

Hazardous Materials Technical Report

***SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity
Northbound HOT Lane***

March 2009

Prepared by:

**Hazardous Materials Staff
Northwest Regional Office
Washington State Department of Transportation
Seattle, Washington**



**Washington State
Department of Transportation**

THIS PAGE LEFT BLANK INTENTIONALLY

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

 WHY DID WSDOT DEVELOP THIS REPORT? 1

 WHAT IS THE PROJECT AND WHY IS IT NEEDED? 1

 WHAT HAZARDOUS MATERIALS MIGHT THIS PROJECT ENCOUNTER, USE, OR SPILL? 2

 HOW MIGHT THE EFFECTS OF ENCOUNTERED, USED, OR SPILLED HAZARDOUS MATERIALS BE
 MITIGATED? 3

CHAPTER 1: INTRODUCTION..... 4

 WHY DID WSDOT DEVELOP THIS REPORT?..... 4

 HOW DID WSDOT DEVELOP THIS REPORT? 4

 WHAT IS THE PROJECT AND WHY IS IT NEEDED? 5

 WHAT PROJECT ACTIVITIES MUST THIS ANALYSIS CONSIDER? 6

CHAPTER 2: EXISTING CONDITIONS 9

 WHAT EXISTING NATURAL AND BUILT CONDITIONS MUST THIS ANALYSIS EVALUATE? 9

 WHAT NATURAL AND BUILT CONDITIONS EXIST IN THE VICINITY OF THE PROJECT AREA?..... 9

 WHAT SENSITIVE RECEPTORS EXIST IN THE VICINITY OF THE PROJECT AREA?..... 12

 WHAT STUDY AREA WAS IDENTIFIED FOR THIS ANALYSIS?..... 12

 WHAT HAZARDOUS MATERIALS SITES ARE RELEVANT FOR EVALUATING THE PROJECT’S POTENTIAL
 HAZARDOUS MATERIALS EFFECTS? 15

CHAPTER 3: POTENTIAL HAZARDOUS MATERIALS EFFECTS..... 30

 WHAT DIRECT HAZARDOUS MATERIALS EFFECTS MIGHT THE PROJECT POSE? 30

 WHAT HAZARDOUS MATERIALS EFFECTS MIGHT THE PROJECT POSE TO SENSITIVE RECEPTORS AND THE
 ENVIRONMENT IN GENERAL? 33

 WHAT COSTS ARE ASSOCIATED WITH THESE DIRECT HAZARDOUS MATERIALS EFFECTS? 34

 WHAT INDIRECT HAZARDOUS MATERIALS EFFECTS MIGHT THE PROJECT POSE?..... 36

 TO WHAT CUMULATIVE HAZARDOUS MATERIALS EFFECTS MIGHT THE PROJECT CONTRIBUTE? 37

CHAPTER 4: MITIGATION MEASURES..... 39

CHAPTER 5: REFERENCES..... 45

APPENDICES..... 47

 APPENDIX 1: LAWS, REGULATIONS, GUIDANCE DOCUMENTS, AND POLICIES GOVERNING THE
 HANDLING, DISPOSAL, AND REMEDIATION OF HAZARDOUS MATERIALS..... 47

 APPENDIX 2: METHODOLOGY FOR IDENTIFYING AND EVALUATING POTENTIAL HAZARDOUS MATERIALS
 EFFECTS 57

 APPENDIX 3: EDR REPORT 72

LIST OF EXHIBITS

EXHIBIT 1: VICINITY MAP..... 5
EXHIBIT 2: PROJECT AND FEATURES MAP 14
EXHIBIT 3: HAZARDOUS MATERIALS SITES - MAP 1 16
EXHIBIT 4: HAZARDOUS MATERIALS SITES - MAP 2 17
EXHIBIT 5: HAZARDOUS MATERIALS SITES - MAP 3 18
EXHIBIT 6: HAZARDOUS MATERIALS SITES..... 19
EXHIBIT 7: MITIGATION MEASURES 40

ABBREVIATIONS AND DEFINITIONS

Term	Meaning
AAI	All Appropriate Inquiries, 40 CFR Part 312, are specific regulatory requirements and standards that must be met to qualify for certain landowner liability protections under CERCLA.
ACM	Asbestos-containing material
Acquisition Properties	Properties WSDOT might acquire for the Project
AHERA	The Federal Asbestos Hazard Emergency Response Act
AST	Aboveground storage tank
ASTM	American Society for Testing and Materials
BGS	Below ground surface
BTEX	Benzene, toluene, ethyl benzene, and xylene
CAA	The Federal Clean Air Act
CAVFS	Compost-amended vegetated filter strips, areas that have been amended to facilitate stormwater infiltration.
CERCLA	The Federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601- 9675
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System. The CERCLIS list contains potential hazardous waste sites that have been reported to EPA.
CFR or C.F.R.	Code of Federal Regulations
CORRACTS	Facilities subject to corrective action under RCRA
CSCS list or CSCSL	Washington State Confirmed and Suspected Contaminated Sites List; a list of sites in Washington State that Ecology's records list as confirmed as or suspected of having contaminated soil, sediment, surface water, groundwater, or air.
CWA	The Federal Clean Water Act
Demolition Properties	Properties containing buildings, above or below ground structures, or equipment that WSDOT might renovate, demolish, or excavate as part of the Project
Ecology	Washington State Department of Ecology
EDR	Environmental Data Resources, Inc.
EDR Report	The report prepared by EDR and contained in Appendix 3 of this Report
EPA	United States Environmental Protection Agency
ERNS	Emergency response notification system
ESA	The Federal Endangered Species Act
GSP	General special provision

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Term	Meaning
Hazardous Materials Site	A contaminated property that might affect the Project Area, where “contaminated property” is a property that is or reasonably might be contaminated with hazardous materials and “might affect the Project Area” means that the contaminated property might affect the Project Area because 1) the hazardous materials have or reasonably might have flowed over the ground surface or migrated through soils or groundwater to the Project Area or 2) the hazardous materials might be drawn into the Project Area by Project construction activities such as dewatering.
HOT Lane	High-occupancy toll lane
HOV Lane	High-occupancy vehicle lane
HSWA	The Federal Hazardous and Solid Waste Amendments
ICR	Independent cleanup reports; these are reports Ecology has received from a site’s owner or operator concerning remedial actions that were conducted on site without Ecology oversight or approval. The ICR database is no longer updated by Ecology.
L&I	Washington State Department of Labor and Industries
LBP	Lead-based paint
LUST (site)	Leaking underground storage tank site. A LUST site is a site in Washington State that has had a recorded release from an UST. Such a site will remain on Ecology’s LUST list even after it is cleaned up.
Methodology	The methodology set forth in Appendix 2 and used by WSDOT to a) assemble and analyze information on existing conditions that could influence the hazardous materials effects posed by the Project and b) identify and evaluate the hazardous materials effects posed by the Project.
MP	Milepost
MTCA	Washington State Model Toxics Control Act, RCW 70.105D
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants, 40 CFR Parts 61 to 71
NFRAP	.No Further Remedial Action Planned. Sites that were on the CERCLIS list and for which no further remedial action is planned. This includes sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration.
NPDES	National Pollutant Discharge Elimination System, a permit program established under the Federal Clean Water Act to regulate the discharge of pollutants to surface water
NPL	National Priorities List, a subset of the CERCLIS list. NPL sites are hazardous waste sites designated for priority cleanup under the Federal Superfund Program. NPL sites are also included on the Washington State CSCS list.
OSHA	Federal Occupational Safety and Health Act

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Term	Meaning
PCBs	Polychlorinated biphenyls, a class of organic compounds
PCE or perchloroethylene	Perchloroethylene, a chlorinated solvent. Also known as tetrachloroethylene.
Project	The WSDOT project to construct a high-occupancy toll (HOT) lane on northbound State Route (SR) 167 by widening SR 167 from the vicinity of 8th Street E in Pacific, Pierce County, Washington (Mile Post (MP) 10.2) north to the vicinity of 15th Street SW in Auburn, King County, Washington (MP 14.26).
Project Area	The area within which Project construction work will occur.
RCRA	The Federal Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 – 6992k
RCW	Revised Code of Washington
Report	This Hazardous Materials Technical Report.
SARA	Federal Superfund Amendments and Reauthorization Act
Sensitive Receptors	Areas typically containing populations that could be particularly sensitive to hazardous materials released by Project activities occurring within the Project Area. Populations that could be particularly sensitive to hazardous materials releases include people who are elderly, sick, or young, and species that are endangered or threatened. Accordingly, areas that typically contain such people – such as nursing homes, hospitals, medical centers, schools, and day care centers – or such species – such as wildlife refuges, wetlands, water bodies, and other recognized habitat – would be Sensitive Receptors if they could be affected by hazardous materials released by Project activities occurring within the Project Area.
SEPA	Washington State Environmental Policy Act
Shannon and Wilson Report	The July 2008 report prepared by Shannon and Wilson for WSDOT titled <i>Hazardous Materials Technical Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT.</i>
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
SQG	Small quantity generator; a site that generates between 100 kg and 1,000 kg of federal hazardous waste per month
SR	State route
Study Area	This is the area within which hazardous materials, if released, might affect the Project Area by flowing over the ground surface, migrating through soils or groundwater, or being drawn into the Project Area by Project construction activities. This is the area that WSDOT studied for the existence of properties that are or might be contaminated.
TCE	Trichloroethylene, a chlorinated solvent
Tetrachloroethylene	A Chlorinated solvent. Also known as perchloroethylene or PCE
TSCA	Federal Toxic Substances Control Act
TSD (facility)	Hazardous waste treatment, storage or disposal facility
U.S.C.	United States Code

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Term	Meaning
UST (site)	Underground storage tank site. Generally, USTs used for commercial purposes must be registered with Ecology. Accordingly, a site in Washington State with an UST that is registered with Ecology is an UST site.
VCP (site)	A contaminated site in Washington State that is participating in Ecology's Voluntary Cleanup Program.
WAC	Washington Administrative Code
WISHA	Washington Industrial Safety and Health Act (RCW 49.17)
WSDOT	Washington State Department of Transportation

THIS PAGE LEFT BLANK INTENTIONALLY

EXECUTIVE SUMMARY

Why did WSDOT develop this Report?

The Washington State Department of Transportation (WSDOT) developed this Hazardous Materials Technical Report (Report) to satisfy the requirements of the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA) with respect to WSDOT's proposed State Route (SR) 167 Stage 5 Project, the SR 167 8th Street E Vicinity to 15th Street SW Vicinity Northbound High-Occupancy Toll (HOT) Lane Project (Project).

WSDOT is considering hazardous materials in planning for this Project because WSDOT could encounter hazardous materials during Project construction. WSDOT could also accidentally spill hazardous materials during Project construction and operation. Encountering, using, and spilling hazardous materials could harm Project workers, the public, and the environment, cause WSDOT to be responsible for hazardous materials cleanup, delay Project construction, and increase Project costs. Identification in this Report of hazardous materials that could be encountered, used, or spilled allows WSDOT to engage in investigations and planning to avoid or reduce the potential effects of such materials.

What is the Project and why is it needed?

The Project will widen the SR 167 roadway and construct a new northbound HOT lane from the vicinity of 8th Street E in Pacific (MP 10.2), Pierce County, Washington to the vicinity of 15th Street SW in Auburn (MP 14.26), King County, Washington. Two ramp meters will be installed on SR 167 northbound on-ramps: one at the SR 167 interchange with 8th Street E and one at the SR 167 interchange with Ellingson Road. SR 167 is an important thoroughfare for cars, trucks, and transit in the Green River Valley. The additional capacity that this Project will provide will relieve congestion and improve safety for commuters traveling northbound on SR 167.

What hazardous materials might this Project encounter, use, or spill?

The hazardous materials that this Project might encounter, use, or spill are hazardous materials that could be encountered or used during Project construction and that could be used during Project operation.

In general, the hazardous materials that might be encountered during Project construction are contaminants present in soil or groundwater that is excavated or dewatered as part of construction work. Typically, such contaminants would have migrated to the area within which Project construction work will occur (the Project Area) or be drawn into the Project Area by construction-related dewatering activities.

Using the methodology described in this Report, WSDOT identified 48 properties that have or might have soil or groundwater contamination that could affect or be affected by Project construction. These properties were or currently are used as gasoline stations, vehicle service shops, vehicle body repair and paint shops, machine and metal manufacturing shops, boat building shops, pavement painting businesses, wrecking yards, mineral spirits and metals recyclers, refuse transfer stations, and addresses that store or stored heating oil. WSDOT then considered these properties against its “high,” “low/moderate,” and “none” contamination impact ratings and assigned a “High” rating to two of these properties. Forty properties, including the fourteen “Heating Oil” properties, received a “Low/Moderate” rating. Six properties received a “None” rating.

The soil and groundwater contaminants that exist or could exist on these properties consist of:

- Petroleum hydrocarbons and petroleum hydrocarbon-based solvents such as gasoline, mineral spirits, diesel, lube oil, waste oil, benzene, toluene, ethyl benzene and xylene
- Heavy metals such as cadmium, chromium, copper, and lead

- Chlorinated solvents such as trichloroethylene and perchloroethylene (also known as tetrachloroethylene).

Hazardous materials that might be encountered during Project construction also include any contaminants that were contained in fill material that was placed throughout the Project Area during the construction of SR 167. These contaminants could include petroleum hydrocarbons and metals. Construction activities could also encounter undocumented contamination or underground storage tanks that contain hazardous materials.

The hazardous materials that might be used during Project construction or operation are hazardous materials used in vehicles and for roadway construction and maintenance. These hazardous materials predominantly consist of gasoline, diesel, motor oil, transmission fluid, radiator coolant, brake fluid, hydraulic oil, cement, asphalt tar, paving oils, tack, and paint. Hazardous materials that will be “used” during Project operation also include hazardous materials carried over the roadway by the traveling public.

How might the effects of encountered, used, or spilled hazardous materials be mitigated?

The effects of hazardous materials that are encountered, used, or spilled during Project construction and operation can be avoided or reduced by implementing a variety of mitigation measures during different stages of Project development and construction. These mitigation measures, ranging from actions to be taken during project design and specification development to actions to be taken during project construction, are set forth in Chapter 4. The Project poses no adverse hazardous materials effects that cannot be mitigated. In some cases, implementation of the mitigation measures set forth in this Report will reduce existing hazardous materials effects on the environment.

CHAPTER 1 INTRODUCTION

Why did WSDOT develop this Report?

The Washington State Department of Transportation (WSDOT) developed this Hazardous Materials Technical Report (Report) to satisfy the requirements of the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA) with respect to WSDOT's proposed State Route (SR) 167 Stage 5 Project, the SR 167 8th Street E Vicinity to 15th Street SW Vicinity Northbound High-Occupancy Toll (HOT) Lane Project (Project).

WSDOT is considering hazardous materials in planning for this Project because WSDOT could encounter hazardous materials during Project construction. WSDOT could also accidentally spill hazardous materials during Project construction and operation. Encountering, using, and spilling hazardous materials could harm Project workers, the public, and the environment, cause WSDOT to be responsible for hazardous materials cleanup, delay Project construction, and increase Project costs. Identification in this Report of hazardous materials that could be encountered, used, or spilled allows WSDOT to engage in investigations and planning to avoid or reduce the potential effects of such materials.

How did WSDOT develop this Report?

WSDOT developed this Report by taking the following steps:

- Assembling and analyzing information on existing conditions that could influence the hazardous materials effects posed by the Project.
- Identifying and evaluating the hazardous materials effects posed by the Project.
- Proposing measures to mitigate the hazardous materials effects posed by the Project.

WSDOT performed the work described in the first two bullets above by using the methodology set forth in Appendix 2 (Methodology).

What is a hazardous material?

A hazardous material is a substance that may harm human health or the environment because of its physical or chemical characteristics. The handling and disposal of hazardous materials and the remediation of media contaminated with hazardous materials are governed by numerous laws, regulations, guidance documents, and policies. Appendix 1 of this Report identifies the most common of those laws, regulations, guidance documents, and policies.

luminaires will also be built or installed. Exhibit 1 shows the general location and extent of the Project.

SR 167 is an important thoroughfare for cars, trucks, and transit in the Green River Valley. The additional capacity that this Project will provide will relieve congestion and improve safety for commuters traveling northbound on SR 167.

What Project activities must this analysis consider?

This hazardous materials analysis must consider whether or not WSDOT will perform any of the following activities as part of the Project:

- Acquire property, since WSDOT could be liable for cleaning up contamination related to property it acquires
- Construct stormwater handling facilities or wetland mitigation sites that will allow infiltration of stormwater, since infiltrating stormwater could spread contamination that may exist where the infiltration facilities or sites are constructed
- Excavate soil, since contaminated soil could be encountered during soil excavation with the likelihood of encountering contaminated soil generally increasing with excavation depth
- Dewater excavations or pits, since contaminated groundwater could be encountered or drawn into the excavation or pit as a result of dewatering activities
- Renovate, demolish, or excavate structures, including underground storage tanks (USTs), since such structures could contain petroleum products, asbestos-containing material (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCBs), mercury, or other hazardous materials.

WSDOT is not expecting to acquire property for this Project because all construction work will occur within existing WSDOT right-of-way.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

WSDOT will construct compost-amended vegetated filter strips (CAVFSs) and two detention ponds as part of the stormwater handling facilities for this Project. Stormwater will infiltrate the CAVFSs. Although the ponds will largely channel and discharge stormwater to an existing stormwater system, some stormwater infiltration will occur in the ponds as well. CAVFSs will be constructed in various locations in the Project Area. One detention pond will be constructed in the northeast quadrant of the SR 167 interchange with 8th Street E; the other pond will be constructed in the northeast quadrant of the SR 167 interchange with Ellingson Road. The locations of the CAVFSs and detention ponds are shown on Exhibits 3 through 5. WSDOT will not construct a wetland mitigation site as part of the Project.

Project construction will require excavation of soil for the construction of eight to twelve retaining walls, one noise wall, two stormwater detention ponds, CAVFSs, media filter drains (formerly known as Ecology embankments), and additional roadbed. Project construction will also require excavation of soil for the installation of utility lines, stormwater drain lines, catch basins, two ramp meters, one to two sign bridges, approximately four cantilevered signs, and approximately twenty luminaires.

Soil excavation will extend up to twenty feet below ground surface (BGS). Specifically, soil will be excavated up to two feet BGS for construction of new road bed, media filter drains, and CAVFSs. Soil will be excavated between one and ten feet BGS for construction of the retaining walls, noise wall, and stormwater detention ponds and for installation of utility lines, stormwater drain lines, and catch basins. Soil excavations will extend fifteen to twenty feet BGS for installation of the foundations for the ramp meters, sign bridges, cantilevered signs, and luminaires. Excavated soil is expected to be used on site as fill for the Project.

Some dewatering is expected to be required during Project construction because the water table in the areas within which Project construction work will occur (Project Area) can be as high as three feet BGS.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

The only demolition that WSDOT will perform as part of the Project is the demolition of existing roadway. Project construction is not expected to involve the renovation, demolition, or excavation of structures containing petroleum products, ACM, LBP, PCBs, mercury, or other hazardous materials.

CHAPTER 2 Existing Conditions

What existing natural and built conditions must this analysis evaluate?

This hazardous materials analysis must evaluate the topography, drainage pathways, water bodies, geology, groundwater characteristics, and land uses in the vicinity of the Project Area. These conditions are summarized below. They are also discussed in detail in the documents listed in the References section of this Report.

WSDOT evaluated these natural and built conditions to identify areas that typically contain populations that could be particularly sensitive to hazardous materials released by Project activities occurring within the Project Area. These areas, termed Sensitive Receptors, are described below.

WSDOT also evaluated these natural and built conditions to identify the area to be studied for the existence of properties that might be contaminated. This area, termed the Study Area, is described below.

Exhibit 2 shows the major natural and geographic features and conditions near the Project as well as the Study Area boundary.

What natural and built conditions exist in the vicinity of the Project Area?

Natural conditions in the vicinity of the Project Area

Topography and drainage basins

The Project Area lies in the north-south trending, contiguous valleys of the Green and White Rivers. A small rise near 15th Street SW in Auburn separates the Green River drainage basin to the north from the White River drainage basin to the south. The northern half mile or so of the four mile long Project Area drains into the Green River valley while the rest of the Project Area drains into the White River valley.

Approximately one hundred to fifteen hundred feet west of the Project Area bluffs rise as much as three hundred feet to the western uplands. East of the Project area the broad, mostly level valley floor extends one to two miles before rising to the

eastern uplands. The ground surface in the Project Area is approximately sixty to one hundred feet above sea level.

Wetlands, streams, and fish habitat

Land in the vicinity of the northern end of the Project Area, along with stormwater from that portion of SR 167, drains into a tributary of the Green River known as Mill Creek. Land in the southern end of the Project Area, along with stormwater from that portion of SR 167, drains into a tributary of the White River known as the Milwaukee Ditch. Jovita Creek, which is crossed by the southern end of the Project Area, also drains into Milwaukee Ditch. Exhibits 2 through 5 show these drainage features. Mill Creek, Jovita Creek, and Milwaukee Ditch provide habitat for Steelhead trout, Coho Salmon, and other protected species. In 2003, Mill Creek was designated a Salmonid Spawning, Rearing, and Migration water body. Wetlands virtually surround the northern end of the Project Area and are scattered along the rest of the Project Area to the south.

Geology and soil

The soil and geologic units underlying the Project Area and the adjacent river valley bottoms are generally low permeability soils, silty to gravelly sand fill emplaced during construction of SR 167 in the 1970s, and alluvium deposited by the Green and White Rivers. Alluvial deposits vary in composition and may contain clay, silt, peat, sand, and gravel. In the Project Area, the alluvium is generally permeable and can be up to three hundred feet thick. The geologic units that form the uplands to the west of the Project Area and that underlie the alluvium covering the river valley bottoms are either glacially deposited gravelly silty sand units or sediments from interglacial periods. Both the glacially deposited units and the interglacially deposited sediments have been densely compacted by overriding glaciers.

Groundwater depths and flow directions

A shallow, unconfined aquifer system exists in the alluvium underlying the Project Area. The water table in that system is about three to twenty five feet BGS though these depths can range up to ten feet seasonally. In the Project Area, aquifer

flow directions vary according to location. Groundwater in the portion of the Project Area that lies within the Green River valley is presumed to flow generally toward Mill Creek; groundwater in the rest of the Project Area is presumed to flow generally towards nearby creeks and streams and to the Milwaukee Ditch. Flow directions can also be locally affected by wells that are being pumped.

Surface and groundwater uses

No human uses of surface water in the vicinity of the Project Area have been confirmed though more than one hundred surface water right certificates and claims have been filed with the Washington State Department of Ecology (Ecology). Groundwater in the vicinity of the Project Area is used for potable water. Groundwater about 0.2 miles south of the Project Area is deemed to be in a sole-source aquifer. The Project Area and vicinity are considered to be highly susceptible to groundwater contamination because of the permeable nature of the underlying alluvium. Accordingly, areas in and near portions of the Project Area are protected for aquifer preservation and recharge purposes.

Built conditions in the vicinity of the Project Area

Land to the west of the Project Area is used for industrial, commercial, and open space purposes. Further to the west, land is used for residential purposes. East of the Project Area, land is used for industrial, residential, and commercial purposes with islands of open space existing within these areas.

No public medical facilities exist within a half mile of the Project Area. One public school, the Alpac Elementary School in the City of Algona, and fourteen day care centers have been identified within one-half mile of the Project Area. Two of the day care centers are located on the uplands west of the Project Area. The remaining twelve day care centers and the Alpac Elementary School are scattered in an area that is east of the Project Area and bounded to the north by 15th Street SW in Auburn and to the south by 3rd Avenue SW in Pacific.

What is a sole-source aquifer?

A sole-source aquifer is an aquifer designated as a sole-source aquifer by the United States Environmental Protection Agency that 1) supplies 50 percent or more of the drinking water for a particular service area and 2) for which no reasonably available alternative water sources exist should the aquifer become contaminated.

What Sensitive Receptors exist in the vicinity of the Project Area?

Sensitive Receptors are areas that typically contain populations that could be particularly sensitive to hazardous materials released by Project activities occurring within the Project Area. Populations that could be particularly sensitive to hazardous materials releases include people who are elderly, sick, or young, and species that are endangered or threatened. Accordingly, areas such as nursing homes, hospitals, medical centers, schools, day care centers, wildlife refuges, wetlands, water bodies, and other recognized habitat would be considered Sensitive Receptors if they could be affected by hazardous materials released by Project activities occurring within the Project Area.

Using its Methodology, WSDOT evaluated the natural and built conditions in the vicinity of the Project Area and determined the following areas to be Sensitive Receptors for this Project:

- Mill Creek, Jovita Creek, Milwaukee Ditch and the ditches and storm drains that drain into them
- Wetlands adjacent to or immediately down slope of the Project Area
- The Alpac Elementary School
- The 12 day care centers scattered in an area that is east of the Project Area and bounded to the north by 15th Street SW in Auburn and to the south by 3rd Avenue SW in Pacific

What Study Area was identified for this analysis?

The Study Area is the area within which hazardous materials, if released, might affect the Project Area. Hazardous materials released in the Study Area could reach and therefore affect the Project Area by flowing over the ground surface, migrating through soils or groundwater, or being drawn into the Project Area by Project construction activities.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Using its Methodology, WSDOT evaluated the natural and built conditions in the vicinity of the Project Area and defined the Study Area for this analysis to be the Project Area plus the area within a half mile of the Project Area. The two conditions that most influenced WSDOT's selection of the Study Area were:

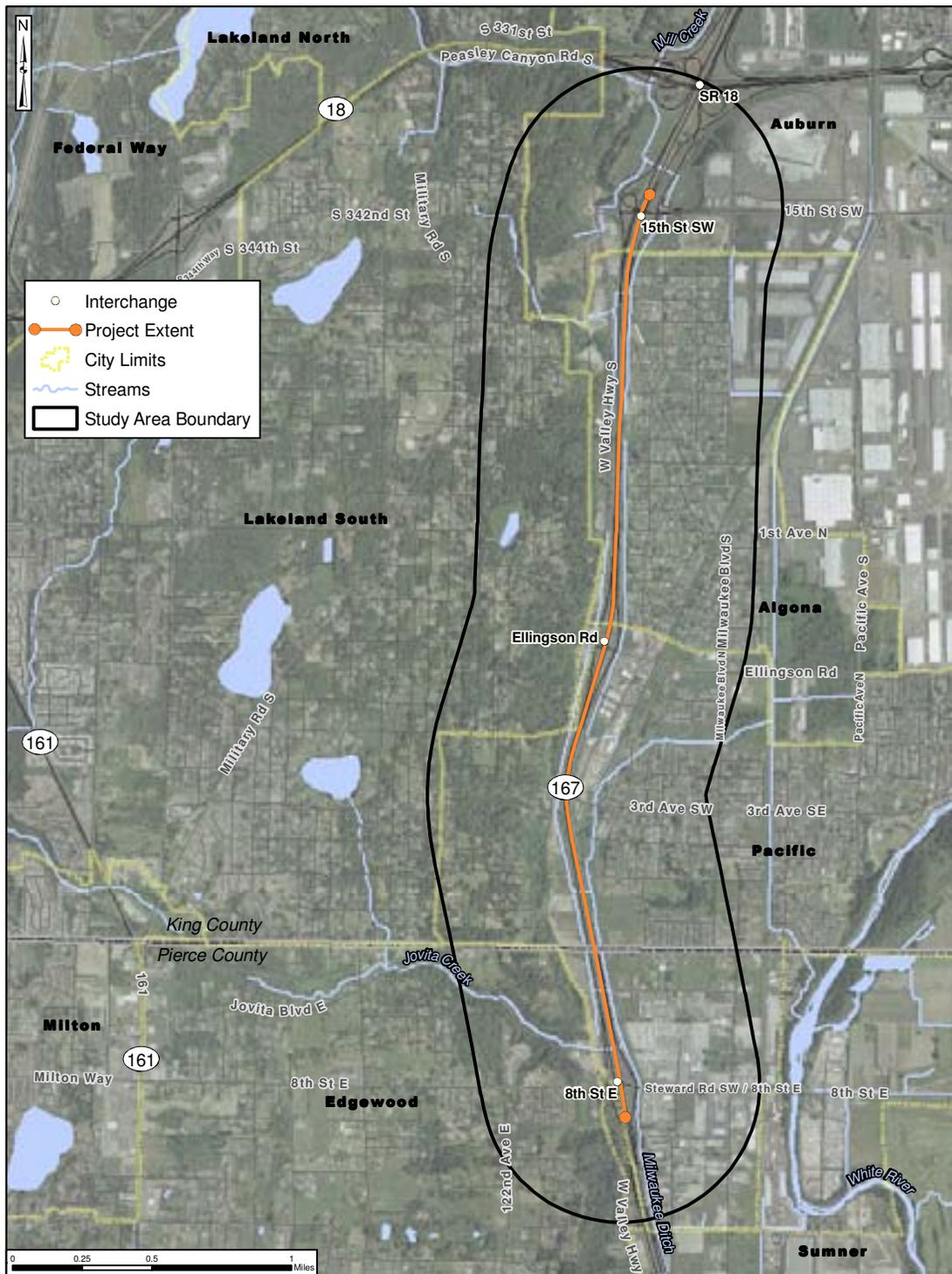
- The flatness of the Project Area and the land to the east of the Project Area
- The permeability of the units underlying the Project Area and the land to the east of the Project Area

WSDOT determined that contaminated properties more than one-half mile from the Project Area are far enough away that: a) contaminants from those properties are unlikely to have migrated to the Project Area and b) Project-related activities occurring in the Project Area are unlikely to affect the contamination on those properties.

Exhibit 2, the Project and Features Map, shows the Study Area boundary in its entirety. Portions of the Study Area are shown on Exhibits 3, 4, and 5.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Exhibit 2 Project and Features Map



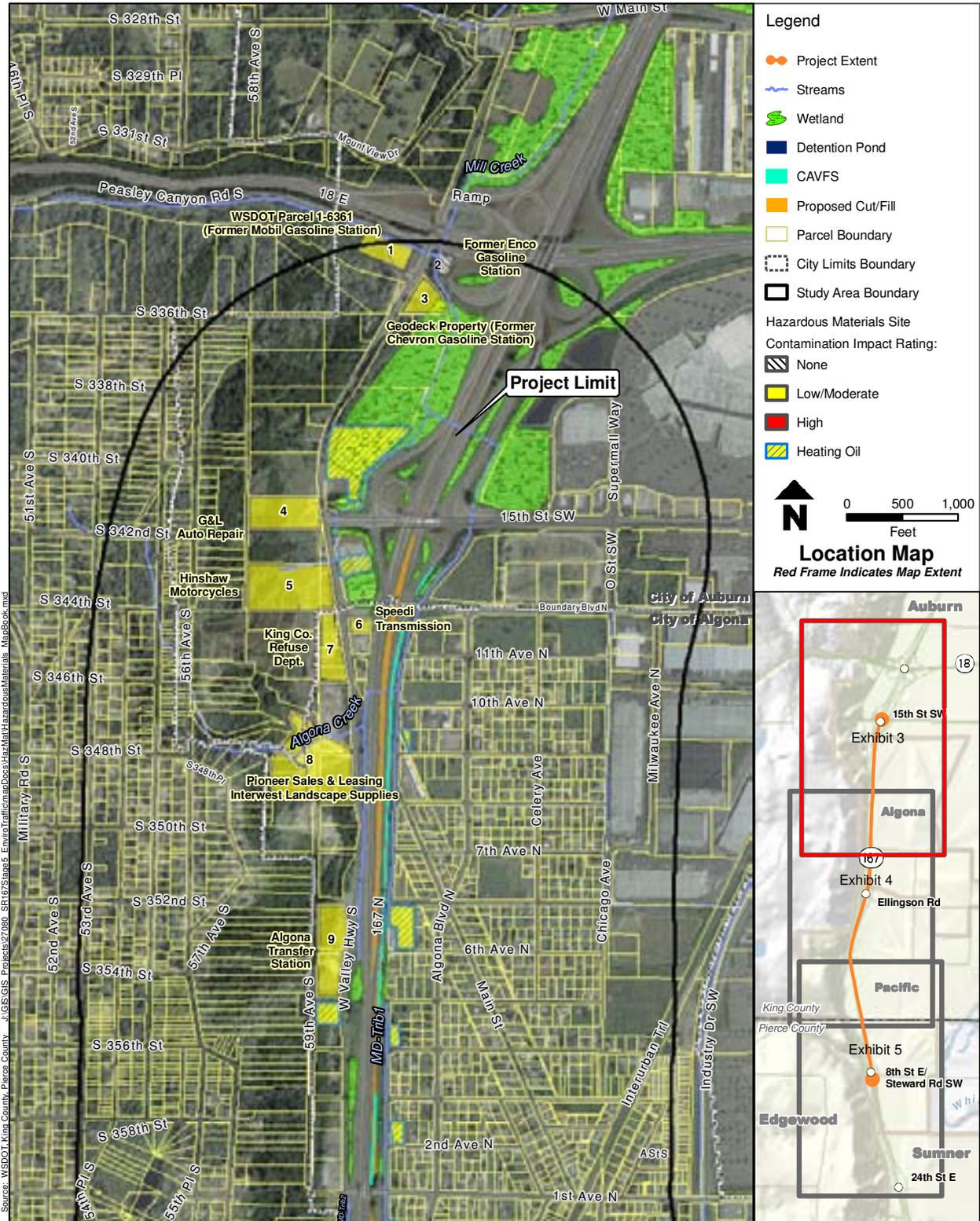
What Hazardous Materials Sites are relevant for evaluating the Project's potential hazardous materials effects?

Using its Methodology and focusing on properties within the Study Area, WSDOT identified thirty-four contaminated properties that could affect the Project Area. These properties, termed "Hazardous Materials Sites," are shown on Exhibits 3 through 5 and are listed in Exhibit 6. Exhibit 6 is a table that presents the known relevant historic and current uses and the known hazardous materials use, contamination, and remediation history for each Hazardous Materials Site.

WSDOT also identified fourteen properties that could affect the Project Area because they currently store or formerly stored heating oil and are located adjacent to the Project Area. These properties are shown on Exhibits 3 through 5 as "Heating Oil" Hazardous Materials Sites but are not listed in Exhibit 6. No evidence was found indicating that heating oil has leaked on any of these properties.

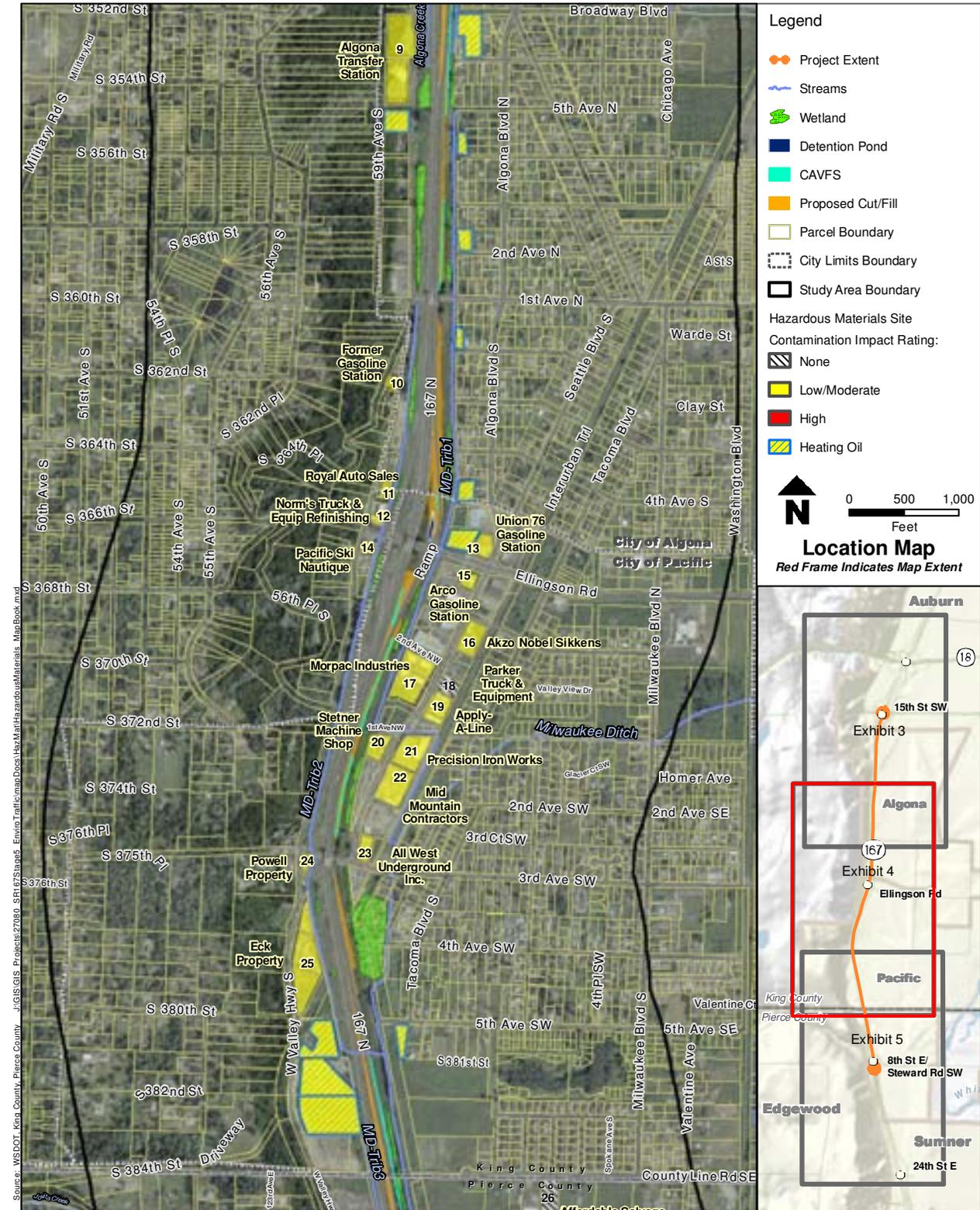
SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Exhibit 3 Hazardous Materials Sites - Map 1



SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Exhibit 4 Hazardous Materials Sites - Map 2



SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
1	<p>WA DOT Parcel 1-6361 (aka WDOT Peasley Canyon Rd; Peasley Canyon Old Gas Station, Mobil gas station)</p> <p>Peasley Canyon Road (possibly 606 W Valley Hwy S) Auburn WA</p>	<p>Approx. 0.2 miles northwest of the Project Area; possibly upgradient but likely down gradient of the Project Area</p>	<p>EDR Report: state CSCSL, LUST, and UST databases</p> <p>Ecology Facility/Site Atlas website</p> <p>Historic records</p> <p>Ecology files</p>	<p>A Mobil gas station apparently occupied this property from 1968 to 1975. A park and ride facility currently occupies the site. At least one UST, which stored waste oil, was removed from the property.</p> <p>During excavation of a bioswale on the eastern boundary of the property, contractors encountered petroleum and soil and groundwater contaminated with benzene, toluene, ethyl benzene, and xylene (BTEX). Additionally, gasoline and benzene contamination is present in soil along the western boundary of the site.</p> <p>Groundwater sampling conducted in 1994 indicates that groundwater along the western boundary contains gasoline, oil, and xylene concentrations above MTCA cleanup levels.</p>	<p>Contamination – Low/Moderate (although the site is likely down gradient of the Project Area, the site’s proximity to the Project Area and the nebulous nature of the area’s groundwater gradient suggest that Project dewatering might affect the site’s petroleum contaminated groundwater)</p>
2	<p>Enco Gasoline Station</p> <p>SR 18/SR 167 interchange Auburn WA</p>	<p>Approx. 0.2 miles northwest of the Project Area; possibly upgradient but likely down gradient of the Project Area</p>	<p>Historic records</p>	<p>A gasoline station occupied this site in 1968 and 1970. Potential contaminants consist primarily of petroleum hydrocarbon products. The property is now part of the right-of-way for the SR 18/SR 167 interchange.</p>	<p>Contamination – None (although this site has or had an UST, the site is more than one-eighth mile from the Project Area and there is no evidence an UST leak occurred at the site)</p>

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
3	Geodecke Property (aka Chevron Gasoline Station, West Valley Chevron, Auburn City Geodecke S Property) 612 W Valley Hwy S Auburn WA 98002	Approx. 0.15 miles northwest of the Project Area; possibly upgradient but likely down gradient of the Project Area	EDR Report: state LUST and UST databases Ecology Facility/Site Atlas website Ecology files	The West Valley Chevron occupied this property in 1970. During the removal of a waste oil UST and a heating oil UST in 1992, contractors encountered petroleum contaminated soil and backfilled the excavations with stockpiled soil. The contractors reportedly did not encounter groundwater. All soil samples taken from the waste oil UST excavation had petroleum concentrations exceeding MTCA cleanup levels and two of the samples had benzene or xylene concentrations exceeding MCTA cleanup levels. The contractors did not collect samples on the east sides of the excavations, closest to SR 167, due to the location of the site building.	Contamination – Low/Moderate (although the site is likely down gradient of the Project Area and groundwater was not encountered during UST removal, the site’s proximity to the Project Area, the area’s variable and generally high water table, and the nebulous nature of the area’s groundwater gradient suggest the existence of petroleum contaminated groundwater at the site that might be affected by Project dewatering)
4	G & L Automotive Repair Inc (aka Chevron Gasoline Station) 1505 W Valley Hwy S Auburn WA 98001	Approx. 0.1 miles west of the Project Area; probably up or cross gradient of the Project Area	Historic records Ecology Facility/Site Atlas website	An auto repair shop has occupied this property since at least 1968; additionally, this site may also be known as a former Chevron gasoline station site. Potential contaminants consist primarily of petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals. This property is not listed on any state or federal databases that would indicate contamination is present.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a long history of being used as an auto repair shop; USTs may exist or may have existed on the site)
5	Hinshaw’s Motorcycle Store 1611 W Valley Hwy S Auburn WA 98001	Approx. 0.1 miles west of the Project Area; probably up or cross gradient of the Project Area	Historic records Windshield survey	Construction of the building on this property occurred in 1988. The property is currently occupied by a motorcycle and motorcycle parts and equipment sales company. Motorcycle service is also currently performed on site. Potential contaminants consist primarily of petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and appears to have a long history of being used for motorcycle repair)
6	Speedi Transmission Inc. 34622 W Valley Hwy S Algona WA 98001	Immediately west of the Project Area; probably up or cross gradient of the Project Area	Ecology Facility/Site Atlas website Historic records	An auto or truck repair shop has occupied this property since 1969. Potential contaminants consist primarily of petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a long history of being used for vehicle repair)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
7	King County Refuse Department 34601 W Valley Hwy S Algona WA	Less than 0.05 miles west of the Project Area; probably up or cross gradient of the Project Area	Historic records (Polk City Directories, aerial photos)	The King County Refuse Department occupied this property from 1970 to 1991. Based on historic aerial photographs of the project area, it appears that a large amount of grading occurred in this location, predominantly in 1985 and 1990. It is unclear how this property might have been used. Since the Algona Transfer Station has been in operation since 1966 approximately one-fourth mile to the south, this property may have been Refuse Department offices or a yard for parking and possibly refueling and repair of refuse collection vehicles. Potential contaminants from such uses consist primarily of petroleum products, solvents, and metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and might have been used for up to 15 years for vehicle refueling and repair)
8	Pioneer Sales and Leasing & Interwest Landscape Supplies (aka Valley Top Soil Inc.) 35019 W Valley Highway S Algona WA 98001	Less than 0.05 miles west of the Project Area; probably up or cross gradient of the Project Area	EDR Report: state LUST and UST databases Ecology Facility/Site Atlas website Ecology files Windshield survey	At least two USTs were present on this property: one 500 gallon gasoline UST and one 1,500 gallon waste oil UST. The gasoline UST was removed before 1994; soil and groundwater sampling results do not exist in the Ecology file for this property. It is unknown if a release occurred from the former gasoline UST. In 1994, contractors removed the waste oil UST and encountered petroleum-contaminated soil but no groundwater. Soil sampling in the waste oil UST excavation indicated that remaining soils did not contain petroleum contamination above MTCA cleanup levels.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and though contamination from the former waste oil UST appears to have been removed, it is unknown if any contamination exists from the former gasoline UST)
9	Algona Transfer Station (aka King County Transfer Station) 35315 W Valley Hwy S Algona WA 98001	Less than 0.05 miles west of the Project Area; probably up or cross gradient of the Project Area	Ecology Facility/Site Atlas website Historic records Windshield survey	The Algona Transfer Station has occupied this property since 1966. Transfer stations typically accept numerous hazardous materials including petroleum, metals, and solvents. Although only small quantities of hazardous materials are temporarily stored on this property, there is the potential for soil and/or groundwater contamination due to the long-time use of this property as a transfer station.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area, has a long history of being used by activities that can cause contamination and documented evidence of a release or contamination)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Exhibit 6

Hazardous Materials Sites

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
10	Former gasoline station 35936 W Valley Hwy S Algona WA 98001	Less than 0.05 miles west of the Project Area; probably up or cross gradient of the Project Area	Historic records	A gasoline station was constructed on this site in 1946. It was very small and only contained one 250-gallon tank. It is unknown when the building was demolished. Potential contaminants consist primarily of petroleum products.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and had or has USTs that could have leaked)
11	Royal Auto Sales (formerly Bud's Auto Body) 36104 W Valley Hwy S Algona WA 98001	Less than 0.05 miles west of the Project Area; probably up or cross gradient of the Project Area	Historic records Windshield survey	This was occupied by an auto body shop in 1981 and is currently occupied by an auto sales facility. The building on the property was constructed in 1970. Potential contaminants from the auto body shop operations include petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a potentially long history of being used as an auto body shop)
12	Norms Truck & Equipment Refinishing (aka Norm's Paint Shop) 414 W Valley Hwy N Pacific WA 98047	Less than 0.05 miles west of the Project Area; probably up or cross gradient of the Project Area	EDR Report: RCRA SQG database Historic records Windshield survey	Since at least 1991, a truck repair and paint shop has occupied this property. RCRA hazardous waste generator violations were documented for this property in 2001. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a long history of being used as a truck repair and painting shop)
13	Union 76 (aka Pacific Pitstop Express, Trimark Petroleum) 406 Ellingson Road Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records	Since 2000, a gasoline station has occupied this property. Potential contaminants primarily consist of petroleum products.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has USTs)
14	Pacific Ski Nautique 318 W Valley Hwy N Pacific WA 98047	Less than 0.05 miles west of the Project Area; probably up or cross gradient of the Project Area	Historic records Windshield survey	Pacific Ski Nautique is a boat dealership and repair company. Construction of the boat dealership building occurred in 1995. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a notable history of being used for boat repair)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Exhibit 6

Hazardous Materials Sites

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
15	Arco 5567 (aka Pacific Arco) 401 Ellingson Road Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	ERS Report: state CSCSL and VCP databases Ecology Facility/Site Atlas website Ecology ISIS Web Reporting website Historic records	Since 1982, a gasoline station has occupied this property. Four 10,000 gallon gasoline storage USTs were installed in 1982. They were later closed. Presumably, they were removed before four additional 10,000 gallon gasoline storage USTs were installed in 1995. Contamination was discovered in 1988; petroleum products were found in the soil and groundwater above MTCA cleanup levels. Cleanup of the site started in 1993 and, as of 1999, may be largely completed.	Contamination – Low/Moderate (the site's proximity to the Project Area suggests any petroleum contaminated groundwater still remaining at the site may be affected by Project dewatering)
16	Akzo Nobel Sikkens (aka Akzo Nobel Car Refinishes; Yamazen Machine Tool Inc) 206 Frontage Road N Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	EDR Report: state ICR database Ecology Facility/Site Atlas website Windshield survey	An interim cleanup report received by Ecology in 1998 for the Akzo Nobel warehouse property indicates that soils contaminated with petroleum products and solvents were or are present on the site. A phone call to Akzo Nobel at this address on 10/15/08 revealed that this site is a distributor; it does no paint manufacturing or painting on the property. Ecology's Facility/Site Atlas website indicates that Yamazen Machine Tool Inc is also a tenant of this business park and is a hazardous waste generator.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and may have soil contaminated with petroleum products and solvents)
17	Morpac Industries Inc. (aka Norberg Custom Boats) 117 Frontage Rd N Pacific WA 98047	Less than 0.05 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records Windshield survey	Since 1991, a boat builder has occupied this property. This business appears to be fairly large in size. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a long history of being used for boat building)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
18	Parker Truck & Equipment (Possibly also Recycling Technologies, Inc.) 116 Frontage Road N Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	EDR Report: state LUST, UST, and ICR databases Ecology files Windshield survey	Parker Truck & Equipment sells and repairs trucks and construction equipment. Recycling Technologies, a mineral spirits recycling company, leases a portion of the Parker Truck and Equipment property. Mineral spirits is a gasoline-range petroleum substance. During the removal of two USTs, contractors encountered soil contaminated with mineral spirits on the Recycling Technologies portion of the property. Contaminated soil was excavated and disposed of off-site. Soil samples from the walls of the UST excavation, and a water sample from the groundwater in the excavation, reportedly had concentrations of mineral spirits below regulatory cleanup levels.	Contamination – None (there is no information indicating these two businesses have a long history of operating at this site; the extent of the mineral spirit-contaminated soil identified during UST removal appears to have been defined and the contaminated soil appears to have been cleaned up)
19	Apply A Line Incorporated 106 Frontage Road N Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	EDR Report: RCRA database	Since 1991, a pavement painting company has occupied this property. A number of RCRA hazardous waste generator violations have been documented for this property. Potential contaminants include petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a long history of being used by a painting company)
20	Stetners Machine Shop 101 Frontage Road S Pacific WA 98047	Less than 0.05 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records	Construction of the building at this property occurred in 1979. It has been occupied by a machine shop since 1991. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a long history of being used as a machine shop)
21	Precision Iron Works Inc. (aka Custom Iron Company) 102 Frontage Road S Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records Windshield survey	The building on this property was constructed in 1980 and has been occupied by a metal manufacturer since at least 1991. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a long history of being used for metals manufacturing work)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
22	Mid-Mountain Contractors 204 Frontage Road S Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records Windshield survey	This property is occupied by a service garage. The building was built in 1990. The garage most likely uses small amounts of lube oils and solvents. Potential contaminants therefore include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and appears to have a long history of being used for servicing vehicles)
23	All West Underground Inc. 230 Frontage Road S Pacific WA 98047	Less than 0.05 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records	Two buildings, both built in 1979, occupy this property. One is identified as a service garage. Accordingly, small amounts of lube oils and solvents are likely used on site. Potential contaminants therefore include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and appears to have a long history of being used for servicing vehicles)
24	Powell Property 301 W Valley Hwy Pacific WA 98047	Adjacent to and west of the Project Area; probably cross or up gradient of the Project Area	Ecology Facility/Site Atlas website Ecology files Historic records	This property is listed on the state CSCSL database. Based on Ecology files, a site visit conducted in 2004 showed the property was covered with approximately 25 vehicles in various states of condition along with vehicle parts and other machinery. There were reportedly large oil-stained areas and loose auto batteries throughout the site. The City of Pacific condemned the property and took control of it; however, no soil or groundwater testing records exist in Ecology's file for this property. In addition, in 1929, a small gasoline station occupied this property. It is not known how long the gasoline station operated on the property. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (petroleum product contamination observed on this site might have reached the Project Area or might be affected by Project dewatering; USTs may exist or may have existed on the site)
25	Eck Property 405 W Valley Hwy Pacific WA 98047	Adjacent to and west of the Project Area; probably cross or up gradient of the Project Area	Historic records Windshield survey	Based on aerial photographs, it appears that this was used to store vehicles and may have been used as a junk yard from at least 1998 to 2002. Portions of the property appear to be currently used as a junk yard.	Contamination – Low/Moderate (this site is less than one-eighth mile cross or up gradient of the Project Area and may have a long history of being used as a junk yard)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Exhibit 6

Hazardous Materials Sites

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
26	Affordable Salvage 210 County Line Rd SW Pacific WA 98047	About 0.22 miles east of the Project Area; probably down gradient of the Project Area	Ecology Facility/Site Atlas website Windshield survey	Ecology identifies this facility as an automotive services facility. In or before 2004, soil at this site was confirmed to be contaminated, and groundwater was suspected of being contaminated with petroleum products and priority pollutant metals. The site is currently awaiting a site hazard assessment by Ecology. The site appears to be currently used as a junk yard.	Contamination – None (because the site is almost one-fourth mile east of and cross or down gradient from the Project Area, it is highly unlikely that any contaminated groundwater has migrated from the site to the Project Area or that that any contaminated groundwater will be affected by the Project)
27	NW Machine Products Inc. (possibly AG Serv Auto Repair LLC and Perfect Auto Glass Collision Center, which is located at 354/364 Roy Rd SW Pacific WA 98047)	About 0.06 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records Windshield survey	The building on this property was constructed in 1988 and is currently occupied by a metal products manufacturer. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and may have a long history of being used for metals manufacturing work)
28	Bio Recycling Corporation 251 Roy Rd SW (Formerly 2nd Street E?) Pacific WA 98047	About 0.20 miles east of the Project Area; probably cross or down gradient of the Project Area	Ecology Facility/Site Atlas website Windshield survey	Ecology identifies this property as the site of a spill.	Contamination – None (because the site is between one-eighth and one-fourth mile east of and cross or down gradient from the Project Area and because the site is identified only as having been the site of a spill, it is highly unlikely that any of the spilled material has reached the Project Area or might be affected by the Project)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
29	LCI Partners LLC Development 828 Valentine Ave Pacific WA 98047	More than 0.25 miles east of the Project Area; probably cross or down gradient of the Project Area	Ecology Facility/Site Atlas website Windshield survey	In or before 2007, soil and groundwater at this site was confirmed to be contaminated with petroleum products, priority pollutant metals, and conventional inorganic contaminants. The site has entered Ecology's voluntary cleanup program. This appears to be a new, empty commercial/light industrial building for multiple tenants	Contamination – None (because the site is more than one-fourth mile from and likely cross or down gradient from the Project Area, contamination from this site is highly unlikely to have reached the Project Area; contamination at this site is highly unlikely to be affected by the Project)
30	Hidalgo Blasting Services Inc. and Day's Grocery (aka Custom Fabric & Welding, DFG Tooling Company, K & M Recycling, Days Corner) 608-624 W Valley Hwy S Edgewood WA 98372	Less than 0.1 miles west of the Project Area; probably cross or up gradient of the Project Area	Historic records Ecology Facility/Site Atlas website EDR Report: state UST database Windshield survey	This property has several addresses and has had multiple uses. Several buildings, and possibly several residences, occupy the site. Hidalgo Blasting Services Inc. occupies the western portion of the site. The building associated with this business reportedly was constructed in 1966 and occupied by DFG Tooling Company, K & M Recycling, and Custom Fabric & Welding. These businesses appear to have included metal manufacturing and metal recycling. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals. An unoccupied building identified as "Day's Grocery" is located on the southeastern corner of the property. A small gasoline fueling facility was associated with this building. The grocery store and gas station were apparently known as the Days Corner gas station and mini mart. That business is listed on the state's UST, LUST, CSCSL, and VCP databases. It has three temporarily closed USTs that stored gasoline and diesel.	Contamination – High (the fuel release on the Days Corner property has likely reached the Project Area or will likely be affected by Project dewatering)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
31	<p>Valley Freightliner Inc 277 Stewart Rd SW Pacific WA 98047</p> <p>Gordon Trucking (aka Gordon Trucking Pacific Terminal) 151 Stewart Rd SW Pacific WA 98047</p>	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	<p>EDR Report: state SQG database</p> <p>Historic records</p> <p>Ecology Facility/Site Atlas website</p> <p>Windshield survey</p>	<p>Valley Freightliner and Gordon Trucking share the property shown on Exhibit 5. Valley Freightliner sells, rents, and services trucks. Gordon Trucking, a trucking company, owns Valley Freightliner and has its corporate office at 151 Stewart Rd SW. The main building on this property was apparently constructed in 1995.</p> <p>Truck servicing activities typically use lube oils and fluids as well as solvents. Potential property contaminants therefore include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals. Additionally, trucking companies typically have a private fueling facility on-site, which may be the case for this property.</p> <p>Valley Freightliner had several hazardous waste generator violations in 2002. The property is on the state's CSCSL and VCP databases. Soil on the property has petroleum products above MTCA cleanup levels; groundwater has petroleum products and non-halogenated solvents in concentrations above MTCA cleanup levels.</p>	Contamination – High (the petroleum and solvent contaminated groundwater will likely be affected by Project dewatering)
32	<p>Pacific Plumbing Supply (aka Delta Plumbing, Delta Plumbing & Heating Inc.)</p> <p>172 Stewart Rd SW (possibly also 164 Stewart Rd SW) Pacific WA 98047</p>	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	<p>EDR Report: state UST and LUST databases</p> <p>Ecology Facility/Site Atlas website</p> <p>Ecology files</p> <p>Windshield survey</p>	<p>In 2002, contractors removed a 500-gallon diesel UST and a 2,000-gallon gasoline UST from the southeast portion of this property and encountered petroleum, BTEX, naphthalene, and/or lead contaminated soil and groundwater. The contractors removed approximately 6,000 tons of petroleum contaminated soil and disposed of the material off-site. In addition, the contractors treated "thousands" of gallons of groundwater. Soil sampling results indicated that contamination remains under the existing building and east of the property under Thornton Avenue SW. Based on soil samples closest to the SR 167 corridor, it appears unlikely that soil beneath SR 167 is contaminated.</p>	Contamination – Low/Moderate (the contaminated groundwater might be affected by Project dewatering; groundwater contaminant concentrations at the Project Area can be reasonably predicted to be low; handling and disposal of contaminated groundwater can be reasonably predicted to be straightforward)

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 6
Hazardous Materials Sites**

Site No.	Site Name and Address	Site Location Relative to the Project Area	Site Information Sources	Relevant Site Use(s), Site Conditions of Concern, Affected Media and Remediation History, and Hazardous Materials of Concern	Impact Rating
33	Shelley's Auto Sales 1250 Thornton Avenue SW Pacific WA 98047	Less than 0.1 miles east of the Project Area; probably cross or down gradient of the Project Area	Historic records	This property consists of a single family residence and a warehouse that were constructed in 1955 and 1960, respectively. Since at least 1996, an auto repair shop has used the warehouse. Potential contaminants include petroleum products, petroleum hydrocarbon-based solvents, chlorinated solvents, and heavy metals.	Contamination – Low/Moderate (this site is less than one-eighth mile from the Project Area and has a notable history of being used for vehicle repair)
34	Person & Person Inc. (presumed address: 136 Stewart Road SE Pacific WA 98047)	Approx. 0.25 miles east of the Project Area; probably cross or down gradient of the Project Area	EDR Report: state UST, LUST, and ICR databases Ecology Facility/Site Atlas website	A 1,000 gasoline UST and a 500 gallon diesel UST were removed from this property in 1992. In or before 1992, soil and groundwater on this site were found to be contaminated. The contamination was reportedly cleaned up by 2001.	Contamination – None (because the site is approximately 1/4 mile from and likely cross or down gradient from the Project Area, contamination from this site is highly unlikely to have reached the Project Area; any remaining contamination at this site is highly unlikely to be affected by the Project)

CHAPTER 3 POTENTIAL HAZARDOUS MATERIALS EFFECTS

NEPA and SEPA regulations require documents such as this Report to consider a project's direct, indirect, and cumulative effects. Accordingly, this chapter will discuss direct, indirect, and cumulative hazardous materials effects that the Project might pose.

What direct hazardous materials effects might the Project pose?

NEPA defines direct effects as effects a project causes that occur at the same time and place. *See* 40 C.F.R. § 1508.8(a). Direct hazardous materials effects that this Project might pose would arise during Project construction. Such effects would be of two types:

- Effects posed to the Project by Hazardous Materials Sites
- Hazardous material effects posed by the Project to Sensitive Receptors and the environment in general.

What effects might Hazardous Materials Sites pose to the Project during Project construction?

As is described in detail in Appendix 2, a Hazardous Materials Site could pose the following effects to a project during construction:

- Subject WSDOT to liability for remediating contaminated property;
- Harm project workers, the public, and the environment; and
- Cause WSDOT to be responsible for cleaning up hazardous materials released from the site as a result of construction activities.

Each of these effects could have the further effect of delaying project construction and increasing project costs. The actual effects that a Hazardous Materials Site might pose depend on the site and on whether project construction will involve acquiring that site, renovating, demolishing or

excavating structures on that site, or excavating soil or dewatering groundwater on or near that site.

Because WSDOT is not expecting to acquire any property for this Project or to renovate, demolish or excavate any structures that could contain hazardous materials, WSDOT only evaluated the Hazardous Materials Sites for effects that contaminated soil or groundwater on or from those sites could pose to the Project during Project construction. Pursuant to its Methodology, WSDOT then assigned each site one of the following impact ratings:

- Contamination – None
- Contamination – Low/Moderate
- Contamination – High

The impact rating assigned to each site and a summary of the rationale for that rating are presented in Exhibit 6.

Of the thirty-four Hazardous Materials Sites listed in Exhibit 6, six received a “Contamination – None” rating, twenty-six received a “Contamination – Low/Moderate” rating and two received a “Contamination – High” rating. The thirty-four sites were or currently are used as gasoline stations; motorcycle, automobile, truck, construction equipment, and boat service and repair shops; vehicle body repair and paint shops; machine and metal manufacturing shops; boat building shops; pavement painting businesses; junk and vehicle wrecking yards; mineral spirits and metals recyclers; and refuse transfer stations.

Although they are adjacent to the Project Area and store or stored heating oil, the fourteen properties shown on Exhibits 3 through 5 as “Heating Oil” Hazardous Materials Sites were assigned a “Contamination – Low/Moderate” rating. No evidence was found indicating heating oil leaked on any of these properties and heating oil is not very mobile when it leaks into the soil or comes into contact with groundwater.

The soil and groundwater contaminants that exist or could exist on the sites that received a “Contamination –

Low/Moderate” or “Contamination – High” rating includes the following:

- Petroleum hydrocarbons and petroleum hydrocarbon-based solvents such as gasoline, mineral spirits, diesel, lube oil, waste oil, and benzene, toluene, ethyl benzene, and xylene (BTEX)
- Heavy metals such as cadmium, chromium, copper, and lead
- Chlorinated solvents such as trichloroethylene (TCE) and perchloroethylene (PCE, also known as tetrachloroethylene).

In addition to effects posed to the Project by Hazardous Materials Sites, fill material that was placed throughout the Project Area during the construction of SR 167 may have come from contaminated sites and could contain a variety of contaminants, including petroleum hydrocarbons, metals, construction debris, and wood waste.

There is always a risk that contamination could be encountered anywhere in the Project Area because contamination may exist that has not been documented or was not discovered by the research performed to prepare this Report. Similarly, undocumented or undiscovered USTs may exist within the Project Area, especially because WSDOT commonly encounters unanticipated USTs when widening major routes.

Although Hazardous Materials Sites and undocumented contamination and USTs could adversely affect the Project during Project construction, this Project will likely have a positive effect on the environment. WSDOT will properly handle and dispose of any USTs, contaminated soil, and contaminated groundwater encountered during Project construction. This eliminates potential contaminant sources and removes contamination that might otherwise have remained in the environment and continued to migrate.

Petroleum hydrocarbons

All petroleum hydrocarbons are less dense than water and therefore either float on or dissolve in water.

Gasoline is relatively mobile in the environment and is more toxic at lower concentrations than diesel and oil which are heavier grades of hydrocarbons. The well known gasoline components benzene, toluene, ethyl benzene, and xylenes are volatile organic compounds that can pose a substantial risk to humans and the environment, and are highly soluble and mobile in groundwater.

Diesel and oil are not particularly mobile in the environment and are relatively low in toxicity. Compared to gasoline, diesel- and oil-range petroleum tends to float on the water table rather than dissolve or disperse throughout the water column.

Heavy metals

Metals can become soluble and migrate to groundwater depending on the conditions of infiltrating water and the media in which the metals were initially contained. However, metal contamination is more commonly found in shallow, subsurface soils

Chlorinated solvents

Chlorinated solvents are denser than water and therefore either dissolve or sink in water. Chlorinated solvents are highly mobile in soil and groundwater and are highly toxic at low concentrations. Unlike most contaminants, chlorinated solvents can migrate readily through fine-grained soils. Because they sink in water, chlorinated solvents tend to move downward through the subsurface and water column.

What hazardous materials effects might Project construction pose to Sensitive Receptors and the environment in general?

Project construction might pose adverse hazardous materials effects to Sensitive Receptors and the environment through spills of hazardous materials used or encountered during Project construction.

Project construction will require the use of hazardous materials typically employed in construction and paving work. Gasoline, diesel, motor oil, transmission fluid, radiator coolant, and brake fluid will be used in construction vehicles. Many of those vehicles will also have systems powered by hydraulic oil. Cement, asphalt tar, paving oils, tack, and paint will also be used to construct the new roadway areas associated with the Project. During construction, these hazardous materials may also be stored at one or more locations within the Project Area. Finally, Project construction activities could encounter hazardous materials that have migrated to the Project Area from Hazardous Material Sites.

The hazardous materials used in Project construction vehicles could leak from the vehicles onto the Project Area and could also be spilled if the vehicles are refueled or serviced within the Project Area. Hydraulic hoses on heavy equipment could possibly drip hydraulic oil. Hazardous materials used to construct the new roadway areas could be spilled in the Project Area. Hazardous materials stored within the Project Area could leak. Finally, contaminated soil or groundwater encountered during Project construction could be released or spread.

It is highly unlikely that any human Sensitive Receptors will be adversely affected by a spill or release of hazardous materials during Project construction. The hazardous materials that will be used during Project construction or that might be contained in Project Area soil or groundwater are unlikely to be used in sufficient quantities or to

evaporate in sufficient concentrations to harm human beings outside of the Project Area.

Large spills or releases of hazardous materials used or encountered during Project construction could drain into and adversely affect the environmental Sensitive Receptors, i.e., Mill Creek, Jovita Creek, and Milwaukee Ditch, the ditches and storm drains that drain into them and the wetlands adjacent to or immediately down slope of the Project Area. In addition to harming the habitat provided by those creeks and wetlands, such spills and releases could harm the species living in those creeks and wetlands.

What costs are associated with these direct hazardous materials effects?

Types of costs associated with direct hazardous materials effects

The main costs associated with the direct hazardous materials effects the Project might pose are the costs associated with removing, managing, and properly disposing of USTs, contaminated soil, and contaminated groundwater that might be encountered during Project construction. Such costs can be substantial because of the complex laws governing the management and disposal of hazardous materials, including contaminated soil and groundwater. Appendix 1 identifies the most common laws, regulations, guidance documents, and policies governing the handling and disposal of hazardous materials.

Other costs associated with the direct hazardous materials effects that the Project might pose are costs related to:

- Providing Project workers with appropriate hazardous materials training and personal protective equipment
- Keeping appropriate hazardous materials response equipment in the Project Area during construction
- Responding to and cleaning up any contamination caused by releases and spills of hazardous materials during Project construction

- Construction delays caused by unplanned encounters with hazardous materials and by hazardous materials releases and spills

Costs of removing and properly disposing of USTs, contaminated soil, and contaminated groundwater

If an UST is encountered, it should be removed by a certified UST decommissioning supervisor and soil samples should be collected by a registered site assessor to determine if a release has occurred from the UST. The cost of removing and performing the associated sampling of a UST can range from \$5,000 for a 400 gallon heating oil UST to over \$40,000 for a 10,000 gallon gasoline UST. If contaminated soil or groundwater must be removed additional costs would apply.

If contaminated soil is excavated or contaminated groundwater is extracted or “dewatered” during Project construction, it must be characterized and disposed of properly. Characterization consists of sampling the soil or groundwater and having a laboratory analyze that sample for contaminants. Since numerous potential contaminants exist, and since laboratory analyses can be quite expensive, soil and groundwater samples will be analyzed only for contaminants that are suspected of being present.

Contaminants that should be suspected of being present in Project Area soils and groundwater will depend on visual and olfactory characteristics of the soil or groundwater observed in the field as well as where the soil or groundwater was encountered relative to the Hazardous Materials Sites shown on Exhibits 3 through 5 and listed in Exhibit 6. The use and contamination history of the Hazardous Materials Sites as a whole indicate that petroleum hydrocarbons, such as gasoline, diesel and motor oil, and petroleum hydrocarbon solvents such as toluene and xylene would be the most likely contaminants. Chlorinated solvents, such as TCE and PCE, and metals, such as cadmium, chromium, copper, and lead might also be present.

Analysis of soil or groundwater for petroleum hydrocarbons can range from \$40 to \$90 or more per sample for a five to ten business day turn-around. Metals analyses can cost \$25 or

more per metal per sample while chlorinated solvents analyses could cost \$150 to \$200 or more per sample.

Options and costs for disposal of contaminated materials vary similarly. If soil is sufficiently contaminated to be classified as dangerous waste (a waste category that includes federal hazardous waste) disposal costs can range from \$180 per ton for land filling to \$600 per ton for incineration.

Soil and groundwater that has contaminant concentrations above background but below dangerous waste levels can be disposed of more economically than material classified as dangerous waste. The cost for disposing of petroleum contaminated soil that is not dangerous waste ranges from \$19 to \$47 per ton. The cost for disposing of soil contaminated with chlorinated solvents or metals ranges from \$39 to \$47 per ton. These prices do not include the cost of excavating the soil or transporting it to the receiving port for the disposal facility. The cost for disposing of contaminated groundwater depends on whether the water must be treated and whether it may be permitted for disposal in the local sanitary or storm sewer. Off-site treatment and disposal can cost \$0.25 to \$2 per gallon depending upon the type and concentration of contaminants present in the water. Obtaining a permit to discharge the water to the local sewer can cost \$2,500 to \$10,000, again depending on the type and concentration of contaminants present.

If soil is contaminated at levels below MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses, the soil may be reused on site. Similarly, if groundwater contaminants do not exceed MTCA Method A cleanup levels and the water conforms to criteria defined in WAC 173-201A, Water Quality Standards for Surface Waters in Washington State, the groundwater may be discharged directly or indirectly to the ground surface or surface water.

What indirect hazardous materials effects might the Project pose?

NEPA defines indirect effects, also known as secondary effects, as effects a project causes that occur later in time or are farther removed in distance, but are still reasonably foreseeable. *See*

40 C.F.R. § 1508.8(b). Indirect hazardous materials effects that this Project might pose would arise after construction during Project operation.

Hazardous materials effects that could arise during Project operation consist of leaks and spills of hazardous materials by the traveling public and effects caused by WSDOT's use and spills of hazardous materials in maintaining the roadway created by the Project.

Hazardous materials leaks, spills, and uses already occur within the Project Area. Post-construction operation of the Project is not expected to appreciably increase, and in fact could decrease, such hazardous materials leaks, spills, and uses. Specifically, leaks and spills of hazardous materials by the traveling public could decrease because the Project is expected to improve traffic flow and therefore decrease the amount of time vehicles spend in the Project Area. The hazardous materials that WSDOT will use and could incidentally spill in maintaining the roadway in the Project Area will increase somewhat as a result of Project construction. The construction of the Project will improve the handling of stormwater that runs off the Project Area and therefore reduce the residual effect of all hazardous materials leaks, spills, and uses in the Project Area.

To what cumulative hazardous materials effects might the Project contribute?

NEPA defines cumulative effects as effects on the environment that result from the incremental effects of the Project when added to other past, present, and reasonably foreseeable future actions. *See* 40 C.F.R. § 1508.7. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7.

WSDOT roadway construction projects typically have a positive effect on the environment. Contaminated soil and groundwater encountered during project construction is removed and properly disposed of, thereby reducing the amount of contamination in the environment. Further, post-

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

construction Project operation is expected to leave unchanged or improve hazardous materials effects caused by the use and maintenance of the portion of SR 167 within the Project Area.

Based on this analysis, the Project will positively affect, by reducing, cumulative hazardous materials effects on the environment.

CHAPTER 4 MITIGATION MEASURES

The direct and indirect hazardous materials effects that the Project might pose can be avoided or reduced by implementing the mitigation measures described in this chapter. This Project poses no adverse hazardous materials effects that cannot be mitigated.

Measures to avoid or reduce hazardous materials effects posed by Project construction and operation can be implemented during different stages of Project development and construction. Exhibit 7 identifies, by Project stage, the measures that may be implemented to avoid or reduce hazardous materials effects posed by the Project.

The greatest adverse hazardous materials effects that the Project might pose are encountering unanticipated USTs, contaminated soil, or contaminated groundwater during Project construction. As is stated in Exhibit 7, a plan should be developed before construction starts for handling these situations. Although unexpectedly encountering USTs or contamination will increase Project costs and can delay the construction schedule, having such a plan will minimize these effects.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 7
Mitigation Measures**

Project Stage	Potential Hazardous Materials Effect	Mitigation Measure
Design and PS&E	1. Effects Hazardous Materials Sites might pose to the Project during Project construction	<p>Well before WSDOT finalizes the Project construction contract documents and at least six months before the Project contract is advertised, contact a WSDOT Hazardous Materials Specialist in the NWR or in the ESO Hazardous Materials and Solid Waste Program to obtain and review an updated EDR Report for the Study Area. This Hazardous Materials Technical Report was developed in reliance on an EDR Report dated January 10, 2006. In general, if the EDR Report on which a hazardous materials technical report relies is more than two years old, an updated EDR Report should be obtained and reviewed for new information on contaminated sites that might affect the project for which the technical report was prepared.</p> <p>At least six months before the Project contract is advertised, work with a WSDOT Hazardous Materials Specialist to determine if soil and groundwater samples should be collected to characterize areas near the Hazardous Materials Sites assigned a "Contamination – High" rating in which Project excavation or dewatering work will occur or on which stormwater infiltration facilities will be built.</p> <p>Consider designing the Project to avoid or minimize excavation, dewatering, and construction of stormwater infiltration facilities near Hazardous Materials Sites assigned a "Contamination – Low/Moderate" or "Contamination – High" rating.</p> <p>If excavation or dewatering work will occur near Hazardous Materials Sites assigned a "Contamination – High" rating, include a general special provision (GSP) in the contract that addresses the contamination that might be encountered in those areas.</p> <p>Consider including a GSP in the contract if excavation or dewatering work will occur near Hazardous Materials Sites assigned a "Contamination – Low/Moderate" rating; such a GSP would address the contamination that might be encountered in those areas.</p> <p>Arrange for Project excavation and dewatering activities to occur during months when the water table is lowest. This will minimize the need for dewatering and thereby minimize the possibility of drawing contaminated groundwater into previously uncontaminated areas, the expense associated with cleaning up those newly contaminated areas, and the possibility that contaminated groundwater will be "dewatered" and need to be properly handled and disposed of.</p>

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 7
Mitigation Measures**

Project Stage	Potential Hazardous Materials Effect	Mitigation Measure
Design and PS&E, <u>continued</u>	1. Effects Hazardous Materials Sites might pose to the Project during Project construction, <u>continued</u>	<p><u>Note regarding property acquisition:</u> Because WSDOT is not expecting to acquire any property for the Project, no mitigation measures are included in this Report that address effects that could be posed to the Project by the acquisition of contaminated property. If property will be acquired for the Project, contact a WSDOT Hazardous Materials Specialist for assistance.</p> <p><u>Note regarding demolition:</u> Because Project construction is not expected to involve the renovation, demolition, or excavation of structures containing hazardous materials (such as USTs, petroleum products, ACM, LBP, PCBs, or mercury), no mitigation measures are included in this Report that address effects that could be posed to the Project by the <u>planned</u> renovation, demolition, or excavation of such structures. If such structures are expected to be renovated, demolished, or excavated, contact a WSDOT Hazardous Materials Specialist for assistance.</p>
	2. Hazardous materials effects that Project construction might pose to Sensitive Receptors and the environment in general.	No mitigation measures at this stage.
	3. Hazardous materials effects that could arise during post-construction Project operation as a result of Project construction	Incorporate in the Project design appropriate facilities for handling and treating stormwater runoff from the Project Area, thereby minimizing the potential for contaminants from SR 167 to enter nearby wetlands and waterways, including Mill Creek, Jovita Creek, and Milwaukee Ditch.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 7
Mitigation Measures**

Project Stage	Potential Hazardous Materials Effect	Mitigation Measure
Pre-Construction	1. Effects Hazardous Materials Sites might pose to the Project during Project construction	<p>If contamination is identified in a GSP in the contract (see the mitigation measures on the first page of this table):</p> <ol style="list-style-type: none"> 1) Ensure the Project-specific Spill Prevention, Control and Countermeasures Plan (SPCC Plan), discussed below, addresses the contamination. 2) Ensure the Contractor will use in the contaminated areas identified in the GSP personnel who are appropriately trained to recognize and address contaminated soil or groundwater in the event it is encountered. <p><u>Note regarding health and safety:</u> It is the Contractor's responsibility to prepare and implement, for its Project workers, a Project-specific health and safety plan that satisfies federal and state requirements for hazardous waste situations that might arise during Project construction.</p> <p>To minimize effects of encountering unanticipated USTs or contamination on the Project's cost and schedule:</p> <ol style="list-style-type: none"> 1) Ensure the Contractor knows the appropriate initial actions to take in the event an unanticipated UST or contamination is encountered during Project construction (e.g., stop work, contact the WSDOT Project Engineer, secure the work area and, if possible, contain the encountered hazardous materials or contamination). 2) Have a plan for handling unanticipated USTs and contamination. This plan should <ol style="list-style-type: none"> a) Identify the appropriately certified entity or registered individual who will remove the UST or handle the contamination and collect any needed samples (e.g., the Contractor under force account, a separately hired consultant or contractor, a WSDOT Hazardous Materials Specialist who will either help directly or hire an on-call consultant to help). b) Set forth minimum directives for handling the UST or contamination, given the following requirements: <ol style="list-style-type: none"> i) All USTs and contamination shall be handled to prevent the contamination of previously uncontaminated areas. ii) All contamination that the completed Project will render inaccessible must be removed. ii) All USTs and contaminated soil that are excavated and all contaminated groundwater that is extracted must be properly handled and disposed of. See WSDOT EPM 620.08 and the laws, regulations, guidance documents, and policies identified in Appendix 1 of this Report. iii) All encountered USTs and contamination must be reported to a WSDOT Hazardous Materials Specialist who can ensure that WSDOT's obligations for reporting USTs and contamination to Ecology are satisfied. c) Designate areas within or near the Project Area where any soil and groundwater suspected of being contaminated can be temporarily stockpiled or held while characterization samples are analyzed d) Preliminarily establish when it might be best for the Project schedule and budget to reuse contaminated soil on site rather than disposing of contaminated soil off site. e) Preliminarily consider whether on-site treatment of any extracted, contaminated groundwater is cost-effective.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 7
Mitigation Measures**

Project Stage	Potential Hazardous Materials Effect	Mitigation Measure
Pre-Construction, <u>continued</u>	2. Hazardous materials effects that Project construction might pose to Sensitive Receptors and the environment in general.	<p>Ensure an acceptable, Project-specific Spill Prevention, Control and Countermeasures Plan (SPCC Plan) meeting the requirements of WSDOT's Standard Specification 1-07.15(1) is prepared. In general, SPCC Plans address the prevention of and response to releases of contamination identified in contract GSPs and spills of hazardous materials used during project construction. The SPCC Plan for this Project should identify and include measures to protect from releases and spills the Sensitive Receptors identified in this Report, particularly:</p> <ol style="list-style-type: none"> 1) the wetlands adjacent to and immediately down slope of the Project Area 2) Mill Creek, Jovita Creek, and Milwaukee Ditch and the ditches and storm drains that that drain into them.
	3. Hazardous materials effects that could arise during post-construction Project operation as a result of Project construction	No mitigation measures at this stage.
Construction	1. Effects Hazardous Materials Sites might pose to the Project during Project construction	<p>Ensure there are WSDOT inspectors and Contractor personnel on site who are trained in recognizing potential contamination.</p> <p>Ensure the Contractor is prepared for encountering contaminated soil and groundwater when excavating or dewatering in potentially contaminated areas identified in contract GSPs.</p> <p>Ensure the Contractor is alerted to the possibility of encountering hazardous materials and USTs at any location in the Project Area where excavation or dewatering is occurring, especially since fill material that may have come from contaminated sites was placed throughout the Project Area during construction of SR 167.</p> <p>Ensure the Project-specific SPCC Plan is implemented (this includes ensuring that hazardous materials are stored and used and that spill kits are located pursuant to the plan)</p> <p>Ensure that appropriate contact information is readily available so that the plan developed for handling any unanticipated UST or contamination can be quickly implemented to avoid migration of contamination to Sensitive Receptors and to minimize construction delays.</p> <p>Ensure that the plan developed for handling any unanticipated UST or contamination is properly implemented.</p>

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

**Exhibit 7
Mitigation Measures**

Project Stage	Potential Hazardous Materials Effect	Mitigation Measure
Construction, <u>continued</u>	2. Hazardous materials effects that Project construction might pose to Sensitive Receptors and the environment in general.	No mitigation measures needed at this stage besides those listed above.
	3. Hazardous materials effects that could arise during post-construction Project operation as a result of Project construction	No mitigation measures at this stage.

CHAPTER 5 REFERENCES

1. American Society for Testing and Materials International. 2005. *Designation: E 1527 – 05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. West Conshohocken, Pennsylvania.
2. Environmental Data Resources Inc. January 10, 2006. *EDR DataMap Corridor Study, SR 167 HOV Lane, Sumner, WA 98390, Inquiry number 01589250.1r*. Prepared for Shannon and Wilson, Seattle, Washington.
3. King County. October 9, 10, and 12, 2008. *King County GIS Center Parcel Viewer website*. http://www.metrokc.gov/gis/mapportal/PViewer_main.htm.
4. Michael Minor & Associates. August 2008. *Traffic Noise Analysis Technical Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT Lane, SR 167 – 8th Street E Vic. to 15th Street SW Vic. Northbound HOT Lane*. Prepared for Washington State Department of Transportation, Seattle, Washington.
5. Perteet, Inc. September 2008. *Ecosystem Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT Lane, King/Pierce County, Washington*. Prepared for Washington State Department of Transportation, Urban Corridors Office, Seattle, Washington.
6. Perteet, Inc. July 2008. *Public Services and Utilities Technical Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT Lane*. Prepared for Washington State Department of Transportation, Seattle, Washington.
7. Pierce County. October 10, 12, and 16, 2008. *Pierce County Assessor-Treasurer electronic Property Information Profile (e-PIP) website*. <http://www.piercecountywa.org/cfapps/atr/ePIP/search.cfm>.
8. R. W. Beck, Inc. May 2008. *Draft Type A Hydraulic Report SR 167: Stage 4 Project (8th St E to S 277th St Southbound HOT Lane)*. Prepared for Washington State

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

Department of Transportation, Urban Planning Office, King County, Washington.

9. Shannon and Wilson. July 2008. *Hazardous Materials Technical Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT Lane*. Prepared for Washington State Department of Transportation, Seattle, Washington.

10 Shannon and Wilson. July 2008. *Geology, Soils and Groundwater Technical Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT Lane*. Prepared for Washington State Department of Transportation, Seattle, Washington.

11. Washington State Department of Ecology. October 7, 9, 10, 12, and 15, 2008. *Department of Ecology GIS Facility/Site Atlas website*. <http://apps.ecy.wa.gov/website/facsite/viewer.htm>.

12. Washington State Department of Ecology. October 10, 12 and 15, 2008. *Department of Ecology Integrated Site Information System (ISIS) Web Reporting website*. <https://fortress.wa.gov/ecy/tcpwebreporting/Default.aspx>.

13. Washington State Department of Transportation. August 2008. *Social, Economic, and Environmental Justice Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT Lane*. Seattle, Washington.

14. Washington State Department of Transportation. November 6, 2008. Windshield survey of project area and vicinity. Auburn, Algonia, Pacific, and Edgewood, Washington.

APPENDICES

APPENDIX 1: LAWS, REGULATIONS, GUIDANCE DOCUMENTS, AND POLICIES GOVERNING THE HANDLING, DISPOSAL, AND REMEDIATION OF HAZARDOUS MATERIALS

Numerous federal, state, and local laws, regulations, guidance documents, and policies govern the handling and disposal of hazardous materials and the remediation of media contaminated with hazardous materials. A list of the most common federal and state laws and regulations that apply to WSDOT projects is provided below. This is not an all-inclusive list; further evaluation of potentially applicable laws, regulations, guidance documents, and policies should take place.

Federal Laws and Regulations

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 42 U.S.C. §§ 9601 - 9675), the Superfund Amendments and Reauthorization Act (SARA), and All Appropriate Inquiries (AAI) (40 CFR Part 312)

Section 101(35)(B)(ii) and (iii) of CERCLA and SARA define liability for hazardous waste contamination and require liable parties to take responsibility for cleanup. 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries, establishes specific regulatory requirements and standards that must be met to qualify for certain landowner liability protections under CERCLA. The purpose of Hazardous Materials Discipline Reports (referred to as Hazardous Materials Technical Reports in this document) is, in part, to address liability issues relating to identification and acquisition of previously contaminated property for use as part of the Project.

Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984(42 U.S.C. §§ 6901 – 6992k)

RCRA sets forth requirements for handling, transportation, treatment, storage, and disposal of hazardous materials and wastes. It includes provisions for identifying and classifying

hazardous materials and wastes, and, through the HSWA, creates treatment standards for specific wastes. Any removal, treatment, or transportation of contaminated soils as part of the Project must be conducted in compliance with RCRA. HSWA also establishes requirements for ownership, operation, maintenance, and closure of underground storage tanks (USTs). RCRA-regulated USTs are governed by the Washington Underground Storage Tank Statute, Revised Code of Washington (RCW) 90.76, and its implementing regulations, Washington Administrative Code (WAC) 173-360.

Toxic Substances Control Act (TSCA)

TSCA allows the United States Environmental Protection Agency (EPA) to regulate the manufacturing, labeling, distribution, and use of existing chemicals when they pose an unreasonable risk to health or the environment. Under TSCA Section 6, EPA can limit or ban manufacturing and distribution, require labeling, or place other restrictions on chemicals. Chemicals regulated by TSCA include asbestos, lead (such as LBP) and PCBs. If these chemicals are encountered on the Project, they must be handled and disposed of in compliance with TSCA.

Clean Air Act (CAA)

The CAA provides for comprehensive federal regulation of all sources of air pollution. Any activities associated with the Project that have the potential to introduce hazardous substances to the air must be in compliance with the CAA. Discharges to air (including fugitive dust, asbestos, and hazardous chemicals) will be enforced at the state and local municipality level usually by the Washington State Department of Ecology (Ecology) or one of the seven local clean air agencies.

National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Parts 61 to 71)

EPA's rules concerning the removal and disposal of asbestos-containing material (ACM) were issued under NESHAP. NESHAP requires a thorough inspection for friable and nonfriable ACM within a structure prior to demolition activities. An accredited inspector as required by the Asbestos

Hazard Emergency Response Act (AHERA) must conduct all inspections. The NESHAP regulation also includes specific notification, work practice, packaging, labeling, and disposal requirements.

Typically, a notice of intent and a fee must be submitted to Ecology or the appropriate Washington State Air Agency before any asbestos abatement or demolition work is begun. Exceptions may apply for certain sizes and types of asbestos projects. Asbestos removed from buildings prior to demolition must be disposed in a landfill permitted to receive ACM.

Clean Water Act (CWA)

The CWA provides for comprehensive federal regulation of all sources of water pollution. Any activities associated with the Project that have the potential to introduce hazardous substances to surface waters, including wetlands, must be in compliance with the CWA. Several permit programs have been established to address CWA concerns. Permits and approvals required under the CWA that would require the Project to address hazardous substance issues include the National Pollutant Discharge Elimination System (NPDES) General Stormwater Permit for Construction Activities. This permit would require the Project to develop and implement a Temporary Erosion and Sediment Control Plan and a Spill Prevention, Control, and Countermeasures Plan.

Endangered Species Act (ESA)

ESA regulates a wide range of activities affecting plants and animals designated as “endangered” or “threatened.” The ESA states that it is unlawful to “take” any animal listed as an endangered species. ESA lists as “endangered” animals or plants that are in danger of being extinct. ESA broadly defines a “take” to include conduct that “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” an endangered species or an attempt to engage in such conduct. Chinook salmon, bull trout, and the bald eagle are listed as threatened under the ESA and live within the Green/Duwamish Watershed and Central Puget Sound Watershed. These watersheds extend from the Cascade Mountains to Puget Sound.

National Environmental Policy Act (NEPA)

NEPA requires that all actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations are given due weight in project decision-making. If a project is partially funded by the Federal Highway Administration, NEPA compliance is likely to be required. One of the major elements addressed in a NEPA assessment is environmental health. Assessment of effects associated with hazardous materials and waste is a component of the environmental health evaluation.

Occupational Safety and Health Act (OSHA)

OSHA establishes requirements for site safety procedures, worker training, and worker safety and health standards for employees engaged in work related to hazardous materials. All work involving the handling of and potential exposure to hazardous substances by workers while conducting activities associated with the Project must be in compliance with the relevant sections of OSHA.

State Laws and Regulations

Washington State implements many of the federal statutes pertaining to hazardous materials and wastes along with its own, often more stringent, laws and regulations. Washington State laws and regulations are listed below.

Model Toxics Control Act (MTCA, RCW 70.105D) and MTCA regulations (WAC 173-340)

MTCA, Washington State's version of CERCLA, is implemented by the regulations in WAC 173-340. MTCA and its implementing regulations set forth requirements for reporting hazardous materials releases and contamination discoveries, dictate soil and groundwater cleanup levels that are protective of human health and the environment, and establish joint and several liability for contamination cleanup. An overview of MTCA cleanup standards is detailed in WAC 173-340-700. Groundwater and soil cleanup standards are listed in WAC 173-340-720 and WAC 173-340-740. WAC 173-340-450 sets forth requirements for addressing USTs.

Dangerous Waste Regulations (WAC 173-303)

Washington's dangerous waste regulations implement RCRA and the Washington State Hazardous Waste Management Act, RCW 70-105 by setting forth procedures for designating and managing dangerous waste, a waste classification that includes all federal hazardous waste. Dangerous waste designation procedures are the most likely portion of these regulations that would affect the Project. Contaminated materials generated during construction, including soil, water, and debris, need to be properly designated before disposal. WAC 173-303-070 through 173-303-110 set forth dangerous waste characteristics and criteria. Requirements for dangerous waste generators are contained in WAC 173-303-170 through WAC 173-303-230. The dangerous waste regulations also include detailed requirements for forms and rules related to manifesting and transporting dangerous waste. A transporter of dangerous waste must comply with the procedures listed in WAC 173-303-240 through 173-303-250.

Should a spill occur on the Project site, the notification and mitigation requirements of the regulations must be complied with. WAC 173-303-145 lists reporting requirements for unpermitted spills and discharges into the environment. This section of the WAC applies "when any dangerous waste or hazardous substance is intentionally or accidentally spilled or discharged into the environment such that human health or the environment is threatened, regardless of the quantity of dangerous waste or hazardous substance."

Solid (Non-Dangerous) Waste Disposal (RCW 70.95, WAC 173-304)

The State Solid Waste Management Act, RCW 70.95, assigns primary responsibility for managing solid waste to local governments and keeps with the state the responsibility for assuring that effective local programs are established. Although WAC 173-304, the Minimum Functional Standards for Solid Waste Handling, sets forth the storage, collection, and transportation standards for all persons storing containerized solid waste that is generated on site (see WAC 173-304-200), local health departments regulate the handling and disposal of

solid waste. Identifying the appropriate waste disposal facility is the most likely the portion of local solid waste regulation that could affect a project. The local health department determines whether a waste material is acceptable at one or more of the public and private solid waste facilities in the county. In some cases, testing may be required prior to disposal. Even waste that is shipped to a disposal facility out of the county, and soil treatment facilities, falls under the jurisdiction of the local Health Department.

Underground Storage Tank Statute (RCW 90.76) and Regulations (WAC 173-360)

The purpose of the Underground Storage Tank Statute and its implementing regulations is to address the serious threat posed to human health and the environment by leaking underground storage tank systems (LUSTS) containing petroleum and other regulated substances. The regulations describe the enforcement, notification, and reporting requirements for LUSTS. The regulations also detail performance standards and operating and closure requirements.

Underground Utilities (RCW 19.122)

To protect underground utilities from harm, RCW 19.122 requires excavators to provide notice of excavation to all owners of underground facilities through a one-number locator service to which the owners are required to subscribe. Notice is to be communicated to the locator service between 2 and 10 days before excavation activities begin. If the excavator discovers utilities that were not identified or damages a utility, the excavator will stop work and notify the locator service and the owner of the utility service if possible. If the damage causes an emergency situation, the excavator shall also alert the appropriate public health agencies and take all steps necessary to ensure public safety. A failure to notify the locator service of damage to a hazardous liquid or gas pipeline is subject to a civil penalty of not more than \$10,000 for each violation. Any excavator who willfully or maliciously damages a field-marked underground facility shall be liable for triple the costs incurred in repairing or relocating the facility.

Clean Air Act and Local Air Agency Regulations

The requirements of the CAA and the Washington Clean Air Act are implemented usually by Ecology or one of seven local clean air agencies across the state: the Benton Clean Air Agency, the Northwest Clean Air Agency, the Olympic Region Clean Air Agency, the Puget Sound Clean Air Agency, the Southwest Clean Air Agency, the Spokane Regional Clean Air Agency, and the Yakima Regional Clean Air Agency. These air agencies have adopted their own regulations to protect air quality and control the emissions of air contaminants in their areas.

Water Pollution Control Act (RCW 90.48), Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A), and Water Quality Standards for Groundwater of the State of Washington (WAC 173-200)

The Water Pollution Control Act, RCW 90.48, controls pollution of state waters. It is implemented through two regulations that control pollution in state waters: Water Quality Standards for Surface Waters of the State of Washington, WAC 173-201A, and Water Quality Standards for Ground Water of the State of Washington, WAC 173-200. Any construction or operational activities associated with a project must comply with Washington's water quality standards.

WAC 173-201A establishes standards for toxic substances, conventional parameters (e.g., pH, dissolved oxygen, temperature), and aesthetic values for marine and fresh surface waters. It states that toxic substances above natural background levels may not be introduced into waters of the state if the substance will (1) singularly or cumulatively adversely affect characteristic water uses, (2) cause acute or chronic toxicity to the most sensitive biota dependent on the water, or (3) adversely affect public health. Ecology would employ or require chemical toxicity testing and biological assessments as appropriate to determine compliance with the above-mentioned requirements. The waste disposal permits issued under WAC 173-201A-160 are the primary means for controlling municipal, commercial, and industrial waste discharges to surface waters.

WAC 173-200 established similar standards for groundwater, with special emphasis on radionuclides and carcinogens due to potability issues.

Wastewater Discharges to Surface Waters (WAC 173-220)

Wastewater Discharges to Surface Waters, WAC 173-220, regulates discharges to surface water from construction projects. Under this program, it is unlawful to discharge polluting matter to surface waters without a National Pollutant Discharge Elimination System (NPDES) permit. A general NPDES permit for construction is required for a project.

Wastewater Discharges to Ground (WAC 173-216)

Wastewater Discharges to the Ground, WAC 173-216, regulates discharge of stormwater to detention basins if this water contains unacceptable concentrations of polluting matter. A project would likely be exempt from the requirements of this regulation if an NPDES Stormwater Permit for construction is acquired. This should be verified during the permitting process conducted for the project.

State Environmental Policy Act (SEPA)

The Washington State Environmental Policy Act (SEPA), implemented by WAC 197-11 and WAC 468-12, requires the identification of environmental effects that may result from a proposed project. Such information, provided during the SEPA review process, helps agency decision-makers, the project applicants, and the public understand how a proposed project would affect the environment. Assessment of effects associated with hazardous materials and waste, and demonstration that the project has avoided or minimized those potential effects, are components of the SEPA review process.

Washington Industrial Safety and Health Act (WISHA, RCW 49.17) and implementing regulations

The Washington Industrial Safety and Health Act is implemented largely by the General Occupational Health Standards found in WAC 296-62, the Safety Standards for Asbestos and Encapsulation found in WAC 296-65, and the Safety Standards for Construction Work found in WAC 296-155. These safety requirements apply to all construction

activities and are enforced by the Washington State Department of Labor and Industries (L&I).

LBP and Asbestos Work (WAC 296-62 Part I-1; WAC 296-65; WAC 296-155)

The safety standards provide specific procedures for work with and removal and encapsulation of LBP and ACM. All contractors working with LBP and ACM must be certified in LBP and asbestos removal and their supervisors and laborers must be trained. Maximum exposure limits for asbestos and lead must be adhered to and appropriate personal protective equipment must be used

WAC 296-62 requires that before commencement of work an owner must conduct a good faith inspection to determine whether materials to be worked on or removed contain asbestos. An accredited inspector must conduct the good faith inspection. L&I and the local clean air agency must be notified and fees must be paid in advance of any asbestos removal. Exposure assessment and monitoring must be conducted.

ACM and LBP, along with disposable clothing, respirator filters, and equipment used during work with ACM and LBP, must be disposed of in specially permitted landfills.

Hazardous Waste Operations and Treatment, Storage, and Disposal Facilities (WAC 296-62 Part P)

WAC 296-62 Part P sets forth the required procedures for work involving hazardous materials. The procedures include rules covering operations at known hazardous waste sites and initial investigations conducted at sites before the presence or absence of hazardous substances has been determined. Also included are rules on site assessment and control, and emergency response. The personal protective equipment selection protocol is outlined in WAC 296-62-30605. Training requirements for site personnel are included within multiple sections of Part P depending upon the designation of the contamination on site.

WAC 296-62 Part P also details the requirements for handling drums and containers. Unlabeled drums and containers must be considered to contain hazardous waste and handled accordingly until the contents are positively identified and labeled. Drums and containers that cannot be moved without rupture, leakage, or spillage must be emptied into a sound container.

Safety Standards for Construction Work (WAC 296-155)

WAC 296-155 requires employers to inform their workers of the potentially hazardous conditions of the workplace. When WSDOT informs the Contractor of these conditions, the Contractor is required to train the workers to recognize, respond to, and report such conditions. It is therefore important for WSDOT to inform the Contractor of such conditions through Contract and/or Special Provisions so that the Contractor can prepare its employees to appropriately and safely handle encounters of hazardous materials with minimal delays.

APPENDIX 2: METHODOLOGY FOR IDENTIFYING AND EVALUATING POTENTIAL HAZARDOUS MATERIALS EFFECTS

The Washington State Department of Transportation (WSDOT) identified and evaluated potential hazardous materials effects relating to this Project by collecting and analyzing information pertaining to the Project Area pursuant to the process described below.

In identifying and evaluating such potential hazardous materials effects, WSDOT relied heavily on a report prepared by Shannon and Wilson. That report, prepared for WSDOT for the SR 167 Stage 4 Project, was dated July 2008 and titled *Hazardous Materials Technical Report, SR 167 – 8th Street E Vic. to S 277th Street Vic. Southbound HOT*. The SR 167 Stage 4 Project involves an eight mile stretch of southbound SR 167, the southern half of which is adjacent to and parallels the four mile stretch of northbound SR 167 that this Project concerns. For simplicity, this methodology refers to work performed by WSDOT even when the work was performed by Shannon and Wilson personnel.

For purposes of this methodology and Report, the Project Area is the area within which Project construction work will occur.

What preliminary information did WSDOT collect to identify potential hazardous materials effects?

The preliminary information WSDOT collected to identify potential hazardous materials effects consisted of information on the Project Area boundaries, on the types and amounts of hazardous materials that the Project might use, and on the following existing natural and built conditions in the vicinity of the Project Area:

- Topography
- Drainage pathways
- Water bodies
- Geology, including permeability of the soil and subsoil

- Groundwater characteristics, including groundwater depths and flow directions
- Land uses

Using this information, WSDOT identified areas typically containing populations that could be particularly sensitive to hazardous materials released by Project activities occurring within the Project Area (Sensitive Receptors). Populations that could be particularly sensitive to hazardous materials releases include people who are elderly, sick or young, and species that are endangered or threatened. Accordingly, areas such as nursing homes, hospitals, medical centers, schools, day care centers, wildlife refuges, wetlands, water bodies, and other recognized habitat would be Sensitive Receptors if they could be affected by hazardous materials released by Project activities occurring within the Project Area.

Using the same information, WSDOT also identified the area within which hazardous materials, if released, might affect the Project Area by flowing over the ground surface, migrating through soils or groundwater, or being drawn into the Project Area by Project construction activities. This is the area that WSDOT studied for the existence of properties that are or might be contaminated (Study Area).

How did WSDOT identify contaminated properties that might affect the Project Area?

Contaminated properties that might affect the Project Area are properties that are or reasonably might be contaminated with hazardous materials that might affect the Project Area in one of two ways. The first way is that the hazardous materials have or reasonably might have flowed over the ground surface, or migrated through soils or groundwater, to the Project Area. The second way is that the hazardous materials might be drawn into the Project Area by Project construction activities such as dewatering. Contaminated properties that might affect the Project Area are termed Hazardous Materials Sites.

Environmental Database Report Review

WSDOT identified Hazardous Materials Sites by obtaining a report of sites listed in publicly available federal and state

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

environmental databases. WSDOT obtained this report by contracting with Environmental Data Resources, Inc. (EDR). The report that EDR produced (EDR Report) is contained in Appendix 3 of this Report. It is titled *EDR DataMap Corridor Study, SR 167 HOV Lane, Sumner, WA 98390, Inquiry number 01589250.1r* and is dated January 10, 2006.

EDR prepared the EDR Report by searching EPA and Washington State Department of Ecology (Ecology) databases for sites in the vicinity of the Project Area that are known or suspected to be contaminated with hazardous materials. EDR performed the search and prepared its report pursuant to the most recent standard established by the American Society for Testing and Materials (ASTM) for Phase I Environmental Site Assessments, the ASTM E 1527 – 05 standard. The following table shows the federal and state environmental databases that must be searched, as well as the minimum distances from the Project Area that must be searched, pursuant to that ASTM standard.

SR 167 - 8th Street E Vicinity to 15th Street SW Vicinity Northbound HOT Lane

ASTM E 1527 – 05 Standard Environmental Record Sources (where available)		
Standard Environmental Record Sources (where available)^a	Agency	Approximate Minimum Search Distance
Federal NPL site list	EPA	1.0 mile
Federal Delisted NPL site list	EPA	0.5 mile
Federal CERCLIS list	EPA	0.5 mile
Federal CERCLIS NFRAP site list	EPA	0.5 mile
Federal RCRA CORRACTS facilities list	EPA	1.0 mile
Federal RCRA non-CORRACTS TSD facilities list	EPA	0.5 mile
Federal RCRA generators list	EPA	Property and adjoining properties
Federal institutional control/engineering control registries	EPA	Property only
Federal ERNS list	EPA	Property only
State- and tribal-equivalent NPL ^b	Ecology	1.0 mile
State- and tribal-equivalent CERCLIS ^b	Ecology	0.5 mile
State and tribal landfill and/or solid waste disposal site lists	Ecology	0.5 mile
State and tribal leaking storage tank lists	Ecology	0.5 mile
State and tribal registered storage tank lists	Ecology	Property and adjoining properties
State and tribal institutional control/engineering control registries	Ecology	Property only
State and tribal voluntary cleanup sites	Ecology	0.5 mile
State and tribal Brownfield sites	Ecology	0.5 mile
^a . For abbreviation and definitions refer to the Abbreviations and Definitions section of this Report.		
^b . This is the CSCS list in Washington State.		

The EDR Report includes a list of databases that EDR searched, the search distance from the Project Area that EDR used for each database, maps showing the locations of the identified sites, and, where available, details regarding hazardous materials used or found on the identified sites.

WSDOT then reviewed the EDR Report for sites on the Federal National Priorities List (NPL) site list or on the Federal Resource Conservation and Recovery Act (RCRA) hazardous

waste treatment, storage or disposal (TSD) facility list, with the latter list being composed of two lists, the Federal RCRA CORRACTS facilities list and the Federal RCRA non-CORRACTS TSD facilities list. “CORRACTS” are facilities subject to corrective action under RCRA. Any sites on these lists that might affect the Project Area were placed on the Hazardous Materials Sites list, with “might affect the Project Area” meaning that hazardous materials on the sites 1) have or reasonably might have flowed over the ground surface or migrated through soils or groundwater to the Project Area or 2) might be drawn into the Project Area by Project construction activities such as dewatering. Details available in the EDR Report regarding these sites were also incorporated in the Hazardous Materials Sites list.

Next, WSDOT reviewed the EDR Report for sites lying within the Study Area. Sites within the Study Area that are or reasonably might be contaminated with hazardous materials that might affect the Project Area were also placed on the Hazardous Materials Sites List. Again, details available in the EDR Report about these sites were also incorporated in the list. The following types of sites were not placed on the Hazardous Materials Sites List because they generally are not the type of site that is or reasonably might be contaminated with hazardous materials:

- Sites listed in the EDR Report only because they had a one time hazardous materials spill that was likely small or completely cleaned up
- Sites listed in the EDR Report only because they generate hazardous waste and the site doesn't appear to have been in existence for a long time¹

¹ A hazardous waste generator that has a long history of operation or a site that has a long history of being used for activities that generate hazardous waste should be suspected for potential contamination even if such generators or sites have no reported violations or are not listed on another agency database. The EDR Report and other records reviewed to identify Hazardous Materials Sites help indicate the years a generator has been in operation or a site has been used for hazardous waste-generating activities.

- Sites other than underground storage tank (UST) sites that are listed in the EDR Report only because they store hazardous materials

Additional Records Review

WSDOT added to the list of Hazardous Materials Sites, as well as obtained additional information about specific Hazardous Materials Sites, by reviewing the following records for information on properties within the Study Area and for information on already identified Hazardous Materials Sites:

- Washington State Department of Ecology websites (specifically the GIS Facility/Site Atlas and Integrated Site Information System (ISIS) Web Reporting websites)
- King and Pierce County Assessor websites (specifically the King County GIS Center Parcel Viewer and the Pierce County Assessor-Treasurer electronic Property Information Profile (e-PIP) websites)
- Washington State Archive historical tax records (specifically, Puget Sound Archives from 1900 through 1972)
- Historical land use maps (specifically, Kroll Map Company maps from 1938 and 1956)
- Historical fire insurance maps (specifically, Sanborn Maps from 1968 and 1983)
- Business and land use directories (such as Polk City Directories)
- Historic aerial photographs
- Environmental agency records (specifically, files in Ecology's Northwest and Southwest Regional Offices for sites within 0.25 miles of the Project Area, paying particular attention to the nature and extent of any confirmed or suspected contamination and to cleanup activities and enforcement actions associated with the properties).

The following types of sites were not placed on the Hazardous Materials Sites List because they generally are not the type of site that is or reasonably might be contaminated with hazardous materials:

- Sites identified only because they had a one time hazardous materials spill that was likely small or completely cleaned up
- Sites identified only because they generate hazardous waste and don't appear to have been in existence for a long time (see footnote 1)
- Sites other than underground storage tank (UST) sites identified only because they store hazardous materials

What other properties did WSDOT add to the list of Hazardous Materials Sites?

After preparing the basic list of Hazardous Materials Sites, WSDOT would have added the following properties to that list:

- Properties WSDOT might acquire for the Project (Acquisition Properties)
- Properties containing buildings, above or below ground structures, or equipment that WSDOT might renovate, demolish, or excavate as part of the Project (Demolition Properties)

Because WSDOT is not expecting to acquire any property for the Project, WSDOT did not need to add any Acquisition Properties to the list.

Additionally, because Project construction will involve limited demolition of existing roadway and is not expected to involve the renovation or demolition of structures containing hazardous materials such as USTs, petroleum products, ACM, LBP, PCBs, or mercury, WSDOT did not need to add any Demolition Properties to the list.

How did WSDOT finalize the lists of Sensitive Receptors and Hazardous Materials Sites?

WSDOT finalized the list of Project-specific Sensitive Receptors and Hazardous Materials Sites by conducting a

windshield survey. The windshield survey involved driving the public access roads in the vicinity of the Project Area to:

- Verify the location of the Sensitive Receptors
- Identify additional Sensitive Receptors
- Verify the address and general status of the sites on the Hazardous Material Sites list
- Identify additional sites in the Study Area that might be contaminated with hazardous materials

In looking for additional Sensitive Receptors, WSDOT considered the same type of information it originally evaluated to identify Sensitive Receptors. Specifically, WSDOT looked for field evidence of land uses and conditions indicative of populations that could be particularly sensitive to hazardous materials released by Project activities occurring within the Project Area.

In looking for additional sites that might be contaminated with hazardous materials, WSDOT looked only at features in plain sight from public access corridors. WSDOT did not enter any properties or view conditions within buildings. The features WSDOT took note of in looking for additional sites included:

- A property's apparent current and past uses
- The presence of, or evidence suggesting the presence of, above-ground storage tanks (ASTs), underground storage tanks (USTs), above ground or buried pipelines, and hazardous materials containers
- General site conditions indicative of hazardous materials contamination, such as the presence of abandoned vehicles and machinery, garbage, unprotected hazardous materials containers, discarded chemical containers, stained soil, and distressed vegetation and the occurrence of cleanup activity

Potentially contaminated sites found during the windshield survey were researched using available information. If WSDOT determined that a site found during the survey is or reasonably might be contaminated with hazardous materials

that might affect the Project Area, WSDOT added the site to the Hazardous Materials Sites List.

How did WSDOT identify and evaluate potential hazardous materials effects relating to this Project?

In identifying and evaluating potential hazardous materials effects relating to this Project, WSDOT considered effects that Hazardous Materials Sites might pose to the Project, as well as hazardous materials effects the Project might pose to Sensitive Receptors and to the environment in general.

Identifying and evaluating effects that Hazardous Materials Sites might pose to the Project

In assembling the list of Hazardous Materials Sites, WSDOT essentially determined that those sites might pose hazardous materials effects to the Project because contamination that is or might reasonably be present on those sites either 1) has or reasonably might have flowed over the ground surface or migrated through soils or groundwater to the Project Area or 2) might be drawn into the Project Area by Project construction activities such as dewatering. WSDOT evaluated the effects such sites might pose to the Project by assigning each site an impact rating according to the procedures described below.

Identifying and evaluating hazardous materials effects the Project might pose to Sensitive Receptors and the to the environment in general

To identify hazardous materials effects the Project could pose to Sensitive Receptors and to the environment in general, WSDOT considered the Project-related activities likely to occur in the Project Area, the types and amounts of hazardous materials that those activities would involve, whether those activities or unanticipated accidents could release hazardous materials to the environment, and whether such releases could expose Sensitive Receptors and the environment in general to those hazardous materials. WSDOT then evaluated the effects such releases could pose to Sensitive Receptors and the environment.

Assigning impact ratings to Hazardous Materials Sites

To assign impact ratings to Hazardous Materials Sites, WSDOT considered the hazardous materials effects each site might pose as a result of the Project.

Effects that a Hazardous Materials Site might pose primarily consist of: subjecting WSDOT to liability for remediating contaminated property; harming Project workers, the public, and the environment; causing WSDOT to be responsible for cleaning up hazardous materials released from the site as a result of construction activities; delaying Project construction; and increasing Project costs. These effects can be caused by the following Project activities and site conditions:

- Acquiring a Hazardous Materials Site for the Project: in acquiring a Hazardous Materials Site for the Project, WSDOT could assume liability for remediating contamination on or originating from that site. Contaminated site cleanup is governed by numerous laws, regulations, guidance documents, and policies. The most common such laws and regulations are identified in Appendix 1. Assumption of cleanup liability for a site acquired for Project use could increase Project costs and delay Project construction.
- Renovating, demolishing, or excavating buildings, structures, or equipment on a Hazardous Materials Site: Project-related renovation, demolition, or excavation of buildings, above or below ground structures, or equipment on a Hazardous Materials Site could harm project workers, the public and the environment, cause WSDOT to be responsible for hazardous materials cleanup, delay project construction, and increase project costs if such activities include:
 - Renovation or demolition of above-ground electrical utilities: such activities could include removal or relocation of electrical transformers that contain PCBs. PCBs, which can adversely affect human health and the environment, could be released during the removal of the transformers.

- Renovation, demolition, or excavation of buildings, structures, or equipment containing LBP or ACM: such work could release LBP or ACM into the air. Both the lead in the LBP and the asbestos in the ACM can adversely affect human health and the environment.
- Demolition of structures consisting of or containing treated wood: hazardous materials such as creosote and arsenic compounds are commonly used to treat wood used for railroad ties, telephone poles, and marine pilings. Removal of wood preserved by these materials and demolition of structures composed of such wood can release hazardous materials to the environment.
- Demolition of structures containing fluorescent light fixtures and mercury switches: the ballasts of fluorescent light fixtures could contain PCBs. Fluorescent light bulbs and certain electrical switches, such as those in thermostats, contain mercury. Improper handling of ballasts, bulbs, and switches could release PCBs and mercury and adversely affect human health and the environment.
- Demolition of structures and equipment containing hazardous materials containers: the potential for an explosion and a release of hazardous materials exists where hazardous materials containers such as ASTs, compressed gas cylinders, drums, and smaller hazardous materials containers exist in structures or equipment slated for demolition. Such an explosion or release could harm human health and the environment.
- Demolition of monitoring wells: if Project-related construction activities will damage or destroy wells, such as wells used for groundwater monitoring, groundwater

extraction or treatment, or water supply, those wells may need to be abandoned in advance under appropriate permits and in accordance with applicable laws and guidance. Failure to properly abandon a well could cause groundwater contamination and thereby harm the environment and human health.

- Excavation of USTs: excavation of USTs and associated piping and excavation on property that contains an unidentified UST creates an explosion hazard and the potential for releasing any hazardous material contained in the UST if the UST is not first properly located, rendered inert, and pumped out. Such an explosion or release could harm human health or the environment.
- Soil, sediment, surface water, or groundwater contamination: Hazardous Materials Sites that have soil, sediment, surface water, or groundwater contaminated with a hazardous material may pose effects if Project construction activities occur on those sites, if contamination has migrated to the Project Area from those sites, or if Project construction activities cause contamination to migrate to from those sites. Effects that contaminated Hazardous Materials Site could pose include harming Project workers, the public, and the environment; causing WSDOT to be responsible for cleaning up hazardous materials released from the site as a result of construction activities; delaying Project construction; and increasing Project costs. Project construction activities that could cause these effects include the following:
 - Excavating and grading which could encounter, release, or spread contaminated soil, sediment, or surface water
 - Dewatering which could encounter, release or spread contaminated groundwater, and which could alter the flow direction of contaminated

groundwater, thereby spreading the contaminant plume and possibly drawing contaminated water into the Project Area

- Constructing facilities that increase stormwater infiltration, such as constructing compost-amended vegetated filter strips (CAVFSs) or infiltration ponds which, by allowing stormwater to infiltrate, could spread existing soil or groundwater contamination
- Altering soil porosity by placing base rock in utility trenches and road beds, thereby altering the flow direction of and spreading contaminated groundwater
- Blocking access to contaminant sources by installing large foundations or densifying soil, thereby preventing access to an area for soil remediation work.

After identifying the hazardous materials effects each Hazardous Materials Site might pose as a result of the Project, WSDOT assigned one or more of the following impact ratings to each Hazardous Materials Site:

- Acquisition – for a Hazardous Materials Site that WSDOT might acquire for the Project
- Demolition – for a Hazardous Materials Site containing buildings, above or below ground structures, or equipment that WSDOT might renovate, demolish, or excavate as part of the Project.
- Contamination – None – for a Hazardous Materials Site that is a contaminated property that might affect the Project Area, if any of the following apply:
 - The hydrogeology of the site relative to the Project Area makes it highly unlikely that any hazardous material spilled or released on the site either has reached the Project Area or might be affected by the Project (being sure to consider if contamination on a site downgradient of the

Project Area might be affected by Project activities such as dewatering).

- The site is one-eighth mile or more from the Project Area and has been identified as a Hazardous Materials Site only because either or both of the following apply:
 - It has one or more USTs.
 - It has a long history of being used by a particular hazardous waste generator or by activities that generate hazardous waste.
- The nature of any hazardous material that was or might reasonably have been spilled or released on the site, or the nature of any spill or release itself, makes it highly unlikely that any hazardous material spilled or released on the site has reached the Project Area or might be affected by the Project.
- Contamination – Low/Moderate – for a Hazardous Materials Site that is a contaminated property that might affect the Project Area, if the site does not qualify for a Contamination – None rating and either of the following apply:
 - The site less than one-eighth mile from the Project Area and has been identified as a Hazardous Materials Site only because either or both of the following apply:
 - It has one or more USTs.
 - It has a long history of being used by a particular hazardous waste generator or by activities that generate hazardous waste.
 - A hazardous material that has been spilled or released on the site might have reached the Project Area or might be affected by the Project, the concentration or toxicity of that hazardous

material at the Project Area is known or can be reasonably predicted to be low, and the proper handling and disposal of soil or groundwater contaminated with such a hazardous material can be reasonably predicted to be comparatively straightforward or inexpensive.

- Contamination – High – for a Hazardous Materials Site that is a contaminated property that might affect the Project Area, if the site does not qualify for a Contamination – None or a Contamination – Low/Moderate rating. Essentially, this means that any of the following apply:
 - A hazardous material that has been spilled or released on the site has likely reached the Project Area or will likely be affected by the Project.
 - The toxicity or concentration of a hazardous material that was spilled or released on the site is known or can be reasonably predicted to be moderate or high at the Project Area.
 - The proper handling and disposal of soil or groundwater contaminated with a hazardous material that was spilled or released on the site can be reasonably predicted to be comparatively complex or expensive.

APPENDIX 3: EDR REPORT

EDR DataMap Corridor Study

SR 167 HOV Lane

Sumner, WA 98390

Inquiry number 01589250.1r

January 10, 2006