

## 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).

SR 167 - Puyallup to SR 509 Tier II FEIS

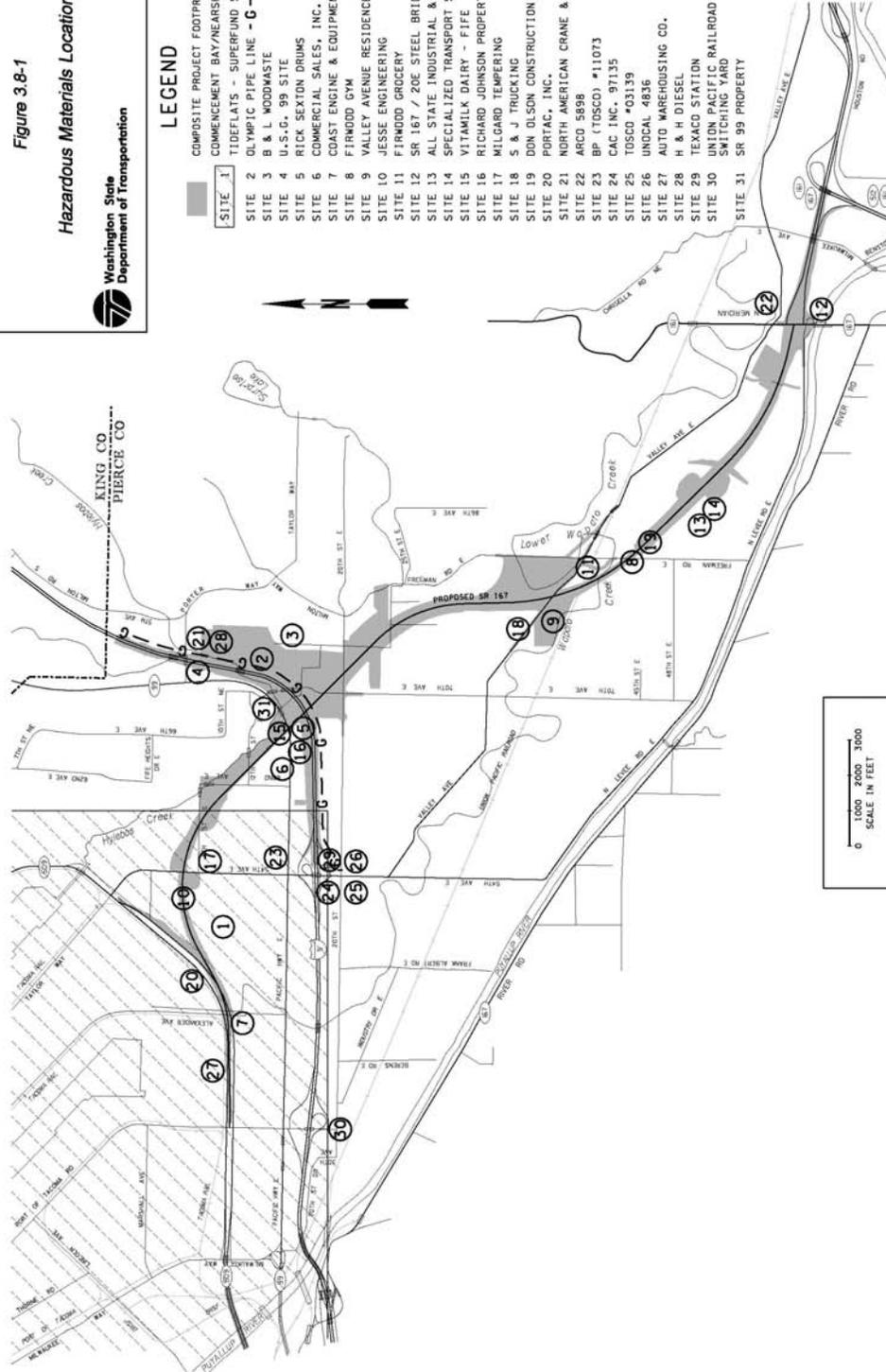
Figure 3.8-1

Hazardous Materials Locations



LEGEND

- COMPOSITE PROJECT FOOTPRINT
- COMMENCEMENT BAY/NEARSHORE, TIDEFLATS - SUPERFUND SITE
- SITE 1 OLYMPIC PIPE LINE - G --- G ---
- SITE 2 B & L WOODWASTE
- SITE 3 U.S.G. 99 SITE
- SITE 4 RICK SEXTON DRUMS
- SITE 5 COMMERCIAL SALES, INC.
- SITE 6 COAST ENGINE & EQUIPMENT
- SITE 7 FIRMOOD CYM
- SITE 8 VALLEY AVENUE RESIDENCES
- SITE 9 JESSE ENGINEERING
- SITE 10 FIRMOOD GROCERY
- SITE 11 SR 167 / 20E STEEL BRIDGE
- SITE 12 ALL STATE INDUSTRIAL & MARINE
- SITE 13 SPECIALIZED TRANSPORT SERVICE
- SITE 14 VITAMILK DAIRY - FIFE
- SITE 15 RICHARD JOHNSON PROPERTY
- SITE 16 MILGARD TEMPERING
- SITE 17 S. J. TRUCKING
- SITE 18 DON OLSON CONSTRUCTION
- SITE 19 PORTAC, INC.
- SITE 20 NORTH AMERICAN CRANE & EQUIPMENT CO.
- SITE 21 ARCO 5898
- SITE 22 BP (TOSCO) #11073
- SITE 23 CAC INC. 97135
- SITE 24 TOSCO #03139
- SITE 25 UNOCAL 4836
- SITE 26 H & H DIESEL
- SITE 27 AUTO WAREHOUSING CO.
- SITE 28 TEXACO STATION
- SITE 29 UNION PACIFIC RAILROAD
- SITE 30 SWITCHING YARD
- SITE 31 SR 99 PROPERTY



**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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