND EVENTUALLY THE HEAVY ODOR OF FUEL OIL PERMEATED THE CREEK AREA. NEIGHBORS WERE SEARCHING FOR LEAKING OIL TANKS, BUT FISHERIES FINALLY TRACED IT TO A DETENTION POND AT THE TRUCK WEIGHT STATION ON I-5 (AT APPROX 366TH ST.)

WASHINGTON STATE STILL CONTINUES TO BENEFIT TIRE DEALERS BY PERMITTING THE USE OF STUDDED TIRES. THE RESULT IS 12" TRENCHES IN THE HIGHWAY SURFACE THAT CARRIES RUNOFF ALL THE WAY FROM 320TH TO THE FLOOD PLAIN THAT BEGINS IN LOWER MILTON AND EXTENDS TO THE HYLEBOS WATERWAY IN TACOMA. THE SITE OF THE PROPOSED INTERSECTION OF SR 167 IS IN THIS FLOODPLAIN.

THERE IS VIRTUALLY NO CHANGE IN ELEVATION FROM PORTER WAY IN MILTON TO THE HYLEBOS WATERWAY IN TACOMA. THIS AREA IS COMPROMISED TWICE A DAY BY TIDAL ACTION. NOT EXACTLY GREAT SPAWNING AREA BUT IS ONE OF THE

C75-001

C75-002

C75-003

TRANSCRIBED COMMENT C75-001

Sorry for the old fashioned approach to letter writing. No computers, no e-mail, just paper and pencil. I am a 35-year old resident in the Spring Valley area of Federal Way (north of the Pierce County line to 356th on the north between I-5 and US 99. I am a long time member of the friends of Hylebos wetland and was a C-A-C member of the King County Hylebos drainage plan. It was concluded that the Milton, Fife, Pierce County portion of the Hylebos would be one of the most difficult to manage.

In addition we have a significant tract of land on the North Fork of the Hylebos Creek. We have approx. 600 feet of creek frontage and also constructed a wildlife conservation pond under a King County permit. The major purpose of the pond (which is connected to the Hylebos Creek) is to provide shelter to the young chinook and coho salmon. Things worked well for several years and we had many visitors to observe outstanding runs of salmon. However I-5 reared its ugly head and we had excessive siltation from highway runoff and eventually the heavy odor of fuel oil permeated the creek area. Neighbors were searching for leaking oil tanks, but fisheries finally traced it to a detention pond at the truck weight station on I-5 (at approx. 366th St.).

RESPONSE C75-001

WSDOT is in the process of developing a restoration area of approximately 25 acres on the Hylebos Creek in the Spring Valley area..

TRANSCRIBED COMMENT C75-002

Washington State still continues to benefit tire dealers by permitting the use of studded tires. The result is 12-inch trenches in the highway surface that carries runoff all the way from 320th to the floodplain that begins in lower Milton and extends to the Hylebos Waterway in Tacoma. The site of the proposed intersection of SR 167 is in this floodplain.

RESPONSE C75-002

WSDOT's Pavement Management System monitors existing pavement conditions and prioritizes resurfacing deficiencies. The existing drainage conditions on I-5 are being improved with the expansion of the HOV lanes between Federal Way and Tacoma.

②

THE MOST CRITICAL SECTIONS OF THE CREEK TO THE SALMON SINCE IT IS
HERE THAT THEY HAVE TO ADAPT TO THE CHANGE FROM SALT WATER TO FRESH
WATER. THE SALMON MAY HAVE TO LIVE IN THIS AREA FOR AN EXTENDED
PERIOD, AWAITING SUITABLE RAINFALL TO GUARANTEE SAFE PASSAGE UP TO
THEIR SPAWNING AREA. SOME MAY END UP IN THE EAST FORK CLOSE TO
SR 161 OR IN THE 45 ACRES OF OPEN SPACE WEST OF THE NEW TODD BEAMER
HIGH SCHOOL, MANY WILL END UP AT BROOKLAKE IN THE HYLEBOS WETLANDS.

C75-003
(cont.)

IF THE STATE HAS TO RESORT TO DETENTION PONDS IT WOULD BE VITAL
TO INCORPORATE FILTERS THAT ARE ACCESSIBLE FOR CLEANING. AN EXAMPLE
WOULD BE AT THE CITY DETENTION POND AT 356TH STREET. THE STATE
SHARES THIS FACILITY TO HANDLE RUNOFF FROM SR 161. ADDITIONAL INFO
MAY BE OBTAINED FROM CAREY ROE (HEAD OF FACILITIES) 253-661-4130

C75-004

A NEW CONCERN IS THE UTILIZATION OF TRAFFIC CIRCLES AT
KEY INTERSECTIONS. HOW MUCH RUBBER IS GOING TO BE SCRUBBED OFF OF
S.U.V.'S TIRES? HOW MANY WILL FLIP OVER? THIS AREA IS TOTALLY UNFAMILIAR
WITH TRAFFIC CIRCLES!

C75-005

THANK YOU FOR YOUR CONSIDERATION
TED ENTORNAF

36817-12TH AVE. SO.

FEDERAL WAY, WA. 98003-7409

253-838-7196

TRANSCRIBED COMMENT C75-003

There is virtually no change in elevation from Porter Way in Milton to the Hylebos waterway in Tacoma. This area is compromised twice a day by tidal action. Not exactly great spawning area but is one of the most critical sections of the creek to the salmon since it is here that they have to adapt to the change from salt water to fresh water. The salmon may have to live in this area for an extended period, awaiting suitable rainfall to guarantee safe passage up to their spawning area. Some may end up in the East Fork close to SR 161 or in the 45 acres of open space West of the new Todd Beamer High School, many will end up at Brooklake in the Hylebos wetlands.

RESPONSE C75-003

Thank you for the information concerning the Hylebos waterway. Additional information concerning the Affected Environment for salmon is included in subsection 3.4.2 of the FEIS.

TRANSCRIBED COMMENT C75-004

If the state has to resort to detention ponds it would be vital to incorporate filters that are accessible for cleaning. An example would be at the city detention pond at 356th Street. The state shares this facility to handle runoff from SR 161. Additional info may be obtained from Carey Roe (Head of facilities) 253-661-4130.

RESPONSE C75-004

This project will incorporate approximately 73 acres of riparian habitat surrounding Wapato Creek in the vicinity of Freeman Road for stormwater flow control. The Riparian Restoration Proposal (RRP) will reduce the need for conventional stormwater ponds. Further details on the RRP are discussed in sub-section 3.2.4 Water Resources of this FEIS.

TRANSCRIBED COMMENT C75-005

A new concern is the utilization of traffic circles at key intersections. How much rubber is going to be scrubbed off of S.U.V.'s tires? How many will flipover? This area is totally unfamiliar with traffic circles.

RESPONSE C75-005

Roundabouts (traffic circles) when used in the appropriate locations are much safer than traditional signalized intersections. This is due to the reduction in speed. The roundabout utilizes right turn movements only and eliminates the need for motorists to cross oncoming traffic in order to make a left turn. This greatly reduces the number and severity of accidents. It is extremely difficult to cause a roll-over type accident if the proper speeds are being used. Roundabouts have also proven to improve capacity, reduce delay and relieve congestion.

Kathleen Carpenter
3919 Freeman Rd East
Edgewood, WA 98371

PETITION TO WSDOT
March 8, 2003

The Department of Transportation is considering three options for the SR-167 Valley Avenue Interchange that will impact citizens of Fife, Puyallup, and our neighborhood in Edgewood.

The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

C76-001

Name	Address	Phone
FLORENCE SCOTT	3909 FREEMAN RD	922-8210
Jean Littleton	3912 Freeman Rd E	922-8302
Margy Ellen Boyd	37th St Ct E	922-6038
BONNIE KILLIAN	8212 38th St E	922-3862
Lily G. GUNDERSON	8221-38th St E	922-2730
Liz Maryann	8225 38th St E	927-8075
Joyce Mangum	11	11
Doreen Mangum	11	11
David Matthew	8229-38th St E	922-5663
Kathleen Carpenter	3919 Freeman Rd E	922-1410
Thomas Bennett	8216 37th St E	926-8199
David Lane	4515 37th St Ct E	896-1292
Alecia Anderson	8411-38th St E	922-8727
Marie Bunja	8321 38th St E	922-8121
Clara Harper	8308 38th St E	926-8078
Marydella Harper	8308 38th St E	926-8078

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March 8, 2003

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We urge the State to adopt this plan.

Name	Address	Phone
Gwyneth Sullivan	4309 90th Ave E, Edgewood	253-841-7956
Quinn Sullivan	4313 90th Ave E, Edgewood	253-848-1466
Alice Nurd	4321 90th Ave E, Edgewood	845-7839
Ruby Higgins	4303 90th Ave E, Edgewood	(206) 445-2927
Luce Blacker	3829-90th Ave E, Edgewood	(855) 845-6178
Colleen L. Moss	4411 90th Ave E, Edgewood	(253-845-0800)

PETITION TO WSDOT
March 8, 2003

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We urge the State to adopt this plan.

Name	Address	Phone
Gail Totav	9104 38th St Ct E, Edgewood	253-841-3067
Tom Totav	9104 38th Ct E, Edgewood, WA 98371	253-841-3067
DALE Cook	3805 90th Ct E, Edgewood, WA 98371	253-840-3219
LISA Larson	3810 90th Ave Ct E, Edgewood, WA 98371	253-778-7933
Doris Hanaway	9020 38th St Ct E, Edgewood, WA 98371	253-435-5467
Jean Hanaway	9020 38th St Ct E, Edgewood, WA 98371	253-435-5467

PETITION TO WSDOT
March 8, 2003

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We urge the State to adopt this plan.

Name	Address	Phone
owner of Cherrywood	8412 38th St E, Edgewood	
Barry Kaimakis	1305 4th Ave #516 Seattle, WA	(206) 621-0455

PETITION TO WSDOT
March 8, 2003

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The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

Tenants of Cherrywood Mobile Edgewood, WA

Name	Address	Phone
Laurel Barber	8413-37th St Ct E	972-7254
Charra S. Matthew	8405 37th St Ct E	
Paul J. Hund	8423-37th Ct E	932-1506

**PETITION TO WSDOT
March 8, 2003**

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The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

All live in Cherrywood Mobile Home Park in Edgewood WA

Name	Address	Phone
Alan J. Jitto	8315-37th #49	926-6837
Sam [unclear]	8307 37th St Ct E	926-6837
Gwen Johnson	8504 37th St. Ct E	922-5270
Thomas [unclear]	8219 37th St Ct E	922-6038
Donald [unclear]	8224 37th St Ct E	
Vina [unclear]	8528 38th St E	922-1934
A. S. [unclear]	8409 38th St E	253-922-2596
Carne [unclear]	8503 38th St E	253-926-5411
Matthew [unclear]	8311 38th St E	253-922-0144
Eric [unclear]	8315 37th St Ct E	922-7072
Wendy [unclear]	8314 38th St Ct E	922-5825
Theresa [unclear]	8406 38th St Ct E	926-9331
Douglas [unclear]	8209-37th St Ct E	926-6388
Valerie Jennings	8211 38th St E	922-2275

**PETITION TO WSDOT
March 8, 2003**

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The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

All on this sheet live in Cherrywood Mobile Home Park in Edgewood, WA

Name	Address	Phone
Jeanne [unclear]	8509 37th St Ct E, Edgewood	
ARTHUR H. [unclear]	8509 37th St Ct E, Edgewood WA	
Dorcas [unclear]	8515 37th St Ct E	896-1292
Mary [unclear]	8527 37th St Ct E	922-9583
Phyllis [unclear]	8503 37th St Ct E	922-8221
Alvina [unclear]	8428 37th Ct E	926-2538
Charles [unclear]	8421 37th Ct E	922-8350
Virginia [unclear]	8421 37th St Ct E	922-5330
Mary [unclear]	8409 37th St Ct E	926-1201
Alta [unclear]	8327 37th St E	926-8115
James W. Clark	8305-37th St Ct E	926-3459
Barbara R. Clark	8305 37th St Ct E	926-3459
Joseph [unclear]	8227 37th St Ct E	922-1527
Suzanne [unclear]	8205 37th St Ct E	922-0754
Frank [unclear]	8212 38th St E	922-3862
Pauline [unclear]	8218 37th St Ct E	922-7344
Joseph H. [unclear]	8206 37th St Ct E	926-6384
George [unclear]	8206 37th St Ct E	926-6384
Larry [unclear]	8216 37th St Ct E	922-5734
Eda [unclear]	8216 37th St Ct E	922-5734

PETITION TO WSDOT
March 6, 2003

The Department of Transportation is considering three options for the SR-167 Valley Avenue Interchange that will impact citizens of Fife, Puyallup, and our neighborhood in Edgewood.

The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

All on this sheet live in Cherrywood Mobile Home Park in Edgewood, WA

Name	Address	Phone
Joyce Butler	8516-37th St. C.E. Edgewood, WA	922-1287
Royal Shaw	8515 37th St. C.E. Edgewood WA	896-1292
Juanita Moore	8427 38th St. E. Edgewood	922-1097
Gene Sargent	8428 38th St E	922-7286
Julie Camacho	8427 38th E.	926-2538
John Carroll	8427 38th E	926-2538
Carol Pulver	8328-31th St. C.E.	922-8565
Karen Ormigg	8306 37th St. C.E.	922-0444
Elinor Rans	8228 37th St. C.E.	926-0966
Kanda J. Franklin	8205 37th St. C.E.	922-0854
Arthur Johnson	8217 38th St. E.	922-5578
Helen E. Sparks	8317 38th St. E.	922-0926
Helen McNewman	8302-39th St. E.	922-0169
Julie Evans	8226 38th St. East	926-3906
Vanette Evans	8226 38th St. East	926-3906
William J. Blackburn	8222-38th St. E.	926-3010
Ramona M. Jay	8218 38th St. E.	922-6371
Nancy Sanders-Dummett	8216 37th St. SE	926-8199
Sand L. Brown	8316 37th St. E.	926-8241
McBrown	8323 37th St. E.	922-0820

PETITION TO WSDOT
March 6, 2003

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The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

All on this sheet live in Cherrywood Mobile Home Park in Edgewood, WA

Name	Address	Phone
Cindy Rogers	8310 37th St. C.E.	896-4970
Penelope Simmons	8320 37th St. C.E.	922-6549
Andrea Johnson	8504 37th St. C.E.	N/A
Robin M. DeZair	8428 38th St. E.	922-7770
Y.S. C. Sun	8429 37th St. C.E.	922-7290
Anita Wilson	8502 37th St. C.E.	926-1395
Samuel E. Wu	8302 37th St. C.E.	926-1315
Roy D. Timmons	8504-38th St. E. #81	922-5483
Barbara Timmons	8504-38th St. E. #81	922-5483
Sue Frankfort	8520 37th St. C.E.	922-0858
Carl Spivey	8527 37th St. C.E.	922-9592
Jeanne O'Brien	8526 37th St. C.E.	896-1332
John O'Brien	8526 37th St. C.E.	896-1332
Joe Engelhardt	8520 37th St. C.E.	922-0858
Carole A. Kraft	8422-37th St. C.E.	253-232-3138
Myra B. Kraft	8422-37th St. C.E.	253-232-3105
Charles W. Kraft	8418 37th St. C.E.	253-922-2961
Sara Perkins	8519 37th St. C.E.	253-926-3155
Dorlene M. Butler	8516 37th St. C.E.	253-922-1237
Thy T. Duhan	8513 37th St. C.E.	253-926-3155

PETITION TO WSDOT
March 8, 2003

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We urge the State to adopt this plan.

All on this sheet live in Cherrywood Mobile Home Park in Edgewood, wa

Name	Address	Phone
John O'Brien	8526 37 th Ct E	253-850-2083
Elisabeth Richmond	8524 37 th St Ct E	253-926-1341
Ella Haddock	8522 37 th St Ct E	253-896-0452
JACK STEPKES	8422 38 th St E	253-822-2229
Betty Jean Garbhorn	8433-38 th St E	553-999-3329
Thelma Rube	8423 38 th St E	253-896-0408
Jada Sura	8423 38 th St E	253-896-0408
Michael Adams	8423 38 th St SE	253-896-0709
Barbara E Kelso	8512 39 th St E	253-982-2274
Joe Richmond	8524 37 th St Ct E	253-926-1341
James L. Gulliver	8419-38 th St E	926-1046
Jensen McLeod	8503 38 th St E	926-3040
LEON M. DIXON JR	8503 38 th St E	939-4934
KEATRICE ARGO	8507-38 th St	922-7590
Bonnie Pierson	8418 37 th St Ct E	922-2961
Greg Gore	8418 37 th St Ct E	922-2961
Ted Manuella	8410 37 th St Ct E	253-896-4037
Merna Shaw	8324 37 th St Ct E	253-896-4306
Robert P. Shaw	8324 37 th St Ct E	253-896-4306
Phyllis Schrein	8316 37 th St	253-926-8261

PETITION TO WSDOT
March 8, 2003

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We urge the State to adopt this plan.

Name	Address	Phone
Jay Caplan	7824 Valley Ave E Fife	922-5711
Bruce Baker	1109 Valley Ave NW	253-848-3742
MANNA MUNDLUND	8311 Valley Ave E Edgewood	253-926-8607
Sharon Worden	8319 Valley Ave E Edgewood	253-922-0108
Yang Worden	8319 Valley Ave E Edgewood	"
Young B. Jo	8124 Valley Ave E Fife	926-1291

Yang Nim Jo 8124 Valley Ave E. fife. 926-1291

PETITION TO WSDOT
March 8, 2003

The Department of Transportation is considering three options for the SR-167 Valley Avenue Interchange that will impact citizens of Fife, Puyallup, and our neighborhood in Edgewood.

The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

Name	Address	Phone
John Eastman	4822 84 th Ave. Ct. E.	(253) 922-3732
Daniel Bourton	4022 84 th Ave. Ct. E.	(253) 686-6046
Carlton W. Hovell	4104 84 th Ave Ct E.	(253) 922-1157
Bruce W. Johnson	4020 84 th Ave Ct E	253-922-7829
David Landerhock	3923 84 th Ave Ct E Puyallup	253-922-6296
Harwin Tolson	4012 84 th Ave Ct E Edgewood	922-576
Porothy Landerhock	3923-84 th Ave. Ct E Puyallup	922-6296
Gregory M. Gault	4104 84 th Ave Ct E Puyallup	922-1157
John W. Johnson	4020 84 th Ave Ct E Puyallup	253-922-7829
Shawn Thurman	4102 84 th Ave Ct E Edgewood	(253) 576-9183

PETITION TO WSDOT
March 8, 2003

The Department of Transportation is considering three options for the SR-167 Valley Avenue Interchange that will impact citizens of Fife, Puyallup, and our neighborhood in Edgewood.

The Valley Avenue Option clearly has the least impact to existing neighborhoods.

We urge the State to adopt this plan.

Name	Address	Phone
C. E. Blod	9906 DeChaux Rd E	(253) 845-5870
Eric V. Bloch	9906 DeChaux Rd E Edgewood	" "
Jami Nalozny	9911 DeChaux Rd E Edgewood	841-3984
Judith Hodgson	10001 DeChaux Rd E Edgewood	983-71-945-9
Judith Rayne	10030 DeChaux Rd E Edgewood	845-3
Dan Spangher	9220 44th STREET CT E Edgewood	u
Barbara Bigelow	9317 44th St. Ct. E. Edgewood	u
Margaret Skelly	9328 44th St Ct E Edgewood, WA	941-02

TRANSCRIBED COMMENT C76-001

The Valley Avenue Option has the least impact to existing neighborhoods. We urge the State to adopt this plan. Signed by 161 Persons

RESPONSE C76-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

FROM: RICHARD & JENNIFER SCOTT
6724 12TH ST. E.
TACOMA, WA. 98424
253-922-2456 (H)



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

Fife
Open House

RECEIVED

MAY 05 2003

TUMWATER DESIGN

Dear NEAL CAMPBELL, WSDOT,

My NAME IS RICHARD SCOTT, AND I LIVE AT THE VERY MOST TIP OF FIFE HEIGHTS CLOSEST TO THE NEW PROPOSED INTERCHANGE WITH I-5, 167, & EXTENTION INTO THE PORT OF TACOMA. My WIFE AND I HAVE A GREAT CONCERN ABOUT EXTREME INCREASES IN TRAFFIC NOISE THAT WILL OCCUR AT OUR RESIDENCE WHEN THE INTERCHANGE IS BUILT. OUR HOUSE IS THE CLOSEST RESIDENCE TO THIS INTERCHANGE THAN ANY OTHER HOUSE IN THE AREA. I GUARANTEE YOU, THERE WILL BE AN EXTREME INCREASE IN TRAFFIC NOISE AT OUR HOUSE. * WE WOULD LIKE YOUR GROUP TO DO THE FOLLOWING: HELP US BY SOUNDPROOFING OUR HOUSE AND SLIGHTLY ADJUSTING OUR INSULATION QUALITY TO ACCOMMODATE THE INCREASE IN NOISE. I DON'T PROPOSE ANY SOUND BARRIER WALLS FOR MY HOUSE, JUST WINDOWS AND SOME SORT OF SOUND PROOF INSULATION. I WOULD LIKE A RESPONSE TO THIS LETTER AND POSSIBLY HAVE SOMEONE FROM YOUR GROUP COME TO MY HOUSE TO SEE AND DISCUSS THIS MATTER. I DO SOMEWHAT SUPPORT THIS INTERCHANGE EVEN THOUGH IT IS SO BIG AND CONSUMING. IT IS AN IMPORTANT PART OF MAKING THE AREA AND COMMUNITY MOVE BETTER AND HELP TRAFFIC. PLEASE TAKE THE TIME TO HELP US IN THIS HUGE PROJECT. WE WILL NEED IT. THANK YOU NEAL, SINCERELY, RICHARD & JENNIFER SCOTT

C77-001

PAGE 2 of 2

disc April 14

Or send comments to:
Neal Campbell
WSDOT Design Project
Engineer
6639 Capitol Blvd S,
Suite 302
Tumwater, WA 98501
360-570-6602
Fax 360-570-6630
e-mail:
campben@wsdot.wa.gov



Comments

State Route 167
Extension
from
Puyallup to
State Route 509
(Fife)

WE AWAIT YOUR RESPONSE TO THIS MATTER. I WILL BE MUCH CHEAPER TO SOUND PROOF

WALLS! THANK YOU FOR CONSIDERATION.

Richard D. Scott

RICHARD & JENNIFER SCOTT
6724 12TH ST. E.
TACOMA, WA. 98424

Or send comments to:

Neal Campbell
WSDOT Design Project
Engineer
6639 Capitol Blvd S,
Suite 302

253-922-2456 HOME #
253-222-5700 CELL #
253-922-1700 WORK #

TRANSCRIBED COMMENT C77-001

My name is Richard Scott, and I live at the very most tip of Fife Heights closest to the new proposed interchange with I-5, 167 extension into the Port of Tacoma. My wife and I have a great concern about extreme increases in traffic noise that will occur at our residence when the interchange is built. Our house is the closest residence to this interchange than any other house in the area. I guarantee you, there will be an extreme increase in traffic noise at our house. We would like your group to do the following: help us by soundproofing our house and slightly adjusting our insulation quality to accommodate the increase in noise. I don't propose any sound barrier walls for our house, just window and some sort of sound proof insulation. I would like a response to this letter and possibly have someone come to my house to see and discuss this matter. I do somewhat support this interchange even though it is so big and consuming. It is an important part of making the area and community move better and help traffic. Please take the time to help us in this huge project. We will need it. Thank you.

We await your response to this matter. I will be much cheaper to sound proof than to put up huge sound walls! Thank you for your consideration.

RESPONSE C77-001

FHWA and WSDOT policy states that funding for projects will not be used to insulate private or commercial buildings. Insulation of buildings can be used in some instances for non-profit institutions or public use structures. A noise study has been conducted to evaluate the placement of noise walls along the project corridor. For more information, please see subsection 3.6.6 of the FEIS.

RECEIVED

APR 24 2003

TUMWATER DESIGN

Linda Payne Taylor
PO Box 23966
Federal Way, WA 98093

26 March 2003

I am all for completing Highway 167. It is good for the Port of Tacoma, where my husband is employed.

However, there has to be another simpler, *CHEAPER*, and better alternative to achieving this goal than building an 85' high bridge over I5, skirting Fife Height's hillside.

Fife Heights is a lovely slice of rural land between the Tide Flats and Pacific Highway South. We already have to endure more and more noise from I5 and Pacific Hwy S. due to the loss of more and more natural land being bulldozed under in the name of "progress." The filth that comes from the roadways, in the form of black tire dust and just plain dust is overwhelming now. Our decks must be washed off daily.

If we get an aerial, truck heavy, highway skirting the other side of our hill, we will be so inundated by noise (think acceleration and deceleration and jack brakes) and the filth of the freeways, that our land will be unusable, our property values will drop to less than our purchase prices/mortgages. This will be very easy to prove and simple for us to gather the evidence.

Is the State Dept. of Transportation set up to buy our homes? Is it set up to compensate us for loss of value? I can assure you that the citizens of Fife Heights will sue for either or both of these monetary compensations.

How do you plan to help the residents endure the noise of the building of the bridges? We have very vivid memories of the work on the Port of Tacoma Road bridges still.

And, finally, how will the Dept. of Transportation protect us from the dust that is laden w/ arsenic? The testing and study has been completed and the outcome is that the arsenic levels are above "background" levels and are harmful. Unless this is dealt with properly, again there will be more lawsuits. There is no denying that the dust levels will be awful.

RESPONSE C78-001

WSDOT held several design workshops and conducted a Value Engineering (VE) study for the I-5 interchange. All aspects of highway design were represented with technical experts from the local jurisdictions, highway designers, bridge designers and geotechnical experts. The preferred option for the I-5 interchange resulted from those meetings.

C78-001

RESPONSE C78-002

FHWA and WSDOT policy is that we only model noise levels 500 feet from the FOG line at the edge of the paved highway. Fife Heights is over 1000 feet from the proposed new SR 167 highway alignment and outside of the project limits. Beyond approximately 500 feet from the highway noise reductions provided by noise barriers are negligible. Noise barriers are effective only for those homes that are immediately adjacent to the highway and a row or two of houses behind this first row. The noise discipline report (2004) modeled impacts at a total of 19 residents between the proposed highway and Fife Heights. Two noise barriers, numbers 4 and 5, were modeled to shield the residents in this area. The study determined that neither wall would be able to achieve the required minimum of 7 decibels noise reduction at one household, and therefore, does not meet the feasibility criteria.

C78-002

RESPONSE C78-003

Construction will require mitigation measures to comply with PSCAA regulations that require the control of dust during construction and preventing deposition of mud on paved streets.

C78-003

Our only conclusion is that the DOT (in your short-sighted thinking and with a few willing, retiring farmers) finds it cheaper and less troublesome, to buy out a few farms than some business locations.


If constructed logically, this roadway would be aligned w/ I5, meeting already constructed on/off-ramps where added traffic lanes (2 or 3) would move the traffic to north or south bound onto I5. A new overpass at Alexander or 54th would keep the trucks rolling over the traffic at Pacific Hwy. S. (Something that should have been done on the Port of Tacoma Road.) It would require the purchase of some businesses and only 1 bridge. There would be no issue w/ the creek, no issue w/ noise or pollution, no issue w/ residential land.

We also suspect that the Indians proposed closure of Alexander has some impact on decisions. Though the City of Tacoma has authority here, it would be a grave mistake to close Alexander. There would only, then, be one, 2-lane roadway leading on and off the Tide Flats and in an emergency it would not be adequate. Dumping many more trucks, at high speeds, would only make matters worse. The Port wishes to expand the use of this part of the Tide Flats but with no bridges, one roadway and now a freeway, this becomes a dangerous and foolish proposition.

It seems to us that you need to reconsider your choices: either buy Fife Heights out and turn the land into industrial land (don't tell this to all the owners of new homes) or re-align and redesign this interchange. The plan you are currently proposing is more costly than 3X the above alternative.

We chose to live in Fife Heights to be close to work, therefore relieving traffic on all roadways. We chose to be part of a solution and not part of a problem. Now you are taking that logical choice away from us. You say you want to relieve congestion on the freeways and roads. Prove it!

Thank you for your attention to my remarks.


415 66th AVE East
98424

C78-004

RESPONSE C78-004

The proposed 54th Avenue interchange will allow trucks to access SR 167 and tie directly to I-5 northbound and the Port of Tacoma Road/SR 509 area without entering the intersection at SR 99. Trucks destined for southbound I-5 will have to use the existing configuration with the SR 99 intersection and then enter I-5. Alexander Avenue has been closed north of SR 509.

C78-005

RESPONSE C78-005

The closure of Alexander Avenue north of SR 509 has been approved by Pierce County and the Cities of Tacoma and Fife. The two Port accesses via 54th Ave and Taylor Way and Port of Tacoma Road are accommodated in this project. Please see response to your comment above.

-----Original Message-----

From: Lari Ryan [mailto:lari.ryan@earthlink.net]
Sent: Sunday, April 13, 2003 5:41 PM
To: Neal Campbell
Subject: Hylebos Creek

Dear Mr. Campbell: I am writing in support of the Hylebos Creek Restoration Proposal, which hopefully will aid in restoring the wetland by allowing the return of the natural floodplain. In talking to other concerned citizens, I find we have a lack of information about the restoration methods and the total size of the proposed restoration area. As there seems to be a good deal of development proposed for the area, I am concerned for the several salmon species affected as well as other wetland creatures including mammals such as beaver and river otter.

Also the proposed SR 167 corridor is close enough in some places to allow major pollution. How is this all going to be addressed.

Sincerely,

Lari Ryan

RESPONSE C79-001

Thank you for your support. Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. Other subsections in sections 3.2, 3.3 and 3.4 have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. Please also see responses to comments G01-001 through G01-049.

C79-001

-----Original Message-----

From: RevelCC@aol.com [mailto:RevelCC@aol.com]
Sent: Friday, March 07, 2003 11:16 AM
To: campben@wsdot.wa.gov
Subject: (no subject)

Neal,

I can't make the Public Hearings, but I wanted to give you my input on this plan...

For the most part I agree with transportation plans that will help reduce our congestion that we have to deal with in today's world. But, my only concern would be are we spending the money on the most important improvement that will return the most for our money.

I drive the 167 freeway on a daily basis to get to and from work. There's a tremendous amount of pressure on this freeway to deliver the capacity that it incurs. Is there any effort to evaluate alternatives to expanding it's capacity?

I think by connecting 167 to I-5, you might actually end up putting more load on an already maxed out capacity. Seems like we could extend the HOV lanes from Auburn to Sumner and then extend 167 to I-5 allowing for an additional load that will occur on 167.

Okay, now that I am on my bandstand, seems like we could get better through put on the system if we open up the commuter lanes to the general public on 167.

Like I've said previously, I've been commuting using this stretch of road (for many years) and areas that there's HOV provided, they are way under used. Opening these up would allow for increased flow....

One last thought is that if the HOV lanes are under used, has anyone thought of using them as the basis of elevated light rail. These lanes could be used for the foundation points to build this type of alternative. Just an idea that I've had for some time....

THANKS for you time and willingness to hear others opinions!

Have a GREAT day!

Joe DeRasier
(360) 893-8902

RESPONSE C80-001

Capacity changes to SR 167 north to Auburn are currently being studied on an adjacent project. The proposed SR 167 extension will ease congestion on local roads. The increase in traffic on the existing SR 167 freeway between Puyallup and I-405 will be minimal.

RESPONSE C80-002

Light Rail is not proposed as part of this project.

C80-001

C80-002

-----Original Message-----

From: Yeilding, James H [mailto:james.h.yeilding@boeing.com]
Sent: Tuesday, March 11, 2003 12:22 PM
To: campben@wsdot.wa.gov
Subject: Finishing 167

Mr. Campbell,

I was unable to download the EIS or other documentation concerning the completion of 167. The current project is just too expensive. And it will prevent any future expansion of I-5. Is one of the possible alternatives to go back to the original route and just cut a deal with the environmentalist and native Americans?

It has to be cheaper to mitigate the adverse impact to the salmon habitat and demolish the existing structures on the original route, than the currently proposed route.

I am one of those Edgewood residents who is going to fight any expansion of Meridian until 167 is completed. So unfortunately, I am part of the problem, not the solution.

But you have to come up with a cheaper solution. \$ 1.6 Billion is just too much money.

Sincerely,

Jim Yeilding

RE: 0L3432, State Route 167
SR 167, Puyallup to SR 509, Tier II Environmental Impact Statement
Response to Your Comments

Dear Mr. Yielding:

I recently mailed you a letter thanking you for commenting on the Tier II DEIS for this project. As stated in the letter, it will take quite a while to incorporate all the comments into a final EIS. I'd like to take this opportunity to answer some of your questions that can be answered right now.

"The project will prevent any future expansion of I-5"

- Adjacent projects at Port of Tacoma Road and projects to widen I-5 through Tacoma will add an additional HOV lane to I-5. These projects are expected to take place before the SR 167 Interchange is built. Future expansion beyond that may still be possible.

"Is it possible to go back to the original route and cut a deal?"

- No, the Tier I EIS defined where the corridor is to occur. The preferred alternative had the fewest environmental impacts of the alternatives presented in Tier I. The original route still has higher environmental impacts than the current design.
- The original plan to connect at Port of Tacoma Interchange will not match City of Fife transportation plans and will overload the interchange at I-5 and Port of Tacoma Road.
- Too many environmental impacts were identified on the original route. It would not be cheaper to mitigate impacts.

If you have any additional questions concerning the project, please contact me at 360-570-6602 or Rae Bennett, the Design Team Leader, at 360-570-6613.

cc: File

C81-001

RESPONSE C81-001

Adjacent projects at Port of Tacoma Road and projects to widen I-5 through Tacoma will add an additional HOV land lane in each direction to I-5. These projects are expected to take place before the SR 167 Interchange is built. Future expansion beyond that may still be possible. The Tier I EIS defined where the corridor is to occur. The preferred alternative had the fewest environmental impacts of the alternatives presented in Tier I. The original route still has higher environmental impacts than the current design. The original plan to connect at Port of Tacoma Interchange will not match City of Fife transportation plans and will overload the interchange at I-5 and Port of Tacoma Road. Too many environmental impacts were identified on the original route, and it would not be cheaper to mitigate impacts.

RECEIVED

APR 14 2003

TUMWATER DESIGN

Mary A. Fries
620 North C St
Tacoma, WA 98403

To Neal Campbell, Project Engineer
WSDOT Tumwater Design Office

Dear Sir:

Many of us who are interested in the preservation of salmon were dismayed to learn that DOT's plans for SR167 do not do a good job of ensuring that highway runoff does not pollute Hylebos Creek.

The Draft EIS needs to be fleshed out with a great many more details about the protection of riparian and creek environments. You may need to acquire and restore more riparian area than is currently specified in your plans. Riparian and floodplain habitat needs to be acquired and restored before this highway attracts a strip of development which will add to detrimental effects on the creek habitat.

Have plant ecologists who specialize in riparian restoration, and fisheries biologists been consulted about environmental impacts, and how best to mitigate them?

I urge you to do a more thorough EIS.

Thank you,

Mary A. Fries

RESPONSE C82-001

Information on the Riparian Restoration Proposal (RRP) has been expanded in the EIS. Please look at subsections 3.2.4 Water Resources; 3.3.8 Wetlands; and 3.4.4 Wildlife, Fisheries, and Threatened and Endangered Species. These sections have been expanded to look at impacts per sub-basin and reorganized to include indirect and cumulative impact analyses. We believe the changes in these sections address your concerns. WSDOT has assembled a team of experts to perform a comprehensive analysis of the project's effects on hydrology, channel hydraulics, and the geomorphology to assure that we address the impacts of our project on the watershed as part of the RRP for Hylebos Creek and Wapato Creek. We have hand chosen a team of specialists with expertise in Hydrologic Simulation Program Fortran (HSPF) modeling, floodplain hydraulics, geomorphology, and stream ecology. Please also see responses to comments G01-001 through G01-049.

C82-001



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

MAY 13 2003

RECEIVED
MAY 15 2003
OLYMPIC REGION

Regulatory Branch

Federal Highway Administration
Mr. Steve Saxton
711 South Capitol Way, Suite 501
Olympia, Washington 98501

Washington Department of Transportation
Mr. Jeff Sawyer
Olympic Region
Post Office Box 47440
Olympia, Washington 98504-7440

Reference: Tier II DEIS Comments
SR 167 Puyallup to SR 509

Dear Gentlemen:

Thank you for the opportunity to review the Tier II Draft Environmental Impact Statement for the extension of SR 167 from Puyallup to SR 509. As a cooperating agency listed on the DEIS, we have a number of concerns. Our primary concerns are discussed below while other concerns are summarized by page number in the attachment.

Section 404(b)(1) of the Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States unless the proposed discharge is the least environmentally damaging practicable alternative capable of achieving the proposal's purpose. In this case, the "discharges" being evaluated under Section 404 are primarily wetland fills and stream relocations. For non-water dependent activities, such as new roadways, associated with fills in special aquatic sites, practicable alternatives that do not involve fill in these sites are presumed to be available, unless clearly demonstrated otherwise. An additional presumption is that when a fill is proposed in a special aquatic site, all practicable alternatives that do not require fill in these sites are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

The Tier II DEIS presents substantial new information about the proposed project. The Tier I EIS, in which the various agencies concurred with "Alternative 2" as the preferred corridor alignment, presented approximately 8 acres of wetland impacts. The Tier II document describes over 30 acres of potential impact. This is substantial new information under the Signatory Agency Committee (SAC) Agreement and could lead to a revisitation of previous concurrence points.

The SAC Agreement requires WSDOT to provide the information necessary to identify the least environmentally damaging practicable alternative early in the joint NEPA/SEPA

F01-001

F01-002

RESPONSE F01-001

A Section 404(b)(1) Analysis has been completed for this project and is included as chapter 4 in the FEIS. The 404(b)(1) analysis demonstrates that "Alternative 2" from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). An analysis of Tier I versus Tier II wetland impacts is provided in section 4.1.3 of the FEIS. This information was reviewed by your agency during SAC Concurrence Point 3. We appreciate your concurrence response of September 14, 2004 indicating that many of your concerns with regard to the Draft Environmental Impact Statement (DEIS) have been addressed. Specifically, you indicated that concerns about the increase in wetland impact between the Tier I and the Tier II analyses have been addressed in a logical and creative fashion.

RESPONSE F01-002

A Section 404(b)(1) Analysis has been completed for this project and is included as chapter 4 in the FEIS. The 404(b)(1) analysis demonstrates that "Alternative 2" from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). Through collaboration with your agency, the project re-examined wetland impacts associated with the corridor determination from Tier I. This analysis is provided in section 4.1.3.

process. Since the Tier I document described alternatives that show less impact (14 to 16 acres) than the current Tier II corridor (over 30 acres), there are off-site alternatives that would meet the 404 (b)(1) requirement to select the least environmentally damaging practicable alternative. There is no explanation in this DEIS of why the “preferred” alternative corridor alignment, now with over 30 acres of wetland impacts, is the least environmentally damaging practicable alternative. The range of alternatives appears to be inadequate since all of the alternatives presented are much more environmentally damaging than those discussed in the Tier I EIS. Therefore, we may not be able approve the current configuration based on the information supplied in this document.

The on-site alternatives presented in the Tier II DEIS only vary in their impacts by about an acre out of 30 acres. The bulk of the impacts appear to be related to the mainline portion of the proposed roadway and there are no alternatives presented for this portion of the project. In addition, a cursory review of some of the drawings in the DEIS show opportunities for avoidance that are not explored in the document leading the reader to believe that even within this corridor there may be other less damaging alternatives that are not presented. The document does not adequately evaluate alternatives under the 404 (b)(1) guidelines.

The SAC Agreement also emphasizes a preference for alternatives that avoid adverse impacts to wetlands. The document also does not present information on how impacts were avoided. Section 404 (b)(1) requires an analysis of how impacts have been avoided or minimized and reduced. Appropriate measures to minimize impacts do not include compensatory mitigation. Mitigation comes last after all possible impacts have been first avoided and then minimized. Compliance with the required 404 (b)(1) analysis of alternatives is more substantive than simply disclosing impacts and presenting a compensatory mitigation plan.

A second area of concern is related to potential floodplain impacts. The floodplain maps in the document are very helpful and we appreciate the recalculation of potential flood hazards based on current watershed conditions to show flood prone areas. However, Executive Order 11988 on Floodplain Management issued May 24, 1977, states that the Corps should “avoid direct or indirect support of floodplain development wherever there is a practicable alternative.” As noted above, the DEIS does not demonstrate that there are no practicable alternatives. Both direct and indirect impacts to the floodplain will need to be addressed more thoroughly. The new roadway will affect, in part, the density, distribution, scope, duration, and/or timing of the growth and development in the floodplain and thus has indirect impacts on the floodplain. In addition, E.O. 11988 states that if floodplain impacts cannot be avoided, then compensatory floodplain storage is required. Proposals for avoiding, minimizing and mitigating for floodplain impacts are not adequately discussed in the document.

The third area of primary concern is related to compensatory mitigation for wetland impacts. The project proponent is proposing to concentrate all of the compensatory mitigation in a single off-site location along the Puyallup River. The document is misleading when it repeatedly refers to a 256-acre mitigation site when only 50 acres of wetland compensation is proposed. We agree that there can be some benefits from concentrating compensatory mitigation into a large site. Long-term management and viability might be greater with one large site.

RESPONSE F01-003

F01-002

A Section 404(b)(1) Analysis has been completed for this project and is included as chapter 4 in the FEIS. The 404(b)(1) analysis demonstrates that “Alternative 2” from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). Mainline avoidance and minimization efforts are described in section 4.2.2. FHWA and WSDOT will also continue to evaluate potential opportunities to incorporate additional avoidance and minimization measures during final design.

F01-003

RESPONSE F01-004

F01-004

A Section 404(b)(1) Analysis has been completed for this project and is included as chapter 4 in the FEIS. The 404(b)(1) analysis demonstrates that “Alternative 2” from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). On March 7, 2005, your agency concurred that the preferred build alternative is the Least Environmentally Damaging and Practicable Alternative (LEDPA) with clarification that although the level of detail provided is appropriate for the NEPA process, this information will need to be developed to a much greater degree of specificity by the time permits are applied for. FHWA and WSDOT will also continue to evaluate potential opportunities to incorporate additional avoidance and minimization measures during final design.

F01-005

RESPONSE F01-005

F01-006

Floodplain impacts, including indirect and cumulative impacts, have been clarified in sections 3.2.6 & 3.2.7. Embankments and structures will be designed, to the extent practicable, to pass maximum flood flows. If necessary, additional flood storage will be provided. A final mitigation plan addressing floodplain mitigation measures will be developed prior to construction. In addition, the proposed RRP would remove existing obstructions such as buildings, embankments, and roadways, and reestablish a more natural condition for the floodplain as well as the existing wetlands. Compensatory mitigation for wetlands would also be provided by creating new wetlands in the project area. Existing and new mitigation areas would include buffers and connection to other wetlands and upland habitats through the new floodplain area developed in the Stormwater Management Plan which will be developed in the Design phase of the project.

However, the large areas associated with the relocations of Hylebos Creek and the Surprise Lake Drain would appear to provide better opportunities for compensatory mitigation closer to the location of the actual impacts.

The DEIS also inadequately describes impacts to wetlands functions and does not show how the proposed mitigation site will compensate for those impacts. Impacts should be described by wetland type, functions, and subbasin. Then mitigation can be developed that more directly addresses the impacts. It is not clear how the proposed site, which is separated from the Puyallup River by a roadway and the rest of the valley's natural systems by an elevated railroad line, would provide adequate compensation for functions or improve conditions for fish and wildlife. The document does not explain how the proposed mitigation site, which is described as having sandy soils and limited water, might be converted into a successful wetland area.

Thank you for the opportunity to review this document. As a cooperating agency we would like to see this document provide enough information for our permit review process. If you have any questions, please feel free to contact Ms. Kate Stenberg at (206) 764-6912.

Sincerely,

Michelle Walker, Chief
South Application Review Section

Attachment

- cc: Elaine Somers, USEPA
- Nancy Brennan-Dubbs, USFWS
- Mike Grady, NMFS
- Sharon Love, FHWA
- Cynthia Pratt, WDFW
- Therese Swanson, Ecology
- Phil KauzLoric, WSDOT

F01-006

RESPONSE F01-006

A Conceptual Mitigation Plan has been developed for this project, identifying several potential wetland mitigation sites (see FEIS section 3.3.7). WSDOT worked extensively with the COE during August and September 2004 to reach mutual concurrence on a Conceptual Mitigation Plan. It was noted that the final plan will need more detail before the COE 404 permit is approved.

F01-007

In March 2005, the COE and WSDOT reached agreement to support a watershed approach to identifying sites for compensatory mitigation (Regulatory Guidance Letter 02-2). Accordingly, the final wetland mitigation plan will maintain a watershed focus. The considered wetland mitigation site(s) will be within the Puyallup River watershed (WRIA 10) and will be selected to prioritize, if possible, locations within the project area ("on-site") and within the specific sub-watershed(s) where substantial impacts to wetlands may occur.

The potential Mitigation sites identified in the Conceptual Mitigation Plan are currently being evaluated as to their positive and negative effects on wildlife and fish, not only at the Puyallup River, but at Hylebos and Wapato Creeks. The final mitigation sites will be selected when the final design is nearly complete and it is known what wetlands are actually affected and what mitigation is required. It is intended that wetlands that best meet the goals and objectives of improving the project area, and that can be connected and supported by the future Stormwater Management Plan, would be those included in the project (see Figure 3.3-1).

RESPONSE F01-007

Since the DEIS was distributed, FHWA and WSDOT have conducted additional analyses of potential project impacts to water resources and wetlands. These impacts were analyzed per sub-basin, and sections 3.2 and 3.3 of the FEIS have been updated to include this information. Before initiating permitting or preparing a final wetland mitigation plan, FHWA and WSDOT intend to reevaluate all wetlands affected by this project, including revisiting wetland delineation and categorizations over 3 years old. This will include an assessment of wetlands within the RRP and the final wetland mitigation site(s). The COE will be invited, upon confirmation of anticipated wetland impacts prior to construction, to review the final wetland delineation and categorization in the field.

As indicated in the Conceptual Mitigation Plan and in section 3.3.7 of the FEIS, several potential wetland mitigation sites have now been identified for the project. In coordination with stakeholder agencies, WSDOT will select one or more of the considered mitigation site(s) to best compensate for unavoidable impacts to wetlands after the Tier II Record of Decision (ROD) is issued.

ATTACHMENT 1

Tier II DEIS SR 167 Puyallup to SR509
Additional comments

Page:

S-9: The project will have secondary or indirect impacts. The document is incorrect in stating that there are no secondary impacts and the analysis of these impacts is incomplete. For example, the new road will affect, in part, the density, distribution, scope, duration, and/or timing of new growth and development in the affected area and, thus, will affect things like the floodplain. As another example, the roadway will directly result in the loss of farmland and some farm operations (the document notes several farmers who believe the roadway will impact their operations such that they will quit farming) and it will make access more difficult for remaining farms. This will lead to a decline in the demand for farm support services which could lead to those services relocating outside of the area, making it more difficult for remaining farmers to operate, and so on, into a declining spiral of secondary effects.

S-15: Impacts to fish and wildlife are never limited to displacement. If an area is no longer suitable for a particular species, whether due to direct loss of cover by paving or indirect effects of "increased noise and activity levels" then that area is no longer suitable for that species and the total available habitat has been decreased by that amount. When the total available habitat is reduced the population also declines. Please disclose all of the impacts.

S-16: If the proposed design with the roadway being placed on fill rather than a bridge structure would impede wildlife movement in an east-west direction, then perhaps other alternatives should be considered.

S-17: The map on this page does not show chinook habitat. Chinook do occur in the area. Perhaps this oversight is due to the color choices for the map. The legend shows chinook habitat should be yellow which probably doesn't show up on the yellow map background.

S-17: Are the potential negative impacts of debris from bridge demolition entering the water mentioned on this page also covered under water quality impacts?

S-23: The document incorrectly characterizes cumulative impacts. An analysis of cumulative impacts is not done by comparing the impacts of the project to everything else that has or will happen in an area. Cumulative impacts are, instead, the addition of the impacts of the project to other reasonably foreseeable actions. A very small incremental impact may still be significant if past actions have pushed a system to a threshold point. For example, the loss of the last connection for chinook salmon migration may be a very small incremental impact and yet be a significant cumulative impact.

RESPONSE F01-008

Indirect impacts have been clarified in the FEIS. Resources that were expected to experience substantial cumulative change were identified as critical resources and those sections in the FEIS were updated to include both an indirect and cumulative impact analysis. Critical resources for the project are water resources (section 3.2); wetlands (section 3.3); wildlife, fisheries, and threatened and endangered species (section 3.4); land use, socioeconomics, and environmental justice (section 3.11); farmland (section 3.12); and cultural resources (section 3.16).

F01-008

RESPONSE F01-009

The impacts to fish and wildlife have been clarified in the FEIS. For more information, please see section 3.4.3 for construction impacts, section 3.4.4 for operation impacts, 3.4.7 for indirect impacts, and 3.4.8 for cumulative impacts.

F01-009

RESPONSE F01-010

The addition of low-cost wildlife crossings and the use of over-sized culverts or clear-spanning structures will be considered at appropriate locations.

F01-010

RESPONSE F01-011

The FEIS no longer contains a figure showing Chinook habitat. Information on impacts to Chinook habitat is discussed in section 3.4 of the FEIS.

F01-011

RESPONSE F01-012

Potential water quality impacts from demolition of the bridges are discussed in section 3.2.4 of the FEIS.

F01-012

RESPONSE F01-013

The cumulative impact section was developed following discussions and meetings with several agencies. The agencies involved were EPA, FHWA, NOAA Fisheries and USFWS. Cumulative impacts for the critical resources have been clarified (see response to comment F01-008, above). In addition, section 3.17 now contains a summary of cumulative impacts including the Net Environmental Benefits Analysis done for the RRP.

F01-013

1-6: Specific mitigation measures required in the Tier I ROD should be enumerated here and distinguished from the Tier II mitigation measures. What were these “specific mitigation measures”?

1-7: As a cooperating agency, this document must meet the Corps requirements for 404(b)(1) analysis and review of public interest factors. The list of issues to be covered in this EIS, therefore, must also include floodplain hazards and floodplain values. These topics are covered later in the document, but they should also be enumerated in the list on this page.

3-3: The summary table of water resource impacts seems incomplete. In later sections, the document describes a wide variety of significant impacts including relocation of stream channels, replacement and addition of culverts, and construction and demolition of bridges that are not highlighted in this introductory summary.

3-8: Farmers with fragmented fields are much more likely to give up farming. A surface street connection does not mean that farm machinery will be able to mix with modern traffic. A surface street connection is also not necessarily as accessible or as quick as the current situation. Additional time to move equipment or restrictions on moving equipment will add to other incentives to cease farming operations. The statement that the mainline would not create a barrier to the movement of farm equipment does not appear to be correct.

3-28: The text discusses several stream crossings required by the various 54th Ave. interchange options and yet the table (3.2-3) shows no impact to water resources. Please include a discussion of both the in-water work and any indirect impacts to the water resources.

3-29: Table 3.2-4 contains a row titled “stream channel relocation.” Is this the amount of existing stream channel that will be lost or the amount of new channel that will be created? If it is the amount that will be created, how much will be lost? The text discussion of the stream channel relocations is unclear. Please include details about the amount of impact, the amount of restoration, the functions that will be impacted or restored, the location of the impacts and restoration work, etc.

3-32: The text of the document seems to imply that the project will establish wildlife corridors that link to existing upland habitats. Where are these corridors located? Where are the upland habitats located? How is the connection made? Are any of these areas protected by any public or non-profit entity in perpetuity? Is there documentation for the functionality of these connections? Some large parcels of the upper Hylebos watershed are protected. How do these currently protected lands relate to this connectivity issue? Simply showing undeveloped forestlands is misleading as these may not be long-term connections.

RESPONSE F01-014

The specific mitigation measures required in the Tier I Record of Decision (ROD) are included in Table 1-2 of the FEIS. This table discusses the mitigation commitments made during the Tier I process. The project commitments are included in Appendix F of the FEIS.

RESPONSE F01-015

Floodplain issues are included in chapter 3.2. The list on page FEIS 1-15 is revised to read “Water Resources (Waterways, Hydrology, Water Quality, Hydrogeology, and Floodplains).

RESPONSE F01-016

Table 3.0-1, the matrix of environmental effects, has been reformatted and updated.

RESPONSE F01-017

The project will bisect three parcels currently being farmed; any impact to equipment access will be mitigated per section 3.12.6 of the FEIS.

RESPONSE F01-018

Only one ditch crossing is required in the 54th Street Loop Ramp option. section 3.2.4, 54th Avenue East Interchange, has been clarified to reflect the crossing for the purpose of comparison.

RESPONSE F01-019

Stream fill impacts and the proposal to relocate Hylebos Creek and Surprise Lake Drain are described in the SR 167 Conceptual Mitigation Plan and section 3.2 of the FEIS.

RESPONSE F01-020

The proposed RRP would reestablish a more natural condition for the floodplain surrounding the project corridor by removing obstructions, such as buildings, embankments and roadways. Compensatory mitigation areas for wetlands will also be provided, including buffers. The new expanded floodplain areas and wetlands including buffers would provide more open space areas that would offer connectivity to exiting wildlife habitats. The Hylebos Watershed, including upland habitats, would be connected through the expanded floodplain areas included in the RRP. Due to their use for flood protection, these areas would be protected from being developed for perpetuity. Please see revised figure 3.4-12 showing wildlife connectivity.

F01-014

F01-015

F01-016

F01-017

F01-018

F01-019

F01-020

3-33: In any locations where you can predict that there will be regulated impacts, such as new stream crossings or the filling of ditches and drainage courses, please provide as much information as possible to assess alternatives and impacts, and to assist with future permit review.

F01-021

3-33: Would the crossing of the Fife Ditch for the 54th Ave. interchange be completely outside of the ordinary high water mark? In-stream work and impacts to aquatic resources are not necessarily the same thing. Please make sure that the text and tables clearly reflect which type of impact is being discussed.

F01-022

3-39: Under roadway crossings for wildlife linkages are mentioned several times in the text. Where are these located? What are the habitats on either side of the roadway? What do these connections link? What species would be served? What impacts are they mitigating? The document needs more detail on these issues.

F01-023

3-41: The text states that the floodplain impacts in the vicinity of the 54th Ave. interchange are “minimal”. Please define “minimal”. The document must add up all of the impacts for the total project. Individual increments cannot be omitted because they are “minimal”.

F01-024

3-44 – 45: Federal regulations require that impacts are first avoided and then minimized, perhaps by redesign of the project. The last step, if there are still some impacts, is to propose compensatory mitigation. Please clearly describe the steps taken to avoid and then minimize impacts in this document.

F01-025

3-45: Section 404 of the Clean Water Act requires permitted projects to also be in compliance with other federal laws. The Corps will be coordinating with EPA to determine whether the project is in compliance with the Federal Safe Drinking Water Act.

F01-026

3-46: While revegetated roof systems are a way to manage stormwater runoff, they are probably not a very practical method of mitigating stormwater runoff from a highway project. It is not clear why they are mentioned in the document.

F01-027

3-64: The DEIS incorrectly describes how prior converted wetlands and farmed wetlands are defined and treated. This section needs to be corrected. The Corps does not regulate prior converted wetlands even if they are being taken out of farming uses. The Corps does regulate farmed wetlands when they are being converted to non-agricultural uses. We would not assert jurisdiction over prior converted wetlands and the text needs to be corrected on this point. However, if WSDOT chooses to combine all of the wetland areas together for ease of analysis and to simplify communication and management in the field, the Corps does not object.

F01-028

3-66: “Ditches” that relocate or divert water flows from pre-existing natural channels may fall within the jurisdiction of the Corps. These areas need to be re-evaluated to

F01-029

Since the DEIS, the Wildlife Connectivity analysis has been moved from the Water Resources section to Section 3.4 Wildlife, Fish, and Threatened and Endangered Species. The text has been expanded to explain the potential for the RRP to provide protection and restoration of a fairly large contiguous block of land (189 acres) in the urbanized Puyallup Valley. Please see Section 3.4.3 and revised figure 3.4-12 showing where the upland habitats are located. Additionally, WSDOT and FHWA have been working with groups such as the Friends of Hylebos Wetlands, NOAA Fisheries, Department of Fish and Wildlife, Department of Ecology, and US Fish and Wildlife in proposing areas to connect wildlife in the Hylebos watershed and Wapato watersheds.

RESPONSE F01-021

Instream work, including removal of undersized crossings and construction of new crossings, has been clarified in sections 3.2.4 and 3.4.3 of the FEIS.

RESPONSE F01-022

It is anticipated that the crossing at Fife Ditch will be a clear span above the ordinary high water mark. The new stream crossing will be designed to result in no long-term impact to water quality. Please see section 3.2.4, 54th Avenue East Interchange for information about the stream crossing of Fife Ditch.

RESPONSE F01-023

The addition of low-cost wildlife crossings and the use of over-sized culverts or clear-spanning structures will be considered at appropriate locations. The habitats on either side of the roadway will vary from wetland, riparian and upland habitats to grassy roadside areas. The species served by the wildlife crossings will also vary depending on the size and location of the crossings. Some will only be able to accommodate smaller animals such as raccoons. Others will be large enough to accommodate larger wildlife such as deer. Specific designs for the crossings are not yet available. Please see revised figure 3.4-12 for additional spatial information regarding wildlife connectivity.

RESPONSE F01-024

Floodplain impacts, including indirect and cumulative impacts, have been clarified in sections 3.2.5 through 3.2.7 of the FEIS.

RESPONSE F01-025

Steps taken to avoid and then minimize impacts to wetlands, streams, and floodplains have been clarified in sections 3.2 and 3.3 of the FEIS. A Conceptual Mitigation Plan has been reviewed by your agency. A final mitigation plan addressing wetland, stream mitigation measures will be developed prior to construction. FHWA and WSDOT will also continue to evaluate potential opportunities to incorporate additional avoidance and minimization measures during final design.

determine whether they should be included in the tabulation of jurisdictional waters under the Clean Water Act.

3-67: The text states that there are several isolated wetlands in the project area. The determination of isolated wetlands has become more complicated recently, and ultimately will need to be made by the Corps. It is unclear in the text how this term is being used in the document and whether these wetlands are included in the total impacts described.

3-69: The difference between prior converted and farmed wetlands is not defined in the text and there is incorrect information about how these areas are regulated. Are the designations in Table 3.3-1 correct?

3-73: The description of the Hylebos Creek relocation and riparian restoration plan is confusing and incomplete. What is the area of impact to the existing creek? How much stream channel will be created? How much riparian buffer will be created? How much wetland area will be created? Restored? Enhanced? Again, the text appears to mis-use the term "prior converted" wetlands. Are these really prior converted wetlands or are they farmed wetlands. How will the restoration plan enhance prior converted wetlands? Simply ceasing farming operations will not allow them to revert to wetlands since the hydrologic regime of prior converted wetlands has been significantly altered. How will the restoration plan restore wetland hydrology to these areas?

3-77: How will the proposed wetland mitigation site improve fish habitat since it is separated from the Puyallup River by a road? The proposed site is described in the text as having sandy soils and limited water. What features indicate that wetland creation in this site might be successful? The proposed mitigation site is also separated from other habitat features in the landscape such as wetlands, streams and forested areas. How will this mitigation site function given its isolation?

3-78: While the Corps is supportive of innovative watershed approaches to compensatory mitigation it is still important to analyze wetland impacts by sub-basin. While there may be significant off-site mitigation opportunities, as a first step, wetland mitigation should occur within the sub-basin where impacts occur. Additional documentation will be needed to explain the need to look at off-site mitigation locations.

3-79: The text is correct that federal regulations prohibit wetland fill unless there is no practicable alternative. This document does not provide sufficient information to show that there is no practicable alternative.

3-81: The use of a line called "jurisdictional boundary" on all of the wetland drawings is confusing. Another term like "incorporated limits" or "county and city boundaries" might be less confusing.

3-105: Great blue herons are territorial feeders. Replacing a variety of scattered wetlands with one large wetland mitigation site will likely negatively impact this species.

RESPONSE F01-026

We have coordinated with all other federal, state and local agencies (including the EPA) responsible for implementing regulations to ensure the project is in compliance with the Federal Safe Drinking Water Act. The comments from these agencies in this regard have been incorporated into this FEIS.

RESPONSE F01-027

Vegetated roof systems are no longer considered as an option to manage stormwater runoff from the proposed facilities.

RESPONSE F01-028

The discussion on regulation of prior converted wetlands is clarified in the introductory portion of section 3.3 (under Regulatory Authority).

RESPONSE F01-029

All "ditches" that are part of the existing system or added to the project will be surveyed and revaluated prior to final design. Those that are determined to fall within the jurisdiction of the Corps will be fully delineated and included in the tabulation of wetlands to be submitted to the Corps for authorization in the 404 permit and the final Wetland Mitigation Plan.

RESPONSE F01-030

In the DEIS, isolated wetland was used in the context of hydrologic isolation. It is not intended to convey jurisdictional determination, just an observation of the hydrologic connectivity of the wetlands in question. The COE is responsible for determining wetland isolation in light of the Solid Waste Agency of Northern Cook County (SWANCC) decision. Accordingly, wetlands considered to be hydrologically isolated were still included in the wetland impact calculations in section 3.3.

RESPONSE F01-031

A description of the difference between prior converted wetlands and farmland wetlands has been added to the introductory portion of section 3.3 (under Regulatory Authority). In addition, the wetlands analysis has been reformatted such that the existing wetland classes and rating are listed per sub-basin, with the added clarification regarding prior converted or farmed wetlands present in the study area (see Tables 3.3-1 through 3.3-3).

RESPONSE F01-032

In collaboration with stakeholders such as your agency, the Riparian Restoration Proposal (RRP) has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with your agency and other stakeholders through the RRP Technical Advisory Group.

F01-029

F01-030

F01-031

F01-032

F01-033

F01-034

F01-035

F01-036

F01-037

3-119: Surprise Lake Drain is variously described in the document as a cold, spring-fed stream and as a ditch with no vegetative cover and warm temperatures. Please clarify the condition of this stream, show the existing system and the proposed relocation on the maps, and describe the desired end result. The current location is difficult to discern on any of the maps, please highlight existing watercourses and proposed relocations on at least one map.

F01-038

3-121: The table 3.4-4 is inconsistent with the text that describes the Valley Ave. interchange removing up to 6 crossings and replacing 3 others. The table shows a maximum of one removed and up to three new crossings in addition to three crossings being modified.

F01-039

3-124: Is there any difference in endangered species impacts between any of the alternatives?

F01-040

3-126: In several places in the document there is an implication that the mitigation site will be 256 acres in size. The document describes the mitigation site as not currently containing any wetlands. Why will there only be 50 acres of wetland created on such a large site. Where on the site will they be created? How was the figure of 50 acres determined?

F01-041

3-253: Will the 41 acres of additional farmland required for stormwater control facilities impact any additional wetland areas?

F01-042

RESPONSE F01-039

This table has been corrected to be consistent with the text in the FEIS.

RESPONSE F01-040

There are two alternatives, build or no build. The build alternative contains minimal differences between interchange options, except for the impact to fish due to creek crossing structures. Please see tables 2-7, 2-8 and 2-10 in the FEIS.

RESPONSE F01-041

Please see response to comment F01-006.

RESPONSE F01-042

The Riparian Restoration Proposal (RRP) will enhance existing wetlands within the RRP area. However, there may be some temporary wetland impacts in the RRP area during construction of the RRP and relocation of Hylebos Creek and Surprise Lake Drain.

RESPONSE F01-033

The UPRR site presented in the DEIS is no longer the preferred Mitigation site. A suite of mitigation sites in the initial Conceptual Plan are currently being evaluated as to their positive and negative effects on wildlife and fish, not only at the Puyallup River, but at Hylebos and Wapato Creeks (see response to F01-020). No final sites have been selected, and none will be until the final design is nearly complete and it is known what wetlands are actually affected and what mitigation is required. It is intended that wetlands that best meet the goals and objectives of improving the project area and that can be connected and supported by the RRP would be those included in the project (see Figure 3.3-1).

RESPONSE F01-034

All affected wetlands have been analyzed and the potential impact of the project on them has been described in Section 3.3. & 3.3.4 of the FEIS. It is intended that compensatory mitigation for affected wetlands would occur on adjacent parcels first, then if not available, the encompassing sub-basin or watershed, and finally if nothing nearby or in the same sub-basin is available, off-site mitigation locations would be considered. If off-site mitigation sites are ultimately included in the project, additional documentation will be provided to explain why it was necessary to select them. Also, see response F01-007.

RESPONSE F01-035

Please see response to comment F01-004

RESPONSE F01-036

The wetland figures 3.3-1 through 3.3-3 have been revised in the FEIS.

RESPONSE F01-037

The Blue Heron has been evaluated in the Biological Assessment for this project and no adverse impacts to it have been identified. Please see comment F01-033. More than one large wetland site is being considered, and the larger area attributed to the RRP would also be available for the Great Heron as “foraging” territory.

RESPONSE F01-038

Surprise Lake Drain is a tributary to Hylebos Creek. It currently drains Surprise Lake (it is not a cold spring-fed stream) through a concourse of man-made ditches until it meets up with Hylebos Creek near I-5. The existing drain is in poor condition and has no vegetation cover which contributes to its warm temperature. It is proposed to improve this “drain” and replant vegetation to bring it back to a more natural condition. (See Figures A-3 and A-6 in Appendix A for the proposed location of Surprise Lake Drain.)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 10
 1200 Sixth Avenue
 Seattle, WA 98101

May 28, 2003

Reply To
 Attn Of: ECO-088

93-025-FHW

Mr. Steve Saxton
 Federal Highway Administration
 711 South Capitol Way, Suite 501
 Olympia, WA 98501

RECEIVED
 MAY 29 2003
 OLYMPIC REGION

Dear Mr. Saxton:

The U.S. Environmental Protection Agency (EPA) has reviewed the SR 167 Puyallup to SR 509 Tier 2 Draft Environmental Impact Statement (DEIS). We are submitting comments to you pursuant to our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Thank you for accepting our comments.

During Tier 1, the roadway corridor was selected from three alternatives through the Puyallup River Valley. The Tier 2 document therefore presents only two alternatives – build and no build, and alignment options are presented for the interchanges at 54th Avenue, Valley Avenue, and at SR 161/SR 167. While the interchange options must be analyzed, from U.S. EPA’s perspective, the most important aspects of the Tier 2 stage are the detailed technical analysis of the affected environment, environmental consequences, and mitigation for the overall project. This is because the SR 167 project will contribute to the conversion of the lower Puyallup River Valley from an environment of prime, environmentally significant farmland and floodplain, to an urban/industrial/residential environment. Thus, the magnitude of the direct, indirect, and cumulative impacts of the project could be substantial, particularly to water quality, water quantity, surface and subsurface hydrology, and aquatic habitat – including habitat for threatened and candidate fish and other sensitive species.

U.S. EPA believes that this project carries with it the potential of substantial environmental impacts, due to the road construction as well as to the subsequent development of the project area, that should be avoided. In addition, further site-specific and project area-wide analysis is needed to clarify the magnitude of environmental impacts that are likely to arise from this project. Accordingly, we have rated the Tier 2 DEIS as **EO-2, Environmental Objections, Insufficient Information**. An explanation of this rating is enclosed.

Substantial environmental impacts avoidance and minimization can be achieved through applying further analysis to improve project design, as well as through performing a collaborative and proactive alternative futures planning effort in the project area. The analysis of alternative development patterns, which incorporate varying degrees of low impact development, smart growth, transportation-oriented development, and other restoration and sensitive area protection strategies, can reveal ways to enable greater protection of open space, sensitive lands, resources, and ecological processes than would likely occur under a conventional development scenario. U.S. EPA has expertise in this area and would welcome the opportunity to work with the project proponents and other entities to make this happen.

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RESPONSE F02-001a

Land use in the lower Puyallup River Valley has traditionally been farming. However, the cities of Fife, Puyallup, and Milton have re-zoned the land in this area to a mix of industrial, commercial, and residential use. This land use conversion from agricultural to industrial/commercial/residential use is currently occurring and is expected to continue as planned by the cities’ comprehensive plans developed in accordance with the Growth Management Act (GMA).

This project will incorporate approximately 189 acres of riparian habitat for stormwater flow control. The Riparian Restoration Plan (RRP) will help restore some open space and protect sensitive area.

F02-001a

Environmental objections and information needs – Detailed comments are enclosed.

Aquatic resources

The potential substantial impacts to aquatic resources that we believe should be avoided and minimized include alterations to surface and subsurface hydrology, polluted stormwater runoff, flooding, extensive wetlands losses, surface and groundwater quality degradation, diminished groundwater supplies and instream flows, and aquatic habitat that is further degraded and unable to support dependent species. The quality, quantity, and overall effectiveness of mitigation could improve with more information on sub-watershed based and reach-specific conditions coupled with site specific project impacts. We believe this will be necessary in order to comply with Clean Water Act (CWA) and Endangered Species Act (ESA) requirements, to protect underground sources of drinking water, and to uphold Tribal trust responsibilities.

Project-related wetlands impacts, which were stated to be eight acres of wetlands for Alternative 2 (the selected alternative) in the Tier 1 Final EIS, have increased to 30.2 acres in the Tier 2 DEIS. A major federal consideration in approving Alternative 2 to be carried forward into the Tier 2 EIS process was the acreage of wetlands impacted when compared to the other Tier 1 Alternatives 1 and 3, which had greater wetland impacts. For the Tier 2 Build Alternative, direct wetlands' impacts have doubled over what would have been affected by Alternatives 1 and 3. Because of this increase, U.S. EPA believes that the Tier 2 Build Alternative may not be the least damaging alternative that is available, and consequently, the Build Alternative may not be in compliance with the CWA Section 404(b)(1) guidelines. Additional wetland evaluations are needed to compare both direct and indirect wetlands' impacts of the Tier 2 Build Alternative with the Tier 1 Final EIS Alternatives 1 and 3 before a determination of compliance or non-compliance with the guidelines can be made.

In addition, there has been no sub-watershed based analysis of wetlands' losses in terms of acreage, functions, and processes. The proposed mitigation may not offset the locally important functions the impacted wetlands provide. U.S. EPA believes that additional analysis and efforts to avoid and minimize these wetlands' losses is essential, and that the mitigation should replace functions where they are most needed within each sub-watershed.

Air toxics

There is a heightened concern for human health from this project as a result of toxic air emissions and particulate matter from diesel exhaust. Because this is a Port of Tacoma related project, 30 to 40% of the average daily traffic on the proposed roadway is anticipated to be trucks (DEIS page 3-283). In addition, project construction is projected to span a 12-year period, wherein the operation of diesel powered construction equipment, increased traffic congestion, and a doubling of truck traffic to 600,000 per year will occur (DEIS page S-2). The DEIS does not provide hotspot analysis at receptor locations as requested by U.S. EPA. and additional construction mitigation measures that we have recommended should be included. Further analysis and disclosure are needed in the EIS to inform the public and decision maker regarding the potential impacts to human health and to design mitigation measures.

F02-001b

F02-001c

RESPONSE F02-001b

A Section 404(b)(1) Analysis has been completed for this project and is included as chapter 4 in the FEIS. The 404(b)(1) analysis demonstrates that "Alternative 2" from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). Through collaboration with your agency, the project re-examined wetland impacts associated with the corridor determination from Tier 1. This analysis is provided in section 4.1.3. All affected wetlands have been analyzed, and the potential impact of the project on them has been described in Section 3.3. & 3.3.4 of the FEIS. It is intended that compensatory mitigation for affected wetlands would occur on adjacent parcels first, then if not available, the encompassing sub-basin or watershed, and finally if nothing nearby or in the same sub-basin is available, off-site mitigation locations would be considered. If off-site mitigation sites are ultimately included in the project, additional documentation will be provided to explain why it was necessary to select them. Also, see response F01-007.

RESPONSE F02-001c

The hotspot analysis was updated, see Tables 3.5-3 and 3.5-4. Construction mitigation measures are listed in section 3.5.5.

Secondary and cumulative impacts

U.S. EPA disagrees with the conclusion in the DEIS that there are no secondary impacts from the proposed project. We would like to see an analysis using currently available methods and models for assessing both secondary and cumulative effects. The cumulative effects analysis, which is strictly qualitative, does present generic conclusions that water quality, hydrological alterations, and aquatic habitat conditions will worsen as the project area develops. While we can agree with these conclusions, the DEIS offers no quantitative analysis (such as using impervious cover as an index of impacts) that would support informed, targeted, and proactive strategies to avert the anticipated environmental decline. Only the standard local controls will be applied, which are inadequate to prevent degradation of aquatic habitat and water quality when total impervious cover exceeds certain thresholds (Booth, 2003; Center for Watershed Protection, 2003).

As described above, there are alternative futures analyses and strategies that can help to characterize the secondary and cumulative effects and design development in the project area in a manner that will avoid and minimize impacts and preserve the natural ecological functions. Additional protective measures, such as, riparian area, wetlands and buffers protection and restoration; protection and re-establishment of forest cover; low impact and zero impact development strategies; and open space acquisition can be implemented by the project proponent and/or by the project proponent in partnership with other entities. We would welcome meeting with the project proponent, FHWA, and local entities to discuss alternative futures analyses and other tools for designing development, as well as additional mitigation measures that preserve and restore some of the ecological functions and values of the area.

Effects to threatened species

The DEIS includes a preliminary effects determination under ESA of “likely to adversely effect” bull trout and Puget Sound chinook salmon, and of “likely to significantly impact” coho salmon. In light of these predictions, U.S. EPA believes that the above stated measures for mitigating these expected outcomes are also important for the lead agency to fulfill its obligations under Section 7(a)(1) of the ESA to conserve listed species. The greatest opportunity to do so is now – before the Puyallup River Valley is fully converted to commercial/ industrial/residential land uses.

Additional substantial impacts

We are concerned about project impacts to the Puyallup Tribe and the need for observing the requirements of consultation and government to government relations¹ with the Tribe. We also have concerns regarding loss of prime farmlands, noise, and lack of facilities for non-motorized travel and public transit (adequate dedicated pedestrian/bicycle trail network, roadside walkways

¹See, e.g., Memorandum, “Government-to-Government Relations with Native American Tribal Governments,” (April 29, 1994) [59 Fed. Reg. 22951 (May 4, 1994)]; Executive Order (No. 13084) on Consultation and Coordination with Indian Tribal Governments (May 14, 1998) [63 Fed. Reg. 27655 (May 19, 1998)].

RESPONSE F02-001d

F02-001d

Indirect (secondary) and cumulative impacts have been clarified in the FEIS. Resources that were expected to experience substantial cumulative change were identified as critical resources and those sections were updated to include both an indirect and cumulative impact analysis. Critical resources for the project are water resources (section 3.2); wetlands (section 3.3); wildlife, fisheries, and threatened and endangered species (section 3.4); land use, socioeconomics, and environmental justice (section 3.11); farmland (section 3.12); and cultural resources (section 3.16).

RESPONSE F02-001e

F02-001e

Section 7 consultation has been initiated with the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NOAA Fisheries). The project’s commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision (ROD) for this project.

F02-001f

and bikeways, freeway overpasses, and park and ride lots), and lack of transportation demand management measures.

We support the riparian restoration proposal as a partial mitigation strategy for project impacts to aquatic resources. We believe that much more of this type of action will be needed to satisfactorily mitigate the impacts of the proposed project. U.S. EPA will continue our efforts to work with the lead agency so that a sufficient analysis and disclosure of impacts is produced. We ask that the lead agency work in a collaborative manner with U.S. EPA, other resource agencies, local governments, watershed-based groups, and the Puyallup Tribe to reduce these impacts. If you have questions, or would like to discuss these comments, please contact Elaine Somers of my staff at (206) 553-2966. Thank you for the opportunity to comment.

Sincerely,



Michelle Pirzadeh, Acting Director
Office of Ecosystems and Communities

Enclosures

F02-001f

RESPONSE F02-001f

WSDOT and FHWA worked closely with the Tribe to address issues of concern to the Tribe during the development of the Tier II FEIS. FHWA and WSDOT are committed to maintaining an open line of communication with the Tribe throughout the design and construction phases of this project.

As stated in response F02-001a: Land use in the lower Puyallup River Valley has traditionally been farming. However, the cities of Fife, Puyallup, and Milton have re-zoned the land in this area to a mix of industrial, commercial, and residential use. This land use conversion from agricultural to industrial/commercial/residential use is currently occurring and is expected to continue as planned by the cities' comprehensive plans. Developed in accordance with the Growth Management Act (GMA).

At the request of Pierce Transit, the proposed project includes two Park and Ride lots to complement local public transit needs in the corridor. The project also includes nearly two miles of a separated multi-use path which connects to the existing local bicycle and pedestrian network in the City of Fife and the westerly end of the Interurban Trail to destinations north through the City of Milton towards Seattle.

FEIS section 3.14.4 has been revised to include additional information on Transportation Demand Management measures.

Thank you for your support of the Riparian Restoration Proposal (RRP). We look forward to continued collaboration with your agency and other stakeholders as we refine the proposed project to avoid and/or minimize impacts to the greatest degree practicable.

U.S. EPA's Detailed Comments
SR 167 Puyallup to SR 509 Tier 2
Draft Environmental Impact Statement (DEIS)

Aquatic Resources

A thorough analysis of the hydrological functions and project impacts is necessary in order to minimize the direct, secondary, and cumulative effects of this project. The description of the affected aquatic environment requires detailed information with respect to sub-watershed based surface water and ground water hydrology, reach specific conditions and use by fish and other biota for various life stages, and limiting factors. The environmental consequences should couple the waterbody/reach-specific impacts that are anticipated from project construction, operation, and maintenance with these descriptions of the affected environment. In this way, the environmental limitations and vulnerabilities will be revealed in order to maximize opportunities for avoidance, minimization, and compensatory mitigation. Important refugia need to be protected, hydrological connectivity maintained, and habitat and water quality maintained or improved. Any compensatory mitigation will also require monitoring for performance and effectiveness, and contingency plans, which makes an accurate assessment of baseline conditions necessary.

F02-001g

The DEIS sections on affected environment, environmental consequences, and mitigation should be organized on a sub-watershed basis. This will ensure that impacts are adequately mitigated in each sub-watershed. The impacts of concern are effects of stormwater runoff, flooding, water quality degradation, decreased groundwater recharge, groundwater pollution, aquatic habitat degradation, and overall alterations to hydrological functions. Specifically, the EIS should include, preferably in tabular format, on a sub-watershed basis, (1) the resource impacted (wetland, floodplain, stream channel, buffers, etc.); (2) the area of impact; (3) the functions affected, (4) quantification of the impact, e.g., acre-feet of stormwater discharge that requires treatment and storage; and (4) the mitigation type, functional goals, location, and amount that is intended to compensate for each listed impact.

F02-002

Washington State Department of Transportation (WDOT) has developed an advanced mitigation watershed assessment methodology (Richard Gersib, Lead), which has been tested, peer reviewed, and is ready for additional testing and use. U.S. EPA recommends that this methodology be used to develop, for the overall project, what the baseline conditions are in the affected sub-watersheds, and what the most complete, cost effective, and environmentally beneficial mitigation package might be for the SR 167 project. We accept and appreciate that the mitigation package will include the proposed riparian restoration and stream relocations for Hylebos Creek and Surprise Lake Drain. We also expect, per verbal assurance by WDOT (Neil Campbell, 12/17/02 meeting with U.S. EPA), that riparian restoration for Wapato Creek will also occur. However, there is likely more that should be done, some of which WDOT could perform, and some of which could be accomplished in partnership with local government, the Puyallup Tribe, local watershed groups, and others. These include, but are not limited to,

F02-003

Page 1 of 17

RESPONSE F02-001g

The project team has conducted additional analyses including hydrologic modeling of the Hylebos sub-basin (MGS et al. 2004). This comprehensive study analyzed the project's effects on hydrology, channel hydraulics, and geomorphology to assure that we address the impacts of the project on the watershed.

In addition, existing conditions of water resources (including physical characteristics, aquatic species use, and limiting factors) and wetlands, as well as anticipated project impacts to these resources, have been analyzed per sub-basin, and sections 3.2 and 3.3 of the FEIS were updated to include this information. We have also developed a Conceptual Mitigation Plan that describes compensatory mitigation measures, and includes preliminary monitoring information.

RESPONSE F02-002

To the extent possible, the water resources; wetlands; and wildlife, fisheries, and threatened and endangered species sections (sections 3.2, 3.3 and 3.4) of the FEIS have been reformatted to describe impacts to the affected environment on a sub-basin basis.

RESPONSE F02-003

The methodology referred to in your comment is entitled "Wetland Functions Characterization Tool for Linear Projects (WSDOT 2000)." This methodology was used to identify and assess wetlands affected by the SR 167 project and is described in the "Wetland Discipline Report" prepared for the project. The results of the assessment and survey using the prescribed methodology are summarized in Section 3.3.1 of the FEIS. Mitigation for impacted wetlands is outlined in Section 3.3.7 of the FEIS. The wetlands affected by the project are described by sub-basin, including Hylebos Basin (which includes Surprise Lake Drain), Wapato Basin, and the lower Puyallup Basin. The Puyallup Tribe, Friends of Hylebos Creek, and the project Technical Advisory Group (TAG) have all been consulted during the preparation of the Draft and Final EIS. Work to further delineate, characterize, and categorize existing wetlands is occurring. The additional information being collected is being incorporated into the project design to avoid and minimize impacts to wetlands, as well as to prepare a Wetland Mitigation Plan.

additional riparian area protection and restoration; wetlands and wetland buffers protection, restoration, and creation; protection and re-establishment of forest cover; low impact and zero impact development strategies, and open space acquisition.

The Tier 2 DEIS indicates that 4 of 7 waterbodies in the project area are on Ecology's Clean Water Act 303(d) list as water quality impaired. This includes the Puyallup River, Hylebos Creek, Wapato Creek, and Fife Ditch. According to the DEIS, the remaining waterbodies lack water quality data, but are physically degraded from human activities and alterations. U.S. EPA recommends that the project proponent gather water quality data to better understand baseline conditions, improve the environmental analysis and disclosure of impacts.

Stormwater

The DEIS states in general terms that best management practices (BMPs), bioswales, constructed wetlands, detention ponds, infiltration into roadway fill, and riparian restoration will be used to offset stormwater impacts from the proposed project. More analysis and information are needed to disclose the impacts of stormwater on water quality and aquatic habitat conditions and the adequacy of stormwater management strategies.

The stormwater management plan analysis (page3-39) indicates that the annual pollutant load from created runoff is estimated to increase Total Suspended Solids (TSS) discharges by 5,398 kg/yr in Fife Ditch and 10,908 kg/yr in the lower Hylebos Creek watershed. The DEIS concludes that because water quality BMPs would be fully implemented and maintenance practices would follow standard procedures designed to minimize impacts, highway runoff is not expected to result in significant water quality impacts. Without any information about predevelopment discharge levels, current TSS discharges, their effects relative to existing conditions, and the significance of the timing of these inputs, it is not possible to know whether this conclusion is correct. On page 3-42, there is information on 6 pollutants for Wapato Creek, however it appears (table title is not definitive) that these data are for the Valley Ave. interchange only.

This analysis of stormwater pollutants is insufficient to determine the impacts of the proposed project for several reasons. First, there is only one calculation provided – for TSS. Stormwater contains many pollutants, including heat, toxic chemicals, heavy metals, nutrients, pesticides, and so on. The DEIS should provide an assessment for all stormwater pollutants, the expected treatment efficiencies of the stormwater runoff BMPs and stormwater treatment methodologies that are being proposed, and the residual pollutants that will be discharged to the various waterbodies. Second, the discharge locations should be identified and the existing water quality conditions of the discharge reach described. If water quality data are lacking, these data deficiencies and the resulting uncertainties in the analysis should be discussed. Because follow-up monitoring requires knowledge of baseline conditions, we recommend that these data gaps be filled. Third, the DEIS should disclose whether or not the discharges will cause or contribute to exceedances of State or Tribal water quality standards that apply to the specific water body. For 303(d) listed waters, the discharges cannot further degrade water quality for the parameters for which the waterbody is listed.

RESPONSE F02-004

The remaining three water bodies are Hylebos Waterway, Surprise Lake Drain and Old Oxbow Lake Ditch. Additional data was evaluated from three existing sources:

- 1) Federal Way continuous flow and temperature monitoring at one station in Hylebos;
- 2) Hydrologic analysis and modeling of Hylebos, Wapato, and Surprise Lake Drain as part of the RRP; and
- 3) Puyallup Tribe data in general summary form for Hylebos and Wapato and through King County for East Hylebos.

Hylebos Waterway is regulated as a Class B (marine) surface water. However, the waterway is designated as part of the Commencement Bay Nearshore/Tide-flats Superfund Site and does not meet minimum state water quality standards (Ecology 1992). Surprise Lake Drain originates from the spring-fed Surprise Lake north of the Puyallup River Valley. This Class A surface water conveys runoff from residential areas in the City of Edgewood south to the valley below, and drains agricultural and residential runoff from the City of Fife through a series of linear ditches to the Fife Ditch and eventually to Lower Hylebos Creek. No water quality data is available for the Surprise Lake Drain. Old Oxbow Lake Ditch drains mostly agricultural lands that fall between Wapato Creek divide and the Puyallup River levee system. The ditch drains to Old Oxbow Lake, an old Puyallup River oxbow that is now isolated behind the levee, but connects to the Puyallup River through a floodgate. No water quality data is identified for this ditch.

RESPONSE F02-005

We have updated the Water Resources section 3.2 of the FEIS to address your comment. An updated pollutant loading analysis is described in sections 3.2.3 through 3.2.7 of the FEIS.

F02-004

F02-005

U.S. EPA strongly supports the riparian restoration proposal for Hylebos Creek and Surprise Lake Drain as partial mitigation for project impacts to aquatic resources. However, the DEIS does not provide an analysis that determines the extent to which it might serve as an alternative stormwater management method. U.S. EPA agrees that riparian restoration "is a more comprehensive approach to addressing lost ecosystem functions than conventional flow control BMPs..." (DEIS page 3-29). Booth (2003) has found that detention ponds, even with increasingly restrictive designs, have still proven inadequate to prevent channel erosion. He states that "preservation of aquatic resources in developing areas will require integrated mitigation, which must include impervious surface limits, forest-retention policies, stormwater detention, riparian-buffer maintenance, and protection of wetlands and unstable slopes." Consequently, we support the use of riparian restoration as a strategy for managing an appropriate portion of the anticipated runoff. Adequate analysis to account for runoff volumes and rates will need to be performed to determine this proportion to ensure that the standards in Ecology's Stormwater Management Manual for Western Washington are met or exceeded.

F02-006

Restored riparian areas, such as those proposed for Hylebos Creek and Surprise Lake Drain, would enhance the existing floodplain capabilities/functions while also providing badly needed aquatic and terrestrial habitat in the project area. We view this restoration as an essential action to mitigate further degradation of water quality and salmon habitat. We urge that all stream segments and waterbodies affected by the proposed project receive riparian restoration – not just Hylebos and Surprise Lake Drain. The DEIS states that 4,400 to 4,600 linear feet of erosion hazard zone will be impacted. The amount of riparian restoration should be in an acceptable ratio, based upon resource agencies' aquatic mitigation policy, to the length of channel impacted by the project.

F02-007

We believe the riparian restoration is a step in the right direction and that much more restoration is needed to protect water quality and aquatic habitat in the project area. In accord with the conclusion of Booth (2003) above, we recommend a comprehensive, multi-faceted approach to stormwater management that begins with a thorough analysis of hydrology. This approach would combine extensive riparian restoration, open space and sensitive area protection and reforestation, impervious surface limits, use of low impact and zero impact development techniques, and sub-watershed based wetlands mitigation, in combination with detention and treatment facilities.

F02-008

There are several items needing clarification in the DEIS. The DEIS is inconsistent in its commitment to riparian restoration for Wapato Creek. WDOT has verbally indicated to U.S. EPA that riparian restoration would occur for Wapato Creek, but the DEIS does not mention this in key locations, such as page 3-28, page 3-227, and other locations. However, Wapato Creek is included on page 3-107. This creates confusion for the reader. Please clarify the commitment to riparian restoration and ensure that the EIS is consistent in its commitments throughout the document.

F02-009

Page 3 of 17

RESPONSE F02-006

Thank you for your support of the Riparian Restoration Proposal (RRP). The project has conducted additional analyses including hydrologic modeling of the Hylebos sub-basin (MGS et al. 2004). This comprehensive study analyzed the project's effects on hydrology, channel hydraulics, and geomorphology to assure that we address the impacts of the project on the watershed. In collaboration with stakeholders such as your agency, the Riparian Restoration Proposal (RRP) has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with your agency through the RRP Technical Advisory Group.

RESPONSE F02-007

In addition to the RRP for Hylebos Creek and Surprise Lake Drain in the SR 167/I-5 interchange area, we will also include Riparian Restoration for Wapato Creek as stormwater flow control. The project will incorporate approximately 73 acres of riparian habitat surrounding Wapato Creek in the vicinity of Freeman Road.

RESPONSE F02-008

The project team has conducted additional analyses including hydrologic modeling of the Hylebos sub-basin (MGS et al. 2004). Future design and implementation of the RRP and associated stormwater management measures will be coordinated with your agency through the RRP Technical Advisory Group.

RESPONSE F02-009

The FEIS now consistently reflects that the proposed project will include Riparian Restoration for Wapato Creek as stormwater flow control. The project will incorporate approximately 73 acres of riparian habitat surrounding Wapato Creek in the vicinity of Freeman Road.

On page 3-227, the DEIS indicates that the road will be built at ground level rather than on structure to accommodate the riparian restoration. Please explain the rationale for this, since placing the roadway on structure would avoid and minimize floodplain impacts, and interfere less with aquatic and terrestrial ecosystem components and processes.

On page 3-46, there is reference to the use of “revegetated roof systems.” Please define this and explain what aspect of the proposed project would make use of revegetated roof systems.

Floodplain, Hyporheic Zone, Groundwater Quality and Quantity.

The DEIS (page 3-39) states that the entire proposed project would affect 6.2 to 7.9 acres of floodplain based on FEMA, but 37.7 to 39.9 acres based on assessment of flood prone area. We agree that the latter assessment provides a better estimate of floodplain area affected. The DEIS should explain what these impacts will do to shallow groundwater movement, hyporheic zone interactions, and delivery of base flows to streams. Since low instream flows are a limiting factor for some project area streams, e.g., Wapato Creek and Surprise Lake Drain, it is important that the project not further exacerbate this condition.

The DEIS offers no estimate or quantitative assessment of the amount of existing impervious surface in the project area on a sub-watershed basis, or of the amount that is anticipated after project construction and full build out. This information is important for characterizing surface water and aquatic habitat impacts as well as subsurface hydrological connectivity involving shallow groundwater, the hyporheic zone, contribution to stream base flows, and recharge of drinking water supplies, particularly in light of Ecology’s 1995 report that “... [groundwater] withdrawals in WRIA 10 ‘have shown a rapid and steady increase’ ” (page 3-335). It is also essential for determining the nature and extent of needed mitigation. We are concerned that insufficient effort has been made to perform a quantitative estimate using aerial photos and GIS analysis, despite the fact that this technology and capability are readily available to the project sponsors.

The DEIS states (page 3-15) that [shallow alluvial] aquifers at or below 70 feet are the primary source of water in the study area and provide water to the majority of Public Water Systems (PWS) in the Lower Puyallup River Valley. However, the DEIS also states that groundwater levels are consistently found at depths of 2 to 5 feet and that the shallow groundwater is more contaminated than the deeper glacial and nonglacial aquifers (page 3-18). The affected environment section of the DEIS should describe this contamination and disclose the extent to which this shallow drinking water supply is vulnerable to further contamination from the direct, indirect, and cumulative effects of the proposed project. The environmental consequences section of the DEIS should disclose the risk, anticipated impacts, and the measures that will be taken to protect underground sources of drinking water.

For example, please disclose where the most shallow aquifer depths are located relative to stormwater discharge and treatment locations. Please explain what contamination exists in the shallow aquifer and, if possible, how that contamination may have occurred. Please disclose the

RESPONSE F02-010

F02-010

During Tier I EIS analysis, it was assumed the new roadway alignment would be closer to Hylebos Creek, so WSDOT agreed to build the highway on structure to avoid floodplain storage displacement. During Tier II the proposed alignment was relocated away from the creek, on the high ground between Hylebos Creek and Fife Ditch (out of the floodplain), but the structure was retained to provide access to residents and infrastructure near the creek. When the RRP was proposed, access to 8th Street and 62nd Avenue was not needed, so the highway could be placed on fill outside the floodplain boundaries instead of on structure. Potential resource fragmentation will be mitigated (as practicable) by providing under roadway crossings where appropriate.

RESPONSE F02-011

F02-013

A vegetated rooftop is a covered roadway system with a pitched roof that would support approximately two feet of soil and vegetation. Underflow would drip to the ground at the drip line (i.e., without gutters). A vegetated buffer zone at the roof drip line can capture most, if not all, runoff even from the largest storm events. Vegetated roofs retain around 80% or more of annual precipitation and obviate the need for a treatment and detention system. Several stormwater management concepts were considered for the project, including low impact development options such as vegetated rooftops for the ultra-urban areas of I-5. However, this stormwater management method has been determined impracticable and is no longer being considered.

RESPONSE F02-012

F02-014

Additional information on the floodplain, hyporheic zone, and groundwater quality and quantity has been included in the FEIS (see section 3.2.2).

RESPONSE F02-013

Section 3.2.5 of the FEIS was revised to include quantification, by sub-basin, of existing impervious surface, direct impervious surface additions from the project, and impervious surface additions at full build-out of the project area.

RESPONSE F02-014

The shallow aquifer identified in the DEIS, found at depths of 2 to 5 feet, is not characterized as drinking water. This non-potable ground water source is not subject to the requirements of the 1996 Safe Drinking Water Act (SDWA). Contaminants that may impact this non-potable ground water source are described in sections 3.2.4 and 3.2.5 of the FEIS. Information as to where the aquifer depths are located relative to stormwater discharge and treatment locations are described in sections 3.2.4 and 3.2.5 of the FEIS.

expected effectiveness of stormwater treatment methods and the pollutant loadings of untreated and treated discharges. Please disclose the resulting pollutant concentrations in the shallow aquifer, including the most shallow and vulnerable locations. This information should be available because the 1996 Safe Drinking Water Act (SDWA) amendments require states to:

- delineate all sources of public drinking water supplies (watersheds for surface water sources and wellhead protection areas for ground water sources);
- inventory all potential sources of contamination within these source water areas that may impact drinking water quality;
- conduct a susceptibility analysis to assess the relative susceptibility (vulnerability) of the drinking water supply to contamination;
- provide all the consumers served by the drinking water supply, all the information on the source, threats, and risks to their drinking water supply.

Seventeen Group A wells (15+ connections/well) and 6 Group B wells (2-14 connections/well) have wellhead protection zones overlapping the staging areas (page 3-26). In addition, SR 167 crosses one Group B and 8 Group A wells. The Draft EIS states that the wells within the roadway footprint will be decommissioned, and that a Spill Prevention Control Countermeasures (SPCC) Plan will be developed (page 3-27). The EIS should indicate what water supply will be provided to replace the decommissioned wells. For the remaining affected wells, the EIS should indicate what the SPCC measures are, their likelihood of effectiveness over a 12-year construction period, and whether they comply with the wellhead protection plans. Further, the EIS should indicate whether the proposed project and all related activities under construction, operation, and maintenance comply with the wellhead protection plans with respect to groundwater quality protection and groundwater recharge/quantity protection.

Wetlands

Project related wetlands impacts, which were stated to be 8 acres of wetlands for Alternative 2 (the selected alternative) in the Tier 1 Final EIS, have increased to 30.2 acres in the Tier 2 DEIS. A major federal consideration in approving Alternative 2 to be carried forward into the Tier 2 EIS process was the acreage of wetlands impacted when compared to the other Tier 1 Alternatives 1 and 3, which had greater wetland impacts. For the Tier 2 Build Alternative, direct wetlands impacts have doubled over what would have been impacted by Alternatives 1 and 3. Because of this increase, U.S. EPA believes that the Tier 2 Build Alternative may not be the least damaging alternative that is available, and consequently the Build Alternative may not be in compliance with the Clean Water Act Section 404(b)(1) guidelines. Additional wetland evaluations are needed to compare both direct and indirect wetlands impacts of the Tier 2 Build Alternative with the Tier 1 Final EIS Alternatives 1 and 3 before a determination of compliance or non-compliance with the guidelines can be made.

In addition, there has been no sub-watershed based analysis of wetlands acreage and functional losses, and the proposed mitigation may not offset the locally important functions the impacted wetlands provide. U.S. EPA believes that additional analysis and efforts to avoid and minimize these wetlands losses is essential, and that the mitigation should replace functions where they are most needed within each sub-watershed.

RESPONSE F02-015

Wells that lie directly beneath the project footprint will be decommissioned in accordance with state laws. Water rights transfers and/or new water rights will be obtained from Ecology prior to decommissioning the wells. A discussion on wellhead protection has been included in sections 3.2.2 through 3.2.4 of the FEIS.

RESPONSE F02-016

A Section 404(b)(1) Analysis has been completed for this project and is included as Chapter 4 in the FEIS. The 404(b)(1) analysis demonstrates that "Alternative 2" from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). Through collaboration with your agency, the project re-examined wetland impacts associated with the corridor determination from Tier 1. This analysis is provided in section 4.1.3. All affected wetlands have been analyzed and the potential impact of the project on them has been described in Section 3.3. & 3.3.4 of the FEIS. It is intended that compensatory mitigation for affected wetlands would occur on adjacent parcels first, then if not available, the encompassing sub-basin or watershed, and finally if nothing nearby or in the same sub-basin is available, off-site mitigation locations would be considered. If off-site mitigation sites are ultimately included in the project, additional documentation will be provided to explain why it was necessary to select them. Also, see response F01-007.

The methodology used to identify and assess wetlands affected by the SR 167 project is described in the "Wetland Discipline Report" prepared for the project and summarized in Section 3.3.1 of the FEIS. Mitigation for impacted wetlands is outlined in Section 3.3.7 of the FEIS. The wetlands affected by the project are described by sub-basin, including Hylebos Basin (which includes Surprise Lake Drain), Wapato Basin, and the lower Puyallup Basin. The Puyallup Tribe, Friends of Hylebos Creek, and the project Technical Advisory Group (TAG) have all been consulted during the preparation of the Draft and Final EIS. Work to further delineate, characterize, and categorize existing wetlands is occurring. The additional information being collected is being incorporated into the project design to avoid and minimize impacts to wetlands, as well as to prepare a Wetland Mitigation Plan.

RESPONSE F02-017

A Conceptual Mitigation Plan has been developed for this project. This plan was provided to your agency during SAC Concurrence Point 3. On March 23, 2005, you concurred with the Conceptual Mitigation Plan, noting your concern about the availability of the potential mitigation sites identified. The project will provide mitigation for floodplain, wetland, and stream fill impacts via a watershed-oriented approach. The considered wetland mitigation sites will be within the Puyallup River watershed (WRIA 10) and will be selected to prioritize, if possible, location within the project area ("on-site") and within the specific sub-watershed(s) where substantial impacts to wetlands may occur.

F02-015

F02-016

F02-017

Following are a number of site specific comments in the DEIS:

Section 3.3.5, Mitigation Measures:

WDOT has proposed to offset wetland impacts by concentrating its mitigation into a single site adjacent to the Puyallup River and owned by Union Pacific Railroad (UPRR). U.S. EPA sees some benefits in concentrating mitigation at this site and has supported this approach in some instances in Washington State. However, we do not believe this mitigation approach is appropriate for offsetting wetland impacts identified in the DEIS. U.S. EPA's major concern regarding the UPR mitigation site is the direct and cumulative project impacts upon wetlands adjacent to Wapato Creek, Hylebos Creek, and the Surprise Lake Drain.

Additionally, U.S. EPA believes that even though the UPR mitigation site is designed to concentrate wetland mitigation in one site, this action could impact the recovery of listed and candidate ESA species and the recovery of the wetlands ecosystem within the lower Puyallup River basin. Wetlands adjacent to Wapato Creek, the Surprise Lake Drain and Hylebos Creek play a very important role in maintaining water quality within these stream systems. Mitigation should first be concentrated along these streams. A positive example of using a watershed approach is in the proposed "SR 167 Puyallup to SR 509 Tier II Water Resources Discipline Study, Technical Addendum 2" dated January 2003. This report, even though it does not include a wetland component, does present a framework to connect a number of wetland functions and values (such as, water quality, wildlife connectivity, flood control).

Mitigation is a sequencing of actions. The first action in this sequencing is to avoid impact on wetlands as much as possible. This may mean realigning sections of the infrastructure, building vertical retaining walls that would eliminate slope fills that could impact wetlands, bridging over wetlands, or eliminating or relocating portions of the project that are not necessary (such as, on and off ramps, truck weigh stations, rest areas). Once these avoidance actions are incorporated into the project design, and detailed wetland functions and values studies are completed, WDOT can then evaluate the direct and secondary project impacts on identified wetland functions and values and propose and develop compensatory mitigation.

Replacing lost wetland functions and values within the area (sub watershed) of impact is the first priority. This can only be accomplished by undertaking a detailed wetlands functions and values study of those wetlands within the project area and by knowing the overall base line conditions of the aquatic resources within each sub basin. Several wetland and watershed evaluation techniques are available that would provide this information.

In reviewing Table 3.3-1, Mainline Wetland Impacts, the DEIS and the "Wetland Discipline Report," dated October 20, 2001, it appears that wetland classification using Ecology's rating system and the Cowardin Classification system were used to rate the importance of these wetlands. In determining the values and functions of those wetlands identified in the project area it appears that WDOT, in the Wetland Discipline Report, used a check list to identify some of the

RESPONSE F02-018

The UPRR site presented in the DEIS is no longer the preferred Mitigation site. A suite of mitigation sites in the initial Conceptual Plan are currently being evaluated as to their positive and negative effects on wildlife and fish, not only at the Puyallup River but at Hylebos and Wapato Creeks (see response to F01-020). The preferred method is on-site mitigation. Wetlands impacts at Hylebos Creek, Wapato Creek, and Surprise Lake Drain will be mitigated on-site or at least within the same watershed. No final sites have been selected and none will be until the final design is nearly complete and it is known what wetlands are actually affected and what mitigation is required. It is intended that wetlands that best meet the goals and objectives of improving the project area and that can be connected and supported by the RRP would be those included in the project (see Figure 3.3-1).

The methodology used to identify and assess wetlands affected by the SR 167 project is described in the "Wetland Discipline Report" prepared for the project and summarized in Section 3.3.1 of the FEIS. Mitigation for impacted wetlands is outlined in Section 3.3.7 of the FEIS. The wetlands affected by the project are described by sub-basin, including Hylebos Basin (which includes Surprise Lake Drain), Wapato Basin, and the lower Puyallup Basin. The Puyallup Tribe, Friends of Hylebos Creek, and the project Technical Advisory Group (TAG) have all been consulted during the preparation of Draft and Final EIS. Work to further delineate, characterize, and categorize existing wetlands is occurring. The additional information being collected is being incorporated into the project design to avoid and minimize impacts to wetlands, as well as to prepare a Wetland Mitigation Plan.

RESPONSE F02-019

SR 167 mainline avoidance and minimization efforts for streams and wetlands are described in section 4.2.2. FHWA and WSDOT will also continue to evaluate potential opportunities to incorporate additional avoidance and minimization measures during final design.

RESPONSE F02-020

Impacts to wetland functions are summarized in sections 3.3.3 through 3.3.6 of the FEIS. Specific functions lost in impacted wetland are identified in the revised Wetland Discipline Report, March 2005. They are also noted in section 3.3.3 grouped by mainline section and interchange options, which correlates somewhat with sub-watershed basins. Wetlands were assessed using the "WSDOT Wetland Functional Assessment for Linear projects." Wetland functions and values are clarified in section 3.3.2 of the FEIS.

F02-018

F02-019

F02-020

wetland functions and values. It is unclear if this is the Wetlands Function Characteristic Tool for Linear Projects (WDOT 2002) referenced on page 3-66 of the DEIS. If this is the approach being used, it is not clear to U.S. EPA whether it is being properly used to effectively evaluate the lost functions and values that would occur from the direct fill needed for the project infrastructure and secondary impacts. A detailed evaluation of wetlands functions and values is needed to fully understand the extent of the impact of the infrastructure, and to clearly understand if and what type of mitigation is needed to replace these lost functions and values within each sub-watershed. The findings of this evaluation should be included in the DEIS in tabular form that clearly shows the values of the existing wetlands and those that will be lost and/or impaired. Then mitigation concepts can be developed to replace lost wetland functions and values within the sub-watersheds. For a good example, see the SeaTac Third Runway EIS, which is available on line.

Page 3-63, first paragraph, first sentence – The definition that is being used in the draft EIS in defining wetlands is the Clean Water Act (CWA) definition used in identifying and regulating wetlands as waters of the United States. The U.S. Fish and Wildlife Service (USFWS) and other federal and state resources agencies use a definition that is more liberal in identifying wetlands. If the DEIS is to use this regulatory definition of wetlands, it should clarify the reasoning behind this choice.

Page 3-64, bulleted list – It would be helpful for the list to indicate if the policies or regulations are federal, state or local.

Page 3-64, top of page, second sentence – Section 404(b)(1) of the CWA is not a permitting section of the CWA. It directs the applicant to prepare a project alternative analysis that would avoid or reduce wetland impacts.

Page 3-64 – In the second paragraph first sentence the (b) needs to be removed after 404.

Page 3-66, first paragraph – The DEIS states, "... some ditch areas dug in uplands for drainage purposes have hydrology and hydrophytic vegetation, but these are not jurisdictional wetlands under the COE or Pierce County definition...". This statement should be corrected to reflect that these areas may be jurisdictional wetlands. Specifically, it is both the COE and U.S. EPA's interpretation that a drain ditch would be jurisdictional under the CWA if the ditch has relocated or diverted water flows from a pre-existing natural channel or swale. In a number of cases in the project area this is likely the effect these drainage ditches have had on the hydrology in the project area. WDOT needs to re-evaluate this issue to determine whether areas that were omitted in their initial study may need to be included as jurisdictional waters under the CWA.

RESPONSE F02-021

Every effort has been made to define wetland by explaining the three attributes common to all wetlands. The definition of wetlands has been clarified in the introductory portion of section 3.3 of the FEIS.

RESPONSE F02-022

This revision has been made within the introductory portion of section 3.3 of the FEIS.

RESPONSE F02-023

This has been clarified in the introductory portion of section 3.3 of the FEIS. A Section 404(b)(1) analysis has also been included as chapter 4 in the FEIS.

RESPONSE F02-024

This revision has been completed in the FEIS.

RESPONSE F02-025

Guidance on ditches resulting from the recent U.S. Supreme Court decision (referred to as the Talent decision) has recently become available. Therefore, before initiating permitting, these areas will be examined to determine if they are jurisdictional under the Clean Water Act Section 404 Program.

F02-021

F02-022

F02-023

F02-024

F02-025

Section 3.3.3, Impacts of Construction:

No Build Alternative – The DEIS states that, “The existing rate of development under the No Build Alternative would not necessarily be the rate at which development would occur under the Build Alternative.” Please clarify what is meant by this statement. Is it that wetland impacts over time that are associated with commercial, residential and agricultural development would be less than what would occur with the build alternative? This would be consistent with other statements in the DEIS regarding the cumulative impacts of the Build and No Build Alternatives.

Section 3.3.2, Affected Environment, General Comments:

Within this section the reference to wetland buffers occurs in a number of sub-sections. Please clarify how wetland buffers are being defined. Wetland buffers are in most cases a natural open space between the delineated wetland boundary and potential activities or structures that may impact various functions of a wetland. As with wetlands, buffers can vary in quality depending upon their existing environmental condition. The goal for establishing these buffers is to provide not only protection, but also ecological linkages and transitions from an aquatic environment to an upland environment. In most cases they are as important as the aquatic habitat they are protecting and provide similar values and functions. The DEIS should identify the width of these buffers and their general ecological condition. This will be used to identify the significance of their loss and to develop an approach to compensation. We suggest developing a numeric rating system similar to the wetland approach, which could be used to characterize the importance of the existing buffer on the wetland system and to determine options for replacing impacted functions and values.

Section 3.34, Impacts of Operation:

No Build Alternative – This section needs to be clarified regarding the difference in both the timing of the impacts and the extent of the impacts associated with the no action alternative. There is no reference to any federal, state or local wetland protection that is in place or that may be in place in the future to prevent wetlands losses in the Puyallup River watershed. Current wetland regulatory protection is based on a tiered system where the federal government more directly regulates larger wetland systems and protection of smaller wetlands are addressed by local government through the State Growth Management Act, local land use plans and regulations. If this regulatory approach is applied, as development occurs in the Puyallup River Valley wetlands impacts would be avoided to the extent practicable and then impacts further mitigated as needed. This needs to be explained in the EIS.

3.17 Secondary Impacts and Cumulative Impacts

Page 3-337, first paragraph, first sentence. Please indicate the impacts of the direct filling of wetlands and the impacts to wetland buffers. The sentence could be reworded as follows: “The SR-167 Build Alternative would be expected to lead to some degradation of wetland functions due to *the direct filling of wetlands and their buffers and the* addition of impervious surface. The impact to wetland buffers are a significant factor in determining the impact to wetland functions and values. This should be included in the cumulative analysis.

RESPONSE F02-026

F02-026

The wetland impacts over time that are associated with commercial, residential and agricultural development would not be less than what would occur with the build alternative. The rate of change would potentially be different, however, the ultimate impact to wetlands would not be substantively different.

RESPONSE F02-027

F02-027

Wetland buffers are regulated by the local governments under critical area ordinances to protect the intrusion into wetlands. The regulated buffer widths are based on the categories of the associated wetlands, and differ from category to category. Buffer impacts are one of the screening criteria that have been used to select options.

RESPONSE F02-028

F02-028

The timing and extent of the impacts are discussed in the FEIS qualitatively. The reference to protection under Federal Law and local government ordinances is included in section 3.3 (Regulatory Authority) of the FEIS. All impacts to wetlands are also reviewed under Growth Management Act (GMA).

RESPONSE F02-029

F02-029

We agree that filling of wetlands and their buffers does affect wetland functions. Buffer impacts are included in our direct impact analysis (also see F02-027). We will work with local governments on the buffer issues.

General comments for the secondary and cumulative impacts in 3.17.3.2.4 Wetlands section: It is not clear if the long term impacts associated with this project are considered significant or non-significant. As stated in the DEIS, by 1980 over 31% of the historic wetlands in Washington were lost. Aerial photography of the lower Puyallup River watershed reveals a noticeable increase in industrial and in some areas residential development from 1980 to present. Without conducting an extensive study of how much additional wetlands have been impacted or lost, it is U.S. EPA's estimate that losses of the historic wetlands could easily now exceed 40% in 2003 with an even higher loss in urbanizing areas, such as the proposed SR 167 project area. U.S. EPA believes that wetlands within the lower Puyallup River watershed have been impacted to a point that they are a resource at risk. U.S. EPA may classify them as an aquatic resource of national importance during the 404 permit review process based on their value to the fisheries. Any further degradation of the aquatic resources in the lower Puyallup basin could result in significant impacts to the environmental health of the region. In order to project an accurate evaluation of the cumulative and secondary impacts of the proposed project, an understanding of the condition of the existing environment is needed. This has not been accomplished in the DEIS.

Air Quality – Air Toxics

U.S. EPA is concerned about exposure to air toxics and particulate matter that may exist along roadways. Diesel emissions, which are a dominant source of these pollutants, and gasoline vehicle emissions containing air toxics will be emitted as a result of the proposed project, may affect receptors, and need to be disclosed. There needs to be adequate disclosure regarding air toxics and particulate matter pollution and known health effects thereof. A micro scale air toxics assessment should be considered for receptor locations, and construction mitigation measures should be included among the project commitments. The DEIS provides insufficient information about air toxics, does not include the emissions assessment, and does not include the use of low sulfur diesel fuel as a construction mitigation measure.

The project area borders the Tacoma Tidelands PM10 nonattainment area (page 3-140). Pierce County is within the 90th percentile for emission densities of diesel particulate matter (0.70 - 1.36 tons/year/square mile) and is adjacent to King County, which is in the 95th percentile, the highest category in the U.S. for emission densities (U.S. EPA/OAQPS, NATA National - Scale Air Toxics Assessment). The SR 167 project is intended to serve the Port of Tacoma to facilitate freight movement and will generate an unusually high amount of truck traffic and associated diesel emissions. The DEIS indicates that truck traffic is expected to double by 2014 from 300,000 to 600,000 trucks per year (page S-2), and the percentage of average daily traffic that is trucks is anticipated to be 30 to 40% (page 3-283). The proposed 6 mile, 6-lane new freeway will potentially affect receptors including residential areas, the Puyallup Recreation Center, long-term Tribal residential areas and land holdings, and schools.

The *National Air Toxics Assessment* (<http://www.epa.gov/ttn/atw/nata>) has revealed that air toxics and particulate matter from mobile sources, particularly diesel exhaust, are a serious human health hazard. A large number of human epidemiology studies show increased lung

F02-030

RESPONSE F02-030

This comment was selected as an action item during the June 23, 2003 meeting with EPA, FHWA, and WSDOT. Based on input from this meeting, indirect and cumulative impacts to wetlands has been clarified in sections 3.3.5 and 3.3.6 of the FEIS.

F02-031

RESPONSE F02-031

FHWA has developed Interim Guidance on Air Toxic Analysis in NEPA Documents dated February 3, 2006. WSDOT has followed this guidance in analyzing Mobile Source Air Toxins (MSATs) for the SR 167 Final EIS. This guidance indicates that detailed assessment of air toxics is not necessary if the AADT threshold of 140,000 vehicles per day (vpd) is not exceeded. The project is anticipated to have only 100,000 vpd which is less than the AADT threshold that would trigger additional analysis. Therefore, no additional MSAT quantitative analysis has been conducted.

WSDOT will consider the use of ultra low sulfur diesel fuel at the time of construction depending upon sufficient availability and comparable cost with other diesel. Puget Sound Clean Air Agency is recommending a voluntary low sulfur diesel fuel program in the state of Washington.

F02-032

RESPONSE F02-032

Please see sections 3.5.3 through 3.5.5 of the FEIS for discussion of air quality impacts. In addition, the proposed project will facilitate the movement of trucks in and out of the Port of Tacoma by relieving congestion and taking trucks off local streets away from sensitive receptors. The number of trucks going in and out of the Port of Tacoma area are a function of the Port's operations and will increase with or without the SR 167 Extension project. The SR 167 Extension project will reduce congestion and improve truck mobility thereby reducing air quality impacts.

F02-033

RESPONSE F02-033

As noted above in Response F02-032 the proposed project is expected to improve quality by reducing congestion, taking trucks off local streets and improving region-wide truck mobility.

cancer associated with diesel exhaust and significant potential for non-cancer health effects, such as asthma, cardiopulmonary effects, respiratory infections, and birth weight and size effects. Also the *Control of Emissions of Hazardous Air Pollutants From Mobile Sources* Final Rule (66 FR 17230, March 29, 2001) listed 21 compounds emitted from motor vehicles that are known or suspect to cause cancer or other serious health effects.

Air toxics and particulate matter are of concern from the highway construction equipment, as well as from traffic/mobile sources emitting diesel and gasoline exhaust. There should be information in the EIS that discloses information regarding the increased emissions resulting from the project, the cancer and non-cancer human health effects associated with these pollutants, and the special vulnerability of specific populations to these pollutants, such as the elderly, school children, and people with respiratory conditions. This information should also be provided directly to the Puyallup Tribal community since they plan to establish long term residential areas for Tribal members on Tribal land that is adjacent to the proposed project.

The establishment of Mobile Source Air Toxics (MSAT) standards by U.S. EPA is not a prerequisite for disclosing environmental effects from MSATs. Please provide information from the U.S. EPA National Air Toxics Assessment, coupled with MSAT emissions and concentrations that result from the project for receptors. There are tools available for determining the significance of localized concentrations for MSATs. The Industrial Source Complex Model (ISC3), AERMOD, and CALPUFF are just a few examples of available models.

Regarding the construction mitigation measures for air toxics, while the Puget Sound Clean Air Agency's goal of early introduction of ultra low sulfur diesel is mentioned on page 3-145 of the DEIS, it is not included among the construction mitigation measures on pages 3-146 and 3-147. Using ultra low sulfur diesel is a recommended mitigation measure for construction vehicles. Using biodiesel B20 is another option for reducing emissions from construction equipment. If neither of these fuels are available, retrofitted construction equipment would be an appropriate way to reduce air toxic emissions. We highly recommend that a commitment is made to one or a combination of these construction mitigation measures.

Secondary and Cumulative Impacts

Our comments will address first the underlying assumption upon which the secondary and cumulative impacts assessment is based and, second, the nature of the analysis:

Underlying assumption

The DEIS asserts on page S-9 that there will be no secondary impacts from this project (however, on page 3-79, the DEIS implies that there will be secondary effects). The rationale is that all of the growth that will occur in the project area is planned growth under the State Growth Management Act and that it will all occur whether or not the proposed project is built. U.S. EPA disagrees with the assumption that the project will have no secondary impacts based upon the following:

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RESPONSE F02-034

See responses F02-031 and F02-032 above.

RESPONSE F02-035

The discussion of impacts of operation, including discussion of MSATs have been updated and include the FHWA interim Guidance on the analysis of MSAT's, please see sections 3.5.4 and 3.5.6 of the FEIS. Also, see responses F02-031 and F02-032 above.

RESPONSE F02-036

WSDOT will consider the use of ultra low sulfur diesel fuel at the time of construction depending upon sufficient availability and comparable cost with other diesel. Puget Sound Clean Air Agency is recommending this as a voluntary program in the state of Washington.

RESPONSE F02-037

Indirect impacts have been clarified in the FEIS. Resources that were expected to experience substantial cumulative change were identified as critical resources and those sections were updated to include both an indirect and cumulative impact analysis. Critical resources for the project are water resources (section 3.2); wetlands (section 3.3); wildlife, fisheries, and threatened and endangered species (section 3.4); land use, socioeconomic, and environmental justice (section 3.11); farmland (section 3.12); and cultural resources (section 3.16).

F02-034

F02-035

F02-036

F02-037

Construction of the new roadway will have induced travel effects. These are well documented and acknowledged by the Transportation Research Board in their 1995 report entitled, *Expanding Metropolitan Highways: Implications for Air Quality and Energy Use*. The Draft EIS does not acknowledge or discuss the induced travel impact, and it is not disclosed whether or not induced travel has been factored into the traffic modeling analyses, growth projections, air conformity analyses, roadway stormwater pollutants, energy usage, and so on. If it has not, we ask that this be done.

The DEIS indicates that the new roadway is expected to accelerate development (page 3-326), and "...the proposed project could alter the rate, timing, and location of future growth and development within the corridor area as planned by local and regional jurisdictions." (DEIS, page S-11) Accelerated development means that planned development could occur sooner than anticipated in the land use plan. The consequences of achieving or approaching completion of all planned development generally are the demand for more developable land, more annexation, and more ensuing development.

The development of the area will occur hand in hand with construction of the roadway and will be influenced by the layout of the road and the number and location of access points. If the road avoids sensitive environmental areas and has no access near them, development in those areas will be less likely to occur and slower to occur. In this way the road can induce or avoid secondary impacts.

Nature of the analysis

We ask that these potential secondary effects be analyzed, such as with the use of the Delphi Method (an expert panel) or other methodology that examines alternative future development scenarios. This would be extremely helpful because the opportunity to protect and preserve sensitive areas, floodplain, open space, and to incorporate low impact development strategies to mitigate the effects of development, are most possible to achieve now, while these lands are yet undeveloped. In addition, regardless of local land use decisions and events, FHWA is responsible for analyzing and disclosing the effects of its actions and factor those effects into decision making and actions.

We believe the cumulative effects analysis is insufficient in that it cites no established methodology or guidance document, is strictly qualitative, and is based upon best professional judgement. While we agree with and appreciate the candid general conclusions, the analysis does not provide the information that is needed for decision making. The EIS must include a "useful analysis of the cumulative impacts of past, present, and future projects." This means the EIS must analyze the combined effects of the actions in sufficient detail to be "useful to the decision maker in deciding whether, or how, to alter the program to lessen cumulative impacts." [City of Carmel v. U.S. DOT, 123 F.3d 1142 (9th cir. 1997)]

RESPONSE F02-038

Please see Response F02-037 for discussion regarding secondary impacts.

RESPONSE F02-039

The cumulative impacts analysis has been revised. Section 3.1.2 of the FEIS describes the criteria examined in determining indirect and cumulative impacts.

F02-038

F02-039

There are several models and methodologies available to conduct secondary and cumulative impact analyses. We recommend alternative futures analyses as a valuable approach, and U.S. EPA has expertise that can help in this area. Models available for secondary and cumulative impact analyses, such as Community Viz and Smart Growth Index, include environmental metrics outputs, (imperviousness, stormwater runoff, total suspended solids, phosphorus, residential water and energy consumption and wastewater production, particulate matter, open space, and many more) that would be useful in determining the project effects upon water quality, aquatic habitat, and so on. The FHWA website includes more than 12 guidance documents for estimating the secondary and cumulative effects of transportation projects, including FHWA's own interim guidance, as well as a bibliography on the subject. We refer you to these tools and ask that an acceptable methodology be used.

F02-040

ESA Threatened and Candidate Species

The DEIS provides a preliminary Effects Determination that the project would be "likely to adversely affect" (LTAA) the listed chinook salmon and bull trout, and "likely to significantly impact" (LTSI) the candidate listing species coho salmon. We understand that the Services wish to analyze only one alternative, and since only one build alternative is presented in the Tier 2 EIS, we suggest there be no delay in consulting under ESA.

The consultation likely will provide essential information on water quality as well as identify needed mitigation measures – mandatory and/or voluntary – that will be needed for maintenance of designated uses under the Clean Water Act (CWA). The sooner this analysis takes place the greater the ability of the project proponent, local government, and other entities will be to take positive steps to protect undeveloped land, restore habitats, implement low impact development, and other strategies to prevent and minimize further environmental degradation.

F02-041

The plan to complete an ESA Section 7 consultation in the future does not absolve the project proponents from the requirement under NEPA to disclose the effects to ESA-listed species from the direct, indirect, and cumulative impacts of the proposed project.

Wildlife

The DEIS indicates (page 3-355), that the proposed roadway will impede east-west wildlife movement due to the road being placed on fill instead of bridge structure. We ask that new alignments not be constructed in a manner that creates such an impediment. To maintain terrestrial habitat connectivity, wildlife crossing structures should be incorporated into the design – preferably a bridge structure or at least an oversized, bottomless culvert – that will enable east-west movement in appropriate locations for species inhabiting the area. Similarly, wherever new or replacement bridge and culvert structures are installed, they should be designed to accommodate terrestrial species as well as aquatic species by spanning sufficient upland habitat as well as aquatic habitat.

F02-042

RESPONSE F02-040

WSDOT met with EPA, USFWS, and WDFW three times between May 2002 and October 2002 to discuss methods and information used for cumulative and secondary effects analysis. Despite specific requests by WSDOT for appropriate models to use, Community Viz and Smart Growth Index were not identified. Models acceptable for use in cumulative and secondary effects analysis should be referenced in guidance documents. The FEIS includes limited additional analysis (e.g. corridor imperious surface analysis) as well as reformatting the information in the FEIS.

RESPONSE F02-041

Section 7 consultation has been initiated with the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NOAA Fisheries). The project's commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision regarding the project.

RESPONSE F02-042

The addition of low-cost wildlife crossings and the use of over-sized culverts or clear-spanning structures, will be considered at appropriate locations.

In addition, while it appears that WDOT intends to do so, we would like to emphasize the importance of and our support for using native plants in all roadside and other site restoration areas, as well as riparian and wetland mitigation sites to provide needed habitat and connectivity in the landscape for wildlife, and to minimize clearing of native vegetation as much as possible in construction and staging areas. We urge that the principles of context sensitive design be applied, particularly whenever new alignment is being constructed.

Multi-modal aspects

The project Purpose and Need states that the project is to “serve multimodal local and port freight movement and passenger movement” between the two project endpoints. We find that the multimodal aspects of this project – namely transit, pedestrian, and bicycle accommodations – are not well developed. Considering the magnitude of this project, the safety and air pollution health hazards for pedestrians and bicyclists, the growing communities in the project area, the notable lack of facilities for them, and the Puget Sound Regional Council (PSRC) multi-county planning policies (RT-8, RT-8.14, RT-8.22, RT-8.38) that call for improving non-motorized transportation, public transit, and transportation demand management, the project should include much more to address these needs.

Transit

While there are various transit routes serving the area, there are no commitments to provide Park and Ride lots (page 3-281). Pierce Transit has recommended two lots, and the DEIS states that this will be studied further when the project moves into design phase. Tier 2 is the design phase, and is the best and most cost effective time to establish the lots before the land is all developed. We recommend that the project proponents, in concert with the land use planning entities, establish the lots and consider doing so in a manner that supports transit-oriented and low impact development. This approach would serve to supply needed transportation infrastructure and modal choice, decrease traffic on roadways, and minimize stormwater runoff.

Pedestrian/bicycle facilities

The DEIS states that pedestrian use of the area is light due to low density land uses and the lack of adequate pedestrian facilities. Sidewalks are relatively nonexistent or discontinuous in the project area and travel to the Puyallup Recreation Center is auto-dominated. We believe that if pedestrian facilities were provided, they would invite more pedestrian usage. We recommend that there be a firm commitment to provide the pedestrian/bicycle overpass, in one way or another.

We commend the project proponent for the separate multi-use trail proposed along Hylebos Creek between SR 99 and 54th. However, we believe this trail needs to be extended farther to better serve the area to maximize its usefulness and service to area destinations, including the Puyallup Recreation Center. It should also be connected to other area trails as is proposed in the DEIS with the Interurban Trail.

Puyallup Recreation Center

F02-043

RESPONSE F02-043

The principles of context sensitive design will be applied wherever possible. Roadside plantings will be done in accordance with WSDOT’s *Roadside Classification Manual*. Native plants will be used for the Riparian Restoration Proposal (RRP).

F02-044

RESPONSE F02-044

The description of multimodal aspects of the project including HOV lanes and pedestrian and bicycle accommodations has been updated, see section 3.15 of the FEIS.

F02-045

RESPONSE F02-045

The project now includes two park-and-ride lot locations, one at the Valley Avenue interchange and one near the SR 161 interchange. Please see sections 3.14.2 and 3.14.3 of the FEIS.

F02-046

RESPONSE F02-046

An over-crossing at the Recreation Center was evaluated, and was determined to be unreasonable because of low recorded non-motorized demand. The preferred (Urban) SR 161 interchange includes an overcrossing east of the Recreation Center, see figure 2-7.

F02-047

RESPONSE F02-047

WSDOT is not proposing an extension of the separate use path beyond SR 99. The project will accommodate the Interurban Trail and re-establish public access connection to the trail in the vicinity of 70th Avenue East and I-5. The relocated portion of the trail will be ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife’s bicycle and pedestrian facilities.

Based on the analyses in the DEIS, it appears that the Puyallup Recreation Center will be heavily impacted by the SR 167 project. There will be unmitigated noise impacts, air pollution, including substantial exposure to air toxics and particulate matter from cars and heavy truck traffic, and no commitment by the project proponent for non-motorized access as described above. The noise and air pollution from the proposed roadway may result in unsafe and unhealthy conditions for outdoor recreation, and the failure to provide non-motorized access to the recreation center will cause auto-dependent access to the Center to continue. This is non-compliant with PSRC multi-county planning policy RT-8.14, which directs that decision makers "Emphasize transportation investments that provide alternatives to single-occupant vehicle travel to and within urban centers and along corridors connecting centers." We recommend that FHWA and WDOT join with the local government and citizens to examine these multiple project impacts to the Center, and assess whether more substantive action is needed to address project impacts to the affected community's health and quality of life and non-motorized recreation and travel options.

Tribal Issues

An August 1993 letter from the Puyallup Tribe, which describes the Tribe's concerns about the SR 167 project, should be included in the EIS. According to the February, 1999 letter from the Tribe, those concerns remain and they should be disclosed and addressed in the Tier 2 EIS. While the project proponent has taken steps to make contact and involve the Tribe, FHWA is responsible for conducting matters in a government to government relationship with the Tribe, as per Executive Memo dated April 29, 1994. Based upon the documented Tribal Coordination (page 1-27), it is not clear that there has been sufficient consultation.

The DEIS asserts (page S-6) that in February, 1998 (this should be corrected to read February, 1999), the "Puyallup Tribe expressed support for the build alternative extending SR 167." We do not believe this accurately summarizes the Tribe's February, 1999 letter. The Puyallup Tribe concurred only with WDOT's proposal to conduct Tier 2 studies and analyses. Because their concerns regarding the project, expressed in 1993 still remain, they "reserve judgement on whether the project should finally go forward" until the Tier 2 analysis is completed. Also, they conditioned their agreement to allow Tier 2 studies to be conducted on WDOT's compliance with commitments made, which include noise mitigation, and several other items. Thus far, WDOT does not appear to be complying with commitments made to the Tribe concerning noise abatement, and the status of the other commitments is not disclosed.

WDOT asserts that they want "to assure that the quality of life on the [Tribal] land is as minimally impacted as possible by the proposed construction of the SR 167 Extension" (6/25/98 letter from Gary Demich). The Executive Memo of April 29, 1994, directs that FHWA "...consult ... with tribal governments prior to taking actions that affect federally recognized tribal governments. All such consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals." In accord with these two documents, we ask that the Tribe be fully informed about toxic air and particulate matter emissions from the proposed project that will be adjacent to their Tribal lands, which are

RESPONSE F02-048

F02-048

The FEIS shows increased noise levels at the Puyallup Recreation Center. A noise wall was evaluated for the Recreation Center and found feasible but not reasonable at this time. WSDOT met with the Puyallup Recreation Center Officials on February 1, 2006, to discuss noise impacts. At this meeting the City expressed that the future noise from the proposed SR 167 roadway would not substantially impair their activities. Please also see sections 3.5.3 through 3.5.5 and 3.6.3 through 3.6.5 of the FEIS for Air and Noise impacts. The Puyallup Recreation Center is also discussed in the 4(f) evaluation, section 5.6.2 of the FEIS.

RESPONSE F02-049

F02-049

The discussion of Tribal Coordination in section 1.4.3 is modified in the FEIS. Consolidated Comments on the Tier II DEIS were received from the Tribe. Their concerns have been considered, and their comments and the associated responses are the part of the FEIS. Please also see the responses to F02-050 and F02-051.

RESPONSE F02-050

F02-050

The project team has met with the Puyallup Tribe to address many issues. This includes regular quarterly meetings over the past couple of years with Tribal staff and individual tribal members as well as meeting with the Tribal Council. FHWA and WSDOT are committed to maintaining an open line of communication with the Tribe throughout the design and construction phases of this project.

intended for long term tribal residential use, and the associated childhood and adult human health effects. We also reiterate our request that hot spot analyses be performed to better characterize the exposure levels for residents and other sensitive receptors near the proposed roadway.

Noise

The DEIS indicates that no noise wall mitigation is deemed to be reasonable at this time. We recommend that the Final EIS clarify how this decision was made and whether it may or may not change. This is because (1) the project area is zoned for commercial/industrial/residential development; consequently feasibility and reasonableness will likely need to be re-evaluated as development occurs. (2) Commitments were made to the Puyallup Tribe to mitigate noise (Tier 1 Final EIS, Appendix K, June 25, 1998 letter from Gary Demich to John Lamb). The February, 1999 letter from the Tribe that concurs with WDOT's proposal to proceed with the Tier 2 studies and analyses only, states their concurrence is conditioned upon WDOT upholding their commitments to the Tribe. The Tier 2 (page 3-159) DEIS does not make a firm commitment based on the reasonableness criterion. If 25 residences are required for noise mitigation to be reasonable, then this needs to be made clear to the Tribe so that the Tribe can factor this condition into their decision-making regarding support or non-support of the proposed roadway. We also suggest that the project proponents examine whether or not the proposed roadway alignment can be adjusted to lessen the noise impacts, as well as the exposure to air toxics for sensitive receptors.

Farmland

Because the proposed project affects agricultural lands, the Farmland Protection Policy Act (FPPA) requires that the farm lands be evaluated for their importance and the need to take protective action. Form NRCS-CPA-106 (DEIS Appendix E), which is used for the agricultural land evaluation and comparison of alternatives, was supposed to be completed during Tier 1. Unfortunately it was not completed until several years later, during Tier 2, after the annexation and rezoning of the farmland had taken place. This had a substantial negative effect on the scoring process, which resulted in two scores – one just below, and one just above the threshold for taking protective action (the higher score resulted from the taking of additional farm lands for implementing the riparian restoration proposal). Without explanation, the Tier 2 DEIS used the lower score. As a consequence, the project proponents will not be required to take protective action.

We would like to point out that had the scoring been completed during Tier 1, as intended under the FPPA, the points total would have greatly exceeded the threshold, thereby requiring protective efforts. Even with an evaluation during Tier 2, the correct score to use was the higher total, which triggers protective action. Please provide an explanation as to why the lower score was chosen to represent the farm land evaluation.

The Natural Resources Conservation Service (NRCS) classified the project area as prime agricultural land and has stated that these are the most arable lands in the State of Washington. The agricultural value is so significant that, even with the annexation and rezone, they still

RESPONSE F02-051

The Feasible/Reasonable test was used to determine what noise walls can effectively reduce noise by at least 5 decibels or more (feasible), and is cost effective by providing noise reduction to enough sensitive receptors to justify the cost (reasonable). Only one wall (barrier) passed both tests and would be constructed. This noise barrier will be included in the final design of the preferred Urban Interchange option, which receives most of its noise from traffic on SR 167, SR 512, and SR 161. WSDOT and FHWA have committed to the Puyallup Tribe to provide landscaped noise abatement structures along 48th street East to mitigate noise impact to tribal trust land. WSDOT and FHWA will assist the Puyallup Tribe in locating new businesses to minimize noise and visual impacts attributable to SR 167, by sharing noise study data and advising the Tribe with respect to quiet locations, landscaping and mitigation measures.

F02-051

RESPONSE F02-052

The Natural Resources Conservation Service (NRCS) evaluation was not completed during Tier 1 process, despite best efforts. Please refer to page 4-261 of the Tier 1 document, which mentioned that the Form AD 1006 was sent to NRCS on November 21, 1995 and February 19, 1997. NRCS, in its response dated March 20, 1997, explained that the Land Evaluation and Site Assessment will not be developed for the foreseeable future and returned the uncompleted form.

F02-052

CPA-106 forms (per the Farmland Protection Policy act) addressing project farmland effects, both with and without riparian restoration, were included in appendix E of the DEIS. For the RRP option, the total points exceeded 160. The DEIS documented the consideration recommended by the Department of Agriculture for a site with a score of more than 160 (DEIS page 3-250). The FEIS includes a revised Form CPA-106 to include evaluations of the Wapato RRP and the Conceptual Mitigation Plan, and the total score is now less than 160.

Currently, neither NRCS nor local governments have farmland protection policy in Pierce County. Farmland protection as suggested by EPA does not fall under the scope of this project.

exceed the points threshold for protective action, yet no action was taken to protect them from development.

We are concerned that neither the timing of evaluation nor the score selection were conducted in a manner that accurately reflects the value and importance of these lands. While the roadway corridor selection, annexation, and rezoning are resulting in the conversion of the farmland, there is still opportunity, and we believe a responsibility on the part of project proponents to mitigate (avoid, minimize, and compensate) for these losses. We recommend that there be additional effort to assess, avoid, and minimize project impacts, and we suggest that FHWA, WDOT, Port of Tacoma, and other local governments work collaboratively to preserve farmland acreage in the Puyallup Valley or elsewhere in Western Washington. This could be done through direct purchase for preservation, or through donation to a local farmland preservation fund.

Traffic Analysis and Transportation Demand Management (TDM)

Table 3.14-1, page 3-276, provides Level of Service (LOS) projections at Study Area intersections for year 2030 for the Build and No Build alternatives. We note the following from this analysis:

- Fifteen of the 38 intersections are at LOS F for both the Build and the No Build alternatives.
- The Build Alternative LOS becomes worse than year 2000 LOS for 15 intersections.
- The Build Alternative LOS remains the same as year 2000 LOS for 10 intersections.
- The Build Alternative LOS improves over year 2000 LOS for only 5 of the 38 intersections.
- Eleven intersections would have some improvement with the Build Alternative, but for 4 of these, the improvement is a change of only one LOS level.
- Only 1 High Accident Location (HAL) will be safer in year 2030 than in year 2000 (SB Off Ramp at 54th), and all of the HALs would be addressed anyway as part of the No Build Alternative planned actions in 2003-2005 (page 3-278).

The traffic analysis does not indicate whether all possible and planned operational improvements are factored into the No Build calculations, and whether or not induced travel is factored into the calculations for the Build Alternative. If not, we recommend that they be. If induced travel has not been factored into the analysis, it is unclear whether any intersections would show improvement by year 2030 with the Build Alternative.

Based on these findings and in light of the high economic, social, and environmental costs of this proposed facility, we see the need for TDM measures to improve its viable life. Again, PSRC multi-county policies (RT-8.11, RT-8.13, RT-8.14) call for the use of TDM. Other than future possible HOV lanes, this proposed project does little to incorporate TDM measures. We recommend that much more work be done to enhance TDM components of the project.

RESPONSE F02-053

Section 3.14.2 of the FEIS, 2030 Network Data, summarizes the improvements that are factored into the build and no build calculations.

RESPONSE F02-054

TDM strategies that are in place now or will be implemented at project completion are listed in section 3.14.4 of the FEIS. As described above, the FEIS contains a more developed plan for bicycle and pedestrian facilities and the addition of two Park-and-Ride lots. The other items on the strategies list consist of educational items that WSDOT participates in statewide such as rideshare information and worksite commute trip reduction.

F02-053

F02-054

Interchange Options

At Valley Avenue, it appears that the Freeman Road option may be somewhat preferable with respect to stream crossings and floodplain impacts (p. 3-34 and 3-42), but the Valley Avenue Realignment option consumes far less land (33.0 acres) than the Freeman Road option (78.6 acres) and removes much less vegetated area (6.7 acres) and farmland (14.2 acres) than the Freeman Road option (25.2 acres and 25.5 acres respectively). In addition, the Valley Avenue Realignment option does not impact land that is of possible interest to the Puyallup Tribe (p. 3-10). Accordingly, it is not clear why the Valley Avenue option has lower water quality impacts than either the Freeman Road or Valley Avenue Realignment options (p. 3-42). We recommend that the Final EIS provide more explanation and comparison of these interchange options with respect to the full range of aquatic habitat, water quality, and stormwater management issues. We urge that the option selected cause the least overall impacts to all of the above land and water resources. This request applies to the 54th Avenue and the SR 161/SR167 options as well.

Environmental Justice

The environmental justice analysis reveals that there will not be high and disproportionate impacts to low income and people of color. The DEIS describes where and how low income and minorities would be impacted, however, "low income" and what races were included in their "minority" population were not defined. Please include these definitions in the Final EIS.

F02-055

F02-056

RESPONSE F02-055

The Valley Avenue option, compared to the other two options in Table 3.2-8 of the FEIS, has "fewer total near or in-water work sites." The Freeman Road and Valley Avenue Realignment options would have more impacts to near or in-water work sites than the Valley Avenue option and that is the primary reason it was selected over the other two options.

The methodology used to identify and assess wetlands affected by the SR 167 project is described in the "Wetland Discipline Report" prepared for the project and summarized in Section 3.3.1 of the FEIS. Mitigation for impacted wetlands is outlined in Section 3.3.7 of the FEIS. The wetlands affected by the project are described by sub-basin, including Hylebos Basin (which includes Surprise Lake Drain), Wapato Basin, and the lower Puyallup Basin. The Puyallup Tribe, Friends of Hylebos Creek, and the project Technical Advisory Group (TAG) have all been consulted during the preparation of Draft and Final EIS. Work to further delineate, characterize, and categorize existing wetlands is occurring. The additional information being collected is being incorporated into the project design to avoid and minimize impacts to wetlands, as well as to prepare a Wetland Mitigation Plan.

A Section 404(b)(1) Analysis has been completed for this project and is included as chapter 4 in the FEIS. The 404(b)(1) Analysis demonstrates that "Alternative 2" from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). On March 23, 2005, your agency concurred that the preferred build alternative is the least environmentally damaging and practicable alternative (LEDPA). This concurrence was achieved through close collaboration with your agency on the analysis of environmental impacts, which led to the design of a bridge at the Valley Avenue interchange (preferred alternative) that will avoid the wetland adjacent to Wapato Creek.

RESPONSE F02-056

Environmental Justice impacts have been clarified in the FEIS, see section 3.11.3.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
911 NE 11th Avenue
Portland Oregon 97232-4181

IN REPLY REFER TO:
AES/HC

APR 29 2003

Memorandum

To: Director, Columbia Cascades Cluster Support Office
National Park Service, Seattle, Washington

From: Regional Director, Fish and Wildlife Service
Region 1, Portland, Oregon *David Wesley*

Subject: Review of the Tier II Draft Environmental Impact Statement for the Proposed Extension of State Route (SR) 167, from SR 161 to SR 509, Pierce County, Washington (ER03/0278)

Attention: Nancy Stromsen

Comments on the subject document are attached for your use in collating Departmental comments, and submission to the Office of Environmental Policy and Compliance in Washington, D.C., who will then transmit comments to the Federal Highway Administration and Washington Department of Transportation. If you have questions, please contact Jon Hale at 503-231-2357. Thank you.

Attachment:

RESPONSE F03-001

The wildlife, fisheries, and threatened and endangered species section 3.4 of the FEIS has been expanded to include indirect and cumulative impacts. This includes a discussion on growth and development in the project area. Please see sections 3.4.7 and 3.4.8 of the FEIS.

RESPONSE F03-002

The project Biological Assessment addresses impacts associated with urbanization on the Lower Puyallup River subpopulation of bull trout. The Bull Trout has been thoroughly evaluated in the project Biological Assessment and is included in the current consultation with NOAA Fisheries and the USFWS to obtain a Biological Opinion (BO) on the project's potential affect.

United States Department of the Interior
Office of the Secretary
Washington, D.C.

In Reply Refer to:
ER03/0278

Mr. Jeff Sawyer
Regional Environmental Manager, Olympic Region
Washington State Department of Transportation
5720 Capitol Boulevard
Tumwater, Washington 98501.

Dear Mr. Sawyer:

The Department of the Interior (Department) through the U. S. Fish and Wildlife Service (FWS) and National Park Service (NPS) has reviewed the Tier II Draft Environmental Impact Statement for the Proposed Extension of State Route (SR) 167, from SR 161 to SR 509, Pierce County, Washington. Following are our comments for your consideration.

Section 4(f) Resources: NATIONAL PARK SERVICE WILL PROVIDE COMMENTS FOR THIS SECTION.

Fish and Wildlife Effects: The FWS evaluated the proposed project alternatives for potential impacts to fish and wildlife resources and their habitat, with specific attention to species listed or proposed for listing under the Endangered Species Act (ESA). Based on that review we anticipate the most serious effects from the project will arise from the secondary effects of increased or accelerated urban development. Consequently, we recommend the geographic scale of the effects analysis in your Final Environmental Impact Statement reflect those effects.

The increased or accelerated urban growth caused by the proposed project may indirectly affect the Lower Puyallup River subpopulation of bull trout, which is listed as threatened under the ESA. The Lower Puyallup River subpopulation is the only spawning subpopulation of bull trout in south Puget Sound. This subpopulation is currently considered to be depressed as a result of urban development, elevated stream temperatures, low in-stream flows, and sedimentation from roads. Although these land use changes are planned for under the Washington State Growth Management Act, they may result in effects to fish and wildlife that have not been specifically evaluated for compliance with the ESA.

The FWS is committed to collaborating with the Washington State Department of Transportation (WSDOT) and the Federal Highway Administration (FHWA) during the ongoing planning of this project. We envision our participation would occur primarily during consultation under section 7 of the ESA and consideration of Army Corps of Engineers' permit applications (i.e., Section 404 of the Clean Water Act and or Section 10 of the Rivers and Harbors Act of 1899). Our overall

F03-001

F03-002

F03-003

goal in this collaborative effort will be to assist you in developing the proposed project in a manner that avoids, minimizes, and mitigates potential effects to fish and wildlife, including bull trout. One specific goal we would like to work with you to achieve is building in habitat connectivity elements for all of the area's wildlife, as well as bull trout.

Though we believe these types of fish and wildlife conservation elements should be built into the project, we would like to commend WSDOT and FHWA for incorporating innovative riparian restoration and stormwater solutions into the project design. We look forward to further collaboration with you on this project.

If you have questions pertaining to fish and wildlife issues, please contact Emily Teachout of our Western Washington FWS Office at (360)753-9583, or Nancy Stromsem of our Columbia Cascades Cluster Support Office of the NPS at 206-220-4118.

Sincerely,

Willie R. Taylor, Director
Office of Environmental Policy and Compliance

cc: Steve Saxton (FHWA, Olympia, WA)

F03-003

F03-004

RESPONSE F03-003

Section 7 consultation has been initiated with the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NOAA Fisheries). The project's commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision regarding the project.

The proposed RRP (Stormwater Management Plan) would reestablish a more natural condition for the floodplain surrounding the project corridor by removing obstructions, such as buildings, embankments and roadways. Compensatory mitigation areas for wetlands will also be provided, including buffers. The new expanded floodplain areas and wetlands, including buffers, would provide more open space areas that would offer connectivity to exiting wildlife habitats. The Hylebos Watershed, including upland habitats, would be connected through the expanded floodplain areas included in the RRP. Due to their use for flood protection, these areas would be protected from being developed for perpetuity. Please see revised figure 3.4-12 showing wildlife connectivity.

We appreciate your participation in the Riparian Restoration Proposal (RRP) Technical Advisory Group. The Technical Advisory Group has been invited to participate in the refinement of the goals and objectives of the RRP.

Since the DEIS, the Wildlife Connectivity analysis has been moved from the Water Resources section to Section 3.4 Wildlife, Fish, and Threatened and Endangered Species. The text has been expanded to explain the potential for the RRP to provide protection and restoration of a fairly large contiguous block of land (189 acres) in the urbanized Puyallup Valley. Please see Section 3.4.3 and revised figure 3.4-12 showing where the upland habitats are located.

Additionally, WSDOT and FHWA have been working with groups such as the Friends of Hylebos Wetlands, NOAA Fisheries, Department of Fish and Wildlife, Department of Ecology, and US Fish and Wildlife in proposing areas to connect wildlife in the Hylebos watershed and Wapato watersheds.

RESPONSE F03-004

Thank you for your support of the RRP.



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

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MAY 7 2003

ER-03/278

Mr. Jeff Sawyer
Regional Environmental Manager
Washington State Department of Transportation
5720 Capitol Boulevard
Tumwater, Washington 98501

Dear Mr. Sawyer:

The Department of the Interior (Department) has reviewed the Tier II Draft Environmental Impact Statement (DEIS) for the Proposed Extension of State Route (SR)-167, from SR-161 to SR-509, Pierce County, Washington. Following are our comments for your consideration.

GENERAL COMMENTS

Geology

The DEIS does not mention any geologic hazards to the roadway, embankments, elevated structures, and bridges. A geology section is needed that includes (1) a description of the geology of the affected environment, (2) a description of seismic, liquefaction, and mass wasting hazards (including fault, soil, and landslide maps), and (3) mitigation plans for any identified geologic hazards.

F04-001

In addition, a soils section is needed with a description of the soils and percentages of soil components (silt, sands, boulders, etc.) in the area. The DEIS should assess any possible expansion attributes of the soils and whether these soils, especially the older alluvium, have properties that might impact the roadway and bridges.

Section 4(f) Resources

The National Park Service (NPS) has reviewed the Tier II DEIS sections on pedestrian and bike facilities and cultural resources. No Land and Water Conservation Fund sites are affected. Several of the project area roads currently accommodate bicycle use, and there are proposals to extend trails into the area. The Washington State Department of Transportation (WSDOT) will attempt to accommodate non-motorized use during construction by rerouting as necessary. Current WSDOT policy calls for best practice design to accommodate non-motorized transportation modes. We note that the WSDOT is working with the State Historic Preservation

F04-002

RESPONSE F04-001

The FEIS has been updated to include a project setting section, please see section 3.1.3 of the FEIS, which includes information about topography, geology, and soils.

RESPONSE F04-002

A Section 4(f) analysis has been completed for this project, please see chapter 5 of the FEIS.

Officer (SHPO); and, if the SHPO determines that any of the affected sites are eligible for the National Register, a Section 4(f) Evaluation analysis will be required.

Fish and Wildlife Comments

The Fish and Wildlife Service (FWS) evaluated the proposed project alternatives for potential impacts to fish and wildlife resources and their habitat, with specific attention to species listed or proposed for listing under the Endangered Species Act (ESA). Based on that review we anticipate that the most serious effects from the project will arise from the secondary effects of increased or accelerated urban development. We recommend that the geographic scale of the effects analysis in your final environmental impact statement reflect those effects.

The increased or accelerated urban growth caused by the proposed project may indirectly affect the Lower Puyallup River subpopulation of bull trout, which is listed as threatened under the ESA. The Lower Puyallup River subpopulation is the only spawning subpopulation of bull trout in south Puget Sound. This subpopulation is currently considered to be depressed as a result of urban development, elevated stream temperatures, low in-stream flows, and sedimentation from roads. Although these land use changes are planned for under the Washington State Growth Management Act, they may result in effects to fish and wildlife that have not been specifically evaluated for compliance with the ESA.

The FWS is committed to collaborating with the WSDOT and the Federal Highway Administration (FHWA) during the ongoing planning of this project. We envision that our participation would occur primarily during consultation under Section 7 of the ESA and consideration of Army Corps of Engineers' permit applications (i.e., Section 404 of the Clean Water Act and or Section 10 of the Rivers and Harbors Act of 1899). Our overall goal in this collaborative effort will be to assist you in developing the proposed project in a manner that avoids, minimizes, and mitigates potential effects to fish and wildlife, including bull trout. One specific goal we would like to work with you to achieve is building in habitat connectivity elements for all of the area's wildlife, as well as bull trout.

Though we believe that these types of fish and wildlife conservation elements should be built into the project, we would like to commend the WSDOT and the FHWA for incorporating innovative riparian restoration and stormwater solutions into the project design. We look forward to further collaboration with you on this project.

SPECIFIC COMMENTS

Page 2-4, Chapter 2 Alternatives/Options, Including the Proposed Action, Section 2.3 Design Evaluation and Selection Criteria, Sub-section 2.3.1 Technical Design Requirements, Table 2.3-1: General Design Criteria:

Geohazards should be a major component of the design criteria and selection of alternatives. Seismic hazards, liquefaction, and mass wasting (Chleborad, 2000) are all geohazards that will affect the project design as well as the environment and costs.

RESPONSE F04-003

The wildlife, fisheries, and threatened and endangered species section 3.4 of the FEIS has been expanded to include indirect and cumulative impacts. This includes a discussion on growth and development in the project area. Please see sections 3.4.7 and 3.4.8 of the FEIS.

RESPONSE F04-004

The project Biological Assessment addresses impacts associated with urbanization on the Puyallup River subpopulation of bull trout.

RESPONSE F04-005

Section 7 consultation has been initiated with the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NOAA Fisheries). The project's commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision regarding the project.

Thank you for your support of the RRP. We appreciate your participation in the Riparian Restoration Proposal (RRP) Technical Advisory Group which will soon refine the goal and objectives of the RRP.

RESPONSE F04-006

The FEIS has been updated to include a project setting section, please see section 3.1.3 of the FEIS, which includes information about topography, geology, and soils.

A complete geotechnical investigation will be part of the final design of SR 167.

F04-002

F04-003

F04-004

F04-005

F04-006

New 2000 Uniform Building Codes (UBC) require evaluation of seismic hazards using peak ground acceleration (PGA) with 2 percent probability of exceedance in 50 years. At Puyallup, for example, the PGA with 2 percent probability of exceedance in 50 years is 0.52g (see References in this letter), a significant seismic risk. The PGA values are calculated for firm rock types, so additional analysis is needed to evaluate the seismic risk for the alluvium, which amplifies the risk. Design criteria for the bridges, elevated roadways, and embankments that are created from fill will have to meet these standards for safety.

F04-006

With the alluvium and shallow water table (page 3-18), liquefaction is a geohazard for which mitigation plans are needed. A significant number of miles in this project are elevated structures or roadways built on fill, all of which could be disastrously affected by the seismic and liquefaction hazards in the area.

Pages 2-22 through 2-24, Section 2.5 Detailed Description of Alternatives, Sub-section 2.5.2 Build Alternative, Figures 2.5-3 through 2.5-5:

The figures of the I-5 Interchange design show areas of cut and fill. Geologic and soil information are needed for the cut areas. If these cuts should pose a risk of mass wasting (slides, slumps, and/or rock fall), then mitigation measures should be discussed in the DEIS. Mass wasting is not only a danger to drivers, but is also an expensive long-term cost for the project (Schuster and Highland, 2001).

F04-007

For questions pertaining to fish and wildlife issues, please contact Emily Teachout of our Western Washington Fish and Wildlife Office at (360) 753-9583.

Thank you for the opportunity to provide these comments.

Sincerely,

Terence N. Monte
for Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc: Steve Saxton (FHWA, Olympia, WA)

RESPONSE F04-007

A site-specific investigation will provide the subsurface information needed to design all cut slopes and embankments such that large scale (global) failures are prevented. A complete geotechnical will be part of the final design for this project.



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240



OCT 24 2005

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ER 05/771

Mr. Tom Whitney
Acting Environmental & Hydraulic Manager
Olympic Region
Washington State Department of Transportation
150 Israel Road SW, F1 4, Tumwater
Olympia, Washington 98501-7417

Dear Mr. Whitney:

As requested, the Department of the Interior (Department) has reviewed the Draft Section 4(f) Evaluation for the **SR-167 Freeway between SR-161 (Meridian Street North) in Puyallup and the SR-509 Freeway in the Port of Tacoma, Pierce County, Washington**. The Department offers the following comments for this project.

The Department agrees with the Washington State Department of Transportation (WSDOT) that there are no prudent and feasible alternatives to using Section 4(f) resources. The Department appreciates the thorough discussion generally presented in the Section 4(f) Evaluation. In particular, the explanation of unique circumstances, such as tribal trust lands and wetlands, was very helpful.

The Department would like to mention some other areas of concern.

Puyallup Recreation Center

The Department commends and supports the planning for architectural or vegetative screening to block the view of traffic and vegetating the embankment side slopes for the Puyallup Recreation Center. See page 26, Draft Section 4(f) Evaluation: SR 167 Puyallup to SR 509.

As noted in the Section 4(f) Evaluation, pursuant to the Department of Transportation Act and the Federal Highway Administration (FHWA) regulations, "[t]he Administration may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that: (i) There is no feasible and prudent alternative to the use of land from the property; and (ii) The action includes all possible planning to minimize harm to the property resulting from such use." 23 C.F.R. § 771.135(a).

F04-008

F04-009

RESPONSE F04-008

Thank you. FHWA and WSDOT have discussed the SR 167 project in relation to its impact on 4(f) properties with the Department of Interior.

RESPONSE F04-009

Based on your comments, we did additional noise modeling at the Puyallup Recreation center to get a better understanding of the future impacts to this facility.

The results of the additional noise analysis shows that, except for a few outfielders on the baseball field closest to the proposed roadway, most of the Recreation Center facility would experience noise levels in the 62 to 63 dBA range. This is below WSDOT and FHWA's noise impact criteria of 66 dBA. The noise level increase from the existing 52 dBA to the future 62-63 dBA range is still considered a substantial increase. We evaluated a noise wall for the recreation Center which was found to be feasible but not reasonable.

Most users of the facility will experience noise levels well below 67 dBA. Placing a noise wall along WSDOT's right-of-way will not benefit the majority of the users who are more than 300-400 feet away from the roadway. Traffic noise below 67 dBA does not interfere with normal conversation. Therefore, users of the facility in the center of the ball fields and in the park and playground area would be able to carry on a normal conversation without raising their voices.

Representatives from the Puyallup Recreation Center agree that the future roadway noise will not substantially impair the activities at their facility. We have updated the 4(f) analysis to include this information. Please see chapter 5 of the FEIS.

Moreover, constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features or attributes of the resource are substantially diminished.

The Section 4(f) Evaluation does not consider the proposed project to result in a "use" of the Puyallup Recreation Center. See Evaluation at page 26, Table 3—Section 4(f) Use—Recreational Resources Eligible for Section 4(f) protection. However, though the recreation center would not be acquired and "used" by being incorporated into the project, the proximity of the project will greatly increase the noise level.

It seems that a "constructive use" will occur due to the increased noise. The Section 4(f) Evaluation also seems to suggest this by acknowledging that "[t]he FHWA noise abatement criterion for active recreation areas is 67-dBA," and the noise from the project will "increase from 52-dBA to 70-dBA." *Id.* This is consistent with FHWA regulations, which state that a constructive use does not occur if noise levels "do not exceed FHWA noise abatement criteria..." 23 C.F.R. § 771.135(p)(5).

The Evaluation further states that while construction of a noise wall was found to be feasible because a 10-foot high wall 2,400 feet long would provide a 7-dBA reduction in noise for the Recreation Center, this option is not reasonable under established WSDOT criteria and therefore, the wall should not be constructed.

However, if there is a "use," then all possible planning must occur to minimize harm. It seems then that construction of a noise wall would be appropriate. The Department recommends consideration of a scaled-down version of the 10-foot high, 2,400 feet long, noise wall, which offers enough reduction in noise to meet the FHWA noise abatement criteria. In the alternative, the Department recommends consideration of other noise reduction mitigation measures, if the noise wall is not viable.

Maps

Finally, for the final Section 4(f) Evaluation, the Department recommends including larger scale maps that are in color to differentiate project boundaries, existing roads, etc. (as opposed to black and white), since some of the maps were difficult to read.

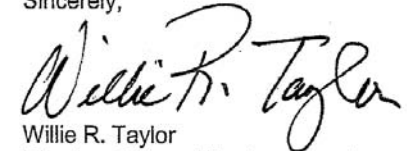
The Department has a continuing interest in working with the FHWA and WSDOT to ensure that impacts to resources of concern to the Department are adequately addressed. For continued consultation and coordination with section 4(f) issues, please contact Kelly Powell, National Park Service, Pacific West Region, 909 First Avenue, Seattle, Washington, 98104, at 206-220-4106 or kelly_powell@nps.gov.

F04-009

F04-010

The Department appreciates the opportunity to provide these comments.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc: Megan Hall
Area Engineer, Olympic Region
Federal Highway Administration
711 S. Capitol Way
Suite 501
Olympia, WA 98501

Steve Fuchs, WSDOT Project Manager
Washington State Department of Transportation
150 Israel Rd SW, FL 4
Tumwater, WA 98501

RESPONSE F04-010

All figures in the FEIS, which will include the final 4(f) Evaluation, will be reviewed for readability. The CD included with the FEIS contains a separate folder with the FEIS figures in 11- by 17-inch format.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 WASHINGTON HABITAT BRANCH OFFICE
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May 10, 2003

Steve Saxton
 Area Engineer
 Federal Highway Administration
 711 South Capital way, Suite 501
 Olympia, Washington 98501

Jeff Sawyer
 Olympic Region Environmental Manager
 Washington State Department of Transportation
 5740 Capital Blvd
 Tumwater, Washington 98501

Re: Review of Draft Environmental Impact Statement (DEIS), SR 167 Tier II EIS, Puyallup to SR 509

Dear Gentlemen:

NOAA's National Marine Fisheries Service (NOAA Fisheries) is a signatory agency committee member with statutory, regulatory, and policy responsibilities under the Endangered Species Act, Magnuson-Stevens Fisheries Conservation and Management Act, and the Fish and Wildlife Coordination Act.

NOAA Fisheries received your request for review under the revised Interagency Working Agreement. NOAA Fisheries appreciates the opportunity to review and comment on this National Environmental Policy Act (NEPA) Draft Environmental Impact Statement (DEIS). Comments on this DEIS does not in any way prejudice or alter NOAA Fisheries's statutory responsibilities under the above-named authorities.

NOAA Fisheries has reviewed the SR 167, Puyallup to SR 509 DEIS, and the Draft Hylebos Creek and Wapato Creek Restoration Plans. NOAA Fisheries' comments address the selection of a preferred interchange alternative at each proposed interchange in the Build Alternative, as they relate to land conversion, wetland fill, and stream crossings. In addition, NOAA Fisheries has comments on the stormwater water quality treatment and flow control proposals, including the proposed Hylebos and Wapato Creek Rehabilitation plans (enhanced water quality treatment and alternative flow control approach).

NOAA Fisheries prefers the interchange alternatives that avoid and minimize the conversion of land from one use to another because of land clearing and grading for the new highway, wetland fill, and the minimization of new stream crossings. Based on those criteria, NOAA Fisheries preferred interchange alternatives include the 54th Ave Half Diamond, Freeman Road option, and

F05-001



RESPONSE F05-001

The Valley Avenue option, compared to the other two options in Table 3.2-8 of the FEIS, has "fewer total near- or in-water work sites." The Freeman Road and Valley Avenue Realignment options would have more impacts to near- or in-water work sites than the Valley Avenue option and that is the primary reason it was selected over the other two options.

A Section 404(b)(1) Analysis has been completed for this project and is included as chapter 4 in the FEIS. The 404(b)(1) Analysis demonstrates that "Alternative 2" from the Tier I FEIS is the least environmentally damaging practicable alternative (LEDPA). On March 23, 2005, your agency concurred that the preferred build alternative is the least environmentally damaging and practicable alternative (LEDPA). This concurrence was achieved through close collaboration with your agency on the analysis of environmental impacts, which led to the design of a bridge at the Valley Avenue interchange (preferred alternative) that will avoid the wetland adjacent to Wapato Creek.

that all replacement and new crossing over streams will minimize their effects by installing open bottom culverts designed to current fish passage criteria, as well as provide a corridor for wildlife migration.

F05-001

NOAA Fisheries understands that wetland fills and modifications will be mitigated for by the enhancement of the Hylebos and Wapato creeks riparian areas, and the removal of dikes on a 265 acre parcel adjacent to the Puyallup River.

In addition, NOAA Fisheries endorses the proposed Hylebos Creek Riparian/Floodplain Restoration Plan as part of the enhanced water quality treatment and stormwater flow control best management practices (BMP) for the SR 167, Puyallup to SR 509 Project. In addition to the Hylebos Creek Rehabilitation plan, NOAA Fisheries encourages the implementation of the Wapato Creek Rehabilitation Plan that was proposed earlier in the project design. It is unclear if the plan is still proposed because of the brief mention in the DEIS project.

NOAA Fisheries endorses the enhanced water quality and alternative flow control BMP proposal based on the fact that current literature on traditional water quality and water quantity BMP design and technology designed to comply with the Clean Water Act (CWA) are not protective of salmonids or their habitat. NOAA Fisheries believes that additional or non-traditional stormwater treatment for water quality and water quantity should be encouraged.

Based on review of the DEIS, supplemental documentation, and scientific literature for the proposed project, traditional stormwater BMPs are not adequate to maintain or reverse the effects of altered water quality and hydrology in the Hylebos and Wapato subbasins. In 1991, King County developed a Hylebos Creek basin plan. Since that time, Federal way has invested approximately 15 million into a Regional stormwater detention pond to reduce downstream flooding on the West Branch of the Hylebos. In addition, King County has spent approximately 2 million on stormwater treatment enhancements and stream bank protection on the East Branch of Hylebos Creek. NOAA Fisheries promotes the use of completed subbasin plans to coordinate stream rehabilitation on a subbasin scale, and assumes that the proposed rehabilitation on Hylebos Creek has been identified in such plan, to address limiting factors for the stream and associated surface waters.

F05-002

The installation of traditional pond BMPs for flow control, in this portion of the valley bottom appear counterintuitive to the goal of the CWA. Stormwater pond placement for water quality and flow control in the valley will reduce flood storage and have little to no effect in the event of a large flood event. Therefore, NOAA Fisheries supports this intuitive and creative approach to minimize effects from the new highway and associated development in the valley.

NOAA Fisheries also noted that the proposed water quality treatment included infiltration road prisms. NOAA Fisheries, again, encourages alternative means to treat water quality, however, the treatment values used were from data obtained on constructed wetlands. NOAA Fisheries believes, because the technology is new, that a more conservative approach should be taken and apply lesser numerical values until data (water quality monitoring) show that the technology meets or exceeds State standards for stormwater treatment.

F05-003

Thank you for the opportunity to review this DEIS. If you have any questions or comments, please contact Barbara Wood, of my staff at 360 534-9307 or barb.wood@noaa.gov.

RESPONSE F05-002

Section 7 consultation has been initiated with the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NOAA Fisheries). The project's commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision regarding the project.

Thank you for your support of the RRP. We appreciate your participation in the Riparian Restoration Proposal (RRP) Technical Advisory Group which will soon refine the goal and objectives of the RRP.

RESPONSE F05-003

The FEIS continues to use pollutant removal efficiencies associated with constructed wetlands (see section 3.2.3). This is assumed to represent a conservative estimate when compared to removals expected from infiltration. The efficiencies are only applied in a general manner to allow equitable comparisons between options and to provide a gross level comparison between existing and future conditions.



Friends of the Hylebos Wetlands

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April 9, 2003

Neil Campbell
Washington Dept. of Transportation
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

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TUMWATER DESIGN

Dear Mr. Campbell:

The following are the comments of the Friends of the Hylebos Wetlands regarding the Draft Environmental Impact Statement (DEIS) prepared by the Washington State Department of Transportation (WSDOT) for the State Route 167 (SR-167) project. Previously, we have had one meeting with project staff to specifically discuss several concerns about the DEIS based on a preliminary review of the document. We have also submitted a letter to Pasco Bakotich, dated March 17, 2003, to memorialize the discussions at that meeting and to expand upon the ideas presented at that time. The comments in this letter are based upon a thorough review of the DEIS and include, but are not limited to ideas presented in the previous meeting and letter.

G01-001

Friends of the Hylebos Wetlands is a non-profit, tax-exempt organization dedicated to conserving and restoring the Hylebos Creek Watershed and its native fish and wildlife populations. The proposed SR 167 project poses potential significant impacts, both positive and negative, to the health of the watershed and is therefore, a project of great interest and importance to the organization and its members.

1. Description of the affected environment and associated impacts

The DEIS falls substantially short of providing an informative description of environmental resources in the project area and presents a fragmented, inadequate assessment of project impacts. Several thematic concerns are pervasive throughout the analysis:

G01-002

- The DEIS considers an insufficiently narrow suite of species, life-stages, habitat attributes and environmental functions (hereinafter, referred to collectively as "environmental receptors").

Page 1

RESPONSE G01-001

The WSDOT project team has had several meetings and discussions with you to ensure that the FOHW concerns are being considered in the FEIS. We will continue to work with you as the project moves forward.

RESPONSE G01-002

We sincerely appreciate the Friends of the Hylebos Wetlands commitment to collaborate closely with the project team, including the review of the revised discipline reports (water resources; wetlands; and wildlife, fisheries, and threatened and endangered species) which were updated to respond to comments. Based on your feedback over the last two years, we believe the FEIS addresses this comment, see sections 3.2, 3.3 and 3.4 of the FEIS.

• For those environmental receptors that are discussed, the descriptions of the current condition are cursory at best; provide few references to appropriate environmental benchmarks (e.g., historical conditions) or thresholds (e.g., biologically meaningful standards for water quality); and include almost no discussion of the combined effect of several distinct impact pathways.

G01-003

RESPONSE G01-003

Please see the response to G01-002.

• Impacts are not synthesized in any meaningful way that would permit the reader to appreciate the overall impact “message” for a particular portion of the project area (e.g., lower Hylebos Creek) or for a particular environmental receptor (e.g., juvenile Chinook salmon throughout the project area).

G01-004

RESPONSE G01-004

We met with the Friends of the Hylebos Wetlands in December of 2004 to discuss how to revise the discipline reports to address this comment. Based upon the additional guidance you provided, we revised our studies by ensuring the discipline report writers communicated with one another. In addition, the water resources; wetlands; and wildlife, fisheries, and threatened and endangered species sections of the FEIS have been reformatted to discuss the project area and impacts by sub-basin.

• The cumulative impacts analysis is decidedly inadequate in several respects and fails to follow the guidance provided by the Environmental Protection Agency on the subject (EPA, 1999). Further discussion of this follows on page 8 of this letter.

G01-005

• On numerous occasions, the report refers to the lack of available information on specific topics. In most of these instances, the information in question is certainly available with adequate research of existing information resources. In other cases – considering the scale, cost and importance of the project and the multi-year planning process – it seems quite reasonable to assume that the information could easily have been collected directly by WSDOT.

G01-006

RESPONSE G01-005

Resources that were expected to experience substantial cumulative change were identified as critical resources and those sections were updated to include both an indirect and cumulative impact analysis. Critical resources for the project are water resources (section 3.2); wetlands (section 3.3); wildlife, fisheries, and threatened and endangered species (section 3.4); land use, socioeconomics, and environmental justice (section 3.11); farmland (section 3.12); and cultural resources (section 3.16).

Water Resources

Many of the thematic concerns identified above are reflected in the section describing the current condition and likely impacts to water resources in the project area. For ease of review, the comments below approximately follow the sequence of the sub-chapter in question, where appropriate.

The introductory section (p. 3-15) states that

“soil densification below and adjacent to roadway embankments would have little impact because aquifers at or below 70 feet are the primary source of water in the study area, although test hole documentation consistently reported groundwater levels at depths of 2 to 5 feet beneath the local ground surface in the project area.”

G01-007

RESPONSE G01-006

Additional data from these existing sources was analyzed and is discussed in section 3.2:

- 1) Federal Way continuous flow and temperature monitoring at one station in Hylebos;
- 2) Hydrologic analysis and modeling of Hylebos, Wapato, and Surprise Lake Drain as part of the RRP;
- 3) Puyallup Tribe data in general summary form for Hylebos and Wapato and through King County for East Hylebos;
- 4) King County data for East Hylebos.

This statement is misleading. The conclusion of “little impact” may apply in part to the *consumptive* use of water, but the impacts to non-consumptive uses may be substantial. The shallow water table most likely implies a dynamic hyporrheic zone (i.e., the interface between ground and surface water) that may play a significant role in regulating water quantity, water quality and biotic diversity within surface waters in the project area.

With regard to flooding, the DEIS relies on aerial photos of the 1990 and 1996 events to estimate Flood Prone Areas (p. 3-16). However, discussion in the Wetlands Discipline Report includes mention of the flood of 1933 which had a measured flow in the Puyallup River that was roughly 25% greater than the 1996 event. While aerial photos may not be available for that event, it seems prudent to produce a spatial model of the likely extent of inundation using 1996 as the reference for current topography, but expanding the flows to reflect a known higher-flow event. This is particularly relevant as the Northwest is thought to be entering a 15-30 year cool/wet climate phase that may bring higher amounts of snow pack and precipitation. In addition, the impacts of human-induced global warming will be

G01-008

RESPONSE G01-007

Section 3.2 of the FEIS was revised to more clearly address impacts to near surface groundwater and the deep aquifer and regional water supply issues.

RESPONSE G01-008

Section 3.2 was revised to include analysis of the draft updated FEMA floodplain maps. Based on our current analysis, significant encroachment into the floodplain as defined by 23 C.F.R. 650.105(q) will not occur.

expressed within the lifespan of this project. Global warming will likely produce warmer (but not necessarily drier) winters in the Pacific Northwest, increasing the likelihood of flooding due to rain-on-snow events. Estimates of global warming related changes to precipitation patterns are readily available from numerous sources, including the Climate Impacts Group at the University of Washington.

The DEIS incorrectly separates surface water areas into divisions that do not make hydrologic sense. For example, while it may be convenient to describe Surprise Lake Drain individually, it should be clearly described as a tributary to Hylebos Creek. This means that any impacts or purported benefits to Surprise Lake Drain – whether related to water quality, habitat restoration or hydrologic impacts – should be discussed in the biological, ecological and hydrological context of the broader Hylebos Creek watershed. The same can be said for Fife Ditch. The Ditch enters Hylebos Creek just upstream of its mouth at Hylebos Waterway.

The brief discussion of hydrology within the Hylebos Creek watershed emphasizes “flash discharges” and flood impacts. However, the report provides no information on the magnitude of these peak flows relative to any meaningful benchmarks, such as median monthly flows during the wet season, or likely pre-development hydrology. This makes it very difficult to assess whether project effects will exacerbate or ameliorate a particular hydrologic dysfunction. One useful metric for assessing hydrologic alteration is the degree of change from natural or historic conditions, e.g., the current versus historical ratio of monthly or annual peak flows to mean or median flows.

It is true that Hylebos Creek suffers from high flow related issues. However, the report fails to describe the recent development and possible effectiveness of stormwater detention facilities in the watershed that were designed to reduce peak-flows during storm events. Since 1991, the city of Federal Way has constructed 4 regional stormwater retention/detention ponds in the upper basin, totaling more than 400 acre-feet of stormwater storage capacity. This omission is but one example of the use of outdated information in the DEIS; most of the references in the section describing Hylebos Creek (and several other sections of the report) are 12-15 years old.

The DEIS mentions impacts to floodwater storage via the filling and hydrologic disconnection of wetlands in the Hylebos watershed, but provides no quantitative information about the loss of storage capacity or the percentage of effective wetland loss. The same can be said for total impervious surfaces, for which there are no estimates in the DEIS for the project area or specific watersheds. The impact of adding new impervious surfaces can only be properly assessed with accurate knowledge about current levels within the project area as a whole and within critical sub-areas, such as the flood-prone sections of lower Hylebos Creek.

There is no mention made in the DEIS about the level of dry-season low flows in Hylebos Creek or in any of the other area streams. Hylebos Creek suffers from very low flows during the late summer and fall, largely due to the loss of natural storage capacity throughout the watershed and the loss of wetlands in the lower reaches. Low flows exacerbate numerous water quality issues by elevating pollutant concentrations and water temperature, while also reducing the amount of available wetted habitat. The SR-167 project will destroy wetlands, reducing local water storage that is important for maintaining base-flows in the stream. Other possible disruptions to hydrologic continuity (e.g., soil compaction and subsequent impacts to shallow groundwater flow and storage) must also be considered. *The reduction of already low dry-season flows will likely have equally serious –*

RESPONSE G01-009

G01-008 Surprise Lake Drain is described as a tributary to Lower Hylebos Creek, and Fife Ditch is described to drain to Hylebos Creek near the crossing of SR 509 through a tide gate and pump station, see section 3.2.2 of the FEIS. The FEIS has been updated to better reflect impacts in the context of the broader Hylebos Creek watershed.

G01-009

RESPONSE G01-010

G01-010 The *Analysis of the SR-167 Extension and Riparian Restoration Proposal in the Hylebos Watershed - Hydrology, Hydraulics, and Geomorphology*, MGS 2004, includes modeling to quantify current and future floodplain depths/elevations, velocities, and channel shear stress. See the floodplain impact analysis in section 3.2.5.

RESPONSE G01-011

G01-011 Please see the response to G01-010 and G01-006.

RESPONSE G01-012

G01-012 Please see the response to G01-010.

RESPONSE G01-013

G01-012 Although the Riparian Restoration Proposal (RRP) will not address low flow in Hylebos Creek during the late summer and fall, design of the RRP area can address factors such as stream temperature. In collaboration with stakeholders such as your agency, the RRP has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with your agency through the RRP Technical Advisory Group, which FOHW is a member of.

G01-013

and in some cases more serious - biological consequences for numerous species (e.g., juvenile salmon, mussels, other invertebrates) than will the exacerbation of high flows. These issues should be addressed in the final EIS.

The water quality data in the DEIS for Hylebos Creek and other streams is severely inadequate and out-of-date. The DEIS cites data published in 1990 and earlier (often collected in the early 80's) to describe current conditions! While it is important to include older, historical data, WSDOT should attempt to provide a realistic view of water quality in each of the area streams. It is impossible to evaluate the effect of increased pollutant loading or higher summer temperatures without an accurate assessment of current conditions. The SR-167 project has been underway for several years – it does not seem reasonable to suggest, for example, that “No water quality data are available for Surprise Lake Drain.” The data could easily have been collected by WSDOT, or funding and equipment could have been provided to local watershed groups, such as the Friends of the Hylebos Wetlands, who would have gladly cooperated with WSDOT. This issue is particularly important in that WSDOT is proposing an ambitious stream relocation plan for the Hylebos as well as an extensive, experimental stormwater management approach based on riparian restoration and constructed wetlands. How can the effectiveness of these efforts be monitored without accurate baseline information?

We recommend that WSDOT immediately implement a comprehensive, continuing water quality monitoring program for area streams to accurately quantify current conditions while providing a baseline for future monitoring.

According to Table 3.2-3, clearing and grading for roadway construction will impact 311 acres. Roughly 175 of those acres are within the Hylebos Creek/Surprise Lake Drain watershed area. Apart from providing general statements about the potential impacts of sedimentation on ecological functions and flooding, the DEIS provides no analysis of potential construction-related sediment inputs to the stream and resulting impacts to associated biota or the flood conveyance capacity of the stream. This is particularly important for a project of this magnitude in that construction will not be limited to temporal “windows” that are designed to minimize impacts to fish and wildlife.

Operational impacts to surface waters are also inadequately described. The impacts for different streams are described inconsistently, making it very difficult to assess the overall project impact. For example, the DEIS estimates Total Suspended Solids (TSS) discharges to lower Hylebos Creek, but does not provide information for any other pollutants. The description of impacts to Wapato Creek, on the other hand, include TSS and five other pollutants.

According to the DEIS, TSS discharges from treated runoff to lower Hylebos Creek watershed and the Fife Ditch watershed are expected to increase by 10,908 kg and 5,398 kg per year, respectively. This is a substantial amount during one year, not to mention during the life of the project. However, the DEIS goes on to say that Best Management Practices (BMPs) and maintenance practices would prevent significant water quality impacts. First, there is no information provided regarding the background or current level of natural and/or anthropogenic TSS input to the watershed, or of current TSS concentrations during specific times of year. This makes it impossible to gauge the significance of additional inputs. Second, since the TSS-loading estimates are for treated runoff, please provide the assumed treatment effectiveness of the proposed treatment BMPs. Thirdly, stormwater impacts – by definition – occur sporadically rather than regularly. The DEIS should analyze the acute

G01-013

RESPONSE G01-014

The monitoring efforts in the Hylebos basin of Friends of the Hylebos Wetlands have been included as part of the analysis for water resource impacts. This long term monitoring program represents a collaborative effort between your group and WSDOT which will improve understanding of the water quality condition of Hylebos Creek near the project area. See section 3.2 of the FEIS.

G01-014

RESPONSE G01-015

The wildlife, fisheries, and threatened and endangered species section 3.4.3 of the FEIS has been revised and includes an analysis of construction related sediment inputs to Hylebos Creek.

G01-015

RESPONSE G01-016

Sections 3.2.5 and 3.2.7 of the FEIS have been revised and include analysis of six parameters of concern from highway runoff.

G01-016

impacts of likely discharges on water quality and on seasonally vulnerable biota, such as incubating salmon eggs.

The project is expected to add roughly 110 acres of new impervious surface to the lower Hylebos Creek/Fife Ditch area, while reducing flood storage capacity by over 60 acre-feet. Again, no estimates are provided regarding the current flood storage capacity, except to show via photographs that flooding is a very serious problem in this area. It seems reasonable to expect that some type of combined hydraulic/hydrologic modeling exercise could be used to quantify floodplain impacts during events of various magnitudes. The Hylebos Creek relocation proposal is expected to counteract some of these flood storage losses, but the DEIS does not provide any quantitative estimates of the net impact.

Wetlands

The wetlands analysis suffers from several shortcomings. First, wetlands are described and analyzed as independent, isolated units, rather than as components of a broader hydrologic system. The description should attempt to convey the wetland system as it pertains to annual flow regimes, flooding, groundwater recharge/discharge, habitat connectivity and other key functions.

Second, the hydrologic connectivity of wetlands to each other and to surrounding water bodies should be discussed more rigorously. The DEIS refers to “several hydrologically isolated freshwater wetlands” (p.3-67), but does not indicate how isolation was determined. While it may be true that apparent surface connections are lacking, it seems highly improbable that wetlands located in or near a floodplain with mostly flat topography are not connected via shallow ground water (2-5 ft depth according to the DEIS) or seasonal surface water connections. Furthermore, the DEIS should distinguish between isolation due to prior anthropogenic disturbances and naturally isolated wetlands.

Third, as stated in our comments on the wetlands discipline report, the assessment of wetland functions is extremely cursory and biased toward physical values, such as flood flow alteration – and biased against any conceivable biological or ecological benefits, such as habitat. For example, the functions of 27 out of 39 wetlands for which functions were described are characterized as “flood flow alteration, sediment and heavy metals retention, and nutrient and toxicant removal”. Only one wetland was identified as providing potential amphibian habitat, and none were identified as providing potential fish habitat, aquatic invertebrate habitat or aquatic bird habitat.

Fourth, wetland impacts are described simply as losses of wetland acreage and wetland buffers, without any assessment of the loss of wetland functions. This is a very simplistic viewpoint that underestimates the importance of wetlands. The DEIS should provide quantitative estimates of losses to specific wetland functions, such as nutrient and toxicant removal, heavy metals retention, habitat values and flood storage. The analysis is further weakened by the fact that neither the DEIS or the discipline report provides any estimate of the proportional loss of wetland acreage, i.e., the percentage of existing acreage that will be destroyed in each watershed. This issue again relates to one of our main thematic criticisms of the DEIS: the descriptions of existing conditions are severely inadequate, precluding an informed assessment of project impacts.

G01-016

RESPONSE G01-017

Please see responses to Comments G01-008 and G01-010.

G01-017

RESPONSE G01-018

The wetlands analysis has been revised, and wetland impacts are described by sub-basin, see section 3.3.3 of the FEIS.

RESPONSE G01-019

Section 3.3.7 of the FEIS describes how the wetland functions and values will be replaced.

G01-018

G01-019

Fifth, the DEIS provides estimates of losses to wetland buffers, but does not specify what exactly is being estimated. It is not clear, for example, whether the analysis assumes some uniform buffer width around each wetland and simply estimated the loss of that acreage. The analysis does not provide any meaningful details, such as whether remaining portions of a specific wetland are left with reduced or absent buffers, and how such an impact is likely to affect wetland function. It seems reasonable to assume that a wetland without adequate buffers is less able to provide key functions, such as pollutant removal and wildlife habitat.

G01-020

Finally, the wetland mitigation area lies along the Puyallup River, while a substantial portion of the wetland losses are within the Hylebos Creek watershed. While the mitigation is still occurring within the same, larger watershed (WRIA 10), the impacts to Hylebos Creek are not being locally mitigated. This problem emphasizes the urgent need to provide detailed plans for the riparian restoration and stream relocation proposals so that the net effect of the project can be properly assessed.

G01-021

Wildlife, Fisheries and Threatened and Endangered Species

The wildlife and fisheries section suffers from many of the same types of problems as the wetlands and water resources sections: insufficient depth and breadth of analysis; simplistic characterization of the types of likely impacts; lack of analytical linkages between different categories of impacts (e.g., the impacts of specific water quality changes on particular species and/or life stages); and a general dearth of information regarding the status of species as well as current and historical habitat conditions in the area.

The suite of species that is discussed in the DEIS is extremely limited, particularly for aquatic organisms. No mention is made of non-salmonids; Hylebos Creek, for example is known to support freshwater mussels which are among the most sensitive types of aquatic organisms in terms of their susceptibility to degradation of water quality.

G01-022

Western pearlshell freshwater mussels are known to reside in Hylebos Creek within the project area. Three general locations are known to us, near the Highway 99 crossing at the Golden Rule Motel, at the I-5 Bridge upstream of Porter Way and between Comet and Birch Streets on the West Hylebos. Since they are anchored in the stream bottom, freshwater mussels are particularly vulnerable to both construction and operational related impacts. Therefore, it is essential that the FEIS include a survey to identify existing mussel beds, assess the state of the creek's population and assess likely impacts to this vulnerable species. This is particularly important for areas where stream relocation is being considered, as mussels residing in those streams will need to be moved prior to channel decommissioning, or the creatures will perish.

For fish, the DEIS provides inadequate consideration of life history stages. The information on species utilization (including information provided in the discipline report) is largely limited to descriptions of known spawning areas. Spawning areas are often completely different from rearing or adult holding areas with different habitat attributes and life-stage requirements.

G01-023

Fish habitat descriptions are extremely cursory and are in no way linked to any quantitative metrics or recognized threshold values (e.g., the NOAA Fisheries' "Properly Functioning Conditions"). Without the benefit of an accurate description of current conditions relative to meaningful benchmarks, it not possible to assess the combined impacts of project components or the potential benefits of mitigation and restoration.

G01-024

RESPONSE G01-020

Section 3.3.3 of the FEIS has a clarified discussion of wetland buffer impacts.

RESPONSE G01-021

The Conceptual Mitigation Plan, WSDOT, February 2005, identifies several potential mitigation sites within the Hylebos basin. This plan also includes information about the stream relocation proposals. A Net Environmental Benefits Analysis was also conducted to quantitatively estimate the benefits of the Riparian Restoration Proposal, see section 3.17 of the FEIS.

RESPONSE G01-022

Additional analysis of the western pearlshell freshwater mussels is included in section 3.4 of the FEIS. Also, please see the response to G01-002.

RESPONSE G01-023

The issues you have raised are currently being given further consideration in the Biological Assessment (BA) and ESA consultation process. New information will be provided to you when the BA process is complete.

RESPONSE G01-024

Please see updated tables 3.4-6 and 3.4-7.

The wildlife section provides another example of distinct inconsistencies within the DEIS. Whereas very few wetlands in the study were functionally classified as providing wildlife habitat (DEIS Wetlands subchapter), this section describes how “[r]esident waterfowl species... are expected to use the rivers streams and wetlands in the project area for nesting and brood-rearing in summer and as wintering grounds during the rest of the year.” It is apparent from these inconsistencies that the chapters of the DEIS have been prepared in isolation without meaningful consideration of the interactions between different ecosystem components, ecosystem functions and project impacts. See section below regarding the overall lack of Synthesis.

G01-025

The DEIS takes a very simplistic view toward quantifying wildlife impacts, which are described as “proportional to loss of vegetation” in acres. Similar to the wetlands case, the DEIS should consider the full suite of habitat functions across the project area, connectivity between patches and losses in habitat diversity as part of the analysis. *It is inconsistent that the benefits of restoration/mitigation actions do include some discussion of broader habitat functions while project impacts are reduced to the simple accounting of lost acreage.*

G01-026

Regarding construction impacts, increased sedimentation and runoff are mentioned as water quality impacts, but no discussion is provided of how these might impact specific fish life stages, nor of what the current conditions are in the streams (e.g., degree of substrate embeddedness or water turbidity). The DEIS notes the possible impacts of falling debris during the demolition of existing stream crossings; these impacts are likely to pale in comparison to the potential sedimentation/erosion impacts.

G01-027

While the riparian restoration proposal may indeed increase future recruitment of Large Woody Debris (LWD, p.3-119), the DEIS should note that these benefits are not likely to accrue until 50-100 years in the future.

G01-028

The success of the Surprise Lake Drain restoration is described as being vulnerable to the potential continuation of channel-clearing activities by adjacent agricultural landowners. It seems only reasonable that WSDOT should secure a permanent conservation easement for the area that precludes such activities. If success is dependent on voluntary cooperation of landowners, then perpetuation of the restoration action is unlikely and can not be regarded as a mitigation action for purposes of fish and wildlife habitat.

G01-029

The DEIS largely avoids a substantive discussion of operational impacts to fisheries, stating only that water quality may be affected (p.3-123). A rigorous analysis of operational impacts seems to be deferred pending future coordination for threatened and endangered species under the Endangered Species Act (ESA). Future ESA-consultation does not absolve the WSDOT from performing credible analysis pursuant to NEPA. At a minimum, the analysis should couple the information on specific water quality impacts (as discussed in Water Resources section) and wetland losses and restoration proposals to provide a credible analysis of effects on specific species and life stages.

G01-030

The Screening Criteria Analysis (Chapter 3.4.5, p.3-123) is unclear and does not adequately convey the purpose of the criteria or how they will be applied. The Threatened and Endangered Species screening criteria seem to constitute a preliminary effect determination under ESA, but it is not at all clear how these determinations will be used in the selection of design options. The Aquatic Priority Habitat and Life criterion (p.3-124) appears to be a simple estimate of losses in riparian acreage despite a rather convoluted explanation. Apparently, the riparian zone is estimated as a 50-foot buffer zone along a

G01-031

Page 7

RESPONSE G01-025

Please see response to G01-004.

RESPONSE G01-026

This comment was considered as part of the revision of section 3.4, see response to G01-004.

RESPONSE G01-027

Please see response to comment G01-015.

RESPONSE G01-028

LWD will be placed to increase streambank stability, allow for the development of pools for refugia, provide favorable substrate for invertebrate colonization, and shade within the RRP.

RESPONSE G01-029

The RRP will protect the stream, wetland, and riparian habitats.

RESPONSE G01-030

Section 7 consultation has been initiated with the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NOAA Fisheries). The project’s commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision regarding the project.

stream course. The paragraph goes on to claim that these estimates present “a worst case scenario, as no actual riparian zone in the study area is that wide”. This seems rather counterintuitive and illogical. It would seem that the amount of existing riparian zone would be a crucial factor in determining a screening criterion, and that areas with less existing riparian cover should receive enhanced protection and restoration. The Wildlife criterion appears to be a simple accounting of lost vegetation acreage, but the criterion purports to include a consideration of required mitigation. It is not clear at all whether such a mitigation factor is somehow reflected in the index. *We strongly suggest that the screening criteria concept be substantially revised and clearly explained in the next iteration of the DEIS.* At present it appears to suggest a quantitative decision-making tool where none actually exists.

G01-031

Finally, the introduction to the Wildlife, Fisheries and Threatened and Endangered Species section claims that “impacts of construction and operation to these resources are quantified...”. With the unremarkable exception of lost vegetation acreage, the DEIS completely fails to provide a quantitative analysis of any meaningful impacts to fish, wildlife or associated habitat characteristics.

G01-032

Lack of Meaningful Synthesis and Cumulative Impact Analysis

A major thematic weakness of the DEIS, in our view, is the lack of two interrelated aspects of environmental analysis: Synthesis and Cumulative Impacts. I will first clarify our understanding of the meaning of these two terms in the context of environmental impact assessment. Second, I will focus on specific issues that we have identified in the DEIS.

What we have identified as a lack of Synthesis in the DEIS is perhaps best described as a lack of intra-project cumulative effects analysis. While the DEIS analyzes “linear” impacts, i.e., impacts of a specific project component on a particular environmental receptor, the cumulative effect of numerous individual project impacts on specific environmental endpoints has not been adequately discussed.

G01-033

Cumulative impacts, on the other hand, are typically defined as the consideration of the direct and indirect impacts of the proposed action in light of past, present and reasonably foreseeable future actions that have affected or are expected to affect the same environmental resources or values. That is, cumulative impacts analysis involves a synthesis and integration of effects across time and space for a suite of activities that may or may not be related to the project at hand. Cumulative impacts analysis cannot be adequately performed until the rigorous synthesis of intra-project effects has been completed.

In reality, direct, indirect and cumulative effects are all components of a continuous spectrum of impacts arising from a particular action. Often, cumulative impacts are regarded as general, broad-scale impacts in contrast to the relative specificity of direct impacts. However, that interpretation is, in our view, erroneous and can easily lead one to understate potential impacts. Some direct impacts can be quite general or at least vague, while certain cumulative impacts can be quite specific.

Synthesis

The DEIS is understandably organized according to specific resource areas (e.g., Water Resources, Wildlife & Fisheries). Within each resource area, impacts are divided into Construction Impacts and Operational Impacts. Finally, the analysis is divided into specific project segments (e.g., SR 509 to 8th Avenue). With few exceptions, the impacts described

G01-034

RESPONSE G01-031

The Screening Criteria Matrix was developed for the Signatory Agency Committee (SAC) which concurred with the screening criteria for selection of the build alternative and options. As noted in the FEIS, the screening criteria help select the preferred options, but are not the sole deciding factor. The environmental impacts of each option are thoroughly and independently evaluated as required by NEPA and SEPA. Since Tier II presents only the one build alternative along with the no-build, the screening criteria at this point in time are intended for the use of interchange design options only.

RESPONSE G01-032

Please see response to comment G01-004.

RESPONSE G01-033

See response to G01-005.

are limited to primary, direct impacts (e.g., kg/yr of a specific pollutant entering the watershed). Secondary impacts, such as the direct effect of that pollution loading on a specific class of organisms, have not been adequately discussed, and in many cases have not been discussed at all.

Apart from the lack of adequate attention to secondary, direct effects, our main concern is the lack of synthesis for particular, environmentally meaningful locations and for specific environmental receptors. For example, regarding spatial synthesis, at no point does the DEIS present the collective impacts of all project components for a particular section of Hylebos Creek, such as the stream reach downstream of 8th Avenue. Basically, what is missing is a sort of “balance sheet” that shows all of the environmental costs and benefits to that portion of the stream, coupled with a detailed discussion of the same.

The Environmental Matrix of Impacts (p.3-3 to 3-10) accomplishes a portion of this task and can be used as the starting point for spatial synthesis. We recommend the following approach:

- Present and discuss impacts (including intra-project cumulative impacts) on a spatial scale that makes sense environmentally. In other words, for the Lower Hylebos (i.e., downstream of I-5), present and discuss the combination of impacts from SR-167 Mainline, the 54th Avenue Intersection, the I-5 Interchange and the Riparian Restoration Zone. In practice, this means that the columns of the Matrix should be reorganized, with Mainline impacts divided into specific geographic areas. Also, the Surprise Lake Drain component should be explicitly identified as a portion of the Hylebos Creek watershed.
- The Matrix rows and associated analysis should be organized by specific environmental receptors, rather than general categories. For example, under the Wildlife & Fisheries section, the Matrix should have rows for specific species and life-stages, e.g., Chinook eggs, Chinook juveniles, Chinook adults. The impacts are very different for each. For example, if Chinook only migrate through a particular area and are only known to spawn further upstream, impacts to eggs are unlikely, whereas impacts to rearing juveniles may be more severe.
- Importantly, the matrix should also depict secondary impacts or associations. For example, if a particular project component has a direct impact – such as the addition of a particular pollutant to the stream reach – a secondary impact may be warranted for, say, juvenile coho, if the pollutant in question is known or suspected to affect juvenile coho survival.
- For spatially based synthesis, the most important missing piece is a thorough discussion that considers the collective impacts of all project components on a particular area. In other words, a tabular listing is not sufficient.

Regarding synthesis by environmental receptor, this is easily accomplished using the same modified Matrix as described above. While the spatial synthesis is essentially an integration of effects by columns, the environmental receptor-based synthesis looks at the cumulative effects of project components throughout the project area on specific receptors (i.e., synthesis by row). This is a particularly relevant perspective from an ESA point of view. This approach also can be used to integrate impacts/benefits across broader spatial scales. For example, it provides a vehicle for highlighting the potential benefits to coho salmon of

RESPONSE G01-034

Table 3.0-1, the Environmental Matrix of Impacts, has been revised in the FEIS to incorporate additional information from the BA, the Riparian Restoration study, and other relevant studies performed.

RESPONSE G01-035

The issues you have raised are currently being given further consideration in the Biological Assessment (BA) and ESA consultation process. New information will be provided to you when the BA process is complete.

G01-034

G01-035

riparian restoration in the lower end of the Hylebos and stream relocation east of I-5, balanced against negative impacts in these and other areas.

Cumulative Impacts

As stated above, cumulative impacts are often mistakenly regarded as including only the general, broad-scale effects that are often associated with external processes such as population growth and urbanization. While these are certainly relevant issues, they do not constitute a complete suite of considerations for cumulative impacts analysis. The DEIS spends a great deal of time on these large-scale issues, but does not bring the analysis to a relevant level of detail. Also, while the project is located largely within incorporated areas, the DEIS focuses on Pierce County plans and actions in unincorporated areas while stating simply that development in incorporated areas will be guided by local jurisdictions. While this is true, it does not absolve the WSDOT analyst from attempting to identify potential cumulative impacts in those areas.

The Environmental Protection Agency (EPA) has produced a guidance document titled "Consideration of cumulative impacts in EPA review of NEPA documents" that highlights many of the most common thematic weaknesses in cumulative impacts analysis. The following discussion summarizes the primary topics with examples from the DEIS project.

Identification of relevant resources and ecosystem components

The EPA guidance highlights the need for a focus on "specific resources and ecological components that can be affected by the incremental effects of the proposed action and other actions in the same geographical area". In other words, the cumulative impacts analysis is meant to relate to the same or associated environmental receptors as the intra-project analysis.

NEPA documents often consider only a limited suite of biological resources, such as ESA-listed species, selected game species and wetlands. This approach (according to EPA) is too limited. For example, as discussed in the section above regarding Wildlife and Fisheries, we believe that a broader suite of aquatic/riparian species should be considered in the DEIS, including freshwater mussels, lamprey, etc.

Specific resource *functions* must also be considered. While wetland impacts are often reduced to an accounting of lost acreage, the function of the wetland within the broader ecosystem must also be considered.

EPA also focuses on the potential for cumulative impacts to ecological processes. Changes in hydrologic patterns, such as changes in sediment transport, alteration of discharge and retention rates of water, changes in velocity of water moving through the system, etc., may initiate incremental, cumulative impacts to specific environmental receptors.

Geographic boundaries and time periods

NEPA documents often limit the cumulative impacts analysis to inadequate geographical and spatial scales. As a general rule, spatial boundaries should attempt to follow natural ecological boundaries. For example, the DEIS Wildlife & Fish section uses areas adjacent to the project within Pierce County UGA as the spatial scale for impacts. A more relevant scale would be the entire Water Resource Inventory Area 10 (WRIA 10) which reflect an

G01-035

RESPONSE G01-036

The cumulative impacts issues you have raised are currently being given further consideration in the Biological Assessment (BA) and ESA consultation process. New information will be provided to you when the BA process is complete.

G01-036

RESPONSE G01-037

Please see response to comment G01-004.

G01-037

RESPONSE G01-038

Geographic boundaries for analysis varied by the ecological function analyzed. Geographic and temporal boundaries were reviewed and updated as necessary, see section 3.1.2 of the FEIS.

G01-038

accepted frame of reference for fish populations in particular. In general, EPA suggests that the “proper spatial scope of the analysis include geographic areas that sustain the resources of concern”.

The issue of temporal scale can be somewhat vexing in that it is difficult to project impacts into the distant future. However, as the EPA document suggests, selecting a temporal scale requires estimating the length of time the effects of the proposed action will last. For example, construction related cumulative impacts should be considered until the point at which the system has recovered from the disturbance. Operational impacts, on the other hand, will extend for the life of the project. The DEIS has chosen the 2030 as the endpoint of temporal analysis of cumulative impacts. This seems inadequate, particularly considering that the project is still several years away from completion.

G01-038

Past, present and reasonably foreseeable future actions

The DEIS, in our view, considers an incomplete set of actions in this category. We appreciate the difficulty of identifying a comprehensive set of actions, particularly for the future, but the analysis should nevertheless utilize a reasonable set of available resources and relate these actions to specific environmental receptors.

One component of the analysis should be a discussion of specific trends for activities and impacts. For example, though the DEIS touches on the issue of impervious surfaces, the current percentage of impervious surfaces within the broader watershed are not presented nor how it has changed through time. Absent reliable, existing data, current technologies – such as aerial photography coupled with Geographic Information Systems-based spatial analysis – provide the tools for estimating the extent of particular categories of land-cover.

G01-039

It seems reasonable to assume that past, present and future transportation projects may impact many of the same resources as the future SR-167. Discussion of other WSDOT projects as well as other local and regional projects is currently insufficient. For example, cumulative impacts of transportation projects often include “alterations of topography, habitat fragmentation, changes in water quality and quantity, increased sediment and contaminant runoff, direct mortality due to road kills” (EPA). These issues should be considered explicitly in the DEIS. At a minimum, this discussion should specifically include planned HOV lane construction projects in the project area and the proposed I5-SR 18 “Triangle Project” that is currently being considered for regional transportation funding.

Describing the condition of the environment

We have raised this issue repeatedly in these comments with respect to the direct and indirect effects of the project, but it applies equally to the cumulative effects analysis. The assessment of impacts requires a thorough description of “benchmark” or “baseline” conditions against which the current level of degradation and the projected impacts can be assessed. Often, NEPA documents use the current condition as the baseline for impact assessment – this is incorrect, and tends to severely understate potential impacts by ignoring past actions and cumulative effects.

G01-040

In some cases, it may not be feasible to accurately describe an “historical” or “natural” condition to serve as a benchmark. However, it is possible to discuss how specific ecological functions operate under pre-impact conditions, and how those conditions have been degraded over time. For example, one could discuss how the likely historical extent and arrangement

RESPONSE G01-039

WSDOT specifically sought trend data through contact with federal and state natural resource agencies, local governments, and Internet searches. Unfortunately, very limited trend data is available and virtually none of it for the project area. The FEIS is revised to incorporate any additional information that could be obtained on trends.

RESPONSE G01-040

We reviewed temporal boundaries identified in the FEIS to verify they are appropriate.

of wetlands in the Hylebos watershed moderated flood flows or maintained base flows, followed by a discussion of the current status of wetlands and their level of function.

An alternative to defining an historical condition may be a somewhat modified but sustainable ecosystem condition.

Using thresholds to assess resource degradation

The threshold issue has also been raised previously in these comments relative to the project's direct and indirect impacts. The use of qualitative and quantitative thresholds is an important way of assessing the importance of a particular incremental impact. Whenever possible, thresholds that are based on law, agency regulations or agency guidance should be used to evaluate the significance of cumulative impacts. Some thresholds are set as numerical standards (e.g., concentrations of specific pollutants under state water quality standards), while others may be based on desired management goals (e.g., amount of open space or unaltered habitat in a particular area).

The DEIS would benefit from a more thorough discussion of current conditions relative to identified threshold values based on the cumulative impacts of past actions, coupled with a discussion of how the project action and other foreseeable actions are likely to deteriorate or ameliorate the condition. It seems quite intuitive that, for example, the release of a particular pollutant into a watershed is especially important if current levels of the pollutant are already at or above identified thresholds.

As watershed conditions relate to salmonids, a useful set of thresholds to be considered is the NOAA Fisheries PFC framework that identifies thresholds for "properly functioning", "at risk" and "not properly functioning" conditions for several watershed attributes, such as stream temperature and riparian condition.

Other examples of threshold categories include: total change in land cover (as an indicator of biotic integrity), patch size distribution and distances between patches (as indicators of species change), estimators of fragmentation and connectivity, etc.

Recommendations regarding cumulative impacts analysis

A defensible assessment of cumulative impacts begins with a thorough assessment of intra-project impacts as described in the Synthesis section. Most of the issues that we highlighted in the context of cumulative impacts – threshold analysis and the definition of a "baseline" in particular – are also integral parts of a thorough intra-project analysis. The EPA document provides very useful, additional guidance.

Since cumulative impacts analysis occurs on a broader spatial scale - *but* should focus on specific environmental receptors and ecological processes – the receptor-based synthesis (see above) is a natural starting point for coupling the project impacts to external impacts. Not every receptor (i.e., every row of the matrix) has to be carried forward into a thorough cumulative impacts analysis. Reasonable, well founded choices can and should be made to identify those receptors that are likely to suffer from cumulative impacts, i.e., those receptors that are expected to be impacted by the proposed action that are in poor current condition (past impacts), and/or are expected to be impacted by other present or future actions in a significant way.

G01-040

G01-041

G01-042

RESPONSE G01-041

Further analyses are being conducted for the Biological Assessment (BA) that would consider "threshold values." Additional information will be provided to you when the BA process is complete.

RESPONSE G01-042

The cumulative impacts issues you have raised are currently being given further consideration in the Biological Assessment (BA) and ESA consultation process. New information will be provided to you when the BA process is complete.

2. Riparian Restoration and Stream Relocation

The Friends of the Hylebos Wetlands are very encouraged by and supportive of the riparian restoration and stream relocation concepts described in the DEIS. With a carefully designed plan, successful implementation and a commitment to maintenance, monitoring and adaptive management, we believe the WSDOT concept can significantly improve both biotic and hydrologic conditions in lower Hylebos Creek and Surprise Lake Drain.

At this time, it is impossible to assess the adequacy of the plan or provide specific comments since no details have been provided apart from conceptual drawings in the DEIS. Since the restoration and stream relocation plans are part and parcel of the stormwater treatment and habitat mitigation components of the DEIS, we expect that opportunity will be provided to comment on specific proposals as they are developed by WSDOT. The completion of a FEIS would, in our view, be premature prior to the completion of a restoration plan that has been made available to the public for comment. The Friends of the Hylebos Wetlands is very familiar with the Hylebos Creek watershed and has performed numerous restoration projects in the basin. We hope that WSDOT undertakes a collaborative approach to restoration planning that provides opportunities for the Friends group to support this important effort.

The DEIS does not clearly identify between the areas where restoration is being proposed as part of the alternative stormwater management plan and restoration areas that are being proposed as mitigation for project impacts. These components need to be thoroughly described in the FEIS, particularly with respect to the amount of proposed mitigation (i.e. acres of habitat, lineal stream feet), mitigation ratios and the amount of destroyed or degraded habitat linked to the proposed mitigation component.

We understand that the proposed Hylebos stream relocation will be performed as required mitigation for stream channel impacts associated with expansion of I-5 between Porter Way and 70th. We do expect the FEIS to provide details about the lineal feet of stream channel that would be destroyed by the roadway expansion and the amount of stream channel and associated habitat that will be created in kind.

The DEIS discusses "reconfiguration of approximately 2,400 feet of Surprise lake drain and the possibility of an additional 2,000 lineal feet of riparian restoration." This discussion is not fully formed in the DEIS and it is not clear the scope of the relocation/restoration being proposed, nor the driving factor for the proposal (i.e. is this stormwater management or mitigation for environmental impacts?). If this is required mitigation, the discussion should explain what is being mitigated for and at what ratios, and provide more specifics about the proposed work.

In Table 3.2-4, please clarify whether riparian corridor width, channel migration width and buffer width are intended to represent widths on each side of the stream, or the total width following the stream centerline.

One important element that is currently absent from the DEIS is a "balance sheet" that conveys the trade-offs between adverse project impacts and the expected benefits of the restoration proposals. Such a balance sheet should convey not only ratios of loss versus gain for particular habitat types, but should also convey functional trade-offs for specific environmental receptors. For example, the balance sheet may convey the adverse effects to juvenile coho salmon of wetland losses and water quality degradation due to increased stormwater runoff, contrasted with the benefits to juvenile salmon provided by increased riparian cover and side-channel refuge habitat.

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RESPONSE G01-043

WSDOT will continue to work collaboratively with FOHW, the Puyallup Tribe, resource agencies, and other interested stakeholders during the development of the restoration proposal. These stakeholders will not only have an opportunity to comment, but have opportunities to be involved in the actual design, and possibly the construction of the restoration work.

G01-043

RESPONSE G01-044

In collaboration with stakeholders, the RRP has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with through the RRP Technical Advisory Group, which FHOW is a member of.

RESPONSE G01-045

Figures 2-5 and 2-6 show the riparian restoration corridor to scale.

G01-044

RESPONSE G01-046

A balance sheet with appropriate FEIS section references would require effort above and beyond the requirements of SEPA/NEPA.

G01-045

G01-046

In the absence of a specific restoration proposal to review, we provide the following comments and suggestions regarding the development of an effective restoration plan:

Successful restoration will integrate site-specific knowledge – both historical and present day - with key concepts and methods of restoration planning, implementation and monitoring. Restoration will seek to recapture over time the natural processes that create, maintain and renew healthy and dynamic wetland, riparian and in-stream habitats. In turn, healthy and connected habitat areas will perform a number of critical functions that allow salmon and other organisms to thrive during periods of favorable environmental conditions, and to persist through less favorable ones.

The restoration area should be large enough to become a self-maintaining environmental unit. The effective size of the unit depends not only on absolute acreage, but also on connectivity between habitat areas within a broader stream system. The Hylebos riparian restoration proposal, coupled with the stream relocation as described in the DEIS, could potentially serve to connect previously restored and other undeveloped open space totaling in excess of 1000 acres. One reason many restoration projects fail to meet expectations is that projects are often too small (FISRWG 2001, NRC 1992). Small restoration efforts may not be able to perpetuate desired ecological conditions or resist external factors such as high winds, flooding, and invasive species. As the ratio of site perimeter to site area increases (i.e. the site gets smaller), the vulnerability to external factors grows.

Shabman (1993) proposes an approach to watershed restoration that begins with planning to establish the sizes, types, and locations of the wetlands/uplands complexes with potential as self-functioning, self-maintaining ecosystems. Considering the interactions among sizes, types, and locations of the wetlands/uplands complexes is important, but often overlooked.

Soil associations and soil types influence vegetation types that will successfully grow, affect infiltration and runoff, and filter pollutants. Soil type is also intimately linked to erosion potential, with certain soils more prone to erosion by hydraulic forces (e.g., non-cohesive soils, such as gravelly streambanks) while others are more prone to failure due to geotechnical instability. The presence of fill or other imported soils may limit the potential for restoration, or increase the cost by requiring extensive soil removal and replacement. A careful assessment of existing soil conditions is an integral precursor to planning both morphological and vegetative restoration efforts.

Restoration in the project area alone cannot significantly alter the hydrologic regime of the basin as a whole. However, restoration can ameliorate the effects of high flows by providing additional holding capacity in the form of wetlands and side channels. Restoration can also benefit salmonids during low flows by creating pools and reducing thermal stress through shading. Richter (1997) argues that – for wetland restoration in particular – hydrologic patterns are the key factor determining the success or failure of restoration efforts in urban areas.

Efforts to restore vegetation should be informed by considerations of soil type, surface and groundwater flows, exposure, microclimate, and adjacent conditions (FISRWG 2001). Proper consideration of environmental conditions will increase the likelihood that the vegetation will survive to provide the intended aesthetic and ecological benefits. Consider little to no treatment of areas that presently support native vegetation, with few or no invasive species.

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G01-047

Restoration should incorporate the development of a diverse, multi-layered, successional planting plan. Short-term objectives should include planting fast-growing, successional trees, woody shrubs and herbaceous plants. A comprehensive mix of trees (e.g., black cottonwood, red alder and bigleaf maple), woody shrubs (e.g., salmon berry, willows and red-twig dogwood) and herbaceous plants (e.g., goat's-beard, nettle and oxalis) should be developed to provide bank stability, leaf-litter and shade. Long-term (decade scale) species composition targets should include slower-growing, decay-resistant conifers, such as Douglas fir, western red cedar, and Sitka spruce. Being late successional species, these are best planted in the shade of deciduous trees where the bank is already somewhat stable.

The project area has many invasive and non-native species including reed canary grass, Himalayan and evergreen blackberries. Removing invasive species and preventing their re-establishment is important to assuring that the restoration project will be successful (Houck 1997). Vegetative site restoration should be coordinated with site development by integrating restoration into site preparation and construction activities. For example, using compost berms and mulch (in place of hay bales and silt fences) for erosion and stormwater management during highway construction facilitates incorporation of compost directly into the soil.

The riparian restoration proposal should directly address the need to initially install large woody debris in the stream channel and to supplement that with new wood over time until the riparian conifer plantings are mature enough (50-100 years) to provide stable, long-term recruitment of large woody debris to the stream channel.

Restoration efforts should seek to meet the requirements of a multitude of species in addition to pacific salmon. Freshwater mussels, for example, live in Hylebos Creek. Freshwater mollusks are negatively affected by any increase in siltation, decrease in water flow, nutrient enrichment, or increase in temperature. In King County, mussels have been observed to live as long as 90 years (Chew 1998).

The incorporation of habitat requirements for multiple species or taxonomic groups highlights the importance of habitat diversity. For example, Richter (1997) provides criteria for the restoration and creation of wetland habitats of certain amphibians appropriate for Hylebos Creek. These criteria include suggested ranges for water current depth and velocity, water fluctuation, open water, and types of vegetation. Richter suggests that water velocities exceeding 5 cm/sec may preclude breeding by the red-legged frog (*Rana aurora*). It follows that if *R. aurora* (or other species with similar requirements) were selected as a target species for restoration, the achievement of reliably low velocities requires that slow-moving, backwater wetlands are explicitly incorporated into a restoration design.

The DEIS advocates relocating the stream to a healthy stream channel in a wetland east of the Fife curve. Channel relocation is not an easy task, and should be considered carefully (FISRWG 2001). Rivers integrate upland and upstream effects (Naiman *et al.* 2000). A relocated channel should attempt to capture most characteristics of ecologically healthy floodplain streams. These include:

- A riparian buffer, including a diversity of obligate and facultative riparian plants, at least 250 feet wide on each side of the Creek, up to 1,000 feet to provide for birds and wildlife habitat and connect habitat per WDFW "Management Recommendations for Washington's Priority Habitats: Riparian,"

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G01-047

- A wetland buffer, including a diversity of obligate and facultative wetland plants, at least 300 feet wide from the edge of the wetland per DOE's Model Wetlands Protection Ordinance,
- A Creek with natural soil and vegetation along streambanks, cobble and gravel as the dominant substrate, several dozen deep pools per mile, large amounts of LWD per mile, adequate off-channel backwaters and ponds, and
- No or minimal permanent roads or ditches in the restoration area.

Local conditions in Hylebos Creek, such as the proximity of the highway, will likely limit the ability to achieve all desired features, such as adequately wide buffers throughout the restoration area. When optimal conditions can not be achieved for a particular criterion, other features that perform similar or overlapping functions should be emphasized. For example, if sedimentation is a problem (as is the case in Hylebos Creek), and if narrow buffers are necessary due to site constraints, then revegetation in the stream buffer should strongly emphasize a mix of species with particularly effective sediment-retention characteristics. Just as healthy, natural systems feature redundancy for most critical functions, restoration efforts should attempt to do the same.

3. Role, adequacy and procedural transparency of discipline reports.

Throughout the DEIS, the discipline reports are purported to contain comprehensive information regarding specific topics, such as fish and wildlife species distribution, wetland functional classifications, etc. Since these documents were prepared as a component of the EIS process, they should be considered a formal component of the DEIS and subjected to the same level of public scrutiny and review. To WSDOT's credit, the Friends of the Hylebos Wetlands were provided an opportunity to review the reports in Fall 2002. We subsequently provided comments to Neil Campbell on July 19, 2002 summarizing our comments on the Water Resources, Wetlands or Wildlife and Fisheries discipline reports. However, to date WSDOT has not responded to any of the comments provided by the Friends group nor made changes in the DEIS that suggest those comments were taken into consideration.

The discipline reports are substantially inadequate in numerous respects and do not provide a sufficient level of information to adequately assess project impacts to Water Resources, Wetlands or Wildlife and Fisheries. Therefore, I have attached herein our original comment letter of July 19, 2002 along with reviews of each of the aforementioned discipline reports and expect that they will become a part of the official public record. We request that the discipline report comments be considered with the same care and attention that is due formal comments on the rest of the DEIS.

In summary:

- The selection of environmental resources considered in the DEIS lacks both breadth and depth. Impacts to additional species and life-stages (e.g., freshwater mussels, juvenile coho salmon) as well as additional resource functions (e.g., the role of wetlands in base-flow maintenance) should be analyzed.

G01-047

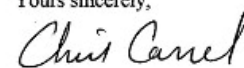
G01-048

G01-049

- Impacts are characterized simplistically (e.g., wildlife impacts reduced to an accounting of lost vegetation acreage) which tends to understate the significance of the impact in a broader, ecosystem context.
- Current environmental conditions are described poorly, using outdated sources of information and lacking references to meaningful benchmarks (such as historical or properly functioning conditions).
- The DEIS lacks analytical synthesis of impacts between individual project components and between different environmental resources, making it nearly impossible to gauge the net impact of the project on a particular area, species or ecosystem attribute.
- In several instances, the DEIS cites lack of information where information almost certainly exists, or could have readily been collected directly by WSDOT.
- The Cumulative Impacts Analysis is vague and incorrectly limited to broad-scale processes (e.g., population growth). The analysis fails to adequately describe existing conditions in the context of relevant benchmarks or to relate external impacts to the same specific resources as the intra-project impact analysis.
- The Riparian Restoration proposal and Hylebos Creek Relocation plan are exciting concepts that have the support of the Friends of the Hylebos wetlands, but the lack of defined objectives, stated mitigation requirements, design drawings or other supporting material renders these components impossible to evaluate in the DEIS context.
- A future iteration of the restoration and stream relocation proposals should include a "balance sheet" description that quantifies the presumed benefits of the actions to specific species and ecosystem attributes, relative to the deleterious impacts of the project.

Thank you for the opportunity to provide comments on the proposed SR 167 project DEIS. Please feel free to contact me at 253-929-1519 if you have any questions about these comments or would like to discuss any of these points further.

Yours sincerely,



Chris Carrel
Executive Director

RESPONSE G01-047

This information will be reviewed by the RRP Technical Advisory Group.

RESPONSE G01-048

We appreciate the collaborative efforts and commitment by the Friends of the Hylebos during the revision of the discipline reports.

RESPONSE G01-049

Thank you for summarizing your comments. We have responded to your concerns through our responses herein as well as in several personal discussions with you.

G01-049

APR 11 2003

Tahoma Audubon Center **OLYMPIC REGION**

2917 Morrison Pond Road, University Place, WA 98466

April 14, 2003

Jeff Sawyer
Department of Transportation
5720 Capitol BLVD.
Tumwater, WA 98501

Re: SR 167 Draft Environmental Impact Statement

Dear Mr. Sawyer,

On behalf of the Tahoma Audubon Society and our 1700 members in Pierce County I would like to comment on the Draft Environmental Impact Statement for the proposed SR 167 Project. The Audubon Society has concerns that the EIS has not adequately provided mitigation for the following areas:

- 1) agriculture preservation,
- 2) Multimodal transportation and
- 3) Endangered Species.

1. Loss of Agriculture.

Farmland Protection Policy Act (7 USC 4201-4209) is intended to minimize the extent to which federal activities contribute to the conversion of farmland to Non-agricultural uses. The cumulative impacts of this projects will put the nails in the coffin of agricultural production in the project area eliminating up to 186 acres of the 279 acres available.

Currently agriculture production in the county is \$80 million business annually which ranks 14 of the state's 39 counties. The county produces 50 percent of the nations rhubarb production. and leads the state in producing lettuce cabbage, radishes and green onions. This highway project will be built on some of the finest agricultural soils in the state.

The EIS documents the decline in agriculture over the last 5 years but it fails to show the role the project will have in the cumulative impact. It also fails to design for less impact. The alignment of the highway divides farmers fields, the freeway overpasses shadow vital growing areas and add considerably to the surface water volume in the creeks.

Valley Avenue Interchange and Freeman Road alignment will effect 115 acres of the 279 total acres farmed in the project area. Depending on final design the effect of divided farm lands and design options. This adds significantly to the total of 161 to 186 acres the project will convert to transportation uses. This is a very high impact on the total 279 acres currently in farming..

Eliminating the Valley Avenue Interchange saves the project millions of dollars, reduces impacts on wildlife and preserves valley agriculture. A further re-alignment of the highway further west of the proposed alignment would reduce the amount of divided farmland.

RESPONSE G02-001

Section 3.11, land use, socioeconomics, and environmental justice and section 3.12, farmland, has been expanded to include an indirect and cumulative impact analysis.

RESPONSE G02-002

Section 2.4.4 of the FEIS includes an evaluation of eliminating the Valley Avenue interchange and determines such an option does not meet the purpose and need of the project.

G02-001

G02-002

The map on page 3-257 shows actively farmed areas. A re-alignment of the project to travel parallel to 70th Ave E and north of Valley Avenue would lessen the impact on divided farmlands considerably.

G02-003

Although much of the project area is in the Fife and Puyallup Urban Growth Boundaries, both cities encourage and support agriculture uses. In fact County-Wide Planning Policies required that cities and the county protect farming uses as part of the Growth Management Act. The road project threatens the 279 acres in the project area as the single largest cumulative impact.

G02-004

Continuing farming in this area makes a significant contribution to the local economy without requiring tax payers to support a \$1.6 billion investment in infrastructure.

G02-005

2. Multimodal Transportation.

Purpose and need for the project calls for "multimodal local and port freight movement and passenger movement between" Puyallup and Port of Tacoma. The projects achieves this goal by providing "new travel corridor for 'experienced' bicycle riders. This should be re-written to read "suicidal" cyclist who would dare to risk riding among heavy truck traffic.

In addition, access to the Puyallup Recreational Center is blocked by the proposed highway with the EIS declaring arbitrarily that "demand is insignificant to justify a new crossing."

G02-006

The proposed project is not multimodal. The trail provided in the Fife Hylebos Creek area is recreational in nature and does not provide adequate transportation parallel to the proposed highway. While other states use their Federal allocation for bicycle trails to build and support urban bike trails, WSDOT continues to use their bike path funds for widening highway shoulders. This is not safe, nor is it multimodal. It is a joke.

The project should be re-designed to includes a separate bike path that connects existing bike facilities in Puyallup with the bike lane at the Port of Tacoma. Such a bike path could use widened shoulders on Freeman road (a designated bike route). This would provide adequate mitigation for the increased truck and commercial travel the proposed highway will have on the few "experienced" bicycle riders currently traveling through the area.

Build it and they will come. Few bicyclist dared to use state road 162 between Sumner and orting. Once the bike trail was established, on a Sunday afternoon it contains more people than the parallel highway route.

3. Endangered Species.

A detailed analysis of the impacts of the proposed highway on Hylebos Creek and the details of proper mitigation will be provided by *Friends of the Hylebos Creek*. Tahoma Audubon endorses their proposals. Here we will focus on Wapato Creek.

Mitigation measures calls for first avoiding impacts where possible, then minimizing impacts before compensation for unavoidable impacts. Again, eliminating the Valley Avenue Interchange is the best alternative to avoiding impacts on endangered species and the

G02-007

RESPONSE G02-003

Realigning the project to travel parallel 70th Street would further impact other environmental areas that must be taken into account.

RESPONSE G02-004

Most of the land in the project area within the jurisdiction of the cities of Fife and Puyallup is zoned commercial, industrial, or residential. There is no longer any land zoned for farming within the project area; please see figure 3.11-2 in the FEIS. The Farmland section of the FEIS has been updated to include a discussion on cumulative impacts; please see section 3.12.5 of the FEIS. Please also see response to comment G02-005 below.

RESPONSE G02-005

The majority of the land being farmed within the project area is in the city limits of the City of Fife. The city has determined that the highest and best use of the property located within the project area is industrial use and has zoned the land as such. The city feels that this designation is a large part of its growth, tax base, and allure for development will contribute more to the economy. The city has already implemented infrastructure improvements (municipal sewers) that have made it hard to raise crops profitably in a growing urban area where property taxes have risen dramatically. Much of the land under cultivation is either up for sale or has been sold for development over the past years. The city expects that the land will convert to urban use over 20 years.

RESPONSE G02-006

There will be access to the Puyallup Recreation Center. The Urban Option for the SR 161/SR 167 interchange includes an overcrossing east of the Recreation Center. The City of Fife has a proposed bike route along Freeman Road.

RESPONSE G02-007

The Valley Avenue Interchange Option is the environmentally preferred option that has the least overall impact to adjacent properties. This was determined by comparing the environmental impacts associated with the options while also assessing which options could best meet the project's Purpose and Need.

continuation of farming in this area. All of the alternatives for Valley Avenue and Freeman Interchanges are unacceptable.

The US Fish and Wildlife Service, the Environmental Protection Agency and the state Department of Fish and Wildlife were correct in requiring a build alternative that did not include an interchange at Valley Avenue. The expected growth in truck traffic occurs *because of the interchange*, not because local cities currently have plans to develop the area. A close look at the evaluation of this area for agriculture and wildlife shows that it should be preserved by *avoiding impacts* and saving taxpayers millions of dollars in construction costs.

At the point at which Wapato Creek meanders through these agriculture lands is the location where one creek crossing is turned into a major surface water facility that will add 49 acres of impervious surface with 47% of it discharging into Wapato Creek Watershed. The Valley Avenue Realignment option also requires two new creeks crossing. How is this justified as minimum impact?

Under provision of the Endangered Species Act such impacts are considered a "taking" of habitat under the 4(d) rule. Page 3-111 adequately lists the effected salmon and Bull Trout that are protected and affected. Mitigation for the proposed highway should include adding riparian cover by adding plantings along the creek to provide shading and resolve temperature problems that limit spawning. Best available science calls for a 200 foot buffer along the creek to protect this stream.

Prior to the construction of the Fred Meyer facility in the headwaters, the creek never ran dry during the summer drought. In fact farmers used it for irrigation. Adequate mitigation would include improving fish passage by removing restrictive culverts etc. Adding further impervious surfaces from highway construction will greatly degrade this environment. Eliminating Valley Avenue Interchange is these best solution to minimizing impacts and protecting endangered species.

Summary:

As always, these Environmental Impact Statements go to extremes to carefully document the extensive damaged that such a massive project will have on the wildlife, the environment and the existing way of life. Included here is a careful collection of applicable regulations that if followed avoid this excessive damage. What is missing is the will to eliminate the damaging Valley Avenue Interchange, the will to provide a bike lane to fulfill the multimodal requirements of the purpose, and the will to provide for the long-term survival of the endangered species.

When the project is valued using a highway planners priorities (page 3-357) of "accessibility, mobility, travel time, fuel saving," the EIS may justify the huge commitment of resources to construct and operate this project. However, for the cost of \$1.6 billion or greater, the destruction of endangered species and local farming seems a high price to pay to further their demise. In the next 20 years the seven to 10 billion people due to arrive on the planet may in fact consider local food supply more significant than travel time and fuel savings between Puyallup and the Port of Tacoma.

Sincerely,



G02-007

G02-008

G02-009

RESPONSE G02-008

Section 7 consultation has been initiated with the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service (NOAA Fisheries). The project's commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision regarding the project.

RESPONSE G02-009

A number of poorly functioning culverts and other stream crossings are identified that will either be eliminated or modified to improve fish passage, see section 3.4 of the FEIS. Impacts to both low- and high-flow conditions from the addition of impervious surface area are discussed in section 3.2.5 of the FEIS. However, it is not possible to eliminate the Valley Avenue Interchange and still meet the project's defined purpose and need.

-----Original Message-----

From: Campbell, Neal
Sent: Saturday, April 12, 2003 2:40 PM
To: Bennett, Rae; Bhalla, Harjit
Subject: FW: SR 167 Draft EIS, Tier II, February 2003

-----Original Message-----

From: Bob Myrick [mailto:bobmyrick@msn.com]
Sent: Saturday, April 12, 2003 10:15 AM
To: Neil J. Campbell
Cc: Anne Heller-Seago; Bill LaBorde; Bob Vogel; Bob Warfield; bpugh; BUGTRAIL; Carla Gramlich; Chuck Morrison; Kirk Kirkland; kkingso; Lois Stark; Milton Loflin; mdalin; NedrowT; Richard Patrick; ralphdena; Russ Matthews; FLINT, Bryan; steve_brown2; Steve Sugg; wbaarsma
Subject: SR 167 Draft EIS, Tier II, February 2003

Please accept the following comments and suggestions on behalf of the Tacoma Wheelmen's Bicycle Club. We are trying to help your project be successful and consistent with our goal of promoting cycling for recreation, health and transportation. Where possible, your project should enhance non-motorized transportation in a safe and convenient manner. Cyclists and walkers reduce congestion and don't contribute to air and water pollution. A well planned non-motorized system will help mitigate your project's impact on the human and natural environment.

For your background information, we are very concerned because we have a number of WSDOT projects in Tacoma where the final result has gone awry and been less than satisfactory as follows:

1. The SR16 trail promised to Tacoma in 1974 was never built.. Even today, there are no sidewalks under the freeway on Pine Street and missing sidewalks on Union Avenue.
The trail will finally be built in conjunction with the current widening of SR16.
2. In Sumner, WSDOT and the Transportation Improvement Board financed Fryar Avenue arterial construction. Bike lanes were anticipated in the funding applications, but Sumner decided to leave them out and the State agencies were not aware of the deletions until we brought the matter to their attention.
3. In Tacoma, the SR509 construction has a fine, wide shoulder for bicycle travel, but Tacoma deleted any widened travel lanes or shoulders on the State financed Marine View Drive continuation and we now have un-used sidewalks in an industrial area.
4. The new pedestrian bridge over I-5 at the Tacoma Mall is a great bridge, but Tacoma or WSDOT didn't build the approaches properly to facilitate bike travel.

G03-001

RESPONSE G03-001

As you noted the SR 16 Trail will be completed during the ongoing expansion and modification to SR 16. The design of the bike and pedestrian path on the new Tacoma-Narrows Bridge as well as the on- and off-ramp configurations at 36th Street in Gig Harbor took into consideration your concerns. This is a strong indication of our willingness to work with you on Bicycle issues. WSDOT does not have authority to alter the desires of local jurisdictions which may have decided not to participate in some of the other projects you listed. Funding is also a constraint. We added several Trail improvements to the SR 167 project. These improvements are described in section 3.15 of the FEIS.

5. The new Narrows' Bridge construction included a severely inadequate tunnel segment for cyclists. Thru only happenstance, we were able to work with WSDOT for a better, much less expensive alternative, but there is still not a good connection between the new Cushman Trail and the SR16 Trail.

Because of this past history, we are very anxious to stay involved thru the design and construction process. We have several transportation professionals in our club who would be happy to participate in the design review. Our preference for this project would be a completely separated trail from Meridian to SR509 with a connection to the new Interurban Trail in Milton. This trail could also connect to Puyallup's existing river trail and continue to Seattle thru Sumner. It would also connect to the Foothills' Trail running to Orting, Buckley, Enumclaw and Mt. Rainier. Then, Pierce County's proposal to build a river trail from Puyallup to Tacoma could be re-evaluated as to need. This trail proposal has been troubled by being too close to the river(Shoreline Management Act), by having to cross over or under several major railroad tracks, and by the Puyallup Tribe not embracing the idea. Tacoma has not proceeded in a timely manner with construction of a Federally funded trail segment along the river. The new SR 167 trail might be integrated with your wet land mitigation requirements and allow walkers and cyclists to view wildlife in the area. Our second choice is your proposal to travel on the freeway from Meridian to 20th Street East and then go onto a separated trail to connect with Milton's Interurban Trail and SR509. We would expect that many cyclists would continue to use the existing local streets because of the freeway noise and generally un-pleasant riding conditions. Your non-motorized proposal is pictured on page 3-309 and we are concerned that a smooth, safe transition should be made on Meridian so that we can access Valley Avenue East, North Levy Road and Puyallup's River Trail. When we leave the freeway at 20th Str eet East, the same concern arises as to connecting with the local roads, Milton's Interurban Trail and SR509.

I hope that you will consider our ideas and continue to work with Pierce County, local affected communities, the Puyallup Tribe and our club to produce a great project that meets all our needs and enhances the local environment.

RESPONSE G03-002

This analysis is limited to the study area within the corridor and is not intended to analyze improvements to all routes within the local area network. WSDOT and FHWA intend to accommodate non-motorized transportation modes in the study project area using best practice design.

G03-002

-----Original Message-----

From: Bob Myrick
To: aseago@harbornet.com; LaBorde@transportationchoices.org; rvogel@co.pierce.wa.us; BUGTRAIL@aol.com; campben@WSDOT.WA.GOV; cgramlich@att.com; suave51@juno.com; jladenb@co.pierce.wa.us; jshiu@cityoftacoma.org; KirkKirkland@compuserve.com; kkingssol@cityoftacoma.org; loiss@tacomaparks.com; lme12@quest.net; NedrowT@WSDOT.WA.GOV; ralphdena@earthlink.net; keeperowl@venture.com; SpokeandSprocket@yahoo.com; steve.brown2@weyerhaeuser.com; ssugg@ci.university-place.wa.us
Sent: 3/27/2003 7:54 PM
Subject: SR167 and Bicycles

Hello from New Zealand. I am the Community and Governmental Affairs Director for the Tacoma Wheelmen's Bicycle Club. I understand that comments are being taken on the EIS for the project. Our Club wants to make sure the DOT works with local jurisdictions to insure that a safe bicycle route is provided thru this subject area. We understand that travelling on the proposed SR167 may be hazardous for bicyclists and therefore, we understand that DOT may be obligated to provide a safer alternative route thru the area. We look forward to continue working with DOT to assure that a safer route is provided.

G03-003

RESPONSE G03-003

There will continue to be access to the existing bicycle and pedestrian facilities. In addition, the City of Fife has several planned bicycle routes along local roads.



April 4, 2003

Jeff Sawyer
Olympic Region Environmental Manager
Washington State Department of Transportation
5720 Capitol Blvd.
Tumwater, WA 98501

Dear Mr. Sawyer:

This letter is to formally comment on the SR 167, Puyallup to SR 509 – Tier II Draft Environmental Impact Statement (DEIS).

As you are aware, this project falls within the Sound Transit district boundary, and may affect both current and planned transit services. As such, we would like you to consider the following comments:

- In section 3.14.2 Affected Environment, under *Rail Operations*, please correct the passages referencing Sound Transit to reflect that we operate Sounder Commuter Rail along the BNSF mainline, not light rail. Please also update the data to reflect that Sounder runs three daily roundtrips, carrying more than 2,800 passengers daily. Although the BNSF mainline is not directly affected by the project, Sound Transit seeks to ensure that access to its Sounder stations, particularly the Puyallup station, is not affected detrimentally by the project.
- Under *Transit*, please note that Pierce Transit routes 400 and 405 no longer operate. In addition, please note that Sound Transit routes 574 and 582 are express bus routes, not local. We would like to note that should there be significant timesaving due to the SR 167 completion, Sound Transit would consider using this freeway extension for its ST Express bus routes.
- Under the *Park and Ride Lots* section, please make reference to *The SR 167 Park and Ride Site Selection Study*, completed by Pierce Transit in July 2002. Sound Transit was a partner to and funded this study. The study recommended that right-of-way should be acquired by WSDOT as part of its SR 167 extension project for development of park and ride sites at three locations. In order of priority, the sites are: a 1,000-stall facility located near the intersection of SR 167 and SR 161; a site located at the proposed Valley Avenue and SR 167 interchange, just north of the planned Fife Landing South; and, to a much less recommended extent, a site north of 8th Street, east of 54th Avenue East under the elevated freeway.

Central Puget Sound
Regional Transit Authority
Union Station
401 S. Jackson St.
Seattle, WA 98104-2026
Reception 206.398.5000
Facsimile 206.398.5499
www.soundtransit.org

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OLYMPIC REGION

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Chair, King County Council
- Claudia Thomas
Lakewood Deputy Mayor
- Executive Director
Joni Earl

L01-001
L01-002
L01-003

RESPONSE L01-001

Section 3.14.2 of the FEIS is updated to include the most up-to-date information.

RESPONSE L01-002

Section 3.14.2 of the FEIS is updated to reflect the correct transit routes for both Pierce Transit and Sound Transit.

RESPONSE L01-003

Section 3.14.2 of the FEIS has been updated to include two park-and-rides, one at the Valley Avenue interchange and one at the SR 161 interchange, based on Pierce Transit's July 2002 Park-and-Ride study.

Mr. Jeff Sawyer
April 1, 2003
Page Two

- Please note that the Sound Transit long-range vision for electric light-rail includes the possibility of a future high-capacity transit corridor running south along I-5 through the SR 167 extension project boundary.

Sound Transit hopes its comments on the DEIS assist WSDOT in making the necessary refinements to improve the project.

If you have any questions regarding these comments, please contact Brian O'Sullivan in our Office of Policy and Planning at (206) 398-5292.

Thank you for the opportunity to review the document.

Sincerely,



Paul Matsuoka
Policy & Planning Officer

PM:tp/SR 167_DEIS Comments.doc

c: Joni Earl, Executive Director
Perry Weinberg, SEPA Responsible Official
Barbara Gilliland, Planning & Development Manager
Brian O'Sullivan, Long Range System Planning Manager

RESPONSE L01-004

Improving regional mobility is one of the purposes of this proposed project. A discussion of the long-range plans for Sound Transit light rail is added to section 3.14 of the FEIS.

L01-004



1000 Laurel Street
Milton, WA 98354-8852
www.cityofmilton.net

John E. Williams
Mayor

Activity Center
Tel. (253) 922-6586
Fax (253) 926-7838

Administration/City Hall
Tel. (253) 922-8733
Fax (253) 922-2385

Fire
Tel. (253) 922-0944
Fax (253) 922-2385

Municipal Court
Tel. (253) 922-7625
Fax (253) 922-2385

Police
Tel. (253) 922-8735
Fax (253) 922-2706

Public Works
Tel. (253) 922-8738
Fax (253) 922-3466

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April 8, 2003

Attn: Jeff Sawyer, Region Environmental and Hydraulic Mgr.
Washington State Department of Transportation
Olympic Region Headquarters
PO Box 47440
Olympia, WA 98504-7440

Re: SR 167, Puyallup to SR509 Draft EIS/Tier II Comments
FHWA-WA-EIS-2002-02-D

Dear Mr. Sawyer:

This letter is submitted on behalf of Mayor Asay and the Milton City Council.

We desire WSDOT to review and include in their deliberative process the discussion of the potential for siting regional recreation facilities within required drainage and detention facilities that may be associated with this project. If these treatment facilities are designed appropriately, they could serve a dual purpose in providing much-needed recreational facilities such as ballfields, soccer fields, or skateparks.

Moreover, as you may know, Pierce County has allocated \$1.4 million towards the construction of a regional recreational facility in the Fife/Milton/Edgewood area. Stakeholder meetings are in currently process. Therefore, we believe that this issue should be seriously considered as the design of this project moves forward.

Another item that Council discussed at our April 7, 2003 meeting was the impact that this project will have to our regional Interurban Trail, currently under design with construction slated for as early as next year. We would expect that appropriate mitigation will occur to ensure that this trail's links between Fife and Milton are not broken in the process of constructing the SR 167 project.

Thank you for your time. Should you have any questions, please feel free to contact me at 253.922.8738.

Cordially,

Marlo D. De Rosia, MBA, MPA
Public Works / Parks & Recreation Director

Cc: Mayor Katrina Asay
Councilmembers

RESPONSE L02-001

FHWA and WSDOT recognize the importance of working collaboratively with both the City of Fife on the Pacific National Soccer Park and the City of Milton on the Interurban Trail. These recreational facilities were considered during the development of the Riparian Restoration Proposal for SR 167, please see the *Analysis of the SR-167 Extension and Riparian Restoration Proposal in the Hylebos Watershed*, MGS et al. November 2004.

RESPONSE L02-002

WSDOT has coordinated design efforts in the I-5 interchange area with the City of Fife's proposed soccer complex and the City of Milton's proposed Interurban Trail. This coordination will continue through the final design of the project. As the project team moves forward to develop appropriate mitigation for the use of these 4(f) facilities. Coordination will continue through the final design of the project.

RESPONSE L02-003

The project will accommodate the Interurban Trail and re-establish the public access connection to the trail in the vicinity of 70th Avenue East and I-5. The relocated portion of the trail will be ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife's bicycle and pedestrian facilities.

L02-001

L02-002

L02-003



October 24, 2005

Ms. Michelle Elling
SR 167 EIS Manager
Olympic Region WSDOT
150 Israel Road SW, FL 4 MS 47417
Tumwater, WA 98501
ellingm@wsdot.ws.gov

Re: Draft Section 4(f) Evaluation SR 167 to SR 509, Pierce County, WA
August 2005

Dear Ms. Elling,

Thank you for taking the time to meet with me and Interim Public Works Director Bill Larkin on October 4th and for delivering the Tier II Preliminary Final EIS and Section 4(F) Evaluation on October 17. Thank you again for allowing us to provide comments after the October 4th deadline.

You asked me to concur with the impacts identified in the Section 4(F) document. The only impact identified by the 4(F) document in Milton results from the acquisition and subsequent re-routing of the western terminus of our portion of the Interurban Trail.

Milton's Interurban Trail is a 3 mile link in a 36 mile non-motorized network. The Interurban Trail right of way was an historic electric railway connecting Tacoma to downtown Seattle. Presently the paved portion of the regional Interurban Trail terminates to the south in the City of Pacific and 33 miles to the north in downtown Seattle. Non-motorized links across the West Seattle Bridge connect the trail to Alki Beach. Non-paved portions of the Interurban Trail link the cities of Pacific, Edgewood, Milton and Fife to Tacoma's Commencement Bay. Both the Cities of Fife and Edgewood have plans to acquire and improve their portions of the Interurban Trail.

The City of Milton has spent the better part of the last decade acquiring the Interurban Trail right of way within our City limits. We are WSDOT right of way certified. Our plans to pave the trail are at 98% completion. With federal CMAQ and STP(E) funds as well as state IAC and county Conservation Funds, we have acquired the right of way, prepared engineering plans, and completed environmental review. We intend to pave our entire 3 mile section in the spring and summer of 2006. The improvement of the Milton Interurban Trail is the #1 project in our Transportation Improvement Plan and in the Non-motorized section of our Comprehensive Plan.

Planning & Community Development
1000 Laurel St. Milton, WA 98354-8850
Ph 253.922.8738 / Fax 253.922.3466

L02-004

It is our intention, and the intention of our neighboring municipalities and the Puget Sound Regional Council to connect this link to the Puyallup River Trail, creating a seamless, separated Class I or II non-motorized facility from Alki Beach to Commencement Bay and east to Puyallup. The Puyallup Trail will eventually link to the Foothills Trail and its present ending at South Prairie at the foot of Mount Rainier.

At our meeting, you assured us use of the Milton Interurban Trail would be mitigated. To mitigate the impacts of use, at the very least, the Milton Interurban Trail must be an ADA accessible, separated Class I or II non-motorized path linking to either the Puyallup River Trail or through Fife to Tacoma.

Again, thank you for the opportunity to comment on the 4(f) document. I concur with it's conclusions regarding 4(F) impacts. I very much appreciate the opportunity to comment.

Cordially,

Emily Terrell, AICP
Director

L02-004

RESPONSE L02-004

The project is committed to providing appropriate mitigation for use of the Interurban Trail. This includes maintaining access to 70th Avenue. We will ensure the relocated portion of the trail is ADA accessible, a separated Class I or II non-motorized path linking to the City of Fife's bicycle and pedestrian facilities.



City of Edgewood

2221 Meridian Avenue East, Edgewood Washington 98371-1010

RECEIVED

APR 15 2003

*(filed)
forwarded Apr 14 @ 5:00pm*

TUMWATER DESIGN

Phone (253) 952-3299 Fax: (253) 952-3537

April 14, 2003

John Powers
Mayor

Neal Campbell, Project Engineer
WSDOT Tumwater Design Office
PO Box 47446
Olympia, WA 98504-7446

Sue Miller
Deputy Mayor

RE: SR 167 TIER 2 PREFERRED OPTION

Bill Esten
Councilmember

Dear Mr. Campbell:

T.D. Faherty
Councilmember

Attached you will find a certified copy of Resolution 03-154, which was unanimously passed at the April 8, 2003 regular Council meeting and signed by all of the Edgewood City Councilmembers. The resolution states the City's position in support of the Valley Avenue Option for the design of the above referenced project. Support of this option is based on oral and written public comment, including petitions received by residents in the area proposed for the interchange, and the City staff analysis of environmental and neighborhood impacts.

L03-001

Rose Hill
Councilmember

The Valley Avenue Option creates the least amount of negative impact for Edgewood residents and our environment. The Valley Avenue option provides the least amount of relocation of the citizens of Edgewood because of the project. It also, directs traffic and congestion away from Freeman Road East, where most of our affected citizens reside. It appears that the Valley Avenue construction dust and noise would impact the City of Edgewood, but this would be the only major impact if Valley Avenue was to be selected by Washington State Department of Transportation.

L03-002

Colleen Wise
Councilmember

Thank you for the opportunity to provide you with the City's preferred option for this project.

Roger Talei
Police Chief

Very truly yours,

Henry J. Lawrence, Jr.
City Manager

Henry J. Lawrence, Jr.
City Manager

c: Council
Public Works Director
Police Chief
File

E-mail: cityhall@ci.edgewood.wa.us • Website: www.ci.edgewood.wa.us

RESPONSE L03-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

RESPONSE L03-002

These factors were considered during the selection of the preferred Build Alternative, see Table 2-8 in section 2.6 of the FEIS. WSDOT will use possible measures as identified in section 3.6.3 of the FEIS for mitigating the construction noise impact to the public. Dust from construction would also be mitigated as identified in section 3.5.3 of the FEIS.

RESOLUTION NO. 03-154

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, ESTABLISHING THE CITY OF EDGEWOOD'S POSITION ON THE PREFERRED OPTION FOR THE SR 167 TIER 2 DRAFT ENVIRONMENTAL IMPACT STATEMENT ANALYSIS.

WHEREAS, on March 25, 2003, the City of Edgewood City Council received a presentation from a representative of the Washington State Department of Transportation (WSDOT) regarding the design options under analysis in the SR 167 Tier 2 Draft Environmental Statement (EIS); and

WHEREAS, the Council has heard testimony from its citizens in the matter, concerning three proposed interchange options; and

WHEREAS, while addressing high priority transportation needs, the completion of SR 167 will reduce traffic volumes on SR 161; and

WHEREAS, the City wishes to state, herein, the preferred option for the design of the proposed SR 167 interchange.


NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, AS FOLLOWS:

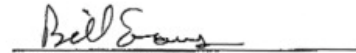
- Section 1.** The completion of SR 167 to Interstate 5 is the highest regional priority.
- Section 2.** Edgewood supports the allocation of funds for the completion of SR 167.
- Section 3.** Edgewood supports the Valley Avenue Option for the design of the proposed SR 167 interchange.

PASSED BY THE CITY COUNCIL ON APRIL 8, 2002.

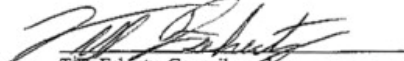

John F. Powers, Mayor



Sue Miller, Deputy Mayor

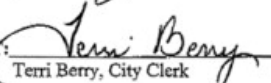

Rose Hill, Councilmember


Bill Evans, Councilmember

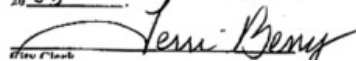

Colleen Wise, Councilmember


T.D. Faherty, Councilmember


Mike Kelley, Jr., Councilmember

ATTEST: 
Terri Berry, City Clerk

I, Terri Berry, City Clerk of the City of Edgewood, do certify that this is a true and correct copy of the original on file with the City.
DATED this 14th day of April, 2003.


City Clerk

L03-003

RESPONSE L03-003

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.



April 14, 2003

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APR 15 2003

TUMWATER DESIGN

RECEIVED

APR 15 2003

OLYMPIC REGION

Mayor
Mike Kelley, Sr.

Council
Walt Fietz
Barry Johnson
Kory Edwards
Joe Rozenski
Mardene Patton
Kim Roscoe

William J. Malinen
City Manager

Loren Combs
City Attorney

Steve Worthington
Community Development
Director

Michael Lafreniere
Parks, Recreation &
Community Services
Director

Marlyn Campbell
City Clerk/Treasurer &
Finance Director

James Paulson
Police Chief

Sally Dowty
Court Administrator

Russ Blount
Public Works Director &
City Engineer

Public Works
3725 Pacific Hwy. E.
Fife, WA 98424-1135
(253) 922-9315

Criminal Justice Center
3737 Pacific Hwy. E.
Fife, WA 98424-1135
(253) 922-6633

Fife Community Center
2111 - 54th Ave. E.
Fife, WA 98424-2061
(253) 922-0900

Fife Swim Center
5410 - 20th Street E.
Fife, WA 98424
(253) 922-7665

City Hall
5411 - 23rd St. E.
Fife, WA 98424-2061
(253) 922-2489
Fax: (253) 922-5355

Jeff Sawyer
Region Environmental and Hydraulic Manager
Olympic Region
5720 Capitol Boulevard, Tumwater
Olympia, WA 98504-7440

RE: DEIS 167

Dear Mr. Sawyer:

Enclosed you will find the City of Fife Comments to the Draft Environmental Impact Statement for the SR-167 project. The comments come to you in two parts. The first is an official copy of the Resolution #795-03, which represents the policies of the City of Fife as adopted by the Fife City Council on March 25th, 2003. These comments are of specific interest to the elected officials of our City and should be given appropriate weight. The second set of comments are technical comments which were developed by city staff revolving around four topic areas:

1. Transportation
2. Local Government Services
3. Recreation
4. Stormwater and environmental.

Attachments include a copy of the Parks and Recreation Plan, a copy of the Transportation Plan and a copy of the 1937 Drainage District Map showing boundaries of the two drainage districts in the city of Fife.

The City of Fife appreciates the opportunity to comment on this essential project for the states transportation system. Please direct any question or response to me and I will see that the appropriate city staff person is available for a responses.

Sincerely,

Steve Worthington
Community Development Director

Transportation Comments

1. The City of Fife adopted at Transportation Comprehensive Plan (the Plan) in November of 2002. The Plan identifies several improvements to the transportation system that are located within this area identified by WSDOT as the wetland mitigation area.
2. Improvements in this area and improvements connecting to this area are identified in the Plan. With the construction of SR 167, City of Fife project 30 reconstructs Levee Road as a 3-lane section in its entirety, from Freeman Road to Frank Albert Road. A new principal arterial (projects 48.1 and 49.1) is to be constructed between Frank Albert Road, connecting to an extension of Port of Tacoma Road, through the wetland area. If SR 167 is not constructed, the above mentioned road requirements increase to 4- and 5-lane sections to adequately accommodate anticipated traffic and maintain the adopted level of service for City streets.
3. The Frank Albert Road Connector is identified as a completed project in the future baseline network (Figure 4). Frank Albert Road, between North Levee Road and Industry Drive, is identified as a road segment currently having a v/c ratio of greater than 0.90. This indicates a high level of congestion (see Figure 5). The projects identified in the Plan need to be constructed in order for the City to meet our transportation needs now and in the future.
4. Pg 1-1 Last paragraph, sixth line, refers to "a major truck route through Fife via Valley Avenue and 54th Avenue East". This is incorrect; trucks are prohibited on Valley Avenue East west of 70th Avenue East and on 54th Avenue East south of 20th Street East.
5. Pg 1-1 Last paragraph, tenth line, refers to "two intersections" having been improved with better synchronization. In fact, the City of Fife has improved signal controllers and operations at several other intersections, including 70th and Valley Avenues East but volumes exceed capacity at these intersections also. While it may not be necessary to describe every intersection in Fife, focus on only two intersections may understate the problem.
6. Pg 1-18 First paragraph under "Valley Avenue Interchange" heading, seventh paragraph, and the text refers to "Burlington Northern Railroad". That is incorrect. The rail line in question is owned by the Union Pacific Railroad.
7. Pg 1-19 Last paragraph discussion of the I-5 Value Engineering Study doesn't reference the fact that the substantial re-routing of 20th Street East was a "policy" change that could only be implemented by the Fife

L04-001

L04-002

L04-003

L04-004

L04-005

L04-006

L04-007

RESPONSE L04-001

We have revised the Conceptual Mitigation plan to include several potential wetland mitigation sites. The City reviewed the Conceptual Mitigation Plan as a member of the Signatory Agency Committee for this project. On March 18, 2005, the City concurred with the mitigation plan with the understanding that the Union Pacific/Tacoma Junction wetlands mitigation site is no longer being given preferential priority. The Conceptual Mitigation Plan identifies a number of potential wetland mitigation sites that could meet the project's needs. WSDOT will select one or more wetland mitigation site(s) after the Tier II Record of Decision (ROD) is issued. WSDOT and FHWA will continue to consult with the project cooperating agencies, the U.S. Army Corps of Engineers and the City of Fife, through the design and construction phase of this project.

RESPONSE L04-002

Conditions described for the "No Build Alternative" section 2.5.1 in the FEIS will need to be assumed by the City of Fife if the SR 167 Extension project is not built.

RESPONSE L04-003

Conditions described for the "No Build Alternative" section 2.5.1 in the FEIS will need to be assumed by the City of Fife if the SR 167 Extension project is not built.

RESPONSE L04-004

Section 3.14 of the FEIS text has been revised to reflect this information.

RESPONSE L04-005

Section 3.14 of the Tier II FEIS contains much greater detail pertaining to intersection operations in the area.

RESPONSE L04-006

The FEIS is revised to include the correct information.

RESPONSE L04-007

The City of Fife representative at the Value Engineering (VE) study supported the realignment of 20th Street East. WSDOT has met with the City of Fife regarding 26th Street and 28th Street crossings. WSDOT will continue to coordinate the design effort with the City in this area.

City Council. Though Fife acknowledges the cost required to maintain 20th Street East in the alignment that was in the City's Comprehensive Plan, a change to that alignment could not be implemented without a change to the City's Plan. In fact, the Fife City Council updated its Comprehensive Plan to reflect the DOT's proposal, as a proposal, but would still prefer that 20th Street be maintained in its current alignment. Fife's updated Comprehensive Plan also requires elevation of SR 167 at 26th and 28th Streets, for extension of these arterials between 70th Avenue East and Freeman Road.

8. **Pg 1-20** Third item in the table should reflect Fife's preference for maintenance of 20th Street East in its current alignment and for elevation of SR 167 over Fife's designated 26th and 28th Street East corridors.
9. **Pg 2-3** The description of the Value Engineering process for the SR 167 / I-5 interchange should include acknowledgment of the fact that the realignment of 20th Street East requires formal action by the Fife City Council and that Fife staff members had no authority to approve such realignment, at the time of the VE meetings.
10. **Pg 2-4** Second row of the "General Criteria" column should indicate that reconstruction of local streets will conform not only to the design standards but also the Comprehensive Plan of the local jurisdiction.
11. **Pg 2-6** Third and/or fourth lines of Table 2.3-2, continued, "Specific Design Criteria" should indicate that the 20th Street alignment and 26th and 28th Streets will all be as shown in the City of Fife Comprehensive Plan
12. **Pg 2-12** Third paragraph of "Mainline Description", first line, should read "southeasterly" rather than "southwesterly".
13. **Pg 2-13** Last paragraph should include mention of grade separation structures to carry SR 167 over 26th and 28th Streets East
14. **Pg 3-274** Sixth paragraph should be revised to reflect the fact that most principal arterials in the vicinity of SR 167 are operated by the City of Fife rather than Pierce County. Pacific Highway East and 70th Avenue East should be included in the list of Principle arterials. The last paragraph on the page should be revised by removal of 70th Avenue East from the list of minor arterials, and the addition of North Levee Road East.
15. **DEIS Page S-2/3** Regional mobility and multimodal transport are identified as needs of the project. The Puget Sound regional transportation system includes both light and heavy rail facilities. This is not mentioned or discussed in this report.

L04-007

L04-008

L04-009

L04-010

L04-011

L04-012

L04-013

L04-014

L04-015

RESPONSE L04-008

Due to the complexity of the I-5 interchange, it is not possible to maintain 20th Street East in its current alignment. WSDOT analyzed using a grade separation to carry SR 167 across 26th Street East and 28th Street East, and found that it is not feasible due to the elevation profile constraints from nearby I-5 interchange. Providing a grade separation at this location may be possible by substantially layering 26th/28th to provide sufficient vertical clearance of SR 167 in this location. WSDOT will continue to coordinate the design in this area with the City of Fife.

RESPONSE L04-009

Please see response to comment numbers L04-007 and L04-008, above.

RESPONSE L04-010

Reconstruction of local streets and roads will meet the design standards of the controlling jurisdiction. WSDOT will work with the City during the final design and construction of the project.

RESPONSE L04-011

Please see response to comment numbers L04-007 and L04-008, above.

RESPONSE L04-012

The FEIS is revised to correct this information.

RESPONSE L04-013

Please see response to comment number L04-008, above.

RESPONSE L04-014

The FEIS is revised to reflect this information.

RESPONSE L04-015

Sound Transit's Regional Express bus service and commuter rail service is discussed in the Transit section section 3.14.2 of the FEIS.

16. **DEIS Page S-3 Figure 3** depicts the realignment of 20th and 70th, including a pair of roundabouts. 20th St E is a Pierce Transit (501) bus route. 70th is a designated truck route in Fife. What are the impacts to these routes as a result of the realignment?

L04-016

RESPONSE L04-016

The realignment of 20th Street East adds minimal travel time. The roundabouts will be designed to handle large trucks and busses. There will be less delay time for vehicles entering and exiting the roundabouts as compared to a traditional signalized intersection.

17. **DEIS Page S-9** Ensure Figure 8 is current with City of Fife projects.

L04-017

RESPONSE L04-017

The Summary has been revised to follow a ‘reader-friendly’ format, and no longer includes figure 8. Section 3.11 of the FEIS was updated to include current development in the City of Fife.

18. **DEIS S-21** Identify those developments that are already permitted (as well as un-and under developed parcels) by the City for displacements, disruptions and relocations. Transportation mitigation measures need to include the actual/anticipated impacts on the infrastructure itself. The added construction and detour traffic will add much higher than anticipated traffic loads to the roads. The reduction in pavement life needs to be calculated and mitigated by WSDOT as part of this project. The pedestrian and bike facilities need to be consistent with the approved Parks and Rec. Plan of the City.

L04-018

RESPONSE L04-018

Because the SR 167 freeway from SR 161 to SR 509 is a new route, detours onto city streets will be minimized. WSDOT will work with the City during final design to identify appropriate mitigation due to detours affecting the city streets. Pedestrian and bike facilities are updated in the section 3.15 of the FEIS.

19. **DEIS –1-1** Regional mobility in this region includes rail facilities. No mention of that here.

L04-019

RESPONSE L04-019

Improving Regional Mobility is mentioned in the Purpose and Need statement in chapter 1. FEIS section 3.14.2 contains more information on Rail Facilities.

20. **DEIS 1-20** 20th St E and 70th Ave E are bus and truck routes respectively. The VE recommendations, and WSDOT acceptance of them, need to recognize this. Consult Fife on the over Pacific Highway portion still being investigated.

L04-020

RESPONSE L04-020

WSDOT will continue to coordinate with the City of Fife throughout final design of the project.

21. **DEIS 2-4** Degradation of City streets needs to be addressed, not just reconstruction. Regional mobility includes rail lines. They are not discussed in this report.

L04-021

RESPONSE L04-021

Section 3.14 in the FEIS has been revised to include information on rail lines. Please also see response to comment L04-018 regarding street degradation.

22. **DEIS 2-6** Since bridge impacts are still being studied as part of this DEIS, the I-5 interchange structure should be reconfigured to allow 20th St E to continue along its current alignment. The realignment depicted in the plans includes two roundabouts. With the current development along 70th Street East of the industrial nature, 70th Street East will still have a large percentage of truck traffic. The roundabouts, if constructed, will need to be of a design to accommodate the anticipated truck volumes. This would indicate a large design diameter of the roundabout, which, in turn, would require a great deal more property than indicated on the plans. If this is the case, the I-5 structure should be lengthened to allow 20th Street East to retain its existing alignment and the appropriate traffic signal designed and constructed.

L04-022

RESPONSE L04-022

The roundabouts will be designed to accommodate truck and bus traffic. Please also see response to comments L04-007.

23. **DEIS 2-12** The I-5 interchange had only one design option considered. Another option, should the construction be phased, should include interim ramps to city streets at I-5.

L04-023

RESPONSE L04-023

The I-5 interchange will include freeway to freeway connections only. Access to I-5 from local streets are provided at the 54th Street interchange and the Port of Tacoma Road interchange.

24. **DEIS 2-13** The purpose and need portion of the DEIS identified that the Port of Tacoma will have twice as much truck traffic (300,000 to 600,000) by the year 2014. Is the rationale for having only single lanes across I-5, for SR 167, consistent with the earlier statement? Note the design year here is 2030. Identify 20th and 70th as bus and truck routes, respectively. Ensure the project is consistent with City bike and Pedestrian plans.

L04-024

RESPONSE L04-024

The traffic forecast for year 2030 for through movement on SR 167 over I-5 shows that a single lane bridge would handle the demand approximately 1100 vehicles per hour (vph). This was discussed in the Value Engineering (VE) study and it was concluded that a single lane bridge will substantially reduce costs. 20th Street East and 70th Avenue East have been identified as truck routes in the FEIS. The FEIS is updated and is consistent with the City's bicycle and pedestrian plans.

25. **DEIS 2-22** The I-5 interchange structure should be lengthened to accommodate the existing alignment of 20th Street East. The intersection has truck, and public and school bus traffic. In addition, the twin roundabouts severely impact both the NB 70th Avenue East and the EB 20th Street East traffic movements.

L04-025

RESPONSE L04-025

The roundabouts will be designed to accommodate truck and bus traffic. Due to the complexity of the I-5 interchange, it is not possible to maintain 20th Street East in its current configuration. Please also see response to comment L04-008.

26. **DEIS 2-36** This roadway section doesn't provide for future HOV expansion.

L04-026

RESPONSE L04-026

This figure shows the SR 161 bridges crossing the Puyallup River. HOV facilities are not planned for SR 161.

27. **DEIS 2-37** The effects of increased traffic due to the construction traffic and the detoured traffic have a detrimental effect on Fife roads. This reduction in roadway life needs to be mitigated.

L04-027

RESPONSE L04-027

Please see response to comment L04-018.

28. **DEIS 3-273** The roadway system bounding the project area needs to be updated to include the I-5/54th Ave E interchange.

L04-028

RESPONSE L04-028

The roadway system bounding the project area along I-5 is the I-5/SR 18 interchange to the north, and the I-5/Port of Tacoma interchange to the southwest. The I-5/54th Avenue interchange is contained within this boundary.

29. **DEIS 3-274** Update the existing surface streets section to include discussion and identification of principal arterials and minor arterials as defined in the Transportation Comprehensive Plan. These include Pacific Highway East (maintained by the City), 70th St E, and Valley Ave.

L04-029

RESPONSE L04-029

The "Existing Surface Streets" subsection in section 3.14.2 of the FEIS includes discussion and identification of principal arterials and minor arterials. The FEIS is updated to describe 70th Avenue East as a principal arterial.

30. **DEIS 3-275** Some of the 2000 LOS as identified in table 3.14-1 do not correspond to the adopted City of Fife transportation Comprehensive Plan. The figure needs to be updated.

L04-030

RESPONSE L04-030

A discussion of Canyon Road and SR 18 truck climbing is included in the Transportation section 3.14 of the FEIS. The DEIS was distributed in February 2003 and the City of Fife Transportation Plan (December 2002) was not available at the time this section was written. The City's LOS were generated from data obtained in 1999, 2000, 2001 and 2002 (Transp. Plan page 7). The DEIS used 2000 as the base year. The 2000 data was not revised to keep the existing condition at year consistent throughout the EIS document. The FEIS still uses year 2000 as the existing condition.

31. **DEIS 3-279** Pierce Transit route 501 serves Fife and needs to be added to the report.

L04-031

32. **DEIS 3-282** The traffic projects section needs to reference the approved City of Fife Transportation Comprehensive Plan. The Fife Plan also contains "build" and a "no build" alternatives for the construction of SR 167 and its impacts on the City street system in general. Required

L04-032

project lists are considerably different in the “no build” alternative. These need to be referenced in the DEIS.

33. **DEIS 3-285** An interim capacity change, based on a phased construction of the northern portion of SR 167, should include ramps to surface streets at the I-5 interchange. The planned improvements to Valley Ave are four lanes, not 5-lanes as stated. 70th Ave E will be reconstructed from the existing 2-lanes to 5-lanes.
34. **DEIS 3-286** The SR 167 structure at the I-5 interchange should be extended to allow 20th St E to remain in its current alignment. The two planned roundabouts will be required to be designed for truck, public transit, and school bus operations. This design will require a large amount of ROW for construction. The alignment of 20th St E should be allowed to remain the same with reconstruction of the 20th and 70th intersection to Fife standards and planned construction.
35. **DEIS 3-287** Impacts to railroad include the wetland mitigation area. This area is a planned UPRR sidetrack to facilitate improved operations and efficiencies for the union Pacific Railroad. The purpose and need of the project is to provide for regional mobility as well as to serve multimodal local and port freight movement. The proposed wetland mitigation area severely limits the port freight movement objective of the SR 167 purpose. The possible required improvements for bikes and pedestrians should adhere to the Parks and Rec. and Transportation Plans.
36. **DEIS 3-288** WSDOT and the contractor should directly notify the City of Fife of all freeway and local road closures. Detour and construction traffic will effect local street pavement life and should be mitigated by the project.
37. **DEIS 3-289** Table 3.14-5 lists the two roundabouts as mitigation for the 20th and 70th intersection. The mitigation should be changed to extending the structure to allow for the existing alignment of 20th St E. City streets utilized for construction haul routes and for construction detours will experience a decline in actual pavement life, versus design pavement life. This reduction needs to be mitigated by WSDOT and the SR 167 project.
38. **DEIS 3-292** The section of 70th Ave E crossing I-5 is currently a 2-lane section with a 25 MPH posted speed limit. 20th Street East does not include any sections with a posted 20 MPH speed limit as shown on figure 3.14-2. 54th Ave E is not a 2-lane section north of I-5. Identify the Port of Tacoma lanes and speed limit within the City limits.

L04-032

RESPONSE L04-031

The FEIS section 3.14.2 is updated to include Pierce Transit route 501.

L04-033

RESPONSE L04-032

Section 3.14.3 has been revised to include information from the 2002 City of Fife Transportation Plan.

L04-034

RESPONSE L04-033

The I-5 interchange will provide freeway to freeway connections only. Local access to I-5 is provided at the 54th Avenue East Interchange and at the Port of Tacoma Road Interchange. The FEIS "Capacity Changes" in section 3.14.3 of the FEIS is updated to include the correct planned improvements to Valley Avenue and 70th Avenue East, based on this comment.

L04-035

RESPONSE L04-034

The roundabouts will be designed to handle large trucks and busses. Due to the complexity of the I-5 interchange, it is not possible to maintain 20th Street East in its current alignment.

L04-036

RESPONSE L04-035

We have updated the Conceptual Mitigation Plan to include several possible wetland mitigation sites. The UPRR site is identified as one of several wetland mitigation sites. WSDOT will coordinate with the City to develop safe accommodations for users of the City’s bicycle and pedestrian facilities impacted by construction.

L04-037

RESPONSE L04-036

WSDOT will work with the City to identify detour routes and road closures during final design and construction.

L04-038

RESPONSE L04-037

WSDOT will work with the City to resolve any issues regarding detours during final design and construction. Please also see response to L04-034.

RESPONSE L04-038

Section 3.14 of the FEIS is updated to include the correct information.

39. **DEIS 3-294** The LOS at the 70th and Valley Ave intersection does not match the City of Fife Transportation Comprehensive Plan. This needs to be corrected.

L04-039

RESPONSE L04-039

Please see response to comment number L04-030.

40. **DEIS 3- 297** The realignment of 20th Street East needs to be changed to reflect the extension of the structure to accommodate the existing 20th Street E alignment.

L04-040

RESPONSE L04-040

Due to the complexity of the I-5 interchange, it is not possible to maintain 20th Street East in its current alignment.

41. **DEIS 3-301** The City of Fife has an adopted Transportation Comprehensive Plan. That Plan needs to be referenced, discussed, and adhered to with the SR 167 construction. Certain elements of the Plan are assumed to be completed by the SR 167 EIS. Other elements of the plans, including future transportation links and projects need to be identified and constructed or mitigated by the SR 167 project. The water, sewer, and storm water comprehensive plans identify the service areas, capitol projects, and required system extensions and improvements. The SR 167 should design and construct improvements and extensions as planned and required by these comprehensive plans or provide full mitigation for them.

L04-041

RESPONSE L04-041

The design phase will continue to utilize the most current information provided by the jurisdictions.

RESPONSE L04-042

Flooding at the proposed I-5 Interchange will be addressed through the relocations of Hylebos Creek and Surprise Lake Drain and the associated riparian areas. This information is detailed in section 3.2.5 of the FEIS.

RESPONSE L04-043

The project has conducted additional analyses including hydrologic modeling of the Hylebos sub-basin (MGS et al. 2004). This comprehensive analysis of the project's effects on hydrology, channel hydraulics, and geomorphology was completed to assure that we address the impacts of our project on the watershed. This assessment has included use of hydrologic simulation models and continuous runoff data to assess existing and future conditions, both with and without the project. The analysis shows that the RRP will improve flooding conditions in the I-5 interchange area. Water resources and wetlands impacts were analyzed per sub-basin, and sections 3.2 and 3.3 of the FEIS were updated to include this information.

L04-042

RESPONSE L04-044

A hydrologic simulation modeling of Hylebos Creek was recently completed to support preparation of the FEIS. This study addressed flooding, erosion, stream bank stability and other issues to insure the RRP will be effective for stormwater flow control as well as meet ecological stream functions. The relocated streams will be larger than the existing channels, and affected constriction points will be eliminated.

L04-043

L04-044

Stormwater and Environment Comments

1. The Tier II DEIS for SR167 takes a different approach for the analysis of storm drainage impacts and mitigation measures than the Tier I DEIS did. The Tier II DEIS analysis of storm drainage impacts lacks the traditional details provided by a hydrologic model, where new flows are estimated and their impacts on the existing drainage system are evaluated. There is no mention of the impact of additional flood water on the existing severe flooding problems, particularly in Hylebos Creek at the proposed I-5 interchange.
2. The Tier II DEIS proposes to use riparian restoration (a wooded landscape and buffer treatment) along the creeks, especially Hylebos Creek, as the chief mitigation measure for all flood storage and peak runoff impacts created by the project. The document is silent on the current impacts that I-5 has on the various watersheds in the Fife area, particularly Hylebos Creek. The existing freeway system has contributed significantly to the existing water quality and quantity problems in the lower Hylebos basin. Additional runoff can only make the existing situation worse.
3. If the riparian restoration process is to successfully mitigate flow volumes, the stream channel must be enlarged to pass the new peak flows

to Commencement Bay. Otherwise, more flooding of private property will occur, along with other related erosion, sedimentation, scour, etc. impacts. Public and private bridges over Hylebos Creek and an existing culvert are the primary constrictions along the channel. If these structures are widened to increase flow capacity, the water surface profile during floods will be greatly improved.

4. The loss of flood storage by filling in FEMA flood plains and frequently flooded areas is noted, but the mitigation is vague. No future water surface profiles or flood elevations are provided. It is stated on page 3-31 that the DOE will require a hydrologic model to be developed to show that the riparian restoration mitigates for added impervious area. Restoration alone may not be adequate for the Fife area. Technical justification will be needed to show compliance with the new DOE standards. Without some working knowledge of how much the riparian restoration will improve flooding conditions, it is not possible to evaluate the proposal in a logical method.
5. The DEIS also ignores the existing Drainage District 21 and 23 boundaries, the districts' authority, and their responsibility in maintaining the various drainage ditches for the past 66+ years. The proposed relocation of streams and ditches inside the drainage district boundaries should also involve drainage district approval, since the districts represent the property owners who are taxed for storm drainage maintenance.
6. Proposed riparian restoration areas assume land acquisition for the purpose of containing floods. The goal is to contain all the flooding in the areas to be acquired for habitat restoration over the long term. Exhibits 2.5-20 and 3.2-2 do not show matching flood prone areas and habitat restoration areas. Without lowering the water surface profile resulting from the project, even more land might be needed in the flooded areas. The only way to make sure the buffer areas near the streams can contain the flood waters is to have a working knowledge of both the flood elevations and the land contours, which will allow volume calculations in the buffer zones. The DEIS is too vague and lacks any analysis to verify that the proposed land acquisition is enough.

Land acquisition for riparian restoration, buffers, and wildlife corridors takes valuable property off the local tax roles and reduces the tax base for services and support.

Waiting to have their property condemned for WSDOT flood plain acquisition does not help farmers and other property owners with their current problems. It also keeps the value of their property down, since it can be used only as a flood plain or riparian buffer.

L04-044

L04-045

L04-046

L04-047

RESPONSE L04-045

Floodplain impacts, including indirect and cumulative impacts, have been clarified in section 3.2 of the FEIS. Embankments and structures will be designed, to the extent practicable, to pass maximum flood flows without substantial change to that experienced today. If necessary, additional flood storage will be provided. A final mitigation plan addressing floodplain mitigation measures will be developed prior to construction. Please also see response to comment L04-043.

RESPONSE L04-046

Drainage district (#21 and 23) boundaries are included in the figure 3.10-9 and drainage district activities are included in section 3.10 of the FEIS. WSDOT will continue to keep the drainage districts informed of plans associated with stream relocations and coordinate with them during final design of the project.

RESPONSE L04-047

A comprehensive analysis of the project's effects on hydrology, channel hydraulics, and geomorphology was completed to assure that we address the impact of this project on the watershed as part of the Riparian Restoration Proposal (RRP). The study compares the impacts and benefits between the RRP and conventional detention ponds. The modeling results show that this alternative stormwater flow control strategy will meet or exceed Ecology's and WSDOT's design standards. Flood profiles and land contours were used in this analysis to calculate storage volumes. In collaboration with stakeholders, the Riparian Restoration Proposal (RRP) has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with the City through the RRP Technical Advisory Group.

7. The proposed riparian restoration on Hylebos Creek ends near 8th Street, but the creek channel continues another 5,800 feet downstream to its mouth near Marine View Drive. There is no mention of downstream channel improvements, flow restrictions or existing structures that need to be modified or removed to assist in the conveyance of stormwater or to improve water quality.
8. The FEMA flood maps are incorrect for the Fife Ditch area and are completely omitted in the area bounded by 20th Street, 70th Avenue, and I-5. Although the FEMA maps are incomplete, Fife has aerial and ground photos from the 1990 and 1996 major storm events that accurately depict these flooded areas. These should be incorporated in any storm drainage planning. The City of Fife eventually intends to modernize the FEMA flood maps inside the city limits, when funding is available.
9. The ultimate construction of SR167 with mitigation would benefit the remaining property in Fife. However, long delays between planning, right-of-way acquisition, and full project construction would exacerbate the current drainage and flooding problems in Fife that already affect properties near the SR167 corridor.
10. The City adopted a city-wide Comprehensive Stormwater Management Plan in 2002. The report has valuable information regarding storm drainage issues and proposed capital improvements. The DEIS should refer to the document, when applicable, as part of the overall drainage analysis and mitigation plan.
11. The City has nearly finished a consultant study showing flood plain elevations from the 1990 and 1996 storm events, based on aerial photographs and ground shots. The study including setting benchmark control in Fife and establishing water surface elevations in frequently flooded areas in the Wapato Creek, Hylebos Creek, and Fife Ditch conveyance systems. This is valuable information for studying the water surface profiles of flooded areas in Fife and for estimating compensatory storage volumes.
12. **Pg S-11** First paragraph, seventh line, description of the corridor area omits the proposed wetlands mitigation area. This omission significantly understates the impact of the project on the City of Fife.
13. **Pg 1-27** Second “un-bulleted” paragraph should include a description of the process to be followed in resolution of the conflict with USFWS, USEPA, and WDFW, if the formal conflict resolution process is not to be followed.
14. **Pg 3-17** The first full paragraph should be revised to reflect data obtained from a completed stream survey and hydraulic modeling effort. The

L04-048

L04-049

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L04-055

RESPONSE L04-048

Hylebos Creek is contained within its banks at the 100-year flood downstream of 8th Street East. Although the 4th Street pedestrian bridge represents an obstruction, flood waters will back up into the Milgard Nature Area, which was designed for periodic inundation. Please see section 3.2.2 of the FEIS.

RESPONSE L04-049

Section 3.2 of the FEIS is revised to reflect more recent and accurate flood maps.

RESPONSE L04-050

The hydrology, drainage and floodplain improvements proposed as mitigation for the SR 167 Extension project will be implemented as soon as possible to minimize water resource impacts in the project area.

RESPONSE L04-051

This Comprehensive Plan was used extensively in development of the recently completed hydrologic analysis for Hylebos Creek. Portions of the hydrologic model used in development of the Comprehensive Plan were directly incorporated into the new model for Hylebos Creek. References to this work are included in section 3.2 of the FEIS.

RESPONSE L04-052

This Comprehensive Plan was used extensively in development of the hydrologic analysis for Hylebos Creek. Portions of the hydrologic model used in development of the Comprehensive Plan were directly incorporated into the new model for Hylebos Creek, see section 3.2.

RESPONSE L04-053

The FEIS has been revised to ensure that all proposed wetland mitigation sites are referenced. Please see section 3.3.7 of the FEIS.

RESPONSE L04-054

WSDOT will follow the formal conflict resolution process.

RESPONSE L04-055

This information has been included in section 3.2 of the FEIS.

failure to include such information in the preliminary environmental impact statement is a major shortcoming. It would be inappropriate to issue such survey and analysis for the first time with the final EIS; they should be issued as a supplement to the preliminary EIS and the preliminary EIS comment period extended as necessary to permit thorough review by interested parties, including the City of Fife.

15. **Pg 3-17** The fourth full paragraph should be revised to indicate that offsite runoff was considered. The proposed stormwater management concept will mix SR 167 runoff with offsite runoff in the Surprise Lake Outlet and Hylebos Creek. While DOT is not obligated to clean the runoff entering the highway corridor, the condition of such runoff should be considered in evaluation of the efficiency of the stormwater treatment concept.
16. **Pg 3-18** The first paragraph should also mention the Fife Ditch, which is tributary to Hylebos Waterway.
17. **Pg 3-19** Second full paragraph should address the impact of the failure to dredge the Puyallup River. What mitigating measures might be necessary? Would any such measures impact SR 167?
18. **Pg 3-21** First full paragraph should be revised to indicate that Fife Ditch is tributary to Hylebos Waterway, not Hylebos Creek
19. **Pg 3-22** The first paragraph of the "Hylebos Waterway" section should be revised to indicate that the waterway receives runoff from "the surrounding industrial area". The tide flats were filled decades ago. The drainage area should be stated
20. **Pg 3-23** The first paragraph of the "Surprise Lake Drain" section should include a statement of the drainage area. The second sentence of the second paragraph of this section should be revised to read: "That portion of Surprise Lake Drain west of Freeman Road East has been maintained as an agricultural ditch." The Drain "resembles" a ditch because it has been maintained as such.
21. **Pg 3-24** The second full paragraph, second line, should be revised to read "Hylebos Waterway" rather than "Hylebos Creek".
22. **Pg 3-25** A new paragraph (or more) should be added to the bulleted list at the top of the page to describe flood control impacts. The proposed riparian restoration program would include a conscious decision to allow large woody debris to accumulate in the stream channels. The initial design should include a substantial increase in stream capacity, so that all anticipated loss of capacity, due to such debris accumulation, would not reduce capacity below that needed to carry storm flows to Commencement Bay without increased flooding of properties outside the

L04-055

L04-056

L04-057

L04-058

L04-059

L04-060

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L04-062

L04-063

RESPONSE L04-056

The information provided in section 3.2 has been updated to reflect the fact that the entire section of the Surprise Lake Drain channel, from its confluence with the mainstem of Hylebos Creek to the crossing at Freeman Road will be restored to improve the quality and condition of the stream, provide flood control, and habitat benefits.

RESPONSE L04-057

Section 3.2.2 of the FEIS has been revised.

RESPONSE L04-058

Sediment buildup in the Puyallup River is discussed in section 3.2.2 of the FEIS.

RESPONSE L04-059

Section 3.2 of the FEIS has been revised.

RESPONSE L04-060

Section 3.2 of the FEIS has been revised.

RESPONSE L04-061

Section 3.2.2 – Surprise Lake Drain has been revised to indicate that it is an agricultural ditch.

RESPONSE L04-062

Fife Ditch drains into Hylebos Creek estuary which drains into Hylebos Waterway.

RESPONSE L04-063

The relocated stream channels will be longer than the existing channels and affected constriction points will be eliminated or modified.

SR 167 corridor. The flood impacts on the area north of 8th Street East should be addressed.

23. **Pg 3-31** The second full paragraph, 11th line, should be revised to reflect the correct name of Drainage District 23. There is no "Fife Drainage District", as such.
24. **Pg 3-39** The areas discussed should include separate specific provision for the Hylebos Creek reach north of 8th Street East.
25. **Pg 3-40** The first paragraph, ninth line, should be revised to reflect new survey and hydraulic modeling, such that "Assuming" can be deleted and real data can be inserted.
26. **Pg 3-75 thru 3-79** The first line of Section 3.3.5 includes the statement that "There would be no net loss of wetland function or area as a result of this project." In fact, there would be a substantial increase in wetland area as a result of the riparian restoration of the Surprise Lake Drain and of Hylebos Creek. The Surprise Lake Drain riparian restoration will convert a substantial area of active agricultural land, zoned for industrial and commercial development, into wetlands. While the Hylebos Creek riparian restoration east of I-5 is in an existing degraded wetland, most of the riparian restoration west of I-5 is in a developed area, in which the first step of the restoration effort will be the demolition of existing homes and businesses. The DOT should take credit for the wetlands created by these efforts.

The DOT should also address that portion of Hylebos Creek north of 8th Street East, where property acquisition and riparian restoration will be necessary to provide the flow capacity necessary to carry runoff from the project through many decades of future accumulation of large woody debris. Additional wetlands should also be created north of 8th Street East, and credit for such wetlands should be reflected in calculation of mitigation needs.

The riparian restoration wetlands are in the Surprise Lake Drain and Hylebos Creek watersheds, most impacted by SR 167 construction, so those new wetlands are more appropriate for mitigation of SR 167 construction impacts than the proposed mitigation area, which is in the Puyallup River watershed. Similarly, to the extent that wetlands in the Wapato Creek watershed must be impacted, they should be mitigated in the Wapato Creek watershed, and impacts in the Puyallup River watershed should be mitigated in the Puyallup River watershed.

Impacts in the Puyallup River watershed are outside the City of Fife, so any wetlands mitigation in the Puyallup River watershed should be outside the City of Fife.

L04-063

RESPONSE L04-064

Section 3.2 of the FEIS has been revised.

L04-064

RESPONSE L04-065

Hylebos Creek north of 8th Street East is described in section 3.2.2 under "Hylebos Basin."

L04-065

RESPONSE L04-066

We have completed a comprehensive analysis of the project's effects on hydrology, hydraulics and geomorphology to ensure that we address these impacts. The FEIS has been revised to include this information.

L04-066

RESPONSE L04-067

The Riparian Restoration Proposal (RRP) is proposed in the Hylebos Creek and Wapato Creek sub-watersheds as stormwater flow control management. Because this is intended for stormwater flow control, it can not be used as wetland mitigation also. The FEIS has been revised to clarify this site-specific stormwater flow control proposal and the additional benefits to existing degraded wetland areas. Please see section 3.2.3 of the FEIS.

The FEIS has been updated to include several potential wetland mitigation sites, some of which are within the City of Fife. No potential wetland mitigation sites have been identified north of 8th Street East. Please see section 3.3.7 of the FEIS for additional information. Please also see response to comment L04-047, above.

L04-067

RESPONSE L04-068

The maps (figures) have been revised in the FEIS.

RESPONSE L04-069

There are no air quality standards for construction, only operation of a project. We do not model construction emissions because they are such a relatively brief event within the scope of the operation of the project that their impacts will be negligible. We do outline steps that should be taken by the contractor to minimize emissions of construction equipment.

27. **DEIS S-17** It appears that the label for the Hylebos Creek sub-watershed is actually mislabeling the Wapato Creek as the Hylebos Creek. This is true for all maps with this labeling.

28. **DEIS S-20** Identify air quality standards that will be effected during construction.

29. **DEIS 1-12-14 Table 1.3-2**Noise (Sound Analysis) – The City of Fife needs to be consulted as well. WSDOT needs to commit landscaping and noise abatement to ALL residents in this area, not just tribal members. Visual – Landscaping measures should be consistent with Fife requirements in this area. Public Services and Utilities – The well impacts include the primary well that serves the City of Fife. Transportation - Degradation of roadbed life expectancy of roads needs to be calculated mitigated. The City of Fife should needs to be included in park and ride discussions. Ped. and Bike facilities – The SR 167 project needs to be consistent with Fife’s Parks and Rec. and Transportation Comprehensive plans.

30. **DEIS 2-5** If a frontage road is not required, is 8th Street East to remain open? He WSDOT response to the specific design criteria states “The mainline will cross over all roads”. This indicates none will have to be closed. As impacts of fills and bridges are still being studied as part of the Tier II EIS, they should be extended to eliminate the realignment of 20th St E around thI-5 interchange as portrayed. Will the added flood storage of the Hylebos Creek restoration be adequate for the amount of additional flood storage required?

31. **DEIS 2-37** Storm Water Treatment Proposal Plan – this storm water proposal must adhere to the City of Fife Storm Water Comprehensive Plan requirements. Any SR 167 drainage added to the storm water systems has to address the pump station upgrade requirements.

32. **DEIS 2-39** The City well appears to be included within a riparian restoration area.

33. **DEIS 2-41** This figure calls out “deep fill median infiltration”. Other earlier sections of the report identify the need for further geotechnical investigation of the roadway fill section regarding the possibility of liquefaction. The medial infiltration is not consistent with the earlier concerns.

34. **DEIS 3-53** The term “flood prone” is used based on aerial photos from 1990 and 1996 floods. Define the term “flood prone”.

L04-068

RESPONSE L04-070

We will continue coordinating with the City on issues that could affect the City throughout final design and construction. One noise abatement structure is proposed on Tribal land within the City of Fife.

L04-069

RESPONSE L04-071

L04-070

A portion of 8th Street East and 62nd Avenue East will be closed. Also, it is not possible to keep 20th Street East in its current alignment due to the complexity of the I-5 interchange. A detailed hydrologic analysis of Hylebos Creek was completed to further assess the Riparian Restoration proposal against stormwater control needs. The study results clearly demonstrate that the Riparian Restoration proposal meets or exceeds stormwater detention goals, including substantially reducing flood levels and inundation areas.

RESPONSE L04-072

L04-071

The stormwater treatment systems proposed either meet or exceed the City of Fife's Storm Water Comprehensive Plan requirements. The existing problems with the Fife Ditch pump station were described in the detailed hydrologic analysis done for the lower Hylebos (MGS et al. 2004).

RESPONSE L04-073

L04-072

The City well is on a parcel that is already fenced and located on high ground (out of the floodplain and erosion hazard zone). If access can be provided without jeopardizing the function of the riparian buffer in this area, then consideration will be given to exempting the well and associated buildings from the RRP. If this is not the case, other mitigation will be negotiated with the City of Fife.

RESPONSE L04-074

L04-073

Further testing of this treatment method is planned to both evaluate its use as a stormwater treatment practice and to address stability issues. If it is determined that deep fill infiltration is not feasible, more traditional stormwater control facilities (e.g., detention ponds) will be used.

L04-074

RESPONSE L04-075

L04-075

The term “flood prone” areas was used in the DEIS to make a distinction between the actual mapped floodplain as defined by FEMA and the more extensive area that has recently experienced flooding (i.e. the 1990 and 1996 flood events). However, the FEIS also relies on hydrologic analysis based on computer simulations to predict the 100 year floodplain under existing and future conditions for both Hylebos and Wapato Basins.

35. **DEIS 3-59** The City of Fife drainage systems rely on pump stations to release storm water. The pump stations need to be located and identified on the map.
36. **DEIS 3-61** The Sr167 wetland mitigation site needs to be removed as identified on the map. The site is part of an agreement with the Puyallup Indian Tribe, City of Fife and the Union Pacific Railroad. The Frank Albert Grade separation, the closing of the 54th Ave E at-grade railroad crossing and the construction of the "Frank Albert Connector Road" are all predicated on the need of the Union Pacific Railroad constructing roughly a two mile long side track in this area.
37. **DEIS 3-76** Define how the wetlands along the SR 167 route are degraded.
38. **DEIS 3-77** The ground water hydrology needs to be further investigated before the site should be chosen as the sole wetland mitigation location.
39. **DEIS 3-78** The WSDOT plan calls for the levee to be breached in three locations. The effect of this breach needs to be discussed in much more detail. The elevations of the flood waters, the property effected and to what extent? Detail the water elevation compared to the elevation of the railroad tracks.
40. **DEIS 3-161** A new multi-family development has been constructed just west of the 20th Street and 70th Avenue East intersection. The effect of noise on this development needs to be identified.
41. **DEIS 3-203** The utility impacts and mitigation shall adhere to the City of Fife codes, including the undergrounding of all relocated overhead utilities.
42. **DEIS 3-219** The Major Stormwater Lines figure needs to be updated to include major drainage areas, including ditches. Fife has few major drainage ditches that are piped, but are intergral to the City system and will be impacted by the project.

Recreation Comments

1. **Section 3-15** In general, I find a good deal of the narrative concerning the City of Fife to be out of date. Much of it refers to the plans associated with Fife's 1996 Comprehensive Plan, and it does not take into account the Parks, Recreation & Open Space Comprehensive Plan adopted in 2002. The trail planning in the earlier document was considerably revised and fine-tuned in the Parks Comp Plan. Consequently a number of the trails depicted on pages 3-310 and 3-311 are incorrect. The trails either do not exist as depicted, or they are not in fact proposed. The regional

L04-076

L04-077

L04-078

L04-079

L04-080

L04-081

L04-082

L04-083

L04-084

RESPONSE L04-076

Pump stations are not shown on the FEIS figures. However, WSDOT will coordinate with the City on any impacts to utilities.

RESPONSE L04-077

The FEIS describes the several alternative wetland mitigation sites, including the Union Pacific Rail Road (UPRR) site, as presented in the SR 167 Conceptual Mitigation Plan, February 2005.

RESPONSE L04-078

The quality of wetlands along the SR 167 route are described by the Washington State Department of Ecology ratings and the wetland functional assessment found in the Wetland Discipline Report, WSDOT May 2005.

RESPONSE L04-079

WSDOT did not have permission from UPRR to monitor groundwater hydrology or delineate this potential mitigation site as identified in the SR 167 Conceptual Mitigation Plan. Any site or combination of sites proposed in the Final Mitigation Plan will include wetland delineations and characterizations of groundwater hydrology. Please see section 3.3.7 of the FEIS.

RESPONSE L04-080

These types of details will be developed in the Final Wetland Mitigation Plan, if a mitigation site with the potential to develop off-channel habitat for the Puyallup River is acquired.

RESPONSE L04-081

The area just west of the 20th Street and 70th Avenue East intersection was evaluated for a noise wall in the original report. A substantial portion of the noise reaching the receivers is from I-5 and SR 99 and local traffic along 70th and 20th Avenues.

RESPONSE L04-082

WSDOT will coordinate with the City on this issue during design and construction of the project.

RESPONSE L04-083

Figure 3.10-9, Major Stormwater Lines is revised in section 3.10 of the FEIS to include major drainage ditches.

trail system is not reflected accurately. For example, the North Levee Trail should be shown crossing the Milroy Bridge, then east to Puyallup, and not continuing east on Levee Road as depicted.

The primary concern with respect to impacted non-motorized transportation systems is relative to the Interurban Trail and the planned trails on 70th Avenue E. There is insufficient detail to understand how the project proposes to make these connections, however it is implied that it is WSDOT's intent to ensure that the linkages are made.

The proposed 20th Street E northern loop and roundabout design would significantly impact the proposed soccer complex that is under discussion at the North East corner of the 70th Avenue East and 20th Street East intersection the loop would take it through this property in such a way as to take nearly a third of the site. The City intends to see the loop eliminated. The project also proposes to meander a relocated Hylebos Creek through that same property. As proposed in the detail, this would clearly conflict with the use and layout of that site for soccer fields.

2. **DEIS 2.5-2** Why is the 10-foot bike path elevated? The elevation simply requires additional land and project footprint. The SR 167 cross section does not include HOV lanes. The section should be adequate enough and build to accommodate them in the future. The fill elevation for the mainline should be identified.
3. **DEIS 2-28** The terminus of the bike pat is not shown. It needs to match the Fife Parks and Rec. Plan.
4. **DEIS 3-239** The separated bike lane design, on a fill section, adds ROW to the total required for the project. If the final design minimizes the need for ROW, the bike lane design and location needs to be evaluated.
5. **DEIS 3-281** Some bike and pedestrian facilities have been planned, approved and constructed. This section needs to identify those already constructed and those planned for in the transportation and Parks and Rec Plans.
6. **DEIS 3-299** The pedestrian and bike facilities need to meet the requirements of the City of Fife Parks and Rec. and Transportation Comprehensive plans.
7. **DEIS 3-319** Secondary impacts and cumulative impacts to the City's transportation, water, sewer, storm water, and Park and Rec. facilities should be mitigated in accordance the corresponding comprehensive plans or elements adopted by the City.

L04-084

L04-085

L04-086

L04-087

L04-088

L04-089

L04-090

RESPONSE L04-084

The figures in section 3.15 of the FEIS have been updated to reflect the correct information. Since the DEIS was published in February 2003 we have worked extensively with the City of Fife to coordinate design efforts in the project area near the proposed soccer complex. Through this coordination, we have found a solution that will work for both WSDOT and the City's soccer complex. The Interurban Trail will maintain a westerly connection to 70th Avenue East.

RESPONSE L04-085

The bike path is elevated because it was placed on top of the back swale of the stormwater ditch adjacent to the freeway. This design serves a dual purpose and limits the amount of total right-of-way required in this area. HOV lanes are not shown on the DEIS figure 2.5-2 because the project will not include HOV lanes between SR 509 and I-5.

RESPONSE L04-086

The SR 99 terminus is shown on sheet xx in Appendix A of the FEIS. It is in accordancw with the City of Fife Parks and Recreation Plan (date).

RESPONSE L04-087

Please also see response to L04-085.

RESPONSE L04-088

The FEIS has been revised to include updated information on bike and pedestrian facilities.

RESPONSE L04-089

Non-motorized facilities located on local arterials will meet or exceed local jurisdiction's design standards.

RESPONSE L04-090

There will be direct impacts to public services and utilities as part of the proposed project, indirect (secondary) and cumulative impacts are not anticipated.

Local Government Services

1. **DEIS S-11** Mentions “principally low-intensity land uses would be converted to transportation uses”. While these may be “low-intensity uses”, they are mostly zoned industrial which is a large part of Fife’s growth, allure, and tax base. Further identify “low-intensity” and include the importance of land use to Fife.
2. **DEIS S-12** Loss of farmland is mentioned. Explain that this “farmland” is zoned as industrial in nature and loss of land for industrial use has a large impact on Fife.
3. **DEIS S- 13** Purchasing of produce elsewhere has an economic impact on Fife. Further detail the impact to the economy, farm workers, and residents, not only the impact of purchasing produce elsewhere. Further discuss the impact of wells in the area. The project will impact the active City wells located on 62nd.
4. **DEIS S-213** The City’s Comprehensive Sewer Plan identifies the entire south eastern portion of the City impacted by this project (especially that portion of the City east of SR 167) as utilizing a gravity fed sanitary sewer system, tying into portions already constructed, including pump stations. Public Water facilities are planned to serve the entire City as well. The DEIS does not address this planned service. Further discussion needs to be added.
5. **Table 3.01** All of the Water Resources impacts and the WSDOT mitigation requirements shall meet all the requirements of the City of Fife Storm Water Comprehensive Plan. All of the Transportation impacts and the WSDOT mitigation requirements shall meet all the requirements of the City of Fife Transportation Comprehensive Plan. All of the Pedestrian and Bike impacts and the WSDOT mitigation requirements shall meet all the requirements of the City of Fife Parks and Rec. and Transportation Comprehensive Plans. All of the water and sewer impacts and the WSDOT utility mitigation requirements shall meet all the requirements of the City of Fife Water and Sewer Comprehensive Plans. The impacts of road reconstruction shall be constructed to City of Fife standards, including the requirement of relocating overhead utilities underground.

DEIS Comments
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RESPONSE L04-091

The FEIS summary and section 3.11 of the FEIS have been revised to show that agricultural land is expected to convert to commercial and industrial uses in accordance with local zoning.

L04-091

RESPONSE L04-092

Sections 3.11 and 3.12 have been updated to explain that existing farmland has been re-zoned to industrial, commercial, and residential uses.

L04-092

RESPONSE L04-093

The project will mitigate for any wells directly impacted by the project.

L04-093

RESPONSE L04-094

The project will mitigate for any impacts to public water and sewer facilities.

RESPONSE L04-095

We will continue to coordinate with the City regarding any impacts to City-owned facilities throughout final design and construction.

L04-094

L04-095

6. **DEIS 3-60** Identify the City of Fife water supply wells on the map.
7. **DEIS 3-200 A** local church runs a food bank that needs to be included in the Social Institutions section.
8. **DEIS 3-201** The utility section incorrectly identifies the supply areas of Tacoma Power and Puget Sound Energy.
9. **DEIS 3-202** The water section needs to add the City of Fife as a water provider as well as identifying the Fife water service area. The City of Fife Water Comprehensive Plan needs to be referenced and adhered to with any planning of the water system. The City of Fife provides sewer service to part of the SR 167 project area. The entire Fife City limits are identified as the Fife sewer service area per the Sewer Comprehensive Plan. This needs to be referenced and adhered to. The construction of SR 167 bisects this service area. Provisions must be made by the SR 167 project to ensure the entire City can be served by the Fife sewer system, per the sewer plan.
10. **DEIS 3-200 A** local church runs a food bank that needs to be included in the Social Institutions section.
11. **DEIS 3-201** The utility section incorrectly identifies the supply areas of Tacoma Power and Puget Sound Energy.
12. **DEIS 3-202** The water section needs to add the City of Fife as a water provider as well as identifying the Fife water service area. The City of Fife Water Comprehensive Plan needs to be referenced and adhered to with any planning of the water system. The City of Fife provides sewer service to part of the SR 167 project area. The entire Fife City limits are identified as the Fife sewer service area per the Sewer Comprehensive Plan. This needs to be referenced and adhered to. The construction of SR 167 bisects this service area. Provisions must be made by the SR 167 project to ensure the entire City can be served by the Fife sewer system, per the sewer plan.
13. **DEIS 3-204** The utility impacts and mitigation shall adhere to the City of Fife codes, including the undergrounding of all relocated overhead utilities.
14. **DEIS 3-206 SR 167 mainline** - The Fife water system needs to be identified. The Fife/Tacoma intertie is located in the vicinity of the 54th interchange area. Any impacts to the Fife water system shall adhere to Fife standards and the Fife water plan. Both the Tacoma intertie and the Fife supply wells are in or near the SR 167 project limits. They are the only water sources for the City system and shall be protected as such. Any impact to these supply sources shall be completely under the permission and direction of the City of Fife.

L04-096

RESPONSE L04-096

Group A and B public water supply wells and wellhead protection zones are shown on figure 3.2-5 in the FEIS.

L04-097

RESPONSE L04-097

Section 3.10.2 of the FEIS is revised to include the food bank.

L04-098

RESPONSE L04-098

Section 3.10.2 of the FEIS is revised to clarify this information.

L04-099

RESPONSE L04-099

Section 3.10.2 of the FEIS is revised to include information about the Fife water service area.

RESPONSE L04-100

WSDOT will coordinate with the City regarding utility relocations during design and construction of the project.

RESPONSE L04-101

Section 3.10.2 of the FEIS is revised to include information about the Fife water system. WSDOT will coordinate with the city on this issue during design and construction of the project.

L04-100

L04-101

15. **DEIS 3-207** The City of Fife has an existing force main and a new gravity sewer system in the vicinity of the 70th and 20th intersection. This needs to be identified in the sewer section.
16. **DEIS 3-207** The City of Fife has an existing force main and a new gravity sewer system in the vicinity of the 70th and 20th intersection. This needs to be identified in the sewer section.
17. **DEIS 3-208** The City of Fife has an existing sewer system located in 54th Avenue East. This needs to be identified in the sewer section. All storm water plans and mitigation needs to adhere to the City of Fife storm water comprehensive plan.
18. **DEIS 3-209** Operation impacts will exist to City water and sewer services once SR 167 is constructed. The planned water and sewer improvements in the associated comprehensive plans must be adhered to, constructed and mitigated.
19. **DEIS 3-217** The Major Water Distribution Lines Figure does not correctly represent the City of Fife major water distribution lines within the project limits or project area.
20. **DEIS 3-218** The Major Sewer Lines figure does not correctly represent the City of Fife sewer system in the project area.
21. **DEIS 3-228** The City of Fife Comprehensive Plans and associated elements need to be referenced in section 3.11.5 as plans that should be adhered to.
22. **DEIS 3-235** Section 3.11.8 needs to address the City of Fife infrastructure as impacted by SR 167 construction. The utilities will be impacted and potentially relocated. The roads will be impacted by having much higher traffic volumes during construction, including construction traffic. The life cycle of paved roads will be reduced with the additional detour and construction traffic. These effects need to be mitigated also.
23. **DEIS 3-252** In addition to addressing the impacts to farmland, section 3.12.3 needs to address the loss of industrial zoned property within the City of Fife.
24. **DEIS 3-257** Some of the actively farmed lands, shown in figure 3.12-1, are approved developments in the City of Fife. The figure needs to be updated accordingly.

L04-102

RESPONSE L04-102

Section 3.10.2 of the FEIS is revised to include the City of Fife force main and new gravity sewer system and figure 3.10-8 is updated to include this information.

RESPONSE L04-103

The FEIS section 3.10.3 has been revised to include the City of Fife's sewer system under 54th Avenue East. Figure 3.10-8 is updated to show the sewer system.

L04-103

RESPONSE L04-104

WSDOT will coordinate with the City on this issue during design and construction of the project.

L04-104

RESPONSE L04-105

Figure 3.10-7 is revised to show the City's water distribution lines in the project area.

L04-105

RESPONSE L04-106

Figure 3.10-8 has been updated to show the City of Fife's sewer system.

L04-106

RESPONSE L04-107

As the project proceeds through the design phase on into construction, WSDOT will ensure that the project will be consistent with the policies developed in the Comprehensive Plans.

L04-107

RESPONSE L04-108

The best management practices will be used during construction to minimize the impacts to the community and the infrastructure. As part of construction management, access and traffic mitigation and dust control measures will be prepared and included in the project's contract specifications. As during any WSDOT project, the Department will coordinate and work with the local jurisdiction and/or utility agency on possible impact and relocation of any utilities.

L04-108

L04-109

RESPONSE L04-109

Land use impacts, including industrial properties in the City of Fife are addressed in FEIS section 3.11 Land Use, Socioeconomics, and Environmental Justice.

L04-110

RESPONSE L04-110

Figure 3.12-1 and associated data are updated.

25. **DEIS 3-290** It is unclear if the ITS Implementation Plan requires Surveillance, Control and Driver Information (SC&DI) elements to be designed into this section of SR 167. SC&DI elements should be fully designed and utilized on this project. The project should provide, and completely construct, provisions for the City of Fife to directly link to and access the WSDOT system via fiber optic connections.

L04-111

RESPONSE L04-111

The ITS plan will be developed during final design. WSDOT will coordinate with the City during final design.



www.cityoffife.org

September 27, 2005

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OCT 06 2005

Mayor
Mike Kelley, Sr.

Council
Richard Godwin
Barry Johnson
Kory Edwards
Rob Cerqui
Mardene Patton
Kim Roscoe

William J. Malinen
City Manager

Loren Combs
City Attorney

Steve Worthington
Community Development
Director

Michael Lafreniere
Parks, Recreation &
Community Services
Director

Marlyn Campbell
City Clerk/Treasurer &
Finance Director

Robert J. DeGroot
Police Chief

Russ Blount
Public Works Director &
City Engineer

Public Works
3725 Pacific Hwy. E.
Fife, WA 98424-1135
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Criminal Justice Center
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Fife Community Center
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Fife, WA 98424-2061
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Fife Swim Center
5410 - 20th Street E.
Fife, WA 98424
(253) 922-7665

City Hall
5411 - 23rd St. E.
Fife, WA 98424-2061
(253) 922-2489
Fax: (253) 922-5355

Tom Whitney
Acting Environmental and Hydraulic Manager
Olympia Region
WSDOT
PO Box 47417
Olympia, WA 98504-7417

Dear Mr. Whitney:

In reference to your request for comments on the SR 167, Puyallup to SR 509 Draft 4(f) Evaluation, I find the document meets joint coordinated planning efforts for historic and recreational purposes. With that thought, I hereby submit the following:

1. Please notify the City when WSDOT will begin the process of purchasing those structures in Fife.
2. Will WSDOT assist with the relocation of any structure that is purchased?
3. Discussions concerning the Interurban Trail should include the City of Fife, as the Trail will connect with the proposed Pacific National Soccer Complex, which is to be constructed in Fife.
4. It is our understanding that there will be a trail system within the Surprise Lake and Hylebos drain buffers. Will you please confirm this.
5. It is not clear what pedestrian access will be provided across 20th Avenue E.
6. The basic alignment of 20th Street E and the Surprise Lake and Hylebos drain buffer limits, as shown on Figure 13, Page 42 of the 4(f) Evaluation are acceptable. This is with the understanding that there will be twelve full-sized regular soccer fields.
7. There is a possibility that the soccer complex will be constructed in phases with the first phase occurring as soon as the Fall of 2006. The City would like WSDOT to relocate the Surprise Lake Drain in conjunction with the Phase I development of the soccer complex.

In conclusion, the document accurately reflects our proposal to develop a city park adjacent to Hylebos Creek, the Hylebos Creek Conservancy Trail. The document also accurately reflects our proposal to develop a soccer complex. It is our understanding that the proposal to extend SR-167 from Puyallup to SR-509 will require use of these facilities.

L04-112

L04-113

L04-114

L04-115

L04-116

L04-117

L04-118

L04-119

RESPONSE L04-112

FHWA and WSDOT appreciate the City's efforts to jointly coordinate concerning the use of recreational facilities.

RESPONSE L04-113

The three historic structures are subject to the conditions set in the Section 106 Memorandum of Agreement, which requires that the residences will be offered for sale for one year to any buyer willing to move the structure. Once WSDOT purchases these structures, they will be offered (most likely in a lot) for auction. Local jurisdictions are notified of the auction and sometimes they are offered the structures first. The buyer will pay for all expenses associated with moving the structure(s). If no such buyer surfaces, then WSDOT would be allowed to demolish the structure as long as a historic property recordation that consists of appropriate large-format photo documentation has been performed. We will notify the City of Fife when WSDOT is ready to proceed with the purchase of these properties.

RESPONSE L04-114

FHWA and WSDOT recognize the importance of working collaboratively with both the City of Fife on the Pacific National Soccer Park and the City of Milton on the Interurban Trail. As the project team moves forward to develop appropriate mitigation for the use of these 4(f) facilities, we are committed to continuing this collaborative process, including inviting all stakeholders to future meetings.

RESPONSE L04-115

The current design for SR 167 includes a multi-use path between the 54th Avenue Interchange and SR 99, which is within the Hylebos riparian restoration area. The project is committed to encouraging community-based stewardship of the riparian areas, which will include providing reasonable public access. This will be developed during the final design of the Riparian Restoration Proposal, after the Record of Decision for the SR 167 Tier II FEIS.

RESPONSE L04-116

During final design, WSDOT will work with the City of Fife to coordinate pedestrian crossings with the Interurban Trail and with future landuse changes in the vicinity of 20th Street East.

RESPONSE L04-117

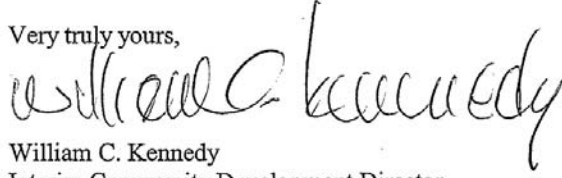
This is our current understanding, also.

WSDOT's preliminary design showing access to the Hylebos Creek Conservancy Trail appears acceptable. The City acknowledges WSDOT's efforts to minimize use of the proposed Pacific National Soccer Park.

The City is committed to working cooperatively with WSDOT in identifying acceptable measures to minimize harm, potential mitigation for use of any constructed soccer complex facility.

Please feel free to contact me should you have any questions.

Very truly yours,



William C. Kennedy
Interim Community Development Director

L04-119

RESPONSE L04-118

The timing of Phase I of the Pacific National Soccer Complex construction is occurring prior to final design of the I-5 Interchange area and the Riparian Restoration for the project. Unfortunately, WSDOT does not have the construction or right-of-way funding necessary to relocate Surprise Lake Drain during the Fall of 2006.

RESPONSE L04-119

We look forward to working cooperatively in the future to identify any additional measures to minimize the use of the Pacific National Soccer Park, minimize impacts to the Hylebos Creek Nature Park Conservancy Trail, and develop appropriate mitigation for unavoidable impacts to those facilities.

RESOLUTION NO. 795-03

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FIFE, PIERCE COUNTY, WASHINGTON PROVIDING COMMENTS ON STATE ROUTE 167 DRAFT ENVIRONMENTAL IMPACT STATEMENT, TIER II.

WHEREAS, the SR 167 Highway Project will be constructed within the City of Fife corporate boundaries; and

WHEREAS, the SR 167 project is important to the transportation system of the state of Washington, the moving of goods to and from the Port of Tacoma, and the state and national economy; and

WHEREAS, SR 167 Highway Project will have significant environmental impacts to the properties, persons and governmental services of the City of Fife; and

WHEREAS, The Department of Transportation as the lead entity for the SR 167 Highway project has sought comments from the City of Fife City Council to minimize impacts.

NOW THEREFORE BE IT RESOLVED that the City Council provides the following comments:

1. The SR 167 wetland mitigation area proposed west of Frank Albert Road, between the Union Pacific railway line and Levee Road running to the western limits of the City of Fife comprises 233 acres of Industrial zoned lands. Of those acres only fifteen acres are inventoried as national wetlands. The remaining 218 acres of Industrial zoned property is currently available for Industrial development.
Establishing this area as a wetland mitigation area will permanently remove this property from development and the creation of jobs, economic value to the region and taxes to the City of Fife, Pierce County, the Fife School District, and other taxing districts.
If developed today, the area would carry an estimated assessed value of \$46 million dollars. This loss of this area for job creation, regional economy, and taxes is unacceptable to the City Council of the City of Fife. The City of Fife is already losing in excess of 200 acres of industrial zoned property to the SR 167 Right-of-Way footprint. While in time the properties immediately adjacent to SR 167 may increase in value due to the freeway availability, there would be no off-setting increase in value from the wetland mitigation site.
The proposed mitigation area should be located elsewhere outside the City of Fife on properties that do not have the economic potential of this developing industrial area. Lower valued rural property with wetland features which can be more easily enhanced is better suited for the SR 167 wetland mitigation area. These areas would be less costly to the tax payers to acquire and would provide an equivalent function for mitigation. Alternate sites exist which would not lead to a significant loss of future jobs, economic vitality, and taxes for the governments of the area.

L05-001

RESPONSE L05-001

No final site has been selected. We have updated the Conceptual Mitigation Plan to include several possible wetland mitigation sites. The Union Pacific Rail Road (UPRR) site is identified as one of several potential mitigation sites.

The inclusion of the SR 167 wetland mitigation area in the City of Fife is an unfair burden to the City, its citizens and the regional economy.

2. The SR 167 project will result in a loss of revenue from lands within the footprint of the highway. Adjacent properties are also impacted by the uncertainty of the timing of the construction of SR 167. The SR 167 project should be phased with early construction in Fife to mitigate the revenue loss due to the right-of-way acquisition, and to minimize the uncertainty of the timing of construction to adjacent properties.
3. The configuration of the Valley Avenue Interchange with SR 167 is shown with 3 options. The Fife City Council prefers the option listed as the "Valley Avenue re-alignment option, at Valley Avenue" as depicted in Figure 2.5-13 of the DEIS. This option provided the best functionality for the City of Fife street system.
4. The configuration of the 54th Avenue interchange is shown with several options. The Fife City Council prefers the "Loop" option at 54th Avenue East, as depicted in Figure 2.5-9 of the DEIS.
5. The SR 167 project bisects the current and proposed street system in the east portion of Fife. The current alignment of 20th Street East will be disrupted by SR 167. The proposed re-alignment includes an awkward loop of 20th Street East, under SR 167 south of I-5. The City Council objects to the proposed unwieldy design for 20th Street East. Grade separations for Fife's surface arterial systems must be provided to minimize the impacts to the local transportation system. City proposed extensions of 26th Street East and/or 28th Street East should be provided grade separations from SR 167.

L05-002

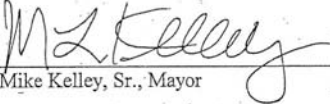
L05-003

L05-004

L05-005

ADOPTED by the City Council at an open public meeting held on the 8th day of

April, 2003.


Mike Kelley, Sr., Mayor

Attest:


Marlyn Campbell, Clerk/Treasurer

RESPONSE L05-002

The final "footprint" of the SR 167 Extension project has not been determined. The location, dimensions and access points for the affected parcels are not all known at this time and won't be determined until the project design is advanced to a near final stage. At this time WSDOT is using a prioritization process for determining which properties to purchase for the SR 167 Extension project because we do not have enough funding at this time to buy all of the property needed for the project. We are concentrating most of our property acquisition in and around those areas that will need to be constructed first according to our staging strategy for the project. We are currently buying undeveloped and non-businesses properties from willing sellers following our prioritized list. We will continue to purchase property using this prioritization process until existing allocated funds are exhausted. The Legislature has appropriated funding for this project through June 2009. When the Record of Decision for the Final EIS is approved by FHWA (currently scheduled for early 2007), the acquisition process should remain the same for all practical purposes, however, WSDOT will then have the authority to condemn property under eminent domain law.

RESPONSE L05-003

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties.

RESPONSE L05-004

The Loop Option for the 54th Avenue interchange is the environmentally preferred option with the least amount of impact to adjacent properties.

RESPONSE L05-005

Due to the complexity of the I-5 interchange, it is not possible to maintain 20th Street East in its current configuration.



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 APR 30 2003
 TUMWATER DESIGN



Mr. Neal Campbell,
 Project Engineer
 WSDOT Tumwater Design Office
 PO Box 47446
 Olympia, WA 98504-7446

April 28, 2003

RE: SR 167 Puyallup to SR 509
 Tier II DEIS Review

RECEIVED
 MAY 05 2003
 OLYMPIC REGION

Dear Neal:

We want to thank you again for extending the opportunity for the Port of Tacoma to provide our comments on the subject document.

The Port considers the SR 167 from I-5 to SR 509 as one of the most critical, if not the most critical, infrastructure improvement for port traffic circulation due to the construction of the new Pierce County Container Terminal and the potential for a new East Blair Container Terminal within the next five to fifteen years.

Based on the importance of this project to the success of the Port of Tacoma's mission, our comments are almost exclusively directed to the traffic patterns and the congestion relief provided by direct access to I-5 by the SR 167 project.

Alexander Avenue vacation

The DEIS did not recognize the current plans for the Port and the City of Tacoma to vacate Alexander Avenue north of SR 509. We expect this vacation to occur with the next 12 months. Thus the potential exists for WSDOT to reanalyze and reconfigure the grade separation, and the resulting traffic patterns, at Alexander Avenue and SR 509/167.

L06-001

RESPONSE L06-001

The grade separation and resulting traffic patterns at Alexander Avenue has been taken into account. Please see section 3.14 of the FEIS.

SR 167/54th Avenue East Interchange

The DEIS acknowledges Port traffic to and from the Fife valley. It does not address, however the increased traffic from Port growth, the new terminals coming in the future and the closure of Alexander Avenue. The proposed interchanges at 54th Avenue East will thus become the only truck traffic access between Fife (I-5) and the Hylebos peninsula, including traffic from the largest container terminal on the West Coast outside of Los Angeles. The ability for the SR 167/54th Ave East interchange to handle this traffic is very critical. The Half Diamond Option is our preferred option to facilitate southbound traffic merging onto SR167 from Taylor Blvd and 54th Avenue East locations.

L06-002

RESPONSE L06-002

The traffic studies completed for the DEIS was based on PSRC's growth projections, which takes into account future growth of the Port of Tacoma. During the development of the FEIS, the Port changed their preferred option at 54th Avenue interchange to the Loop Ramp Option. This option is the preferred option in the FEIS. Please see response to comment L06-007.

P.O. Box 1837 • Tacoma, Washington 98401-1837 • Telephone: (253)-383-5841

SR 509/Taylor Blvd Interchange

With the new traffic patterns for the Hylebos peninsula as discussed above, we request that WSDOT reconfigure the intersection at Taylor and SR 509 into a grade separated overpass as part of the SR 167/SR 509 project. The potential reduction in scope of the Alexander interchange would provide the opportunity for the Taylor/SR 509 interchange to be re-evaluated.

Grade Separated Rail Access across SR 509

There currently exists an "at grade" rail crossing of SR 509 just west of Alexander Avenue. A grade separated rail corridor for access to the Ceeco property is not considered in this DEIS. The proposed rail trackage will cross near the proposed siting of the southbound ramp SR 509 to SR 167 and will need to cross under the elevated SR167 near Alexander Avenue. The ramp design will need to consider the rail right-of-way and the elevated SR167 roadway needs to consider the railroad required 'envelope' dimensions. As this project moves from the EIS towards design, the Port will want to remain involved in the design of the area of the SR 167 connection to SR 509 with regards to potential encroachment on rail trackage in this immediate area. We have provided a proposed rail configuration plan as part of this response for your review.

SR 509 (old East/West Road) between Alexander Avenue and Taylor Blvd.

The existing dredge disposal site located south of SR 509 between Alexander and Taylor is primarily accessed from the SR 509 South Frontage Road. It appears this access corridor will remain with the relocation of the South Frontage Road closer to the North Frontage Road, and with SR167 crossing this area as an elevated roadway. The Port needs to maintain access to this area. This area is also being considered for potential development that would require rail access. Thus the previous comment concerning rail access applies directly to this comment as well.

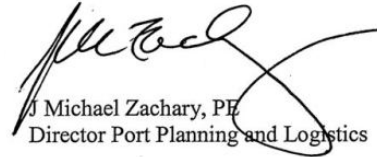
Traffic Data

In general we are also concerned that the traffic data developed during the study does not accurately reflect the current traffic patterns after the opening of the Port of Tacoma Road rail grade separation overpass. Nor does it take into account the new traffic patterns anticipated as discussed earlier in our comments. Thus we recommend that WSDOT carefully review new traffic data as part of your ongoing design. This summer, the Port of Tacoma and the City of Tacoma will be conducting an extensive Tideflats Traffic Circulation Study. We would be very willing to share the data from this study with you as part of the effort to construct SR 167.

We again thank you for this opportunity and we look forward to our continuing relationship on this project.

Sincerely,

PORT OF TACOMA



Michael Zachary, PE
Director Port Planning and Logistics

- cc: Russ Blount, City of Fife
- Steve Worthington, City of Fife
- Craig Sively, City of Tacoma
- Mike Adams, Port of Tacoma
- Sarah Armstrong, Port of Tacoma
- Dick Gilmur, Port of Tacoma
- Jeannie Beckett, Port of Tacoma
- Allison Smith, Port of Tacoma
- Fred Thompson, Consultant

L06-003

L06-004

L06-005

L06-006

RESPONSE L06-003

WSDOT is coordinating with the Port on the Port's Expansion plans. The Taylor Road/SR 509 intersection is outside the scope of this EIS. The crossing at Alexander Avenue is still required, regardless of vacation of Alexander Avenue north of SR 509 in 2004.

RESPONSE L06-004

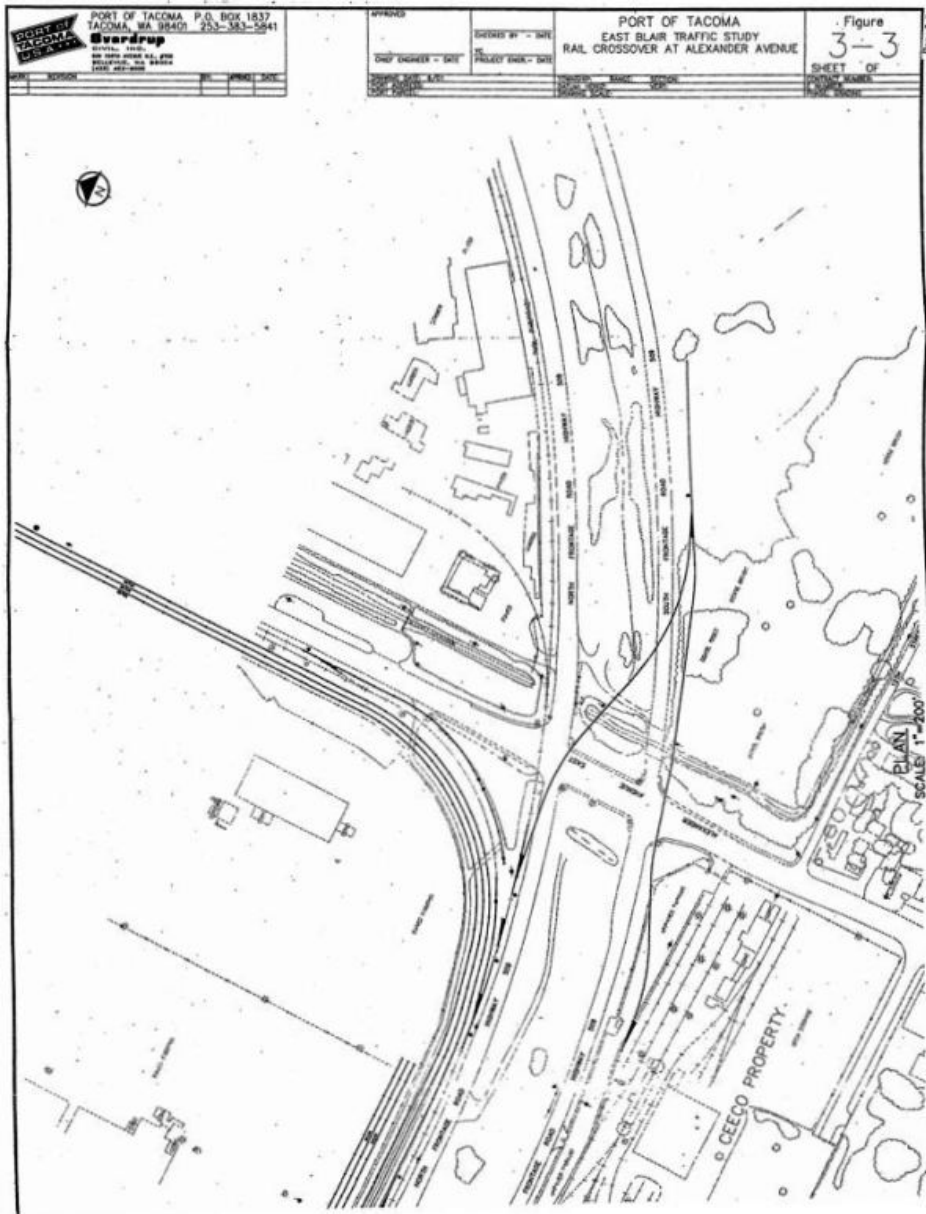
WSDOT and the Port has been working together to develop a rail crossing into the CEECO property. Please also see the "Rail Operations" section in section 3.14 of the FEIS.

RESPONSE L06-005

WSDOT and the Port have been working together to develop roadway plans that consider the current Port Expansion plans, including rail improvements.

RESPONSE L06-006

The Tideflats Traffic Circulation Study has been reviewed as part of revising the FEIS.



RECEIVED
 FEB 17 2004
 TUMWATER DESIGN



February 11, 2004

Steven D. Fuchs P. E.
 Project Engineer
 Washington State Dept. of Transportation
 6639 Capitol Boulevard SW, Suite 302
 Tumwater, WA 98501-5592

RE: SR 167 Puyallup to SR 509
 Tier II DEIS Review

Dear Mr. Fuchs:

This is a revision to the April 28, 2003 letter to Mr. Neil Campbell. We have reviewed the options on the SR 167/54th Avenue East interchange and came to the conclusion that we prefer the Clover Leaf Option instead of the Half Diamond Option.

L06-007

If you have any questions, you can contact me at 253.428.8639.

Sincerely,


 J. Michael Zachary
 Director, Port Planning and Logistics

P.O. Box 1837 • Tacoma, Washington 98401-1837 • Telephone: (253) 383-5841

RESPONSE L06-007

The Loop Option for the 54th Avenue interchange is the environmentally preferred option with the least impact to adjacent properties.

April 14, 2003

Mr. Jeff Sawyer
Regional Environmental and Hydraulic Manager
Post Office Box 47446
Olympia, Washington 98504-78446

RE: SR 167, Puyallup to SR 509 – Tier II Draft Environmental Impact Statement

Dear Mr. Sawyer:

The Puget Sound Regional Council appreciates the opportunity to comment on the Draft Tier II Environmental Impact Statement (DEIS) for SR 167, Puyallup to SR 509 project. The Regional Council has participated in the development and framing of this project for several years and through several environmental and planning steps including the Major Investment Study and the Tier I EIS.

The SR 167, Puyallup to SR 509 project is included as a candidate project in the adopted regional transportation plan, *Destination 2030*. *Destination 2030* is the transportation element of the regional growth, transportation, and economic strategy - VISION 2020. Key elements included in this project such as closing missing links in the regional transportation system, taking steps to complete the HOV system, and making improvements to the nonmotorized network are vital to the successful implementation of *Destination 2030*.

Our response is divided into two parts. First, we offer comments on the DEIS, and second, we provide separate guidance on how the final proposal relates to adopted regional approval and federal funding processes.

Comments on Draft Environmental Impact Statement

Statement of Need. It is stated that this project is needed to improve regional mobility, reduce congestion, improve safety, and maintain or improve air quality. The FEIS should clarify and briefly summarize in one place how the design level decisions addressed in this Tier II phase address and advance these objectives consistent with the corridor level outcome of Tier I.

Relationship and Compatibility with Other Projects and Plans. The FEIS should more specifically report on the relationship and compatibility between the preferred SR 167 design-level improvements and other separate but related projects and plans. For example, the FEIS should include text to: demonstrate flexibility to likely outcomes from newly proposed corridor planning on the rest of SR 167; note that the priority project for the I-405 corridor is the SR 167/I-405 interchange; and explain the potential for an indirect connection to Canyon Road,

L07-001

L07-002

RESPONSE L07-001

Purpose and Need were developed in coordination with the Signatory Agency Committee representatives during Concurrence Point 1. Please see section 1.1 of the FEIS.

RESPONSE L07-002

It was decided early on in the EIS process to do a Traffic Analysis of the highway system, not the local roadway system. During final design, a more detailed traffic analysis will be performed for each interchange and the local system.

whether this project supports the managed lanes concept, and how this project might reduce the need for westbound truck climbing lanes proposed for SR 18.

Cost and Phasing. Estimated cost ranges for the construction of the alternatives should be included in the FEIS along with an anticipated construction schedule.

HOV Lanes. The region's adopted transportation plan *Destination 2030* places high priority on completing missing freeway links and key components of the regional HOV system, both of which are part of the SR 167 project. The HOV lanes associated with this project are planned for, but appear not to be scheduled for construction until a later phase of the project. The FEIS should be clear about what HOV elements are included in the opening year (2015) and what elements are to be completed in later phases and when those later phases are expected to be complete. For example, will the HOV to HOV connections at SR 167 and I-5 be constructed at the same time this interchange is constructed or is this part of a future phase? Also, a discussion of the analysis/reasons for the HOV related decisions should be clearly articulated in the document. While the SR 167 Tier II EIS Traffic Report includes a statement of the HOV lanes not being warranted until 2030, it doesn't elaborate on that statement or explain what warrants were considered.

Air Quality Conformity

The FHWA has indicated that the final preferred alternative, as ultimately constituted with any potential refinements that might arise after your complete review of all comments on the DEIS, must be included in the current conforming long-range transportation plan. Therefore, any improvements that differ from the current general Candidate project description in *Destination 2030* will have to be identified and submitted to the Regional Council for inclusion in the regional air quality conformity analysis and a project description change made to Appendix 9 of *Destination 2030* prior to issuance of the FEIS. The Regional Council's Executive Board is authorized to make such revisions upon concluding that the preferred alternative is consistent with adopted regional policies and that the regional plan, as modified, meets regional air quality conformity requirements.

It is unclear from the project description in the DEIS when the HOV lanes from I-5 to SR 161 will be completed. The project as included in *Destination 2030* has the western portion of the freeway from I-5 to SR 509 built by 2010, and the eastern portion from I-5 to SR 161 – including the HOV lanes - completed by 2020. If the final preferred alternative has different completion dates for either of these sections, a revised project description will need to be submitted for inclusion in the Plan and a new air quality conformity finding will need to be made.

The discussion regarding regional conformity and the Build, No Build scenarios should state only that the project is included in a conforming plan and TIP; the statement that the No Build scenario is not included in a conforming plan and TIP should be removed. As indicated in the paragraph above, however, the details regarding the Build alternative should be verified to ensure that the project as described is indeed included in the conforming plan and TIP.

Nonmotorized. A number of significant regional nonmotorized trails, including the Interurban Trail, Hylebos Creek Trail, Wapato Creek Trail, and Puyallup River Levee Trail, traverse this corridor and should be supported with improved non-motorized connections. The proposal to

L07-002

RESPONSE L07-003

Estimated costs and construction timing are described in the FEIS.

L07-003

RESPONSE L07-004

The DEIS did not contain a phased construction schedule for this project. HOV lanes are not proposed between SR 509 and I-5. HOV lanes are included in the project between I-5 and the existing freeway terminus of SR 167 in Puyallup. The FEIS has been updated to include more information.

L07-004

RESPONSE L07-005

Section 3.5.4 of the FEIS includes a discussion of the Conformity Analysis for the Build alternative. This discussion concludes that the SR 167 Extension project meets the regional conformity requirements.

RESPONSE L07-006

The SR 167 Extension project is a \$2-billion project that will be constructed in stages as funding becomes available. Prior to beginning construction on the final stage (HOV portion of the project) .application for a separate Air Quality Conformity Finding will be submitted to PSRC for approval.

L07-005

RESPONSE L07-007

The sentence concerning the No Build Alternative has been removed. Thank you for your comment.

L07-006

RESPONSE L07-008

Section 3.15.6 Mitigating Measures (Pedestrian and Bike Facilities) of the FEIS describes the various measures that would be added to the project that would improve "Connectivity" for non-motorized travel. Impacts to existing bike connections are described in the FEIS. Mitigation will be determined prior to construction of the project.

L07-007

L07-008

elevate the new SR-167 facility provides an opportunity to go beyond mitigating adverse impacts and is an opportunity to establish better non-motorized connections that support future travel patterns.

The non-motorized section lacks sufficient information to determine the details of how existing connections across the proposed SR-167 would be affected by each alternative and how connections would be improved or mitigated. In particular, *Figure 3.15-1 Proposed Non-Motorized Connectivity*, is referenced throughout the non-motorized section but provides little information that illustrates what is described in the text. What does “bike connectivity” in the legend mean? This Figure and /or others should support references to text regarding crossings of the proposed SR-167 facility. The DEIS states “At each segment or intersection, specific mitigations are recommended to accommodate non-motorized travel”. Please describe these measures in detail for each segment or intersection.

In general, there are numerous references throughout the non-motorized section that appear to minimize the character of existing and potential future levels of bicycle and walk activity in this corridor. References such as “Pedestrian users would not likely use this facility given density projections and locations to existing generators.” are not supported. Also, when mitigation measures are discussed they are regularly qualified with references that cast doubt on their actual need. References such as “often would include...”, “where feasible...”, and “as traffic volumes warrant...” should be further defined.

TDM/TSM. The DEIS currently treats TDM and TSM as mitigation. Language in the FEIS should be added to fully include these activities as components of the proposed long-range solution. This discussion is related to the future provision of HOV lanes, which are part of the project package.

Irreversible and Irretrievable Impacts. The irreversible and irretrievable impacts section of the DEIS is too brief and simply stated. The FEIS would benefit from a more thorough accounting of the elements of the environment documented in other sections of the document that would be lost in the trade-off for realizing the benefits of the project.

Data. The DEIS states that economic data from the 2000 Census was not available for the discipline report. These data are available and should be included in the FEIS. The Land Use and Socio-Economic section of the DEIS contains references to a number of geographies (FAZs, TAZs, and block groups) and it would be helpful to include maps of these various geographies. Please note that the DEIS omits before and after traffic figures for I-5 North of the proposed I-5/167 interchange (see figure 3.14-6).

Regional Planning Comments Not Directly Related to the DEIS

Candidate/Approved process. The following information addresses the steps to be taken to advance the SR 167 project from a Candidate project to an Approved project in *Destination 2030*.

Background. In May 2001, the Puget Sound Regional Council adopted a new regional transportation plan – *Destination 2030*. This plan included guidance for capacity investments that categorized all regionally significant improvements as either Candidate or Approved (please

RESPONSE L07-009

L07-008

The project corridor is a limited access facility, and although the facility will allow non-motorized users, with noted exceptions, it is common that high speed, high volume limited access highways coupled with the presents of commercial and industrial sites do not present demands consistent with further accommodations beyond normal accessibility.

RESPONSE L07-010

Section 3.14 of the FEIS is updated to include more information.

L07-009

RESPONSE L07-011

Section 3.19 Irreversible and Irretrievable Commitment of Resources is intended to be a brief summary discussion.. A more thorough evaluation is contained in the impacts and mitigation measures sections for each environmental topic.

L07-010

RESPONSE L07-012

Section 3.11 of the FEIS has been updated to reflect the 2000 Census data.

L07-011

RESPONSE L07-013

L07-012

L07-013

L07-014

The figures (maps) have been modified to depict the geographic areas (FAZs, TAZs and block groups) and incorporate changes based on the 2000 Census.

RESPONSE L07-014

L07-015

Figure 3.14-6a has been updated to include traffic forecast volumes of I-5 north of the proposed I-5/SR 167 interchange.

refer to Guidance for Major Capacity Investments for a more detailed explanation of these distinctions). The SR 167, Puyallup to SR 509 project is included in *Destination 2030* as a Conditionally Approved project, to allow land acquisition expenditures qualifying for "early acquisition," as identified by Federal Highway Administration regulations in 23 CFR 710.501. Conditionally Approved projects must still satisfactorily address Approved project criteria before being designated as Approved in *Destination 2030*.

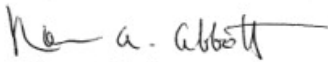
Process. *Destination 2030* includes a policy that enables the Executive Board to authorize a change in status of regionally significant projects from Candidate to Approved. Listed below is a summary of the requirements identified in the "Guidance for Major Capacity Investments" for moving a project from Candidate to Approved status.

1. Regional Council staff review and determine consistency of the project's final preferred alternative with *Destination 2030* policies.
2. Sponsor provides documentation for completed benefit cost analysis.
3. Environmental documentation is completed and submitted with sufficient detail as to the final nature, character, components or design of the given project or program to determine regional policy consistency.
4. Sponsor satisfactorily addresses any other planning requirements, which might have been specified by the Regional Council's Executive Board for a given project.
5. Sponsor submits financial plan demonstrating project feasibility by showing how the entire corridor project or its individual project components are to be funded.
6. The project's final preferred alternative is reviewed for consistency with the current Plan air quality conformity analysis, a new air quality Plan conformity may be required.

When a Candidate project meets the above requirements, the project sponsor(s) may request the Regional Council to change the project and associated supporting projects to Approved status.

In conclusion, the Regional Council would like to again thank the study team for their commitment to this project. If you have questions about our comments, please call me at (206) 464-7134 or Eli Cooper, Director of Transportation Planning at (206) 464-7122 or Kevin Murphy, Program Manager at (206) 464-6411.

Sincerely,



Norman Abbott
Environmental Officer

RESPONSE L07-015

Thank you for the updated information. We will include these steps in our process as the project moves forward.

L07-015



April 14, 2003

Jeff Sawyer
Olympic Region Environmental Manager
Washington State Department of Transportation
5720 Capitol Blvd.
Tumwater, WA 98501
Fax: 360.357.2739

RE: FHWA-WA-EIS-2002-02-D
SR 167, Puyallup to SR 509
Draft EIS/Tier II

Dear Mr. Sawyer,

Thank you for the opportunity to review the above-noted EIS. Pierce Transit's comments are included in the following paragraphs. These comments range from suggestions for simple grammatical changes to serious discussion of the scope of this EIS as it relates to transit facilities. We would like to reiterate our ability and willingness to cooperate on this project as has been shown by our commitment to researching sites for potential park and rides and attending Partner's Committee meetings. We do note, however, that the *SR 167 Park and Ride Lot Study* (completed by Pierce Transit and Sound Transit in July 2002) we submitted for your review and addition to the EIS has not been fully incorporated.

Page 1-17, in the first paragraph under the **Stakeholder Interviews** section, Pierce Transit is listed as "Pierce County Transit" It should say simply Pierce Transit, as Pierce Transit (the PTBA) is not tied to Pierce County (the governmental organization).

Transit is specifically addressed beginning on page 3-279. Within this section, a number of Pierce Transit routes are listed as traversing this corridor. With the most recent service change, this list has become outdated. For your information, Routes 400 and 405 are no longer in service. (This addressed the 2nd and 4th bullet.) The fifth bullet lists Route 500A as travelling between downtown Tacoma and Federal Way, however, there is no longer a Route called 500A. That service has been picked-up under a new route, Route 501.

As regards the discussion of Park and Ride Lots (beginning on page 3-280):

There is a commitment to set aside land for park and ride lots stated in Table 1.3-2, Commitments and Mitigations. The EIS does not, however, include a specific environmental analysis of the proposed park and ride sites. The *SR 167 Park and Ride Lot Study* includes detail that could easily be integrated into the EIS. This addition would create only a minor addition to the overall project cost. In our viewpoint, WSDOT is a multi-modal agency. You have heretofore been a very strong supporter of park and ride development including several that we operate in cooperation with WSDOT. Generally, there is an on-going deficit in available park and ride spaces, and the *SR 167 Park and Ride Lot Study* identifies a significant demand well into the

future. So, in our opinion, the integration of proposed park and ride sites listed in our study fits in well with this project. Omitting the full environmental analysis work for the proposed park and rides makes very little sense.

If full environmental analysis of the park and ride lots is left out of this EIS, a completely separate environmental process will have to be performed. The separate environmental analysis would be done at significant additional public expense. Further, if full analysis of the park and ride lots is not included, this would force you to take out the emphasis of the park and ride lots as part of the improvement of this corridor and will, we believe, remove them as mitigation measures included in the current version of the EIS.

Both NEPA and SEPA require environmental documents to look at the "big picture" of projects, including all their elements, rather than fragmenting them. Leaving full analysis of the recommended park and ride lots out of the EIS produces fragmentation.

Thank you for allowing us the opportunity to review this document. We hope that the above-noted concerns will be addressed.

Sincerely,

Kevin Desmond
Vice President of Operations and Development

C: Terrence Plaskon, Sound Transit

L08-004

L08-001

RESPONSE L08-001

The FEIS has been updated to include two park-and-rides, one at the Valley Avenue interchange and one at the SR 161 interchange, based on Pierce Transit's July 2002 Park-and-Ride study.

L08-002

RESPONSE L08-002

The FEIS is revised to include the correct name for Pierce Transit.

L08-003

RESPONSE L08-003

The FEIS is revised to list the correct transit routes.

L08-004

RESPONSE L08-004

The FEIS has been updated to include two park-and-rides, one at the Valley Avenue interchange and one at the SR 161 interchange, based on Pierce Transit's July 2002 Park-and-Ride study.



Transportation Services

2401 South 35th Street, Room 150
Tacoma, Washington 98409-7485
(253) 798-7250 • FAX (253) 798-2740

Mr. Jeff Sawyer
Washington State Department of Transportation
5720 Capitol Blvd, Tumwater
P.O. Box 47440
Olympia, WA 98504-7440

April 14, 2003

RE: SR-167 DEIS Comments

The following comments result from our review of the SR 167, Puyallup to SR 509, Tier II Draft Environmental Impact Statement, February 2003. We have reviewed the draft for a number of issues and would offer the following comments:

1. The Canyon Road East Northerly Extension project is neither textually nor graphically depicted in the DEIS. It would be appropriate to acknowledge this proposed facility in a number of the latter document including on Page 3-286 in the 'Local Roadway Network' section, Page 3-288 in "Mitigating Measures", and in Figures 3.14-5 and 3.14-6

The SR 167 extension would have significant traffic impacts on Canyon Road East and 70th Avenue East. It may be appropriate to consider the impacts upon passenger and freight traffic between the Port of Tacoma and the Frederickson industrial area to the south.

2. While the EIS offers substantial data and analysis on intersection capacity in the study area, there appears to be less information on the performance of roadway links between the intersections.
3. The EIS does not address circulation issues between the Port of Tacoma and the Frederickson areas.
4. Table 3.14.-4 should show the No Build travel times (column is blank).
5. The title of Figure 3.14-1 should be changed since it displays more than just freeways.



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RESPONSE L09-001

PSRC's traffic forecast was included in the traffic report for this project. PSRC's traffic modeling included traffic impacts from the proposed Canyon road project, as well and Port of Tacoma growth. For more detail please see the 2001, SR 167 Extension Final Traffic Report for Tier II EIS. Design details of the Canyon Road project are not currently available.

RESPONSE L09-002

For these types of roadways, intersections in the project area are the most critical locations to address. The intersections govern the level of service analysis.

RESPONSE L09-003

The FEIS Transportation section 3.14 utilized the 1996, Tacoma Tide Flats Circulation Study, which included circulation information for the Port of Tacoma and Fredrickson areas.

RESPONSE L09-004

Table 3.14-4 has been updated to include No Build travel times.

RESPONSE L09-005

The title of figure 3.14-1 is changed to "Regional Highway System."

L09-001

L09-002

L09-003

L09-004

L09-005

6. On Figure 3.14-6, it would be useful to shown a traffic volume on the SR167 Extension between Valley Ave. and SR161.
7. The title of Figure 3.15-2 should be changed since many of the facilities shown do not exist today.
8. The following comments are related to bicycle and pedestrian travel through the proposed SR 167 Corridor:

A. Page S-21 (Last Paragraph). The EIS explains that *“bike and pedestrian users...would likely experience difficulties”* at the 54th Avenue Interchange and other interchanges. The EIS also states, *“Nonmotorized vehicles would be restricted on SR 167 from the 54th Avenue East interchange to 20th Street East. A separate multi use trail would be provided between 54th Avenue and SR 99.”* It is agreed that the highway and interchanges will provide a nonmotorized facility only for experienced bicyclists confident in their ability to negotiate across high speed motor vehicle merge and exit ramps. A separate multi use trail that travels along a longer segment of the highway would provide a nonmotorized facility available to a much larger segment of the population. At a minimum, the separate multi use trail should be examined along the entire length between 54th Avenue East and 20th Street East where nonmotorized vehicles will be restricted.

B. Figure 3.15-1 is unclear displaying how nonmotorized users get to the East-West Road (SR 509) from the path that ends at 54th Avenue. Also, how nonmotorized users travel from the end of the path at SR 99 back to SR 167 Northbound. One potential means by which to address these concerns is to break Figure 3.15-1 into several diagrams showing the proposed nonmotorized route and facilities in detail.

C. Page 3-305 (Sixth Paragraph). The EIS describes a *“new and improved 70th Avenue East overpass would allow users of the Interurban Trailhead to cross I-5 as before.”* Will the “new and improved” overpass be improved with nonmotorized facilities? Providing a separate trail facility on the new 70th Avenue overpass would be the ideal method to connect the Interurban Trail to Tacoma. From figure 2.5-3 it is not clear how a nonmotorized user connects from the Interurban Trail to the road system or how an Interurban Trail user crosses I-5 to get to the north and the path at SR 99? Based on the EIS, it seems that a southbound user of the Interurban Trail will have to go onto 20th Street East, travel through two, two-lane round-a-bouts, and cross I-5 on 70th Avenue to SR-99, and then travel on the shoulder of SR-99 for a short distance to reach the new Separate Trail. Perhaps an easier nonmotorized connection should be provided that avoids this new barrier to the Interurban Trail.

L09-006

RESPONSE L09-006

Figure 3.14-6 is updated to include the traffic volume between Valley Avenue and SR 161.

L09-007

RESPONSE L09-007

Figure 3.15-2 is updated to show the most current information.

L09-008

RESPONSE L09-008

Section 3.15.6 Mitigating Measures (Pedestrian and Bike Facilities) of the FEIS describes the various measures that would be added to the project that would improve “Connectivity” for non-motorized travel. Impacts to existing bike connections are described in the FEIS. Mitigation will be determined prior to construction of the project.

L09-009

RESPONSE L09-009

The locations of existing and proposed bike/pedestrian trails are shown on figure 3.15-2 in the FEIS.

L09-010

RESPONSE L09-010

The new roadway cross section on the 70th Avenue Overpass includes sidewalks and a bike lane.

D. Figure 3.15-2 “Existing Pedestrian and Bike Facilities” is incorrect. The Puyallup River Levee Trail, Wapato Pointe PUD Trail, Dirt Trail, and CMC Heartland PRD Trail do not exist. A portion of the Fife Landing Trail does exist.

E. Figure 3.15-3 “Proposed Pedestrian and Bike Facilities by Local Jurisdictions” is also incorrect. Pierce County is unable to find a local proposed plan recommendation for the Hylebos Creek Trail or the Wapato Creek Trail. The Puyallup River Trail (North Levee Trail) is proposed to run on the north side of the Puyallup River west of 66th Ave E. The trail is proposed to run on the south side of the Puyallup River east of 66th Ave. E. A portion of the Puyallup River Trail exists within the City Limits of Puyallup and should be shown on Figure 3.15-2.

F. The Interurban Trail shown on Figure 3.15-3 is a major regional facility owned by the City of Milton and is currently used by the public. More improvements are planned for the future including paving and connection to the existed paved Interurban Trail that travels to Renton from Pacific. This Interurban Trail at 70th Avenue should be shown as an existing trail in Figure 3.15-2.

G. Page 3-302 (Second Paragraph). The EIS discusses potential connections to the Puyallup Recreation Center. One sentence reads, “Historically, the Center has experienced very minimal levels of seasonal pedestrian and bicycle related traffic.” It should be noted that to reach the Puyallup Recreation Center from the City of Puyallup one must walk or ride a bike through the SR 161/SR 167 Interchange. There is currently no attractive route to get to the recreation center by bicycle or foot. The SR 167 corridor project could facilitate travel for providing good nonmotorized access to the recreation center from the City of Puyallup.

H. Page 3-305 (Third Paragraph). The EIS describes a developer planned overcrossing of the mainline between the Valley Ave Interchange and the Puyallup Recreation Center. It would be helpful to see this proposal on Figure 3.15-1 and more information provided on the possibilities for nonmotorized mainline access from this proposed overcrossing or access from North Levee Road.

I. Page 3-306. It is difficult to tell which Valley Avenue Interchange might be the best configuration for bicyclists. However, it seems that the Valley Avenue Realignment Option (Figure 2.5-13) may have an advantage over the other two options by not including a two-way exit and merge intersection on a local road. This may make negotiating the local road easier for the recreational or commuting bicyclist as well as pedestrians.

L09-011

RESPONSE L09-011

Figure 3.15-2 in the FEIS has been revised.

L09-012

RESPONSE L09-012

Figure 3.15-2 in the FEIS has been revised.

L09-013

RESPONSE L09-013

Figure 3.15-2 in the FEIS has been revised. The Interurban Trail has been addressed in the Section 4(f) analysis, included as chapter 4 of the FEIS.

L09-014

RESPONSE L09-014

Bicycle lanes will be provided through the SR 161 interchange area.

L09-015

RESPONSE L09-015

The FEIS provides the level of detail based on available information.

L09-016

RESPONSE L09-016

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties. Bicycle access will be developed during the final design phase of the project. The bicycle community will be invited to provide input.

J. Figures 2.5-14, 2.5-15, and 2.5-16. A current popular bicycling route often used by experienced bicyclists in Pierce County involves going from Valley Avenue to N. Levee Road (and vice-versa) at the SR 161/SR 167 intersection. Under the three proposed options for this interchange the route for bicyclists is going to become much more difficult and complex. Special accommodation may be necessary at this interchange to preserve a method for bicyclists to negotiate their way through this interchange. The three proposals all seem to require multi-lane crossings on a high-speed facility with complex turning movements. The possible overcrossing mentioned in comment H above may serve as accommodation around this interchange.

L09-017

RESPONSE L09-017

The Urban Option at the SR 161 interchange is the environmentally preferred option with the least amount of impact to adjacent properties. This option includes a crossing between Valley Avenue and North Levee Road. This crossing may provide a better route for bicyclists to travel to the Puyallup Recreation Center.

We appreciate the opportunity to comment on the Draft EIS for the SR 167 Extension Project. We hope the comments are of some value to the continuing review process for this important highway project. If you have any questions regarding these comments, please feel to contact Jesse Hamashima, Transportation Planning Supervisor, at (253) 798-2760. Thank you.

Sincerely,



GARY N. PREDOEHL, P.E.
Program Development Manager

GNP:JTH

Cc: Thomas G. Ballard, P.E., County Engineer
Patrick D. Baughman, P.E., Consultant Eng./Environmental Supervisor
Shawn Phelps, Transportation Planner
Robert H. Vogel, Transportation Planner
Mike Mariano, P.E.
Jesse Hamashima, Transportation Planning Supervisor

4

Environmental Services
9550 54th Street West
University Place, Washington 98467-1078
www.piercencountywa.org/environmental

March 18, 2003
U-67129

Jeff Sawyer, Region Environmental Manager
Olympic Region, Wash. State Dept. of Transportation
5720 Capitol Boulevard
Tumwater, WA 98501

**Subject: SR 167, Puyallup to SR 509 -
Tier II Draft Environmental Impact Statement**

Dear Mr. Sawyer:

The Pierce County Public Works and Utilities Sewer Utility have a number of comments regarding the subject document. We appreciate the opportunity to provide comments and will participate with the Department of Transportation (WSDOT) to minimize the construction impacts to the County's sanitary sewer system along the route of the proposed highway extension.

We have a number of comments with regard to the subject document and, in addition, we will be providing several maps within the proposed alignment near Interstate Highway No. 5. We have drafted your approximate alignment on existing assessor's maps where the appropriate sizes and locations of our existing sanitary sewer system identified.

Our specific comments to the subject document are as follows:

Page i-iii. Pierce County permits will be required to relocate, abandon or protect existing sanitary sewer facilities

Page S-27. A block should be added to include approval and permits to relocate, abandon or protect existing sanitary sewer facilities.

Page 2-28 & 2-29. Pierce County has a 15-inch and 18-inch interceptor that will have to be relocated as a result of the proposed project.

Page 2-39, Figure 2.5 - 20, Stormwater Treatment Proposal Plan. Pierce County operates several sanitary sewer interceptors within the preliminary stormwater treatment areas and we are concerned with regard to the location of those future stormwater systems and their potential inflow impacts to the sanitary sewer system. It appears that the proposed relocation of Hylebos Creek will have a direct impact on Pierce County's existing 30-inch sanitary sewer interceptor. The

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Sewer Utility
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Solid Waste
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pcsolidwaste@co.pierce.wa.us

Water Programs
(253) 798-2725
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pcwater@co.pierce.wa.us

L10-001

L10-002

L10-003

L10-004

RESPONSE L10-001

We will coordinate with the County regarding impacts to County owned utilities during final design.

RESPONSE L10-002

Table 1-4 in the FEIS is a list of environmental permits and approvals. Construction permits have not been listed in this table. WSDOT will work with the County during design and construction of the project on the relocation of County utilities.

RESPONSE L10-003

WSDOT will work with the County during final design on coordination of relocating the interceptors in question.

RESPONSE L10-004

WSDOT will coordinate with the County on this issue during design and construction of the project.

interceptor in this area is approximately 5 to 7 feet deep and carries approximately one million gallons per day of raw sewage. The line currently is a gravity line and, depending on the depth of the creek, gravity service may be impacted. In addition, Pierce County Public Works and Utilities, Environmental Services Division, has requested that the WSDOT remove the excess fill material placed over the interceptor last year. That excess fill material could severely impact the interceptor as it was not designed to handle the additional dead load and the Sewer Utility would like the material moved as soon as possible. Page 3-218. There are some discrepancies in the mapping at and north of the Interstate Highway No. 5 intersection. We are providing assessors maps identifying the size and approximate locations of Pierce County's sanitary sewer system within the limits of the subject project.

This concludes our specific comments on the subject document. Pierce County Public Works and Utilities, Sewer Utility, is supportive of the proposed project and is more than willing to work with the WSDOT to minimize impacts to the operation and maintenance of our existing sanitary sewer facilities.

Should you have any questions or require further information, you may contact me at your earliest convenience. My direct telephone number is 253-798-4144.

Sincerely,

ROBIN R. ORDÓÑEZ, P.E.
Supervisor of Engineering

RRO:dr
Cors/U67129-RRO

Enclosures

- cc: Dan Mathis, Division Administrator
711 South Capitol Way, Suite 501
Olympia, WA 98501
- Neal J. Campbell, Project Engineer
Washington State Department of Transportation
P.O. Box 47447, Olympia, WA 98504-78446
- Steve Saxton, Area Engineer
Federal Highway Administration
711 South Capitol Way, Suite 501
Olympia, WA 98501
- Brian Stacy, P.E., Wastewater Utility Manager
- Pete Philley, Pierce County Deputy Prosecuting Attorney
- Bill Murphy, Wastewater Utility Collections System Manager

L10-004

L10-005

RESPONSE L10-005

Figure 3.10-8 is updated to show locations of Pierce County's sanitary sewer system in the project area.

From: Harold Smelt [mailto:HSMELT@co.pierce.wa.us]
Sent: Monday, March 10, 2003 9:14 AM
To: campben@wsdot.wa.gov
Subject: SR 167 Extension

Thanks for the updated mailing on the SR 167 extension. I'll be sure to review the documents available at our Planning and Land Services Division.

Just a reminder that Pierce County Water Programs owns significant tracts of land along the Hylebos in the vicinity of the proposed interchange with I-5 and I would appreciate being kept current on any plans that may impact this property. I'm assuming that there will be wetland and habitat mitigation needs for a project of this size and I realize our sites may be the best location to do that mitigation work. Let me know if you are thinking along those lines.

L11-001

Thanks.

Harold P. Smelt, P.E., Capital Improvement Program Manager
Pierce County Water Programs
9850 - 64th Street West
University Place, WA 98467

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hsmelt@co.pierce.wa.us
<http://www.piercecounitywa.org>

03/13/03

RESPONSE L11-001

WSDOT will continue to work collaboratively with Pierce County Water Programs.



STATE OF WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE
 19112 Pioneer Way E □ Orting, Washington 98360 □ (360) 893-1721 FAX (360) 893-3446

April 14, 2003

Washington Department of Transportation
 ATTN: Jeff Sawyer
 P.O. Box 47440
 Olympia, WA 98504-7440

RE: FHWA-WA-EIS-2002-02-D, SR167, Puyallup to SR509 DEIS/Tier II

Dear Mr. Sawyer:

The Washington State Department of Fish and Wildlife (WDFW) has reviewed the above-mentioned document and provides the following comments at this time. Additional comments may follow as the project develops in the future.

The comments that will be provided herein will be focused on two main points: project impacts and mitigation. The project proposes to relocate approximately 10,000 lineal feet of stream reach in the Hylebos watershed. Although there is a limited discussion of mitigation proposals for the Hylebos creek portion of the relocation, there is a reluctance to commit to mitigation in the Surprise lake outlet portion of the Hylebos watershed.

Any relocation of stream channel within the Hylebos watershed will have many long-term impacts that are not fully understood. This type of activity should be approached with clear goals and objectives that include intensive riparian restoration plans that will ultimately enhance the overall function and productivity of the Hylebos watershed. These goals and objectives are currently not included in the DEIS.

As indicated in the WDFW Wild Salmonid Policy, functional riparian buffers for small streams should be a minimum of 45 m (150ft). This is a consideration that appears to be absent from the mitigation portion of the stream relocation discussion. This is an important issue that needs to be resolved prior to any consideration of issuance of an FEIS.

RESPONSE S01-001

The goal for the Riparian Restoration Proposal (RRP) is to provide stormwater flow control and compensatory mitigation for stream channel impacts. The draft goals and objectives developed by the RRP Technical Advisory Group (TAG) are included in the Commitments List, included as Appendix F of the FEIS. Refinement of the goals and objectives will be coordinated with your agency through the RRP Technical Advisory Group.

S01-001

S01-002

In addition to the relocation of the aforementioned stream reaches, there are impacts both directly and indirectly related to Wapato creek and Simons creek (in the vicinity of the Valley Interchange of the project). Both of these stream support salmonids and certainly will require similar riparian enhancement and instream restoration treatments to that of the Hylebos watershed in areas that are adjacent to the project.

Overall, the stream impact mitigation needs to be further developed with the United States Fish and Wildlife Service, National Oceanic Atmospheric Administration (NOAA) Fisheries, Puyallup Tribe and the Washington State Department of Fish and Wildlife to ensure the development of a well-informed mitigation package.

Thank you for the opportunity to provide this information. If you have any questions, please contact me at (360) 893-1721

Sincerely,

Travis W. Nelson
 WDFW Area Habitat Biologist

TN:tn

Cc: WDFW SEPA Coordinator

S01-003

RESPONSE S01-002

The preliminary design plans include riparian restoration areas that are generally 400 feet wide (200 feet on either side of the stream). There are a few segments that are constrained to a width of approximately 150 feet. Overall, the minimum requirement of 150 feet will be exceeded as a project average.

RESPONSE S01-003

Steps taken to avoid and then minimize impacts to wetlands, streams, and floodplains have been clarified in sections 3.2 and 3.3 of the FEIS. A Conceptual Mitigation Plan has been reviewed by your agency as a participating SAC member. A final mitigation plan addressing wetland, stream, and floodplain mitigation measures will be developed prior to construction. Also, in collaboration with stakeholders such as your agency, the Riparian Restoration Proposal (RRP) has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with your agency through the RRP Technical Advisory Group.



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600 • (206) 407-6000 • TDD Only (Hearing Impaired) (206) 407-6006

April 28, 2003

Mr. Neal Campbell, Project Manager
6639 Capitol Blvd. Suite 302
Tumwater, WA 98504-78446

Dear Mr. Campbell:

The Department of Ecology submits the following comments on the Draft Environmental Impact Statement/Tier II on State Route 167 – Puyallup to State Route 509:

WATER QUALITY AND STORMWATER

1. Flow Control

Ecology cannot accept WSDOT's proposal to restore riparian vegetation in lieu of flow control facilities, and the rationale given for the proposal is insufficient. The justification indicates that vegetation restoration provides equivalent benefits to controlling the high flow runoff flow rates. However, local scientists' recommendations for protecting and restoring streams include protecting and improving riparian vegetation AND managing the hydrologic regime. While restoring some riparian vegetation could have multiple habitat benefits, it does not address the project impact of increased high stream flow rates that cause accelerated stream channel erosion. In addition, local experience suggests that stabilizing the banks of urban streams with riparian vegetation will likely prove short-lived if the changes in the flow regime are not addressed first.

The DEIS references a WDNR 1997 document as evidence of a competing school of thought regarding the cause of stream channel erosion. However, the DEIS bibliography does not provide a detailed reference for that document. Please provide a complete citation for the referenced document.

The proposal to restore riparian vegetation in lieu of flow control facilities might work within the context of a basin plan that establishes hydrologic and habitat goals for the basin. If those goals are achieved without the need for flow control facilities at the project site, then the proposal could help meet other basin plan goals. Without that basin plan context, it should be assumed that flow control facilities (detention or retention ponds) are necessary to avoid increased high flow impacts.

RESPONSE S02-001

The Riparian Restoration Proposal (RRP) has been revised since the Draft EIS was distributed. In collaboration with stakeholders such as your agency, the RRP has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with your agency through the RRP Technical Advisory Group, which you are a member of. In addition, as part of the Signatory Agency Committee Concurrence Point 3, Ecology gave its general approval to an alternative flow control strategy that converts existing developed land to a restored native vegetation land cover condition (the RRP). Final approval will be based on a demonstration that the theoretical high flow reduction benefits of that land cover (and soil) restoration fully offset the high flow impacts of the additional impervious surface and associated land cover conversions (see Ecology correspondence from August 11, 2004).

S02-001

The DEIS also mentions that the construction of detention facilities could worsen the flooding situation by displacing more water than they control. This claim should be supported with calculations as it seems that such facilities would occupy a very small portion of a floodplain. However, it generally should be noted that the project should not result in a significant loss of flood storage. Mitigation will probably be required by Pierce County to offset loss of flood storage.

Locating detention facilities in the floodplain could reduce their effectiveness. The extent of reduced effectiveness would depend upon the size of the flood event through which they would be functional. For instance, if they are functional through a 25-year flood elevation, they would still provide most of the flow control benefits that they were intended for. If they were not functional at a 2-year flood elevation, their effectiveness would be much compromised. In that situation, it would be appropriate to look at detention facilities for equivalent areas in other locations within the watershed. The DEIS should explore this option before concluding that riparian restoration is the preferred option.

It is preferable and more cost-efficient to perform any such off-site, in-kind flow control mitigation at other WSDOT discharge locations because WSDOT should assume that flow control facilities are a need at all of its discharges to streams. If WSDOT provides flow control for an equivalent area that it is not already responsible for, it does not make any progress in reducing its financial obligations for flow control facilities at its discharge sites.

2. Treatment Options

The treatment proposals include use of "deep infiltration" (p.3-37) and "composted road shoulders" (3-38) to achieve treatment and flow control requirements. These techniques are not part of the approved Highway Runoff Manual, are not described in sufficient detail, and, to Ecology's knowledge, have not been tested and proven to be acceptable alternatives. Therefore, it is speculative and inadvisable to assume that they will provide acceptable treatment and thus be approved for use.

3. Treatment

The DEIS figures 2-38 and 2-39 can be read to imply that ditches are an acceptable treatment option. No such treatment option exists in the HRM or the Ecology manual. If "ditches" will be used for treatment, comment #2 above applies. The statement could be indicating that "ditches" will be used for transmission of the stormwater. This should be clarified.

4. Construction Stormwater Permit and Pollution Prevention Plan

On page 3-45 there is a discussion of the NPDES General Construction Permit and the requirements under the permit. WSDOT states that the permit requires the development of a Stormwater Site Plan (SSP) which includes the development of Temporary Erosion

S02-002

RESPONSE S02-002

Since the DEIS was distributed, FHWA and WSDOT have conducted additional analyses including hydrologic modeling of the Hylebos sub-basin (MGS et al. 2004). Water resources and wetlands impacts were analyzed per sub-basin, and sections 3.2 and 3.3 of the FEIS were updated to include this information. The Conceptual Mitigation Plan describes compensatory mitigation measures, and includes preliminary monitoring information.

S02-003

RESPONSE S02-003

WSDOT and FHWA are currently studying these new techniques to achieve treatment and flow control of stormwater. Language is added to the FEIS that indicates that these technologies are not yet approved.

S02-004

RESPONSE S02-004

The ditches shown on DEIS figures 2.5-19 (page 2-38) and 2.5-20 (page 2-39) are existing surface water sources, and it was not the intent to imply they are part of the stormwater treatment system for this project. These figures are clarified.

S02-005

RESPONSE S02-005

The project will follow construction stormwater permit requirements applicable at the time the permits are issued.

and Sediment Control Plan. The information from the referenced documents may contain important information but they do not appear to contain all of the information required in the Stormwater Pollution Prevention Plan (SWPPP) which must be developed as a permit requirement.

The SWPPP that is required as part of the Construction Stormwater Permit consists of 12 parts. These include the following: mark clearing limits, establish construction access, control flow rates, install sediment controls, stabilize soils, protect slopes, protect storm drain inlets, stabilize channels and outlets, control pollutants, control de-watering, maintain BMPs, and manage the project.

In July of 2003 the new construction stormwater permits will become effective. This project will have to follow the requirements of this new permit.

WETLANDS

1. Riparian Restoration

Ecology approves of the concept of improving the structure of lower Hylebos Creek and the Surprise Lake Drainage by allowing these channels to meander through existing wetland/floodplain and planting woody vegetation along the banks of these new channels. This has the potential to significantly improve habitat for salmonids and other aquatic life within these reaches.

Ecology will need to see detailed plans for Hylebos Creek and Surprise Lake discharge ditch relocation. Any such plans should include detailed sediment plans to mitigate the potential of sedimentation from the new waterways. For example, using washed gravel to line stream bed channels would reduce sedimentation. Ecology will address stream relocation in the 401 Water Quality Certification and is very interested in the plans for this activity.

The assumption that impacts from added impervious surfaces have not occurred along the Lower Hylebos Creek and Surprise Lake Drain because impervious area did not remove the riparian buffer or Large Woody Debris (LWD) from these streams is questionable. It is likely that these systems have been affected by hydraulic changes due to increases in impervious surfaces higher in the watersheds.

2. Contaminated Soils

WSDOT needs to be aware of a soil and groundwater contamination issue that can dramatically impair the success and ecological merit of the riparian restoration proposal. Recent studies by Hydrometrics, Inc., Ecology's Environmental Assessment Program, and a University of Washington student have found elevated levels of arsenic to occur within the soils, surface water, and shallow groundwater within the lower Hylebos Creek floodplain wetland, immediately North of the B&L Landfill. They further found that the

S02-005

S02-006

S02-007

S02-008

RESPONSE S02-006

Stream fill impacts and the proposal to relocate Hylebos Creek and Surprise Lake Drain are described in the Conceptual Mitigation Plan and section 3.2 of the FEIS. A final stream fill and wetland mitigation plan will be developed for this project.

RESPONSE S02-007

It was not WSDOT's intent to imply that these systems have not been impacted hydraulically by existing impervious surface. This text was reviewed and clarified.

presence of these contaminants appears to be limiting the viability of amphibian breeding success in this area.

Therefore, Ecology is concerned with the statement on page 3-32 of the DEIS that, "diversion of the streams would result in an initial loading of suspended material resulting in increased turbidity, and sedimentation with Lower Hylebos Creek." Suspension of arsenic-laden soils is unacceptable and prohibited.

Restoration of this riparian zone is clearly needed, but must be performed in a manner that allows no release of toxic metals that are bound up in the soils. This restoration work also should be done in cooperation with ASARCO and Ecology to achieve a design that will prevent the continued release of contaminants into this area from the landfill. Any continued release of contaminants will compromise the value of this riparian corridor and of the juvenile salmonid over-wintering habitat. Without proper project design, the proposed re-routing of Hylebos Creek and the Surprise Lake Drain may actually open a pathway for arsenic to reach aquatic fauna within these waterways.

More information regarding contamination of this wetland can be found in the Department of Ecology publication #02-03-053 (Jack, R. 2002. *Mobilization and Impacts of Arsenic Species and Selected Metals on a Wetland Adjacent to the B&L Landfill, Milton*. Washington Department of Ecology), available at: <http://www.ecy.wa.gov/biblio/0203053.html> and in the UW student paper, *Schlemmer, R.M. 2002. Amphibian Breeding Success in an Arsenic Contaminated Wetland*, which is available in the Department of Ecology's B&L Woodwaste Landfill files (files of public record).

Without careful consideration and planning regarding contaminated soils and water in the lower Hylebos Creek wetland, the arguments for riparian restoration are compromised. And yet, the fact that this wetland is contaminated underscores the need for careful, thoughtful riparian restoration and contaminant remediation in this area.

3. Compensatory Wetland Mitigation

This is an important issue that needs to be addressed, especially since it appears that the mitigation proposed may not be enough. If additional mitigation is needed beyond what is available at the UP parcel, perhaps riparian restoration and remediation of contaminated soils could comprise a portion of the wetland mitigation requirement.

It is not clear from the DEIS whether the proposed mitigation will be sufficient compensation for the functions lost through the filling of up to 30.2 acres of existing wetland. The compensatory wetland mitigation plan needs to clearly state the extent of wetland areas that currently exist within the Union Pacific Parcel mitigation site. The National Wetland inventory is not expected to accurately depict the extent of wetlands on this parcel, since this parcel is largely agricultural. This does not mean that areas not mapped on the NWI are not wetlands.

RESPONSE S02-008

S02-008

WSDOT has conducted a study of the soil and groundwater contamination associated with the B&L Woodwaste Landfill (Review and Assessment Support, SR 167 Hylebos Creek Realignment, Tetrtech 2004). WSDOT also studied engineering solutions to prevent groundwater contamination of the relocated Hylebos Creek (Engineering Solutions and Cost Estimate, SR 167 Hylebos Creek Realignment, Tetrtech 2004). The FEIS is revised to discuss the results of these studies.

RESPONSE S02-009

S02-009

Extensive riparian restoration is proposed, however, it is as a stormwater flow control best management practice. WSDOT is confident that in-kind mitigation opportunities exist in WRIA 10. A functional assessment of existing wetlands and mitigation are described in the SR 167 Conceptual Mitigation Plan, WSDOT February 2005. WSDOT did not have permission from UPRR to delineate the preferred mitigation site as identified in the SR 167 Conceptual Mitigation Plan. Any site or combination of site proposed in the Final Mitigation Plan will include wetland delineations.

Mr. Neal Campbell
April 28, 2003
Page 5

Table 3.3-4 (page 3-76), showing the wetland mitigation ratio requirements established by Ecology, appears to be incorrect. Ecology's recommended mitigation ratio for category II and III emergent wetlands is 2:1, not 1.5:1. Using the correct mitigation ratio will significantly increase the amount of mitigation required, since most of the wetlands to be disturbed in the project corridor are category III emergent wetlands.

The citation for Ecology (1990) referenced on page 3-76 is missing from the Wetlands section of Appendix B (References Cited). This Ecology document evidently presents the mitigation ratios reflected in Table 3.3-4. However, the more recent Ecology publications # 93-74: *Washington Wetlands Rating System for Western Washington, Second Edition* and #97-112: *How Ecology Regulates Wetlands* should be followed for determining wetland compensatory mitigation ratios.

Ecology's regional wetland specialist will need to be presented with the Wetland discipline report and the conceptual wetland mitigation plan. These materials will be carefully reviewed during Ecology's 401 certification process for this new highway corridor.

One final comment is that erosion impacts during construction and operation will have to be mitigated.

I trust that you will find these comments useful in preparing the Final Environmental Impact Statement. Should you have questions or concerns, please contact me via email at tswa461@ecy.wa.gov or phone me at 360.407.6789.

Sincerely,



Therese Swanson, WSDOT- Ecology Liaison
Department of Ecology

Cc: Jennifer Quan, USFWS
Elaine Somers, USEPA
Cynthia Pratt, WDFW
Jack Kennedy, USACE
Mike Grady, NOAA Fisheries
Phil Kauzloric, WSDOT HQ
Opal Smitherman, Ecology SW Region

RESPONSE S02-010

The SR 167 Conceptual Mitigation Plan, WSDOT February 2005, uses ratios established through WSDOT/Ecology 1998 implementing agreement.

S02-010

RESPONSE S02-011

Copies of the Wetland Discipline Report and the Conceptual Mitigation Plan have been provided to the Department of Ecology as a member of the SAC.

S02-011

RESPONSE S02-012

Erosion impacts will be addressed through permitting and a Temporary Erosion and Sediment Control (TESC) plan would be implemented during construction.

S02-012

Interagency Committee for Outdoor Recreation
360/902-3000
360/902-3026 (fax)
email: info@iac.wa.gov



STATE OF WASHINGTON

OFFICE OF THE INTERAGENCY COMMITTEE
1111 Washington Street SE
PO Box 40917
Olympia, WA 98504-0917

Salmon Recovery Funding Board
360/902-2636
360/902-3026 (fax)
email: salmon@iac.wa.gov

RECEIVED
OCT 05 2005

October 3, 2005

Tom Whitney
WSDOT Olympic Region
PO Box 47417
Olympia, WA 98504-7417

Re: Draft 4(f) Evaluation SR 167 – SR 509
City of Milton Interurban Trail IAC #00-1536C

Dear Mr. Whitney:

I am writing in response to your request for comments regarding the Draft 4(f) evaluation for the above referenced project. The evaluation document identifies the City of Milton Interurban Trail as impacted by the proposed relocation of Hylebos Creek.

The Draft Section 4(f) document states that should the trail be impacted by this transportation project, the City of Milton, in accordance with IAC policy, must request IAC approval for this conversion and is required to provide replacement. That brief statement of the IAC conversion policy is essentially correct, although the steps and the process for conversion is more detailed.

I encourage the City of Milton to begin working with the IAC staff as soon as the impacts to the trail are known. This will help insure compliance with IAC policy and project agreement conditions.

Please call me at (360) 902-2976 or send an email to MyraB@iac.wa.gov if you have any questions or need more information.

Sincerely,


Myra Barker
Project Manager

cc: Marlo DeRosia, City of Milton

S03-001

RESPONSE S03-001

WSDOT and FHWA has been working with the City of Milton in order to minimize impacts to the Interurban Trail. We will continue to coordinate with the City regarding impacts to the Trail.



Puyallup Tribe of Indians



RECEIVED

MAY 14 2003

TUMWATER DESIGN

May 14, 2003

Washington Department of Transportation
ATTN: Neal Campbell, Project Manager
P.O. Box 47440
Olympia, WA 98504-7440

OLYMPIC REGION

MAY 19 2003

RECEIVED

RE: Comments on SR-167 Ext. DEIS

Dear Mr. Campbell:

The Puyallup Tribe of Indians herein submits the following (attached) comments regarding the proposed SR-167 Extension within Pierce County and the Puyallup Reservation. Rather than summarize the attached comments, I have simply listed the source of the materials as follows:

1. Fisheries – Comments from Mr. Russ Ladley, Tribal Fisheries Manager.
2. Tribal Trust Owners – WSDOT/Tribe meeting minutes held April 25, 2003.
3. Comment Letter – Charles Sheldon, member, comments on the DEIS.

T01-000

There will be additional comments under separate cover from the Archeological/Cultural staff and individual letters from property owners who previously attended the April 25, 2003 meeting with you and your staff:

If you have any questions, please don't hesitate to call me at 253-377-2763.

Very Truly Yours,

Raul Ramos, AICP
Director of Land Use/Government Affairs

1850 Alexander Ave. * Tacoma, Washington 98421 * 253/597-6200

RESPONSE T01-000

FHWA and WSDOT are committed to maintaining an open line of communication with the Tribe throughout the design and construction phases of this project.

1. See T01-001 through T01-007 for comments and responses on fisheries.
2. Response to the Tribal Trust Owners is confidential.
3. See T04-001 for comment by Charles Sheldon and the response.

See T03-027 through T03-055 for responses to comment from staff regarding archaeological and cultural responses.

May 5, 2003

Washington Department of Transportation
ATTN: Neal Campbell, Project Manager
P.O. Box 47440
Olympia, WA 98504-7440

RE: SR 167 Draft EIS

Dear Mr. Sawyer:

The Puyallup Tribal Fisheries Division has reviewed the above referenced document and will comment on those sections relevant to fish and fisheries habitat (Chapters 1-3.4). The SR 167 Project Build Alternative represents a highly significant impact to existing environment and major alteration to the surrounding landscape. It is the Tribe's desire to not only fully mitigate these impacts but provide for improved post project conditions and habitat function.

Appropriate project mitigation is contingent upon a thorough understanding of the conditions and resources present as well as the processes which those resources are dependent upon. Although the Draft EIS reports existing conditions and expected impacts during construction operations, the descriptions are, for the most part, general in nature. Furthermore, there is an alarming absence of quantifiable references to baseline conditions.

The Tribe is concerned about future environmental changes. Such changes could include: alteration in the frequency and magnitude of peak stormwater discharges, duration of minimum base flow levels, as well as the duration, frequency and magnitude of excursions to water quality standards.

DOT needs to develop a detailed baseline of current conditions so that a comparison is available for future reference. We know that suspended solids will likely increase upon project completion. But what we don't have is data that monitor TSS and levels change according to precipitation, stream flow or time of year.

We also know that water temperature, dissolved oxygen and pH as well as many other parameters are likely to be affected. Aside from the actual metrics associated with water quality parameters, a before and after analysis is necessary to understand changes that will occur as a result of the project and then develop effective mitigation strategies to counter or offset those changes

T01-001

RESPONSE T01-001

We sincerely appreciate the Puyallup Tribal Fisheries Division commitment to collaborate closely with the project team, including the review of the revised discipline reports (water resources, wetlands, and wildlife, fisheries, and threatened and endangered species) which were updated to respond to comments. WSDOT has collected more recent data from agencies and organizations that have monitored in the area since submittal of the DEIS, including information from the Tribe's water quality program, see section 3.2.2 of the FEIS.

Based the additional guidance you provided, we revised our studies by ensuring the discipline report writers communicated with one another. In addition, the water resources, wetlands, and wildlife, fisheries, and threatened and endangered species sections of the FEIS have been reformatted to discuss the project area and impacts by sub-basin.

The cumulative impacts of the project are updated to allow a closer examination of where the timing of water quality problems intersects with salmonid use or the frequency and type of water quality excursion create a more lethal or chronic impact.

with negative repercussions. Thus, pre and post project monitoring is essential for the application of corrective actions and restorative measures.

Many considerations are necessary when developing a water quality-monitoring program that will provide meaningful metrics of reference conditions and discriminate project related data changes. The duration, frequency and type of water quality excursions are essential considerations. If, for example, Wapato Creek presently exceeds State temperature standards for two weeks per year during the summer months, how will the project affect this finding?

Struggling salmonid resources are easily pushed over the brink of existence when habitat is no longer suitable. Even modest changes in frequency and/or duration of excursions to critical water quality parameters may be lethal. Furthermore, these impacts are cumulative and additive in nature in the context of environmental stressors.

Although the Tribe has collected some water quality data as part of its ambient monitoring program, a considerable expansion of this effort is necessary to develop scientifically defensible relationships of cause and effect. We suggest the appropriate DOT staff contact Char Naylor, Manager of the Tribe's water quality program to find out what type of data has been collected. Additionally, we noticed that the Tribe was never referenced or contacted for fisheries data in the surrounding area despite the fact that we are the only organization who has conducted routine fish utilization surveys.

Hydrology throughout most, if not all, of the project corridor has been altered over time through many different actions. Road construction, agricultural practices, irrigation systems, drainage ditches and mixed development each contribute to reduced groundwater recharge and increased runoff. The large addition of impervious surfaces associated with this project will further compound flooding problems. FEMA has recently revised its 100-year floodplain demarcation along the lower Puyallup River. Appendix B does not but should acknowledge and/or reference the significant changes associated with the new boundaries. The City of Fife's floodplain areas including floodway and flood fringe have been expanded within the latest FEMA review. It is therefore likely that some portion of the SR-167 extension project will also be affected.

It is important to remember the past influence of rivers on the geology and character of the surrounding area. New road prisms will affect existing drainage patterns that will result in both flow constriction and obstruction. Currently both I-5 and Valley Avenue act as dams during periods of high run-off. New road prisms will route and direct water in new and likely unforeseen patterns that must be anticipated through dynamic flood flow modeling. Also, recognize that just because we have not had a large flood in recent memory, the possibility exists

T01-001

RESPONSE T01-002

Floodplain impacts, including indirect and cumulative impacts, have been clarified in section 3.2 of the FEIS. Embankments and structures will be designed, to the extent practicable, to pass maximum flood flows without substantial change to that experienced today. If necessary, additional flood storage will be provided. A final mitigation plan addressing floodplain mitigation measures will be developed prior to construction.

T01-002

RESPONSE T01-003

The project has conducted additional analyses including hydrologic modeling of the Hylebos and Wapato sub-basins. These studies used a hydrologic simulation model for analyzing flood flow routing. Analysis of the 100-year flood event was done for both existing and future conditions with and without the roadway.

These comprehensive studies also analyzed the project's effects on hydrology, channel hydraulics, streambank stability and geomorphology to assure that we address the impacts of the project on the watershed. Water resources and wetlands impacts were analyzed per sub-basin, and sections 3.2 and 3.3 of the FEIS were updated to include this information.

T01-003

Flood events arising in the Puyallup and White Rivers were once attenuated by wetlands and level topography throughout the project corridor. The loss and/or displacement of flood storage capacity can have profound impacts on adjacent property and infrastructure. Aerial photography of recent floods is provided in the Draft as well as maps (Figures 3-2-1 through 6) but no analysis of constricted flow or channel routing has been provided. High flow events resulting from flood conditions can have detrimental effects on stream channels as well as transportation networks. Flood flow scour is just as likely to erode stream-beds as it is road fill and other support structure.

The flooding of I-5 that occurs during intense rainfall events at the bend in Fife is a reminder of the insufficient storm-water detention capacity we have provided as development has progressed. Clearly, this project has the potential to exacerbate this flooding condition as well as others if all necessary safeguards and storm-water engineering practices are not adhered to. Before proceeding with channel relocation activities and riparian enhancement as proposed on Surprise Lake drain, Wapato and Hylebos Creeks, flood flow routing, storage impacts and flow constriction points should be identified and analyzed under a future impervious surface build-out scenario.

Page 3-15 identifies the transformation of 55.6 acres of land to impervious surfaces following project completion. Successful mitigation of this alteration will require detention within a shallow ground water environment as well as the need to provide biofiltration, detention and recharge. Discussions as to how this task will be achieved are not convincing and leave many questions unanswered.

The discussion concerning restored channel widths for Hylebos Creek are defined yet no calculations are offered that illustrate anticipated water elevation, channel slope, depth or flow rate. Meandering the existing Hylebos Creek channel sounds like a good thing from a habitat enhancement perspective. Lets be sure the proposal makes sense from hydraulic perspective before choosing a channel configuration that will only remain until the first high flow event.

The Tribe wholeheartedly endorses the use of the Union Pacific property along the Puyallup River as wetland replacement/mitigation property. Ideally this parcel could be used as a regional wetland-banking site for any future mitigation obligations that may arise through either state or private projects. We especially like the discussion concerning levee breaching and the establishment of distributary channel features.

The enhanced riparian buffer plan proposed (page 3-32, 3-72, 3-76) could offer significant improvements to the existing stream course and corridor, particularly at the I-5 bottleneck. Puyallup Tribal Fisheries request the opportunity to play an active role in the planning and design of these channel relocation and planting plans.

Conceptually, the DEIS offers many exciting possibilities for improved fish habitat in terms of both form and function. Nonetheless, the absence of baseline investigative effort and metrics that portray current conditions, raises doubt many questions.

One of the primary goals of the Tribe for the completion of this project is the overall improvement of habitat function and quality. The DEIS has not convinced us that this will be the case nor has it provided us with the informational foundation necessary to measure environmental change.

Sincerely

Russ Ladley

T01-003

T01-004

T01-005

T01-006

T01-007

T01-008

RESPONSE T01-004

Stormwater from the project may be treated by one or more of the following methods:

- Biofiltration swales
- Deep fill infiltration
- Landscaped fill slopes with composted soils
- Constructed wetlands
- Ponds
- Riparian Restoration Proposal (RRP)

A Technical Advisory Group will identify recommendations for the ultimate design of the RRP. The technical Advisory Group includes agencies such as United States Fish and Wildlife Service, the NOAA National Marine Fisheries Service, the United States Army Corps of Engineers, and Washington State Departments of Fish and Wildlife and Ecology were invited to participate. In addition, the Pierce County Water Program, the Puyallup Tribe of Indians, and the Friends of the Hylebos Wetlands, a local environmental group, were also invited as stakeholders in the RRP design process. When the Endangered Species Act Biological Opinion (BO) is issued, the Technical Advisory Group will be invited to participate in the refinement of the goals and objectives to include more detail for items such as future design, maintenance, and monitoring.

RESPONSE T01-005

The project has conducted additional analysis including extensive hydrologic modeling of Hylebos sub-basin including Creek (MGS et al. 2004). This analysis includes extensive modeling of water elevations, channel depth, slope, and flow rates to assess flooding impacts, streambank stability, and erosion. The results of this analysis were used for the preliminary design of the stream channel location and configuration.

RESPONSE T01-006

We have updated the Conceptual Mitigation Plan to include several possible wetland mitigation sites. The UPRR site is identified as one of several potential mitigation sites. Please see section 3.3.7 of the FEIS for more information on potential wetland mitigation for this project.

RESPONSE T01-007

Thank you for your support of the Riparian Restoration Proposal (RRP). We look forward to continued collaboration on the design of the RRP through the Technical Advisory Group.

RESPONSE T01-008

To address your concerns we have included additional information in the Water Resources, Wetlands, and Wildlife, Fish and Threatened and Endangered Species section of the FEIS.

Anderson, Burns & Hostnik

Attorneys at Law

6915 Lakewood Dr. W, Suite A-1

Tacoma, WA 98467-3299

(253) 475-4200

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J. Arvid Anderson
Charles R. Hostnik
Karol A. Whealdon*

Gary A. Burns
of Counsel

*Also Admitted in California

May 15, 2003

RECEIVED
MAY 19 2003
TUMWATER DESIGN

Mr. Neal J. Campbell, P.E.
Washington State Department of Transportation
PO Box 47446
Olympia, WA 98504-7446

RE: SR 167, Puyallup to SR 509

Dear Mr. Campbell:

Please be advised that I represent Mr. Silas A. Cross, who owns property on Valley Avenue in the vicinity of the proposed SR 167 Extension. The purpose of this letter is to submit written comments to the Department of Transportation per your invitation in connection with your Tier II Report.

I. Identification of Property

Mr. Cross owns property on Valley Avenue near where the proposed extension of SR 167 would intersect Valley Avenue. This property is located on the South side and is a triangular piece of property identified as Pierce County Tax Parcel No. R0420172022. Title to this property is held by the United States of America in trust for Silas Cross.

There is currently a business located on this property, which is owned and operated by Mr. Cross. The property is zoned by Pierce County as commercial land.

This property has been held in trust for Mr. Cross and his family since a fee patent on the property was issued to his grandfather. The ties of Mr. Cross to this property run deep in the history of his family and the history of the Puyallup Tribe.

You should also be aware that Mr. Cross owns an eight acre parcel on the north side of Valley Avenue, across from his business. That parcel is identified as Parcel 1 on the survey recorded in Pierce County on July 1, 1985 under Pierce County Auditor's Number 8507010070. We believe

this parcel has been assigned Pierce County Tax Parcel Number R0420083701. This parcel does not border Valley Avenue directly, although access to the parcel is from Valley Avenue in the area of the proposed widening.

II. Impact of SR 167 Extension

The Cross business property is located on the south side of Valley Avenue, near where the proposed extension of SR 167 will intersect Valley Avenue. According to all three alternatives of the Valley Avenue Interchange Design Options, the Cross property is within that area of Valley Avenue which is proposed to be expanded from two lanes to five lanes to accommodate the proposed interchange.

The proposed widening of Valley Avenue will essentially render unusable the business property owned by Mr. Cross. Valley Avenue is proposed to be widened to the south approximately 35 feet. That 35 foot expansion will bring the roadway up against the windows of Mr. Cross's current business, and will eradicate a substantial portion of his parking area. It will also dramatically alter the ingress and egress to his business.

We are aware that your current plans show a proposed park and ride lot directly to the south of Mr. Cross's property. If that proposed property is acquired for this project, we may be able to resolve many of the impacts upon Mr. Cross's property. However, as a practical result, the widening of Valley Avenue will necessitate destruction and reconstruction of Mr. Cross's current business.

There are also storm water runoff and drainage issues in connection with this property. For several years Mr. Cross has been attempting to work with the City of Fife concerning storm water runoff and drainage issues which have impacted his ability to utilize his property. Although we assume that the project will include efforts to minimize and manage storm water control issues, you should be aware that those issues are particularly acute in the vicinity of the proposed Valley Avenue interchange. We would like to be involved in the plans to manage those issues, especially as it impacts the property owned by Mr. Cross.

III. Consultation with Puyallup Tribe

The historical ties of the Puyallup Tribe and Puyallup tribal members to this area is acknowledged in your Tier II Report. The Puyallup Tribe has jurisdiction over many parcels of property within the SR 167 extension corridor.

Your Tier II Report notes that several federal and state agencies have signed an agreement regarding projects that require a NEPA environmental impact statement. With respect to this project we believe you should include the Puyallup Tribe of Indians, and specifically the Puyallup Tribal Land Use Department, as an agency to be consulted concerning alternatives to be selected with

RESPONSE T02-001

There may be some disruptive impact to parking and property access for the Cross Smoke Shop. We will continue to communicate with you regarding any impacts to the property.

RESPONSE T02-002

The Wapato Creek Riparian Restoration Proposal (RRP) is part of the stormwater management proposal for this area. Although the RRP will not directly impact Mr. Cross' property, he is welcome to participate in the Technical Advisory Group which will be advising WSDOT on the future design, maintenance, and monitoring for the RRP.

T02-001

T02-002

T02-003

regard to the Project Purpose and Need, the Project Alternatives to be evaluated in the DEIS, and the Preferred Alternative and Mitigation Plan.

We therefore encourage you to work with the Puyallup Tribal Land Use Department for permitting and consultation in an effort to avoid, minimize, or mitigate the environmental impacts from this project. Although permits may need to be obtained from the Puyallup Tribal Land Use Department with respect to property under its jurisdiction, it would be in the interest of all parties to include the Puyallup Tribe as an equal partner in the planning and construction of this project.

IV. Ongoing Involvement Requested

We appreciate the opportunity to comment with respect to your Tier II Report. Please include us on your mailing list and keep us informed as this project progresses, especially as the project impacts Mr. Cross's property on Valley Avenue.

Very truly yours,

ANDERSON, BURNS & HOSTNIK



Charles R. Hostnik

CRII:vsk
File #4342

cc: Richard Mohar, WSDOT
Colleen N. Jollie, WSDOT
Raul F. Ramos, Puyallup Tribal Land Use Department
John Bell, Puyallup Tribal Law Office
Bertha Tumipsced
Silas A. Cross

T02-003

RESPONSE T02-003

FHWA and WSDOT are committed to continue working with the Puyallup Tribal Land Use Department and other Tribal departments regarding the project.

**SR 167 Tier II EIS
WILDLIFE, FISHERIES AND
THREATENED AND ENDANGERED SPECIES
Section 3.4 (page 3-97)**

3.4.1 STUDIES PERFORMED AND COORDINATION CONDUCTED (P. 3-98)

- **Specify affected Tribes are to be involved with ESA consultation** and Biological Assessment review, as appropriate.

3.4.2 AFFECTED ENVIRONMENT (P. 3-99)

- **Characterize ecological history information for project area** and emphasize value in achieving ecological restoration.

Wildlife and Wildlife Habitat (p. 3-100)

- **Emphasize the relative significance that “generally small and disconnected” other habitat types contained within “developed areas” have** – in the context of the rapidly urbanizing environment of the project area.
- **Emphasize lack of specific data relating to wildlife usage of upland forest habitats** located in the project area.
- **Emphasize relative significance of the three forested areas within the study area** in terms of their past, present and anticipated future ecological and/or functional values.
- **Emphasize certainty/uncertainty regarding use of project area upland forest habitats** by deer and/or long -tailed weasels.
- **Emphasize certainty/uncertainty regarding use of project wetlands and riparian corridors** by red fox and/or coyote.
- **Emphasize disparities between historic/current, as well as current/future riparian conditions** (e.g. regulatory, ecological, etc.) associated with the Hylebos/Surprise Lake Drain, the Wapato Creek, and Puyallup River drainage systems.
- **Emphasize ecology of open water habitat migratory bird species** affiliated with the project area, including their relative historic-current-future conditions.
- **Emphasize total life history data and/or ecological needs for the eagle populations** that generally use the overall project area (forests/trees, riparian/shoreline, pond/lake/stream/river waterbodies, etc.).

Special Federal Status Migratory Birds (p. 3-102)

- **Emphasize local bald eagle populations usage of local black cottonwood trees (especially large/mature)** as appropriate - particularly the black cottonwood trees of both

RESPONSE T03-001

T03-001

Section 7 consultations will be coordinated with the Puyallup Tribe of Indians.

RESPONSE T03-002

T03-002

Historical information is analyzed in the cumulative impacts section now incorporated into section 3.4 of the FEIS.

RESPONSE T03-003

T03-003

We sincerely appreciate the Puyallup Tribal Fisheries Division commitment to collaborate closely with the project team, including the review of the revised discipline reports (water resources, wetlands, and wildlife, fisheries, and threatened and endangered species) which were updated to respond to comments. Based on your feedback over the last two years, we believe the FEIS addresses this comment, see sections 3.4 of the FEIS.

the project area and/or the general portion of the Puyallup River or river valley environment associated with the project area.

- **Detail probable/known information relating to bald eagle foraging behavior** associated with the relative project area (or Hylebos Creek, Wapato Creek or lower Puyallup River systems).
- **Emphasize relative usage of existing local tree species/tree sizes by bald eagles** based upon relative suitability or availability preferences; e.g. selective preference for large cottonwood-deciduous - in addition to, or in the absence of large fir/conifer species - when foraging along river, or selecting perch or nest trees, etc.
- **Emphasize possible presence of indigenous prairie habitat as a feature that was** associated with these localized proximities of the early tribal reservation/upriver environmental setting.

Fisheries (p. 3-105)

- **Specifically mention “Simons Creek” as among the fish-bearing waters listed** within the study area - it is a historic tributary of Wapato Creek that has a special, high fish-production value in today’s modern era.

Special Status Species and Habitat (p. 3-105)

Puyallup River (p. 3-106)

- **Reconcile references to Puyallup River** - e.g. 1) draining “...approximately 970 square miles and is divided into two watersheds: the upper Puyallup River watershed and lower Puyallup River watershed...”; 2) “...The headwaters of the upper Puyallup watershed are located at the base of a glacier along the heavily forested flanks of Mount Rainier...”; and 3) “...lower Puyallup River begins at the rivers convergence with its first major tributary, the Carbon River, near the City of Orting...” - with the separate reference that describes “...The Carbon and White Rivers convey flow from 75 percent of the lower Puyallup River watersheds drainage area...”. [Overall, it seems confusing as to whether the Puyallup River watershed (e.g. 970 square miles) actually includes the White and Carbon River drainage systems, or not.]
- **Strike general description of the headwaters of the upper Puyallup River watershed being located “at the base of a glacier along the heavily forested flanks of Mount Rainier” as misleading** - given that: 1) the true flanks of the volcano named Mt. Rainier are not necessarily heavily forested, but really contain the more open sub-alpine forests (if anything); 2) that the upper Puyallup River is essentially commercially owned in most places towards the west side of Mount Rainier National Parks’ boundaries; and 3) that “heavily forested” does not accurately characterize the areas of commercial forest which exist directly west of the areas of the upper Puyallup watershed that are situated directly to the inside of Mount Rainier National Park.
- **Add every stream that is recognized in the records utilized by the Washington State Department of Natural Resources/DNR to the list of smaller streams** noted as discharging directly/indirectly into the Puyallup River (all Type 3, Type 4, Type 5; every fish/non-fish bearing perennial/intermittent streams, etc.). For example, a Type 4/Type 3 stream [Ball Creek] that originates west of Alderton and flows northward into Puyallup

RESPONSE T03-004

Bald eagles are described in the project Biological Assessment, and have been incorporated in section 3.4 of the FEIS.

RESPONSE T03-005

Simon's Creek is mentioned in the project BA and is added to the FEIS. The description of the Puyallup River Watershed is reworded for clarity.

RESPONSE T03-006

Sections 3.2, 3.3, and 3.4 of the FEIS were revised to address impacts on a sub-watershed basis.

T03-004

T03-005

T03-006

River is not mentioned; the same being true for the stream [Elhi Creek] that originates in the Elhi area to confluence with the Puyallup River to the west - in addition, Horse Haven Creek is a major tributary of the Puyallup River that enters the river *upstream* of the Puyallup River/Carbon River confluence (but to the opposite side of Puyallup River from the town of Orting). There are other pertinent stream systems that could/should be mentioned in an historical ecology context (if nothing else) - e.g. "Salishan Creek" (both historic and current) as a fish-bearing stream which formerly flowed directly to the lower Puyallup River in the general vicinity of the intersection of Portland Avenue and River Road (in modern day Tacoma).

- **Emphasize hydrologically-related stream systems when listing the smaller streams** that "...discharge directly or indirectly into the Puyallup River below the city of Orting...". Current list should be re-ordered as follows: [*Horse Haven Creek*], Canyon Falls Creek, Fennel Creek, [*Elhi Creek, Alderton Creek*], Clarks Creek-Rody Creek-Diru Creek, Canyon Creek-Clear Creek-Squally Creek-Swan Creek, [*Salishan Creek*]. *Italics are suggested additions to the list of streams currently presented in the DEIS.
- **Refine the statement suggesting that WSDOT intends to "improve Puyallup watershed by riparian restoration of several reaches of the Hylebos, Wapato, and Surprise Lake drainages"** to more accurately reflect that 1) the Hylebos-Surprise Lake drainage system is a system that is relatively independent of the Wapato and/or Puyallup River drainage systems respectively; 2) that the Wapato Creek system is an independent system (that includes all-important Simons Creek); 3) that the Puyallup watershed only includes the Hylebos and/or Wapato Creek systems in that they each empty into Commencement Bay; and 4) that the restoration work that is being anticipated to have direct effect upon properties that are truly located within the Puyallup watershed (according to the definition in preceding paragraph) would actually be the project anticipated for the Union Pacific properties.
- **Amend definition of drainages included within the definition of the Puyallup watershed to officially include/exclude the Hylebos Creek and/or Wapato Creek drainages**, as appropriate.
- **Reconcile or justify statements regarding the White River** - e.g. the headwaters being located at the glaciers of Mount Rainier and "...hence the Puyallup River has...shifting braided channels and naturally colder water temperatures downstream of the confluence of the White River..." in terms of 1) the earlier references to the upper Puyallup River originating separately on its' own from a different Mount Rainier glacier (and thus inherently equally as cold as the White River); and 2) characterizing Puyallup River downstream of the White River as having "shifting braided channels" and/or "naturally colder water temperatures" is likely misleading (and unlikely to be either scientifically, or realistically accurate).

Hylebos Creek (p. 3-108)

- **Emphasize relative condition of riparian systems of Hylebos Creek**, emphasizing past-present-future expectations.
- **Emphasize relevance and value of a chinook population recovery strategy for Hylebos Creek.**

RESPONSE T03-007

A Net Environmental Benefits Analysis (NEBA) was conducted to quantitatively estimate the benefits of the Riparian Restoration Proposal (RRP), please see section 3.17.2 of the FEIS.

T03-006

T03-007

- **Specifically describe the in-channel fish habitat features currently present** within the portions of Hylebos Creek associated with the study area.

Wapato Creek (p. 3-111)

- **Emphasize information describing upper extents of known fish presence and/or suitable habitats.**
- **Emphasize Simons Creek as a significant fish-production tributary** within the Wapato Creek system.
- **Specify relative proximity of Ecology 303(d) listed stream reaches** in comparison to reaches associated with the project area.
- **Specifically describe the in-channel fish habitat features currently present** within the portions of Wapato Creek associated with the study area.

Surprise Lake Drain (p. 3-112)

- **Specifically describe the in-channel fish habitat features currently present** within the portions of Surprise Lake Drain associated with the study area.

Vegetation (p. 3-113)

- **Emphasize relative ecological significance (including historic) of the remaining small, isolated parcels of original forestlands** in the project area.
- **Specify where the “limited undisturbed riparian corridors” along Wapato and Hylebos creeks are located**, their relative proximity to the project area, and inherent association with the stream reaches being targeted for riparian restoration work.
- **Emphasize the overall ecological and/or riparian significance of the Black cottonwood overstory trees** associated with either the project and/or nearby riparian areas.

3.4.3 IMPACTS OF CONSTRUCTION (P. 3-114)

Build Alternative (p.3-115)

Wildlife and Wildlife Habitat (p. 3-115)

- **Emphasize relative significance and specific nature of the 29 acres of forested areas** that would be directly affected by construction - e.g. mature deciduous forest; corridor would fragment the forest stands..., etc.
- **Emphasize relative significance of “perching on the hillsides near the project corridor” by bald eagle** - for example, the availability, adequacy and/or value of suitable perch trees (conifer, deciduous/cottonwood?) existing in the vicinities of the project area -

T03-007

T03-008

T03-009

T03-010

T03-011

T03-012

RESPONSE T03-008

Section 3.4 of the FEIS has been revised to consider information such as the Ecology 303(d) listed stream reaches within the project study area, and baseline habitat conditions of affected stream systems.

RESPONSE T03-009

Baseline habitat conditions in Surprise Lake Drain are described in section 3.4.2 of the FEIS.

RESPONSE T03-010

A description of existing vegetation and impacts to vegetation has been updated and is described by sub-basin in section 3.4 of the FEIS.

RESPONSE T03-011

Additional detail regarding forested areas and associated impacts is incorporated in section 3.4 of the FEIS.

RESPONSE T03-012

Three bald eagle nest sites are located over one mile from the project area. The Section 7 effect determination for this threatened species is not likely to adversely affect.

or, just perch trees in general that are associated with the project study area (for example, is there an optimal arrangement or amount that should be targeted)?

- **Specify whether eagles might perch only “on the hillsides near the project corridor”, or might also perch at other areas nearby/upon the project area.**
- **Emphasize the restoration work being focused upon the independent and separate Hylebos Creek, Wapato Creek, and Puyallup River mainstem riparian systems as each being “notable positive benefits” of the proposed riparian plan.**
- **Clarify meaning of the statement “The proposed riparian restoration plan would link fragmented upland habitats that extend well beyond the project limits” (as opposed to the existing format - which is merely a reference to a different section of the DEIS report).**
- **Clarify any short and/or long-term strategies that are anticipated for ensuring that the projects’ riparian restoration areas will realize their full potential of anticipated wildlife habitat benefits - e.g. plantings will mature, stream stabilizes enough to support certain species, suitable habitat is achieved, etc.**

Migratory Birds (p. 3-117)

- **Emphasize lack of available local data pertaining to relocation of displaced birds at other similar habitats nearby (e.g. carrying capacities of nearby habitat, competition for available space, increased stress and competition for food, etc.).**
- **Explain/clarify meaning or intent underlying sentence that identifies the “...Impacts to riparian, urban, and aquatic habitat have not been quantified...” - why weren’t they, or, is it expected that they will be?**

Fisheries (p. 3-118)

- **Describe strategies/assurances anticipated for ensuring that “the Lower Hylebos Creek and Surprise Lake Drain’s riparian forest matures”, and/or that “many of the trees would fall into the stream...adding complexity to the channel morphology”.**
- **Elaborate upon significance of stating that “...WSDOT may need to maintain the Wapato Creek channel in its’ existing location to prevent damage to adjacent properties...” - is it implying that the existing channel may not be relocated for mitigation, or, that the future relocated channel may never really be allowed to flood outside of the new channel (over both the short and long-term)?**
- **Emphasize importance and/or value of strategies that counteract/circumvent the “...ditching management practices of the agricultural owners of the channel...” - e.g. strategies for protecting the streams’ values as a spring-fed source of water which is used by juvenile salmon - such as ESA-protected Chinook salmon populations - as a stable off-channel refuge (when main-stem Hylebos Creek floods during the winter - and spring or autumn? - months).**

RESPONSE T03-013

T03-012

In collaboration with stakeholders such as the Tribe, the RRP has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with the Tribe through the RRP Technical Advisory Group.

RESPONSE T03-014

T03-013

An analysis of the potential occurrence of migratory birds in the Migratory Bird Treaty Act (MBTA) study area was conducted for the project and is discussed in section 3.4 of the FEIS.

RESPONSE T03-015

T03-014

The goal of the RRP is to provide stormwater flow control management, and compensatory mitigation for stream channel impacts, through the creation, restoration, and enhancement of self-sustainable native riparian and in-stream habitat in the Hylebos and Surprise Lake Tributary sub-basin, and Wapato Creek sub-basin. Design of the RRP will also provide for fluvial processes including natural sediment transport, channel migration, debris passage and LWD placement and recruitment.

RESPONSE T03-016

T03-015

The Wapato RRP entails establishing an approximately 9000 lf long continuous riparian buffer along both sides of the existing stream, where possible. The RRP would result in a corridor through which Wapato Creek would flow. Approximately 73 acres of existing farmlands and residences would be converted into a riparian landscape by removing encroachments (buildings, roads, culverts and other infrastructure) from the land. The riparian area would be planted with native vegetation.

T03-016

RESPONSE T03-017

T03-017

Clarification is made in sections 3.2, 3.3, and 3.4 of the FEIS.

- **Specify relative number/locations of stream crossing structures anticipated** for the Hylebos Creek, and/or Wapato Creek-related waterbodies; as well as associated fish presence.
- **Specify whether the “approximately 8,500 lineal feet of Wapato Creek” to be restored (via the riparian restoration proposal) is an amount that is/is not derived from total distances along both sides** of the creek (as opposed to the total linear distance of stream channel that will be restored). For example, 8500 “riparian” feet is $(8500/2) = 4250$ “channel” feet - 8500 feet of stream infers that 1.6 miles of stream is expected to be restored (vs. 0.8 miles @ 4250 feet).
- **Specify whether the “additional 2000 lineal feet of riparian restoration” anticipated for Surprise Lake Drain is an amount that includes both sides of the stream** (and therefore equates to about 1000 feet of stream channel length), and reconcile either figure (2000/1000) with the stated intention of reconfiguring “approximately 2400 feet” of Surprise Lake Drain. Overall, specify which reaches of Surprise Lake Drain will/will not receive riparian restoration benefits?
- **Emphasize importance/significance of a strategy for assuring that the benefits of restoring riparian areas in the Hylebos/Surprise Lake Drain system will in fact result and persist** - e.g. counteract the “...current management practices (ditch cleaning) by private landowners...”.
- **Re-position all references in the fish/wildlife section pertaining to Surprise Lake Drain area next to information that pertains to Hylebos Creek** (since it is a Hylebos Creek tributary) - having these sets of information interrupted with information relating to the separately located Wapato Crock system diminishes the ability to fully appreciate the collective benefits that should result from the combination of direct treatments focused upon the riparian aspects of the overall Hylebos Creek-Surprise Lake Drain ecological system.

Vegetation (p. 3-121)

- **Emphasize impacts of construction operation on mature vegetation (especially black cottonwood trees)** associated with project area - describe anticipated restoration future needs/long-term expectations regarding mature trees (deciduous and conifer) in areas associated with the project proposal (especially in terms of endangered salmon recovery planning).

3.4.4 IMPACTS OF OPERATION (P. 3-121)

Build Alternative (p. 3-122)

Wildlife and Wildlife Habitat (p. 3-122)

- **Emphasize that permanent introduction of a 6-8 lane urban freeway system (which is expected to receive intensive and around-the-clock daily use into the foreseeable future) is prone to having new, profound and permanent adverse impacts upon wildlife** support systems in this local area (especially terrestrial). [A new freeway corridor at the proposed location could result in being a significant new barrier for wildlife which currently depend upon the relative connectivity-continuity of the habitat

6

RESPONSE T03-018

T03-018

Please see tables 3.2-6, 3.2-8, and 3.2-9 of the FEIS for information about stream crossings per sub-basin. In addition, figures 2-2, 2-5, 2-6, 2-7, and 2-10 provide more specific crossing location information.

RESPONSE T03-019

T03-019

The entire section of the Surprise Lake Drain channel, from its confluence with the mainstem of Hylebos Creek to the crossing at Freeman Road will be restored to improve the quality and condition of the stream, provide flood control, and habitat benefits. This amounts to approximately 5,340 linear feet of new channel. Additionally, 29 acres of adjacent riparian area will be protected. Also, please see response to T03-016, above.

RESPONSE T03-020

T03-020

Benefits of the RRP are described in section 3.17.2 of the FEIS.

RESPONSE T03-021

T03-021

Surprise Lake Drain and its association with Hylebos Creek is clarified.

RESPONSE T03-022

T03-022

Discussion of riparian impacts versus riparian improvements resulting from proposed riparian restoration and wetland mitigation are described in sections 3.4 and 3.17.2 of the FEIS.

RESPONSE T03-023

T03-023

The addition of low-cost wildlife crossings and the use of over-sized culverts or clear-spanning structures will be considered at appropriate locations.

which is currently accessible to wildlife and situated between the upslope areas of the Five-Milton-North Hill vicinities, and the adjacent bottomland resources of Hylebos Creek, Wapato Creek and the lower Puyallup River system. Given all of the urbanization that the proposed freeway is expected to support/generate within the corridor - especially in the areas where new freeway exchanges/outlets are planned to be located (and unfortunately sited directly within the natural riparian areas of both Hylebos and Wapato Creeks, as well as the Puyallup River.) - adverse impacts do seem to be particularly likely.]

- **Emphasize commitments and provisions relating to consultation with affected Tribes** that will be triggered when accomplishing Biological Assessment reviews and/or Section 7 ESA consultation.

Migratory Birds (p. 3-123)

- **Detail the alterations in species composition that could result due to modification and fragmentation of local habitat**, both near and long-term.

Fisheries (p. 3-123)

- **Emphasize the importance/significance of a strategy for counteracting the adverse effects of “maintenance activities such as removing trees located directly adjacent to bridges”** (since that “reduces the value of the riparian community adjacent to the creeks”).
- **Emphasize commitments and provisions regarding consultation with affected Tribes** that will be triggered when accomplishing Biological Assessment reviews, Section 7 ESA consultation and/or EFH consultation.

Vegetation (p. 3-123)

- **Detail the overall vegetative losses and/or plant community alterations that are anticipated** to have some adverse affect (or alteration) in the usage of the project vicinity by wildlife species - both near and long-term.

3.4.5 SCREENING CRITERIA ANALYSIS (P. 3-123)

Threatened and Endangered Species (p. 3-123)

- **Emphasize commitments and provisions regarding consultation with affected Tribes** that will be triggered when accomplishing formal determinations of effect, biological assessment review, and federal agency (FHWA, USFWS, NOAA) ESA consultations.

Aquatic Priority Habitat and Life (p. 3-124)

- **Emphasize that a 50-foot riparian zone area concept alongside fish-bearing (or reaches adjacent to fish-bearing) stream systems is simply inadequate** from a regulatory or ecological perspective and that riparian zone protections of at least 150-300 feet are expected to be implemented locally throughout both the near as well as foreseeable futures. [Overall, a 50 foot riparian area analysis concept applied to a fish-bearing stream system (e.g. as used in this report/aquatic priority habitat and life) is simply insufficient, inappropriate, and unacceptable for reflecting local ESA-related species recovery needs.]

RESPONSE T03-024

T03-023

Section 7 consultation was initiated with the Services and the project’s commitments to the necessary performance measures, and terms and conditions of the Biological Opinion issued by the Services, will be included in the federal Record of Decision regarding the project.

T03-024

RESPONSE T03-025

T03-025

An analysis of the potential occurrence of migratory birds in the Migratory Bird Treaty Act (MBTA) study area was conducted for the project and is discussed in section 3.4 of the FEIS.

T03-026

RESPONSE T03-026

Trees and shrubs when present adjacent to the alignment will be preserved wherever possible for esthetic value, providing roadway clear-zone and sight distance requirements are met.

T03-027

RESPONSE T03-027

Please see response to comment T03-024, above.

T03-028

RESPONSE T03-028

A description of existing vegetation and impacts to vegetation has been updated and is described by sub-basin in section 3.4 of the FEIS.

T03-029

RESPONSE T03-029

Please see response to comment T03-024, above.

T03-030

RESPONSE T03-030

The 50-foot buffer is based on the extent of existing riparian function in the study area. Proposed riparian restoration buffers range between 150 and 400 feet wide.

Wildlife Habitat (p. 3-124)

3.4.6 REGULATIONS AND PERMIT REQUIREMENTS (P. 3-125)

3.4.7 MITIGATING MEASURES (P. 3-125)

- **Emphasize anticipated involvement/consultation expected for affected Tribes in reviewing or preparing the individual design actions** to be taken to “further avoid and minimize impacts to various resources, including habitats and species”.
- **Emphasize anticipated involvement/consultation expected for affected Tribes in 1) reviewing or preparing the “Environmental Mitigation Plan prepared during the design of the project”, and/or 2) pursuing “a watershed approach...” (including “efforts...to find partners”).**
- **Detail any native plant-tree preservation and/or visual buffer-related regulations** (federal, state, county, municipal) that will apply to the areas affected by the project.
- **Detail measures/assurances that are anticipated for ensuring that a broad-based riparian management strategy** which effectively protects and restores the ecological function of the riparian areas of the Hylebos Creek, Wapato Creek and lower Puyallup River systems is to be developed and effectively implemented (in recognition of the DEIS statement that “riparian sites in the project area are of particular importance”).
- **Clarify whether all stream crossings affiliated with project implementation are going to be “clear spans” only** - or whether some might be culverted, etc.
- **Clarify whether the “approximately 50 acres of new wetlands that would be created as a result of the proposed project” is an amount that reflects the total accumulation of restoration work** that is to be targeted upon the Hylebos Creek, Wapato Creek, and Puyallup River systems, or only a single mitigation project, etc.
- **Evaluate and/or emphasize the potential use of stormwater from the project area as a source of water that could enhance-supplement the current and future flows of Wapato Creek** - e.g. intensive detainment and treatment of project-related stormwater could provide water can be routed and released back into the natural hydrologic system (consistent with rates of natural streamflow and/or fisheries management goals or needs).

8

RESPONSE T03-031

FHWA and WSDOT are committed to maintaining an open line of communication with the Tribe throughout the design and construction phases of this project.

RESPONSE T03-032

T03-031

The Carson Chestnut Tree appears eligible to the Washington Heritage Register, and WSDOT has committed to protecting the Carson Chestnut Tree. The Aquatic Habitat Guidelines Project (AHG) and the Integrated Streambank Protection Guidelines (ISPG) recommend a buffer-zone width of 200 feet on each side of the stream for channels between five to 20 feet wide, i.e. Hylebos Creek and Wapato Creek; and a buffer width of 150 on each side of the stream for channels that are less than five feet wide, i.e. Surprise Lake Drain. WSDOT has also made the commitment to make every reasonable effort to protect/preserve existing native riparian trees or plants.

T03-032

T03-033

RESPONSE T03-033

In collaboration with stakeholders such as the Tribe, the RRP has been further described in sections 3.2, 3.3, 3.4, and 3.17 of the FEIS. Future design of the RRP will be coordinated with the Tribe through the RRP Technical Advisory Group.

T03-034

T03-035

RESPONSE T03-034

If possible, proposed bridges or culverts over Hylebos, Surprise Lake Drain, and Wapato Creek (including Wapato Creek’s associated wetlands) will completely span these waterbodies’ ordinary high water mark (OHWM), minimizing in-water work. Also, please see response to comment T03-018.

T03-036

RESPONSE T03-035

Steps taken to avoid and then minimize impacts to wetlands, streams, and floodplains have been clarified in sections 3.2 and 3.3 of the FEIS. The Tribe has reviewed a Conceptual Mitigation Plan. A final mitigation plan addressing wetland, stream, and floodplain mitigation measures will be developed prior to construction.

RESPONSE T03-036

This was evaluated to the extent that low flow augmentation can be attributed to increased floodplain storage and/or increased infiltration.

CHAPTER 3.16 (P. 3-313) CULTURAL RESOURCES

- **Clarify relationship/differences existing between Section 106-NHPA and Tier I EIS-NEPA** processes, procedures, standards and expectations.
- **Substantiate statements describing Tier I cultural resource consultation with Puyallup Tribe** - e.g. tribal participation pertaining to Tier I "cultural resource overview" studies, such as cultural resource identification efforts, documentation of Puyallup winter village locations, or identity of areas to receive "special attention" ("creek crossings" - including riparian areas?; "relict and extant marshes" - include historical/pre-historical?). Was tribal consultation conducted according to Section 106-NHPA, or EIS-NEPA standards/procedures?

3.16.1 STUDIES PERFORMED AND COORDINATION CONDUCTED

- **Substantiate statements describing Tier II cultural resource consultation with Puyallup Tribe** - e.g. tribal participation pertaining to area of potential effect determinations, collection of background information, identification of landforms and other high potential areas for archaeological testing, archaeological testing, supplemental study of riparian restoration plan affected areas, or preparation of a discipline report. Was the oral input of the tribal historian the only form of tribal input considered in the cultural resources discipline report?
- **Clarify relationship of cultural resource discipline report and Section 106-NHPA (or EIS-NEPA)** documentation procedures, especially relation between report and tribal consultation. Was Puyallup Tribe specifically involved in generation/endorsement of cultural resource discipline report? What is the current procedural status of the cultural resource discipline report which was "provided to both OAHF and the Puyallup Tribe" (e.g. open/closed to comment, awaiting responses, appropriate actions now pending, recommendations need implementation, workplan now in progress, etc.).

3.16.2 AFFECTED ENVIRONMENT

- **Enrich/enhance information describing early environmental and/or Indian cultural history** of the project area.
- **Correct erroneous information** contained in the following excerpt: "...In 1857 most of the area became part of the Puyallup Indian Reservation. Soon thereafter much of it passed into non-Puyallup ownership. Dairies, chicken ranches, bulb and berry operations, and vegetable truck farms became increasingly prevalent until replaced by hop fields in the 1870s...". The statements are erroneous given that 1) the Puyallup Indian Reservation boundaries were established in the year 1856; 2) the Puyallup Reservation was off-limits to non-Indian residents (except government officials) until at least after the 1870s; 3) Puyallup Reservation tribal members were selecting their allotment parcels and undertaking their individual cultivation/land improvement activities on their personal allotments throughout the 1870s; 4) ca. 1873 US Government Land Office (GLO) survey data for the Puyallup Reservation suggests much of the eastern portion of the reservation was relatively undeveloped and still forested; 4) individual title for tribal allotments was not officially granted until 1886; and 5) possession by non-Indians of lands on the Puyallup Reservation was not legally possible until Congress authorized it in the mid-1890s.
- **Acknowledge/emphasize cultural and governmental affiliation of Puyallup Tribe to the "...one prehistoric resource that appears potentially eligible for listing in**

RESPONSE T03-037

Compliance with Section 106 must be completed prior to issuing the Tier II FEIS. The Section 106 consultation is complete for this project. The affected tribes have been consulted on the Potential Area of Effect (APE). A Memorandum of Agreement between the Puyallup Tribe, the State Historic Preservation Office, COE, FHWA and WSDOT meeting the requirements of Section 106 is included in the FEIS.

RESPONSE T03-038

A variety of map and literature sources were consulted for cultural resources identification and predictive modeling purposes and are reflected in the FEIS. Consultation efforts with the Tribe is clarified.

RESPONSE T03-039

The cultural resources discipline reports present professional opinions regarding cultural resource eligibility for listing in the National Register of Historic Places and therefore the potential of the proposed undertaking to affect historic properties. In addition, affect assessments and recommendations are provided. The discipline report findings are subject to review and comment by SHPO, Indian Tribes and other interested parties.

RESPONSE T03-040

The FEIS is revised to include additional information developed through consultation with the Puyallup Tribe.

RESPONSE T03-041

This information has been corrected in the FEIS document.

RESPONSE T03-042

The entire SR 167 project area is within the external boundaries of the Puyallup Indian Reservation. The archeological site has been determined eligible for listing in the National Register of Historic Places and therefore WSDOT will design the project to ensure that the site is not adversely affected.

T03-037

T03-038

T03-039

T03-040

T03-041

T03-042

the NRHP... - emphasize status of Puyallup Tribe in terms of the "prehistoric resource" being situated within the exterior boundaries of the Puyallup Reservation, the WSDOT recommendation to SHPO/State Historic Preservation Officer (regarding inclusion of site on National Register of Historic Places eligibility list), decision made by SHPO regarding NRHP-eligibility, and subsequent administrative responses regarding SHPO decision.

- **Detail specific types or range of cultural resources that project area was evaluated for** - e.g. historic trails, traditional use areas, traditional cultural properties/TCP's, sacred sites, Native American graves/human remains, etc. Specify key legislation affiliated with cultural resources considered during evaluation/assessment of project area.
- **Describe significance/implications of the "single probable prehistoric artifact"** that was identified during survey and shovel testing of the riparian restoration area between Hylebos Creek and proposed SR 167 - e.g. local archaeological resource probability/predictability concerns.
- **Consider/evaluate qualifications (or potential) of project area-vicinity as a historic district** relative to federal, state and/or local governmental entity (LGE) guidelines - especially given that at least 60 (-/-5) "historic properties" were inventoried/associated with the project area overall.
- **Acknowledge/emphasize governmental affiliation-role of Puyallup Tribe in regards to the four historic properties** WSDOT recommended to the SHPO for inclusion in the National Register of Historic Places eligibility list - at least the ones located within the exterior boundaries of the Puyallup Indian Reservation.
- **Clarify basis for "Section 4(f)" reference presented within the DEIS, as well as basic significance of WSDOT Section 4(f) "use" determinations** relative to the protective responsibilities of tribal or federally-based agencies/officials that also prevail in association with any archaeological resources or structures in the project area that are eligible for the National Register of Historic Places (e.g. Federal Highways Administration, Army Corps of Engineers, National Park Service-Advisory Council on Historic Preservation, Puyallup Tribe, etc.).
- **Emphasize relationship (or distinction) between national, state or local historic register-eligible properties occurring in the project area** (including the relative legislation-protections applicable to each category pertaining to project adverse impacts upon the respective properties) - e.g. is mitigation provided/not provided for historic properties that are only Local Register (e.g. county) listed/eligible?

3.16.3 IMPACTS OF CONSTRUCTION

Build Alternative

- **Enrich/enhance descriptions regarding cultural resources that could be discovered mid-construction** - emphasize development and application of the Cultural Resources Discovery Plan that "would be followed", and likely contingencies regarding stoppages of construction work, etc. - emphasize roles and responsibilities of the Puyallup Tribe that are anticipated (regarding archaeological excavation-research-curation efforts, etc.).

Mainline

- **Elaborate upon spatial proximity of NRHP-eligible (and other inventoried) historic properties to corridors-centerlines-footprints of mainline, and/or I-5 Interchange portion of the project.**

2

RESPONSE T03-043

T03-042

Per compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended), the SR 167 Area of Potential Effect (APE) was investigated for all cultural resources types, including previously recorded and yet unidentified historic buildings, historic sites, and prehistoric sites.

T03-043

RESPONSE T03-044

T03-044

The "single probable prehistoric artifact" was found in a shovel probe on a residential building lot that contained a substantial amount of fill from an unknown location. The artifact does not otherwise appear associated with the property. Shovel testing on this lot produced no other possible artifacts.

T03-045

RESPONSE T03-045

Nowhere in the SR 167 APE, are there enough historic properties of sufficient quantity and quality to define a NRHP historic district. In addition, the APE included many modern-contemporary intrusions that would compromise any potential historic district.

T03-046

RESPONSE T03-046

T03-047

All project cultural resources within the SR 167 project APE are within the external boundaries of the Puyallup Indian Reservation. The Puyallup Tribe has been invited to comment on the project including the content of the cultural resources discipline reports.

T03-048

RESPONSE T03-047

Satisfying Section 106 requirements will also satisfy Section 4(f) requirements for archaeological resources eligible for the NRHP.

T03-049

RESPONSE T03-048

No properties have been listed or determined eligible to the Pierce County Register. Project effects on cultural resources are assessed per Section 106 and as such only those resources listed or determined eligible for listing in the National Register of Historic Places are afforded protection.

T03-050

RESPONSE T03-049

An Archaeological Monitoring Plan, including a geological model, detailing personnel and methodologies for locating deeply buried cultural resources potentially associated with ancient ground surfaces will be developed during final design.

- **Specify protective considerations-options likely available for NRHP-eligible (and/or other inventoried) historic properties** affiliated with the mainline, and/or I-5 Interchange portion of the project.
- **Describe likelihood of NRHP-prehistoric site being either fully avoided, or impacted by project** construction activities.
- **Specifically feature “I-5 Interchange Option” completely separate from “Mainline” information** - current approach makes it unnecessarily difficult to appreciate nature/extent of construction impacts anticipated for the I-5 Interchange (given that “...Most mainline impacts are associated with constructing the I-5 Interchange portion of the project...”).
- **Specifically feature/emphasize relevance or significance of “Cultural Resources” associated with the “County Inventory”** (especially given the statement “...All inventoried structures were considered to have potential Pierce County historical significance...”)- is it anticipated the project will/will not adversely affect the properties that are County Register listed, or eligible?

54th Avenue Interchange Options

Valley Avenue Interchange Options

- **Consider/evaluate qualifications (or potential) of the vicinity of the Valley Avenue Interchange Options as a historic district** relative to federal, state and/or local governmental entity (LGE) guidelines - especially given that at least 40 “historic properties” were inventoried/associated with this portion of the project area overall.

SR 161/SR 167 Interchange Options

3.16.4 IMPACTS OF OPERATION

- **Enrich/amend statement describing that “...Cultural resource and archaeological sites are not usually adversely affected by operation of transportation projects after construction...”** - it seems quite plausible that potential operational impacts could at least be related to 1) Effects of stormwater generated within project area upon known/unknown archaeological materials within soils located adjacent to the project; 2) placement of fill (in association with project operations) upon known/unknown archaeological materials located adjacent to the project; 3) Increased activities related to traffic or land use activities exacerbated by the freeway operations; and 4) relatively increased/uncontrolled exposure (or vulnerability) of cultural resources-archaeological sites to public or privately-based activity.

3.16.5 MITIGATING MEASURES

- **Detail pertinent regulatory platforms and administrative procedures affiliated with determination of NRHP-eligibility and/or adverse effects of proposed project** (as well as measures to reduce or avoid the effect) - especially emphasize specific protection-management roles and responsibilities anticipated for the Puyallup Tribe.
- **Detail pertinent regulatory platforms and administrative procedures affiliated with development of a “Cultural Resources Discovery Plan”** – emphasize 1) expected monitoring obligations-provisions-methodology, etc.; 2) specific measures and notification procedures should previously unknown sites or artifacts be discovered *before*, during, *or after* construction of the proposed project; and 3) specific participation (and/or management roles/responsibilities) anticipated for the Puyallup Tribe.
- **Detail/specify provisions and mechanisms for consulting the Puyallup Tribe** “...prior to any ground-disturbing activity in the Valley Avenue Interchange area (or other high-probability cultural resource areas?) affected by the project.

RESPONSE T03-050

T03-050

Please see Chapter 5 of the FEIS.

RESPONSE T03-051

T03-051

Impacts from the project corridor include the I-5 Interchange because there are no alternative interchange options at this location.

RESPONSE T03-052

T03-052

Of all the historic resources evaluated in the SR 167 APE, only five (27-4114, 27-4125, 27-4154, 27-4160 and Fife A1) were determined to be eligible to the NRHP. Prehistoric site 45PI488 was also determined to be eligible to the NRHP. The Carson Chestnut Tree appears eligible to the Washington Heritage Register. No properties have been listed or determined eligible to the Pierce County Register. Per Section 106 only those properties that are listed in or determined eligible for the NRHP are afforded protection; however, WSDOT has committed to protecting the Carson Chestnut Tree as well.

RESPONSE T03-053

T03-053

Nowhere within the SR 167 APE are there enough historic properties of sufficient quantity and quality to define a NRHP historic district. In addition, the APE included many modern-contemporary intrusions that would preclude any potential historic district designation.

RESPONSE T03-054

T03-054

Stormwater leaving WSDOT right-of-way during operations would be subject to detention, treatment or other controls that would avoid or minimize potential impacts to soil and groundwater adjacent the project. Placement of additional fill after the construction of the project would be subject to further environmental review and WSDOT’s limited access right-of-way would tend to minimize public and private activity that could harm “vulnerable” resources.

RESPONSE T03-055

T03-055

Please see response to comment T03-049, above.

T03-055



Comments

State Route 167
Extension
from
Puyallup to
State Route 509

Puyallup
Open House

May 2, 2003

~~I own property on the north side, that borders Valley Avenue East. It is very close to the proposed exit from State Route 167 Extension, as a person driving east towards Puyallup from I-5.~~

~~The only effect of State Route 167 Extension would have on my property is the widening of Valley Avenue East near this exit.~~

~~Please note my property is in Trust with the Bureau of Indian Affairs and the Puyallup Tribe of Indians. I am a Puyallup Tribal member.~~

~~I have no other comments about this project.~~

~~However, I would like to be informed about any meetings on the 167 Extension, and the widening of Valley Avenue East that may effect the purchase of my property near this exit.~~

~~Please add me to your mailing list:~~

~~Charles R. Sheldon
PO Box 8306
Tacoma, WA 98418-0306
(253) 396-9032~~

Or send comments to:

Neal Campbell
WSDOT Design Project
Engineer

~~Thank you.~~

T04-001

RESPONSE T04-001

The Valley Avenue Interchange Option is the environmentally preferred option with the least amount of impact to adjacent properties. Your name will be added to the project mailing list.



United States Department of the Interior
OFFICE OF THE SECRETARY
Washington, DC 20240



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ER 05/771

Mr. Tom Whitney
Acting Environmental & Hydraulic Manager
Olympic Region
Washington State Department of Transportation
150 Israel Road SW, F1 4, Tumwater
Olympia, Washington 98501-7417

Dear Mr. Whitney:

As requested, the Department of the Interior (Department) has reviewed the Draft Section 4(f) Evaluation for the **SR-167 Freeway between SR-161 (Meridian Street North) in Puyallup and the SR-509 Freeway in the Port of Tacoma, Pierce County, Washington**. The Department offers the following comments for this project.

The Department agrees with the Washington State Department of Transportation (WSDOT) that there are no prudent and feasible alternatives to using Section 4(f) resources. The Department appreciates the thorough discussion generally presented in the Section 4(f) Evaluation. In particular, the explanation of unique circumstances, such as tribal trust lands and wetlands, was very helpful.

The Department would like to mention some other areas of concern.

Puyallup Recreation Center

The Department commends and supports the planning for architectural or vegetative screening to block the view of traffic and vegetating the embankment side slopes for the Puyallup Recreation Center. See page 26, Draft Section 4(f) Evaluation: SR 167 Puyallup to SR 509.

As noted in the Section 4(f) Evaluation, pursuant to the Department of Transportation Act and the Federal Highway Administration (FHWA) regulations, "[t]he Administration may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that: (i) There is no feasible and prudent alternative to the use of land from the property; and (ii) The action includes all possible planning to minimize harm to the property resulting from such use." 23 C.F.R. § 771.135(a)

Page -2-

Moreover, constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features or attributes of the resource are substantially diminished.

The Section 4(f) Evaluation does not consider the proposed project to result in a "use" of the Puyallup Recreation Center. See Evaluation at page 26, Table 3—Section 4(f) Use—Recreational Resources Eligible for Section 4(f) protection. However, though the recreation center would not be acquired and "used" by being incorporated into the project, the proximity of the project will greatly increase the noise level.

It seems that a "constructive use" will occur due to the increased noise. The Section 4(f) Evaluation also seems to suggest this by acknowledging that "[t]he FHWA noise abatement criterion for active recreation areas is 67-dBA," and the noise from the project will "increase from 52-dBA to 70-dBA." *Id.* This is consistent with FHWA regulations, which state that a constructive use does not occur if noise levels "do not exceed FHWA noise abatement criteria..." 23 C.F.R. § 771.135(p)(5).

The Evaluation further states that while construction of a noise wall was found to be feasible because a 10-foot high wall 2,400 feet long would provide a 7-dBA reduction in noise for the Recreation Center, this option is not reasonable under established WSDOT criteria and therefore, the wall should not be constructed.

However, if there is a "use," then all possible planning must occur to minimize harm. It seems then that construction of a noise wall would be appropriate. The Department recommends consideration of a scaled-down version of the 10-foot high, 2,400 feet long, noise wall, which offers enough reduction in noise to meet the FHWA noise abatement criteria. In the alternative, the Department recommends consideration of other noise reduction mitigation measures, if the noise wall is not viable.

Maps

Finally, for the final Section 4(f) Evaluation, the Department recommends including larger scale maps that are in color to differentiate project boundaries, existing roads, etc. (as opposed to black and white), since some of the maps were difficult to read.

The Department has a continuing interest in working with the FHWA and WSDOT to ensure that impacts to resources of concern to the Department are adequately addressed. For continued consultation and coordination with section 4(f) issues, please contact Kelly Powell, National Park Service, Pacific West Region, 909 First Avenue, Seattle, Washington, 98104, at 206-220-4106 or kelly_powell@nps.gov.

Page -3-

The Department appreciates the opportunity to provide these comments.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc: Megan Hall
Area Engineer, Olympic Region
Federal Highway Administration
711 S. Capitol Way
Suite 501
Olympia, WA 98501

Steve Fuchs, WSDOT Project Manager
Washington State Department of Transportation
150 Israel Rd SW, FL 4
Tumwater, WA 98501



CITY OF PUYALLUP

Parks and Recreation Department
808 Valley Ave. NW
Puyallup, WA 98371

RECEIVED

FEB 13 2006

253/841-5457
Fax 253/770-8369

February 10, 2006

Tom Whitney
Acting Environmental and Hydraulic Manager
Olympic Region, WSDOT
150 Israel Road SW
PO Box 47417
Olympia, WA 98504-7417

RE: SR 167, Puyallup to SR 509, Tier II EIS

Dear Mr. Whitney:

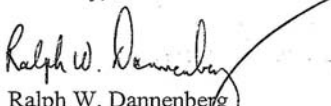
On February 1, 2006 Dick Weber, our Recreation Manager, met with Lone Moody and Jim Laughlin from WSDOT to discuss future noise impacts from the proposed SR 167 Extension Project to the City's Recreation Center. At this meeting, WSDOT acknowledged that the proposed SR 167 Extension project would cause an increase in noise over the existing noise levels at our Recreation Center.

It was explained to Dick that traffic noise does not interfere with normal conversation below the 67 dBA level. Except for a few outfielders on the ballfield closest to the proposed roadway, most of our facility would experience noise levels in the 62 to 63 dBA range. People in the center of the ballfields and in the park and playground area would be able to carry on a normal conversation without raising their voices.

Based on this information, we have determined that future noise from the proposed SR 167 Extension project will not substantially impair the activities at our Recreation Center.

Please feel free to contact me at 253-841-5516 or Dick Weber at 253-841-5517 if you have any questions.

Sincerely,


Ralph W. Dannenberg
Director of Parks and Recreation

cc: Jim Bacon, City Manager



Washington State
Department of Transportation
Douglas B. MacDonald
Secretary of Transportation

Olympic Region
Environmental and Hydraulic Services Office
150 Israel Road SW, Fl 4, Tumwater
PO Box 47417
Olympia, WA 98504-7417
360-570-6700 / Fax 360-570-6697
TTY: 1-800-833-6388
www.wsdot.wa.gov

February 23, 2005 *

National Park Service
Pacific West Region
Attn: Kelly Powell
909 First Avenue
Seattle, WA 98104

RE: SR 167, Puyallup to SR 509, Tier II EIS
Draft 4(f) Analysis – Response to Comments

Dear Ms. Powell:

Thank you for your comments on the draft 4(f) Analysis for the SR 167 Puyallup to SR 509 project. In your letter you raise concerns about possible constructive use of the Puyallup Recreation Center due to noise impacts. Based on your comments, we did additional noise modeling at the Puyallup Recreation Center to get a better understanding of the future impacts to this facility.

The results of the additional noise analysis shows that, except for a few outfielders on the ball field closest to the proposed roadway, most of the Recreation facility would experience noise levels in the 62 to 63 dBA range. This is below WSDOT and FHWA's noise impact criteria of 66 dBA. The noise level increase from the existing 52 dBA to the future 62 to 63 dBA range is still considered a substantial increase. We evaluated a noise wall for the Recreation Center, which was found to be feasible but not reasonable.

Most users of the facility will experience noise levels well below 67 dBA. Placing a noise wall along WSDOT right-of-way will not benefit the majority of the users who are more than 300-400 feet away from the roadway. Traffic noise below 67 dBA does not interfere with normal conversation. Therefore users of the facility in the center of the ball fields and in the park and playground area would be able to carry on a normal conversation without raising their voices.

We met with the Recreation Center Manager on February 1, 2006 to present the results of our noise study and discuss impacts. We asked him to let us know how the noise impacts we presented would affect the Recreation Center activities. He did not feel that the future traffic noise would affect their activities at all. On February 10, 2006 the City of Puyallup Parks and Recreation Department sent us a letter stating that the future roadway noise will not substantially impair the activities at their Recreation Center.

For the reasons stated above we do not feel there is a constructive 4(f) use, due to increased noise, at the Puyallup Recreation Center.

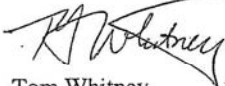
* Please note the year of the letter is 2006, not 2005.

Kelly Powell
February 23, 2006
Page 2 of 2

I have attached the additional noise analysis report, and a copy of the letter from the City of Puyallup for your information. It is our intent to revise the 4(f) analysis to include this new information. We will make appropriate revisions to the document currently incorporated as Chapter 5 in the pFEIS. Your comments to the draft 4(f) and our response will be part of the FEIS.

Let us know if you would be interested in meeting to go over these results and to discuss the project in general. You can contact me at (360) 570-6702.

Sincerely,



Tom Whitney
Acting Environmental & Hydraulic Manager
Olympic Region

TFW:lhmm

Enclosures:

1. Additional Noise Analysis for the Puyallup Recreation Center, dated 11/29/2005
2. City of Puyallup letter, dated 02/10/2006
3. Oct.24, 2005, Willie Taylor, DOI comment letter, dated10/24/2005

cc: Willie Taylor DOI, w/enclosures
Steve Fuchs w/enclosures
Megan Hall w/enclosures
Phil Kauzloric w/enclosures
Project File w/enclosures
SF0223006(3509)

From: Kelly_Powell@nps.gov [mailto:Kelly_Powell@nps.gov]
Sent: Wednesday, October 25, 2006 2:13 PM
To: Love, Sharon; Hall, Megan
Subject: SR 167

Hi, Sharon and Megan,

Sharon, I'm not sure if you're about to head out the door, but thought I'd try to get this email out as soon as possible. I apologize, but I do not have any notes from our meeting. However, I received a letter dated February 23, 2005, from WSDOT (Tom Whitney), which stated that it did not feel there was a constructive use after performing additional noise modeling (most of the recreation facility would experience noise levels below FHWA's criteria of 66dBA).

Pursuant to our meeting and pursuant to WSDOT's letter, I agree that there is not a constructive use. If you would like an official letter from our Deputy Regional Director, please let me know. Also, if you would like a copy of the WSDOT letter, please let me know. Thanks!

-Kelly

Kelly Powell
Environmental Compliance Specialist &
Legal Instruments Examiner
National Park Service
168 S Jackson St
Seattle, WA 98104
206-220-4106
206-447-4246 (fax)
kelly_powell@nps.gov

**MEMORANDUM OF AGREEMENT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION AND THE WASHINGTON
STATE HISTORIC PRESERVATION OFFICE PURSUANT TO 36 CFR Part 800.6(a)**

WHEREAS, the US Department of Transportation, Federal Highway Administration (FHWA) has provided financial assistance to the Washington State Department of Transportation (WSDOT) for completion of SR 167 freeway between SR 161 (Meridian Street North) in Puyallup and SR 509 freeway in Tacoma, located in Pierce County, Washington, Federal Aid Project No. STPUL-0167(026); and

WHEREAS, WSDOT has completed a cultural resources survey in the area of potential affect as follows:

- Historic Property inventory/evaluation within a 400 foot offset on either side of the centerline established in the Environmental Impact Statement (EIS) process; and
- Cultural Resources ground survey within a 200 foot offset on either side of the centerline established in the EIS process and any additional right of way required for actual construction including interchanges, stormwater facilities, mitigation sites, and Park & Ride facilities. Subsurface testing was performed in areas as determined by a geomorphologist; and
- Consultation on Traditional Cultural Properties with the Puyallup Tribe of Indians (Tribe).

WHEREAS, FHWA has determined, and the State Historic Preservation Office (SHPO) has concurred, that the SR 167 Puyallup to SR 509 project (the undertaking) will have an adverse effect upon the following properties determined to be eligible for inclusion in the National Register of Historic Places:

- Bungalow at 7001 20th St. East (DAHP #27-4125, WSDOT #P202)
- Bungalow at 6803 20th St. East (DAHP #27-4154, WSDOT #P168)
- Bungalow at 7717 Valley Ave. East (DAHP #27-4114, WSDOT #P239)
- Bungalow at 3423 Freeman Rd. (DAHP #27-4160, WSDOT #P490)

WHEREAS, FHWA has determined, and the State Historic Preservation Office (SHPO) has concurred, that the SR 167 Puyallup to SR 509 project (the undertaking) will not have an adverse effect upon the archeological site, prehistoric site 45PI488, determined to be eligible for inclusion in the National Register of Historic Places; and

WHEREAS, FHWA has notified the Advisory Council on Historic Preservation (ACHP) of the effects pursuant to 36 CFR Part 800.6(a)(i), regulations effective January 11, 2001, implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Advisory Council has declined to participate, but requests that pursuant to 36 CFR 800.6(b)(iv), a Memorandum of Agreement (Agreement), be developed in consultation with the SHPO, and related documentation be filed with the ACHP at the conclusion of the consultation process; and

WHEREAS, a Department of the Army permit, pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, will be required from the United States Army Corps of Engineers, Seattle District, (COE), to conduct activities related to the construction of SR 167, Puyallup to SR 509, and the COE has participated in the consultation; and

WHEREAS, the Washington State Department of Transportation (WSDOT) participated in the consultation; and

WHEREAS, formal Section 106 consultation pursuant to 36 CFR 800.2(a)(4) was initiated with the Puyallup Tribe in 2000. The Tribe then designated the Tribal Historic Official and the Cultural Resources Technical Advisor as lead contacts for the Tribe on cultural resource-related matters involving WSDOT and/or the FHWA. The Tribe has participated in the consultation; and

NOW, THEREFORE, the FHWA, COE, WSDOT, Puyallup Tribe, and the Washington SHPO recognize that the undertaking is still in the study and planning stages. The signatory and consulting parties agree that if and when the undertaking goes forward, it shall be carried out in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

The FHWA will ensure that the following measures are carried out:

- 1) To minimize visual effects, WSDOT will plant riparian vegetation on the outer edges of the proposed ramp curve nearest the 3423 Freeman Road historic property.

- 2) Historic Property Recordation:

WSDOT will consult with the SHPO regarding appropriate large-format photo documentation to consistent with OAHP Level 2 standards of historic properties, 7001 20th Street East, 6803 20th Street East, and 7717 Valley Avenue East, in the project's area of potential effect.

- 3) NRHP-eligible buildings as described in 2, above, will be offered for sale for a minimum of one year to any buyers willing to move the structures.
- 4) The project will have no adverse effect upon prehistoric site 45PI488, contingent upon WSDOT:
 - (a) Spanning the site with a bridge whose piers are constructed outside the known boundaries of the site; and
 - (b) Monitoring construction for cultural resources in the vicinity. Should cultural resources or human remains be discovered during bridge construction, procedures will be followed per below (items 5 and 6).
- 5) Review of Effects Determination:

Because design has yet to be finalized and because construction may not occur for some time, during final design and prior to construction of the undertaking, FHWA will review the eligibility determinations to:

 - a) Determine if eligible properties retain the qualities that make them eligible for the National Register of Historic Places; and
 - b) Determine if non-eligible properties obtained qualities that would make them eligible for the National Register of Historic Places (i.e. greater than 50 years old).

- 6) Inadvertent Discovery

At least 90 days prior to advertising the project for construction, an Inadvertent Discovery Plan will be developed which will include any monitoring deemed necessary, a communications protocol detailing who will be contacted in the event of a discovery, and specific methods to be employed to protect any cultural resources, including human remains, which are discovered during construction. The Inadvertent Discovery Plan will be developed in coordination with the

Signatory and Consulting parties to this MOA.

7) Amendment of the Agreement:

If any of the consulting parties to this Agreement determine that the terms of the Agreement cannot be met or believe a change is necessary, they will immediately request the signatory parties to consider an amendment or addendum which will be executed in the same manner as the original Agreement. A copy of the amended Agreement will be filed with the ACHP, pursuant to 36 CFR 800.6(c)(7).

8) Dispute Resolution:

a) If a dispute arises regarding implementation of this Agreement, the signatory parties will consult with the objecting party to resolve the dispute. If FHWA determines that the dispute cannot be resolved, FHWA shall forward all documentation relevant to the dispute to the ACHP and request comment, which will be provided pursuant to 36 CFR 800.6(b). Any comment provided by the ACHP, and all comments from the signatory and consulting parties to the MOA, will be taken into account by FHWA in reaching a final decision regarding the dispute.

b) If at any time during implementation of the measures stipulated in this Agreement, should an objection to any such measure or its manner of implementation be raised by a member of the public, the FHWA shall take the objection into account and consult as needed with the objecting party, the SHPO, or the ACHP to resolve the objection.

9) Failure to Carry Out Terms:

Failure to carry out the terms of this Agreement requires that FHWA again request the ACHP's comments in accordance with 36 CFR Part 800.7. If FHWA cannot carry out the terms of the Agreement:

(i) it will not take or sanction any action to make an irreversible commitment that would result in an adverse effect with respect to the eligible property covered by the Agreement;

(ii) nor will FHWA foreclose the ACHP's consideration of modifications or alternatives that could avoid or mitigate the adverse effect on the property until the commenting process has been completed.

10) Duration & Termination:

This MOA will take effect immediately upon execution by the Signatory Parties. The terms of this MOA shall be satisfactorily fulfilled upon completion of the project. Prior to such time, FHWA may consult with the other participating parties to reconsider the terms of the agreement and propose its amendment. Unless terminated, this MOA will be in effect until FHWA, in consultation with SHPO, COE, WSDOT, and the Tribe, determines that all of its terms have been satisfactorily fulfilled.

In accordance with 36 CFR 800.6(c)(8), if any of the signatory and consulting parties determines that the terms of the MOA cannot or are not being carried out, they may consult to seek an amendment of the Agreement. If the Agreement is not amended, any Signatory may terminate this MOA. If either FHWA or the SHPO proposes to terminate this MOA, they shall promptly notify all other parties in writing of the proposed termination and shall include in its notification

the reasons for proposing termination. If the MOA is terminated pursuant to this stipulation and FHWA determines that its undertaking will nonetheless proceed, FHWA shall request the comments of the ACHP.

11) Monitoring and Reporting:

Within 90 Days after carrying out the terms of the Agreement, as described in Stipulations 1 through 4, the WSDOT shall report to all signatories on the actions taken.

This Memorandum of Agreement by the FHWA and the Washington SHPO, shall not be executed until filed with the ACHP, evidence that the FHWA has afforded the ACHP an opportunity to comment on the SR 167 Puyallup to SR 509 Highway Project and its effects on historic properties. Implementation of its terms is evidence that the FHWA has taken into account its effects on historic properties and has satisfied the requirements of Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)).

SIGNATORIES

Federal Highway Administration

By: *Daniel Mathis*
Daniel Mathis
Division Administrator

Date: 09/11/06

Washington State Historic Preservation Office

By: *Allyson Brooks*
Allyson Brooks, Ph.D.
State Historic Preservation Officer

Date: 9/8/06

CONSULTING PARTIES

The Puyallup Tribe of Indians

By: *Herman Dillon, Sr.*
Herman Dillon, Sr. VICE CHAIR-MAN
Puyallup Tribal Council Chair

Date: _____

US Army Corps of Engineers

By: *Michael McCormick*
COL Michael McCormick
Corps of Engineers, District Engineer

Date: 11/2/06

Washington State Department of Transportation

By: *Jeff Sawyer*
Jeff Sawyer
Region Environmental & Hydraulic Manager
Olympic Region

Date: 11/8/06

