

# I-405 Bellevue Nickel Improvement Project I-90 to Southeast 8th Street

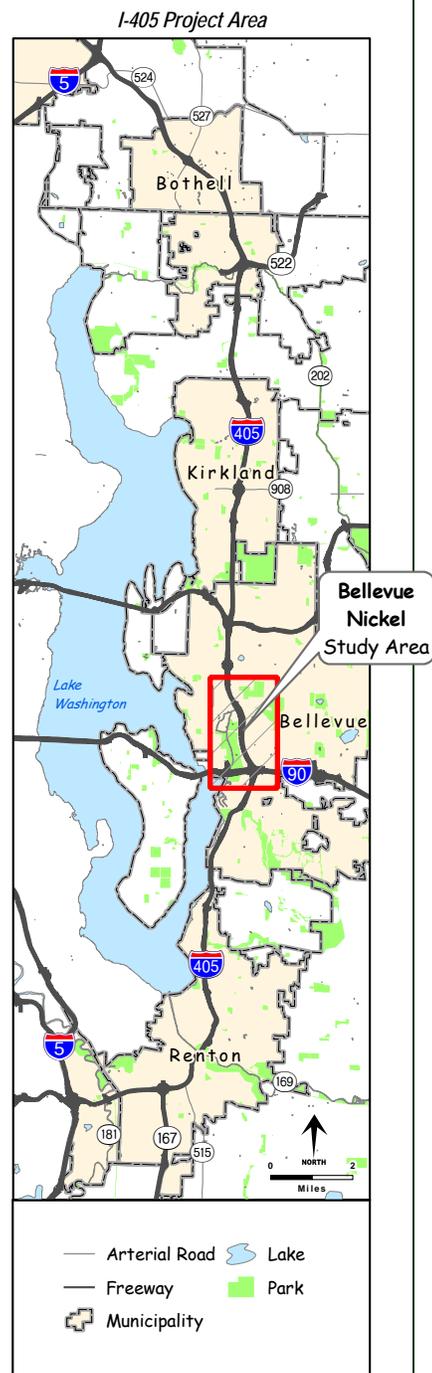


**Corridor Program**

Congestion Relief & Bus Rapid Transit Projects

## HAZARDOUS MATERIALS DISCIPLINE REPORT

January 2006



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# Glossary

<b>Asbestos Hazard Emergency Response Act (AHERA)</b>	Federal legislation adopted in 1986 and subsequently amended requiring the removal or control of asbestos in schools and some public buildings.
<b>aquifer</b>	A body of rock that sufficiently allows groundwater to move through it and yields significant quantities of water to wells and springs.
<b>bedrock</b>	Bedrock is referred to as the rock underlying gravel or soil and is sometimes visible on the surface as outcrops.
<b>best management practice (BMP)</b>	BMPs are generally accepted techniques that, when used alone or in combination, prevent or reduce adverse effects of a project. Examples include erosion control measures and construction management to minimize traffic disruption. Please see Appendix A for a complete list of BMPs.
<b>Comprehensive Environmental Response Compensation and Liability Act (CERCLA)</b>	The 1980 law requires the parties responsible for contamination to conduct or pay for the cleanup. If the Environmental Protection Agency's (EPA's) efforts to take an enforcement action for the cleanup are not successful, the federal government can clean up a site using the CERCLA (federal Superfund law) Trust Fund.
<b>Code of Federal Regulations</b>	The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government. It is divided into 50 titles that represent broad areas subject to federal regulation. Each volume of the CFR is updated once each calendar year and is issued on a quarterly basis.
<b>EDR (Environmental Data Resources, Inc.) Report</b>	The EDR report is a list of databases searched, a statistical profile indicating the number of properties within the study area, selected detailed information from federal and state lists, and maps illustrating the identifiable sites within the indicated search radius. Sites are located on the focus maps provided by EDR. The EDR report is attached as Appendix B.
<b>Endangered Species Act (ESA)</b>	The Endangered Species Act provides a means whereby the ecosystems, upon which endangered and threatened species depend, may be conserved to provide a program for the conservation of such species and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in the act.
<b>general housekeeping</b>	General housekeeping observations include noting how well the site is maintained. For example, scientists note if soil is stained or garbage, junk cars, or discarded chemical containers are scattered about the property.
<b>hazardous materials</b>	Hazardous materials include any material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a threat to human health or the environment.
<b>hydraulic gradient</b>	Sites are located at a higher/lower/adjacent elevation relative to the study area in relationship to groundwater.
<b>Model Toxics Control Act (MTCA)</b>	The Model Toxics Control Act (MTCA) is the Washington State counterpart to the federal hazardous waste cleanup law, CERCLA. Like CERCLA, MTCA sets up a process to identify, investigate, and clean up contaminated properties that are or may be a threat to human health or the environment. Both the state and federal programs allow for the assessment of natural resource damages where the contamination injures wildlife or the environment.

# Glossary

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<b>National Emission Standards for Hazardous Air Pollutants (NESHAP)</b>	Implemented in the Clean Air Act Amendments of 1977, the NESHAP is a set of national emission standards for listed hazardous pollutants emitted from specific classes or categories of new and existing sources.
<b>National Pollutant Discharge Elimination System (NPDES)</b>	The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and imposing and enforcing pretreatment requirements under Sections 307, 318, 402, and 405 of the Clean Water Act.
<b>National Priority List (NPL) (Superfund)</b>	The Environmental Protection Agency's list of the most seriously contaminated hazardous materials sites requiring cleanup.
<b>no further action (NFA)</b>	Ecology can grant an NFA letter for contaminated sites that have undergone cleanup or no longer pose a threat to human health or the environment.
<b>perched groundwater</b>	Perched groundwater is groundwater that occurs seasonally on a low permeable subsurface material and is separated from the main body of groundwater.
<b>permeability</b>	The measure of the relative ease with which groundwater moves through subsurface material.
<b>permissible exposure limit (PEL)</b>	PEL is the maximum amount or concentration of a chemical that a worker may be exposed to under U.S. Occupational Health and Safety Administration (OSHA) regulations.
<b>personal protective equipment (PPE)</b>	PPE is an item or items used to protect the eyes, face, head, arms, hands, legs, feet or body, such as goggles, helmets, head covers, gloves, rubber slickers, disposable coveralls, safety shoes, protective shields and barriers
<b>polychlorinated biphenyls (PCBs)</b>	A toxic environmental pollutant that accumulates in animal tissue and has been shown to be a potential carcinogen.
<b>reasonably predictable sites</b>	Reasonably predictable sites are sites where recognized environmental conditions are known based on 1) existing data, 2) site observations, 3) previous experience in similar situations, or 4) best professional judgment.
<b>remediation</b>	Remediation is an action to identify, eliminate, remove, or minimize hazardous substances that pose a threat to human health or the environment.
<b>right of way</b>	The area to be acquired or already owned by WSDOT within the project footprint. This includes easements, sound barriers, shoulders, and drainage areas.
<b>restricted covenant</b>	A restricted covenant is recorded with the Registrar of Deeds in the county where the site is located when an NFA letter is issued with some contaminants left in place on site.
<b>Sanborn maps</b>	Sanborn fire insurance maps consist of large-scale detailed drawings from 1867 to 1969 showing the commercial, industrial, and residential sections of cities.
<b>Spill Prevention Control and Countermeasures (SPCC) Plan</b>	An SPCC Plan is implemented to minimize effects to soil, surface water, and groundwater. The SPCC plan addresses procedures, equipment, and materials used in the event of a spill of contaminated soil, petroleum products, contaminated water, or other hazardous substances.

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# Glossary

<b>substantially contaminated sites</b>	Substantially contaminated sites are sites that possess a potential for substantial contamination of soil, groundwater, surface water or sediment; contain contaminants that are persistent or expensive to manage; and lack information on predicated remedial costs.
<b>toxicity characteristic leaching procedure (TCLP)</b>	The TCLP analysis simulates landfill conditions. Over time, water and other liquids percolate through landfills. The percolating liquid often reacts with the solid waste in the landfill and may pose public and environmental health risks because of the contaminants it absorbs. The TCLP analysis determines which contaminants identified by the U. S. Environmental Protection Agency (EPA) are present in the leachate and their concentrations.
<b>volatile organic compounds (VOCs)</b>	Organic (carbon-based) chemicals that have a high vapor pressure and easily form vapors at normal temperature and pressure. The term is generally applied to organic solvents, certain paint additives, aerosol spray can propellants, fuels (such as gasoline, and kerosene), petroleum distillates, dry cleaning products, and many other industrial and consumer products ranging from office supplies to building materials.
<b>windshield survey</b>	The process of driving by an area to look at properties for general housekeeping and verify property addresses.

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# Acronyms and Abbreviations

AHERA	Asbestos Hazard Emergency Response Act
AST	above ground storage tank
ASTM	American Society for Testing and Materials
BGS	below ground surface
BMPs	best management practices
BNSF	Burlington Northern Santa Fe
BTEX	benzene, toluene, ethylbenzene, xylene
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSCSL	confirmed or suspected contaminated sites list
CWA	Clean Water Act
EA	environmental assessment
Ecology	Washington State Department of Ecology
EDR	Environmental Data Resources, Inc.
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ESA	U.S. Endangered Species Act
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HOV	high-occupancy vehicle
I-405	Interstate 405
I-90	Interstate 90
LUST	leaking underground storage tank
MSL	mean sea level

# Acronyms and Abbreviations

MTCA	Model Toxics Control Act
NB	northbound
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	no further action
NGVD	National Geodetic Vertical Datum
OSHA	Occupational Safety and Health Act
PACCAR	Pacific Car and Foundry
PCB	polychlorinated biphenyl
PSE	Puget Sound Energy
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
ROD	record of decision
ROW	right of way
SB	southbound
SE	southeast
SPCC Plan	Spill Prevention Control and Countermeasures Plan
TSCA	Toxic Substances Control Act
USC	United States Code
UST	underground storage tank
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation



# Introduction

In 1998, the Washington State Department of Transportation (WSDOT) joined with the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), Central Puget Sound Regional Transit Authority (Sound Transit), King County, and local governments in an effort to reduce traffic congestion and improve mobility in the Interstate 405 (I-405) corridor. In fall 2002, the combined efforts of these entities culminated in the *I-405 Corridor Program Final Environmental Impact Statement (EIS)* and *FHWA Record of Decision (ROD)*.

The ROD selected a project alternative that would widen I-405 by as many as two lanes in each direction throughout its 30-mile length. The ultimate configuration of the selected alternative includes buffers separating general-purpose lanes from parallel high-occupancy vehicle (HOV) lanes (potentially used by future high-capacity transit). The design also allows for expanded “managed lane” operations along I-405 that could include use of HOV lanes by other user groups, such as trucks.

In 2003, the Washington State legislature approved a statewide transportation-funding plan called the “nickel package.” The nickel package provided funding for congestion relief projects in three critical traffic hotspots along the I-405 Corridor: Renton, Bellevue, and Kirkland. The Bellevue Nickel Improvement Project is one of several projects now moving forward as part of a phased implementation of the I-405 Corridor Program. Exhibit 1 shows the location of the Bellevue Nickel Improvement Project.

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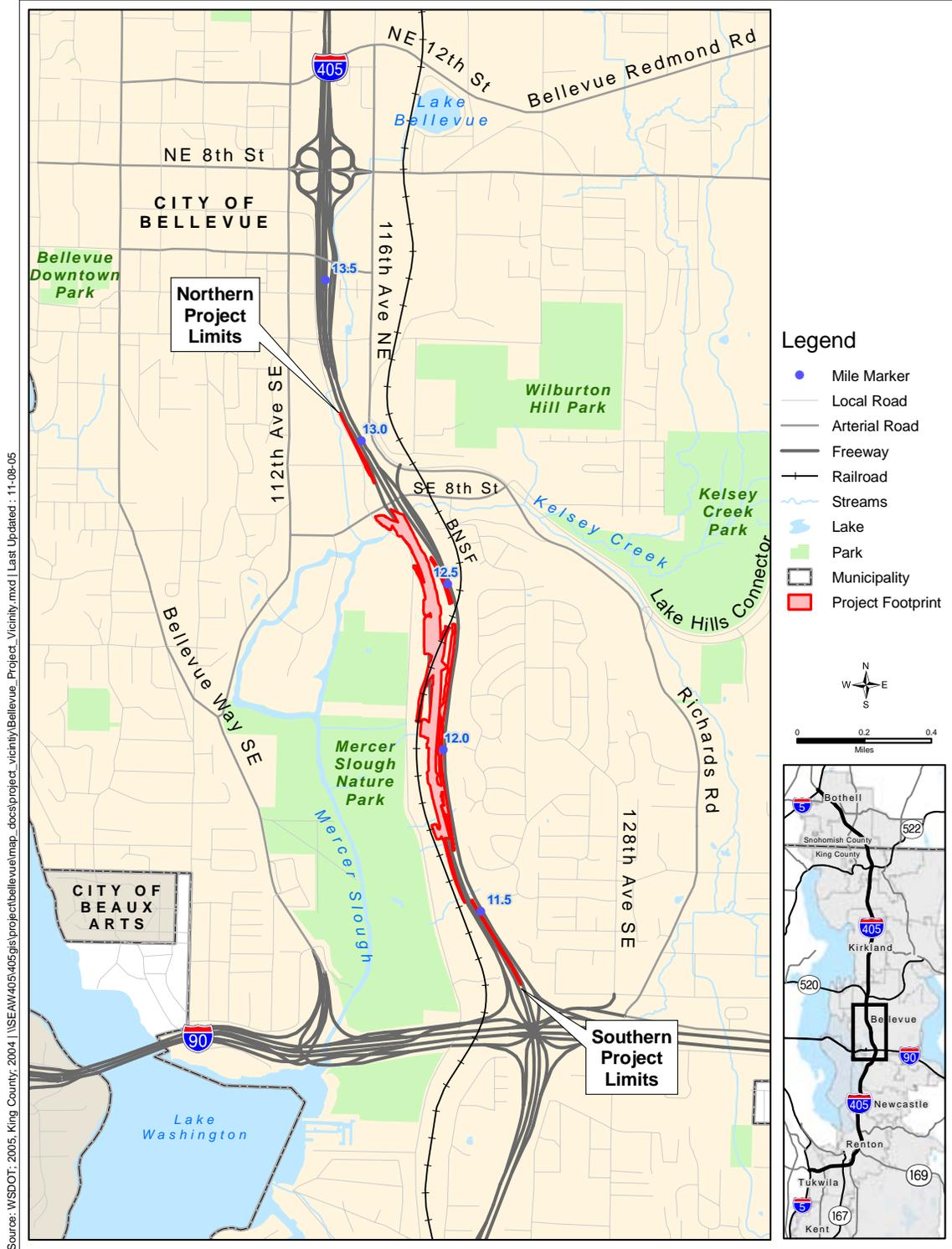
In 2003, the Washington State legislature approved a statewide transportation-funding plan called the “nickel package.” The nickel package provides funding for congestion relief projects in three critical traffic hotspots along the I-405 Corridor, including Bellevue.

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Traffic moving along I-405

Exhibit 1. Project Vicinity Map



In keeping with the direction established in the Final EIS and ROD, we are preparing a National Environmental Policy Act (NEPA) Environmental Assessment (EA) that focuses on project-level effects of constructing and operating the Bellevue Nickel Improvement Project.

We will base the EA on the analysis in the *I-405 Corridor Program Final EIS*, and will describe any new or additional project changes, information, effects, or mitigation measures not identified and analyzed in the corridor-level Final EIS (FEIS). The project-level EA for the Bellevue Nickel Improvement Project will not reexamine the corridor-level alternatives, impacts, and mitigation measures presented in the corridor-level FEIS, or the decisions described in the ROD.

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The Environmental Assessment will describe new project changes, information, effects, or mitigation measures, but the assessment will not revisit the alternatives, impacts, and mitigation measures evaluated in the corridor-level EIS or the decisions documented in the *Record of Decision*.

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## What alternatives do we analyze in this discipline report?

This discipline report is one of 19 environmental elements WSDOT will study to analyze the effects of the Bellevue Nickel Improvement Project. All of the discipline reports will analyze one build alternative and one “no build” or “no action” alternative. This approach is consistent with FHWA’s guidelines for preparing a NEPA EA.

## What is the No Build Alternative?

NEPA requires us to include and evaluate the No Build Alternative in this discipline report. We use this approach to establish an existing and future baseline for comparing the effects associated with the Build Alternative. We assume the No Build Alternative will maintain the status quo: only routine activities such as road maintenance, repair, and safety improvements would occur within the corridor between now and 2030. The No Build Alternative does not include improvements that would increase roadway capacity or reduce congestion on I-405. We describe these improvements further in the Bellevue Nickel Improvement Project Traffic and Transportation Discipline Report.

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We assume the No Build Alternative will maintain the status quo: only routine activities such as road maintenance, repair, and safety improvements would occur within the corridor between now and 2030.

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## What are the principal features of the Build Alternative?

The Bellevue Nickel Improvement Project will add one new general-purpose lane in each direction along a 2-mile section of I-405 between I-90 and SE 8th Street. We will generally use the

inside or “median” side of I-405 for construction. After we re-stripe the highway, the new lanes will occupy the outside of the existing roadway. The project also includes new stormwater management facilities and better drainage structures and systems.

Other project activities include developing off-site wetland mitigation as well as on-site stream mitigation areas to compensate for the loss of these resources within the project area. We expect project construction to begin in spring 2007 and the improved roadway to be open to traffic by fall 2009.

### Improvements to Southbound I-405

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We will add one lane in the southbound direction of I-405 from approximately SE 8th Street to I-90.

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In the southbound (SB) direction, we plan to add one new travel lane from approximately Southeast (SE) 8th Street to I-90 (Exhibits 2, 3, and 4). In addition, the existing outside HOV lane at I-90 will be extended north so that it begins at the on-ramp from SE 8th Street. In order to add these lanes and maintain traffic flow during construction, we will shift approximately 3,000 feet of the SB roadway as much as 200 feet east into the existing median. The relocated SB roadway will connect to the existing SB travel lanes just north of the I-90 interchange, and south of the existing bridge over SE 8th Street.

We will build a new tunnel underneath the Burlington Northern Santa Fe (BNSF) railroad, just east of the existing Wilburton Tunnel, to accommodate the relocated and widened SB roadway. The existing tunnel does not have the capacity to accommodate additional lanes of SB traffic.

The existing SB travel lanes and the Wilburton Tunnel will remain open to traffic during construction of the new tunnel and the relocated/widened SB lanes. We will also build the new tunnel wide enough to accommodate additional lanes. The existing tunnel will remain after we complete the improvements.

Exhibit 2. Proposed Bellevue Nickel Project Improvements (Sheet 1 of 3)

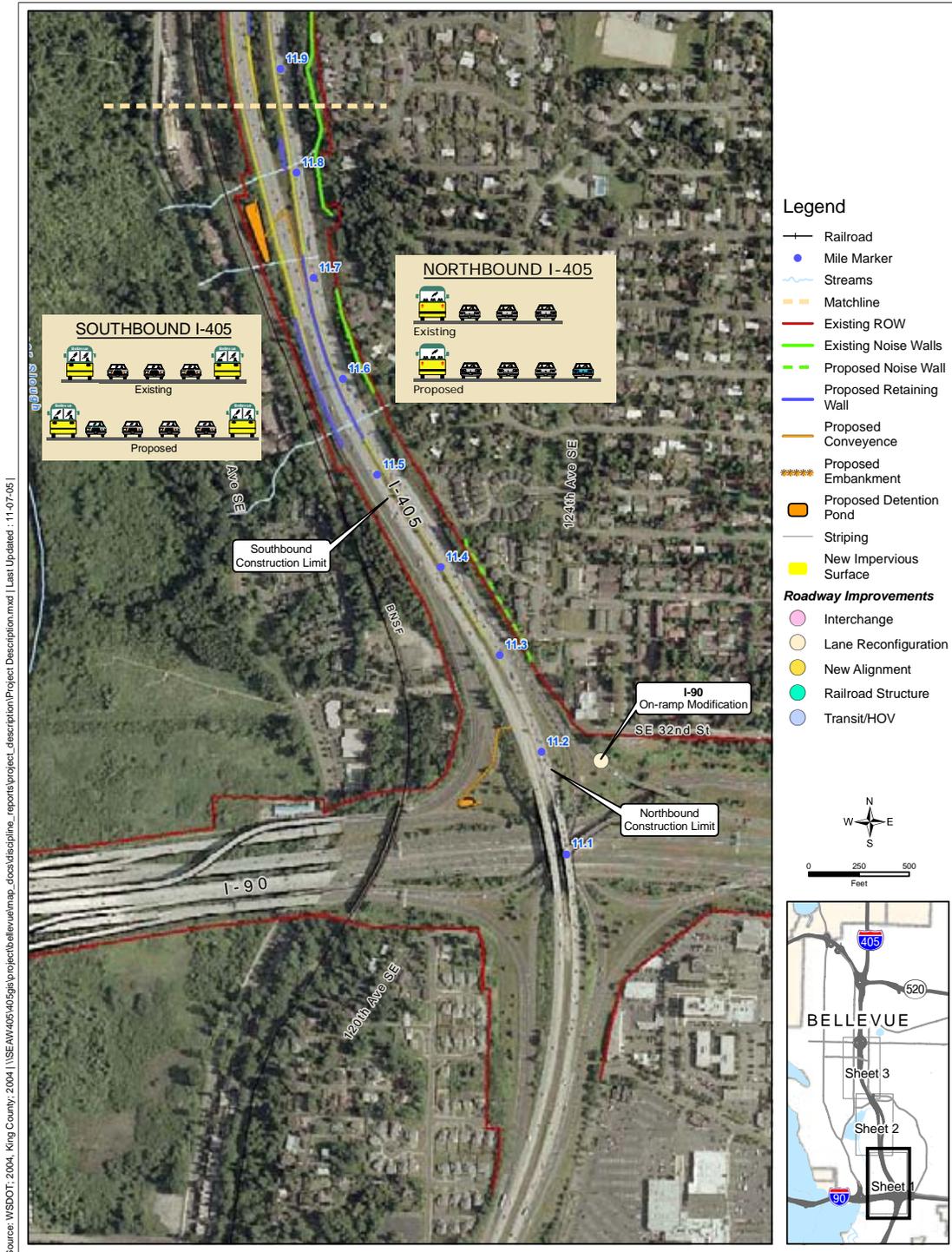


Exhibit 3. Proposed Bellevue Nickel Project Improvements (Sheet 2 of 3)

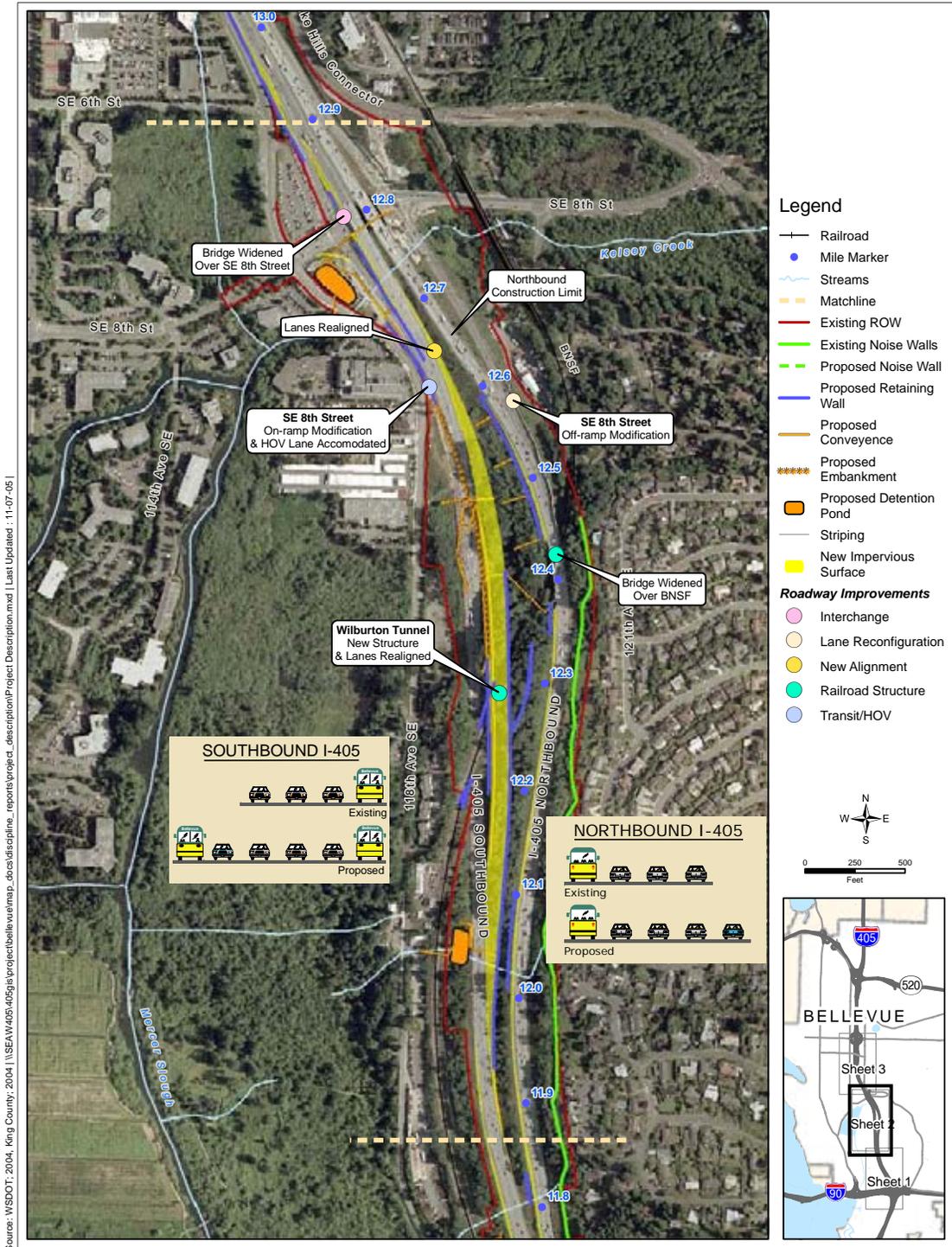
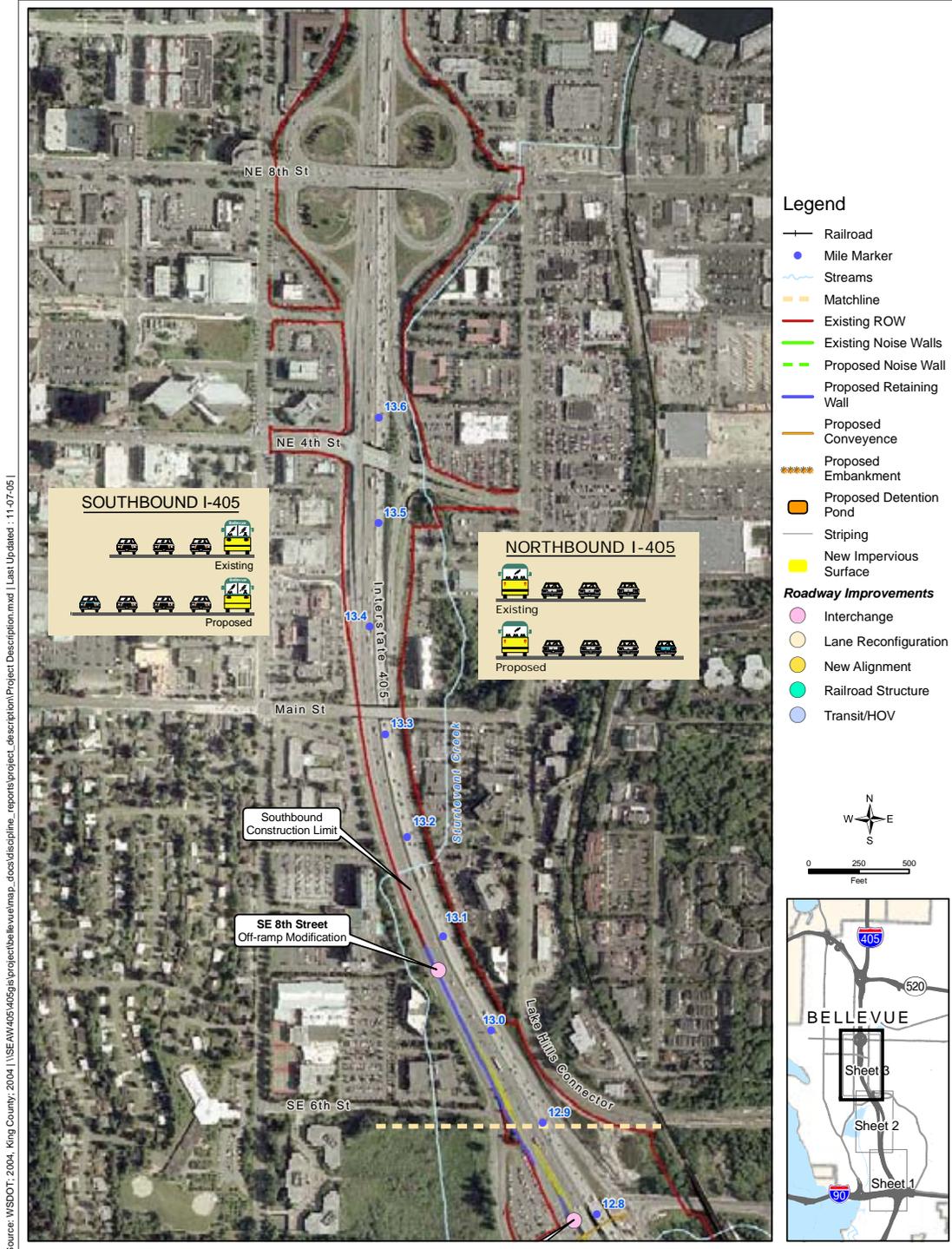


Exhibit 4. Proposed Bellevue Nickel Project Improvements (Sheet 3 of 3)



Source: WSDOT, 2004. King County, 2004. \\SE\AW\405\project\bellevue\map\_docs\discipline\_reports\project\_description\Project Description.mxd | Last Updated: 11-07-05

We will also include the following improvements in the Build Alternative:

- Modify the existing off-ramp at SE 8th Street to make room for an additional southbound lane on I-405. The off-ramp will then become a single-lane, optional off-ramp (i.e., the off-ramp will no longer be an “exit only” off-ramp).
- Build a retaining wall between the SB travel lanes and the off-ramp at SE 8th Street.
- Widen the existing bridge over SE 8th Street to the west to accommodate the new SB lane.
- Modify the existing on-ramp at SE 8th Street to tie into the relocated SB general-purpose travel lanes.
- Reconfigure the on-ramp at SE 8th Street to accommodate the extended outside HOV lane.
- Temporarily shift the existing BNSF railroad track from its current alignment to allow for continuous railroad operation during construction of the new tunnel.
- Construct retaining walls along the eastern edge of the relocated SB travel lanes.

### Improvements to Northbound I-405

In the northbound (NB) direction, we plan to add one new travel lane from approximately I-90 to SE 8th Street (Exhibits 2, 3, and 4). We will add one new lane to the NB ramp from I-90. We will shift the NB lanes to allow all of the proposed widening to occur on the inside, or median side of the existing roadway.

Additional improvements include:

- Re-stripe the westbound/eastbound I-90 on-ramp to NB I-405 resulting in one lane becoming two lanes in the NB direction.
- Widen, shift, and re-stripe NB I-405 travel lanes north of I-90 to allow the westbound I-90 to NB I-405 on-ramp and the eastbound I-90 to NB I-405 on-ramp to enter I-405 without having to merge into a single lane.
- Construct several retaining walls needed for road widening in locations that allow for existing and future widening of I-405.

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We will add one lane in the northbound direction of I-405 from approximately I-90 to SE 8th Street. All widening of the northbound mainline will occur on the inside (median side) of the existing roadway.

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- Construct a noise barrier approximately 725 feet long and 16 feet high (see Exhibit 2).
- Widen the existing bridge over the BNSF Railroad to the west to accommodate the new NB lane.
- Modify the NB off-ramp to SE 8th Street to make it a single-lane “exit-only” off-ramp.
- Transition the NB travel lanes back into the existing lane configuration before crossing over SE 8th Street.

## Improvements to the Stormwater Management System

Managing stormwater for the I-405 Bellevue Nickel Improvement Project involves the collection and treatment of rainfall runoff from the new project pavement consistent with the guidelines in the WSDOT Highway Runoff Manual.

Currently, we treat less than 5 percent of the existing runoff from paved surfaces in the project area before discharging it. We will improve this condition by treating 17 percent more area than the new paved surface area we create. By treating a greater area, we improve flow control and remove pollutants from a portion of the existing roadway as well as from newly constructed areas.

Reconfiguration and new construction associated with the SB lanes will mean that we need to replace much of the existing drainage system. We will continue to use open roadside ditches along the shoulders of the roadway shoulders where possible. We will use standard WSDOT catch basins and manhole structures to move the roadway runoff to a system of stormwater drain pipes. These features will transport runoff to treatment and flow-control facilities within the existing ROW.

We will construct three new stormwater ponds (detention ponds combined with stormwater treatment wetlands) as part of the project and enlarge the existing pond at SE 8th Street. Two of the new ponds will be located south of the Wilburton Tunnel between the SB lanes and the BNSF railroad ROW. We will construct the third new pond in the northwest quadrant of the I-90/I-405 interchange. The project will discharge treated stormwater following existing flow patterns to Mercer Slough or to the wetlands that surround it.

## Avoidance and Minimization Measures

We will use BMPs, WSDOT Standard Specifications, and design elements to avoid or minimize potential effects to the environment from the Bellevue Nickel Improvement Project. We

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### **Best Management Practices (BMPs)**

BMPs are generally accepted techniques that, when used alone or in combination, prevent or reduce adverse effects of a project. Examples include erosion control measures and construction management to minimize traffic disruption. Please see Appendix A for a complete list of BMPs.

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### **WSDOT Standard Specifications**

Guidelines and procedures established by WSDOT for roadway design and construction in a variety of design, engineering, and environmental manuals.

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know these measures to avoid or minimize potential effects to the environment collectively as “avoidance measures.” We describe these measures in more detail in Appendix A. If the Bellevue Nickel Improvement Project has additional effects not addressed in the avoidance measures, we will address these measures through mitigation.

## Wetland and Stream Mitigation Sites

We will compensate for adverse effects to wetlands and their buffers by creating just over an acre of wetland within the boundaries of Kelsey Creek Park (Exhibit 5). The site is located north of the intersection of Richards Road and the Lake Hills Connector.

Our general concept will be to create an area that will transition from forested land beside the Lake Hills Connector to wetlands within Kelsey Creek Park. We will reshape the surface area to create favorable conditions for the necessary wetland aquatic characteristics, and we will replant and enhance habitat in the area by constructing habitats and replanting adjacent roadside areas with forest-type vegetation.

Similarly, we will compensate for unavoidable effects to “Median Stream,” the unnamed stream within the I-405 median. We have developed a conceptual stream mitigation plan that includes on-site habitat restoration and creation. The conceptual stream mitigation plan includes the following specific elements (Exhibit 6):

- Connect the new Median Stream culvert under I-90 to the existing channel and wetland located west of SB I-405.
- Create approximately 500 linear feet of stream channel along the western slope of SB I-405.
- Buffer the created stream channel with approximately 16,000 square feet of native streamside vegetation.
- Enhance approximately 300 linear feet of riparian habitat west of SB I-405 by removing selected non-native invasive plant species and replacing with native streamside vegetation.

We provide more detailed information about mitigation efforts planned in conjunction with the Bellevue Nickel Improvement in the Surface Water, Water Quality, and Floodplains and Wetlands Discipline Reports.

Exhibit 5. Proposed Wetland Mitigation Area

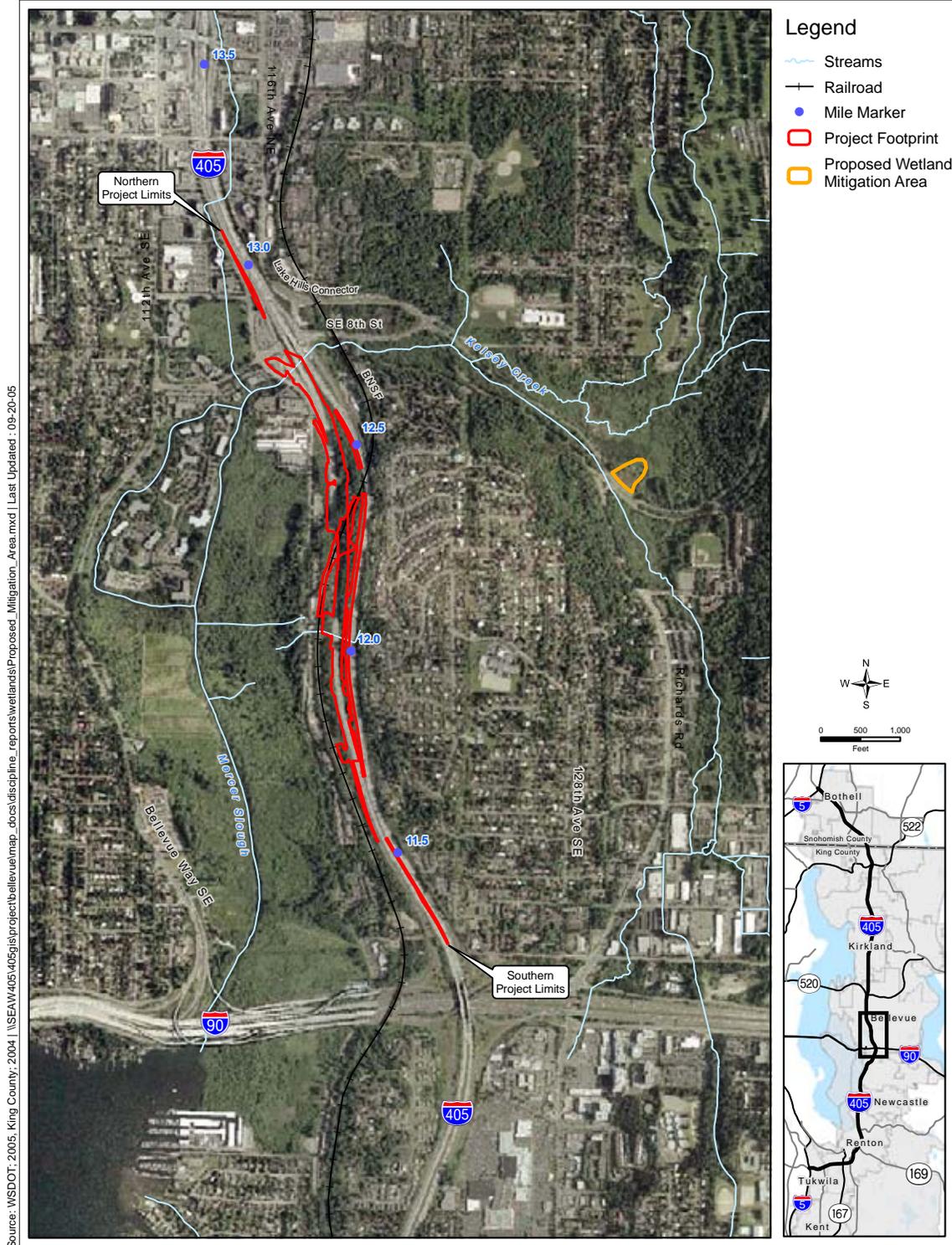
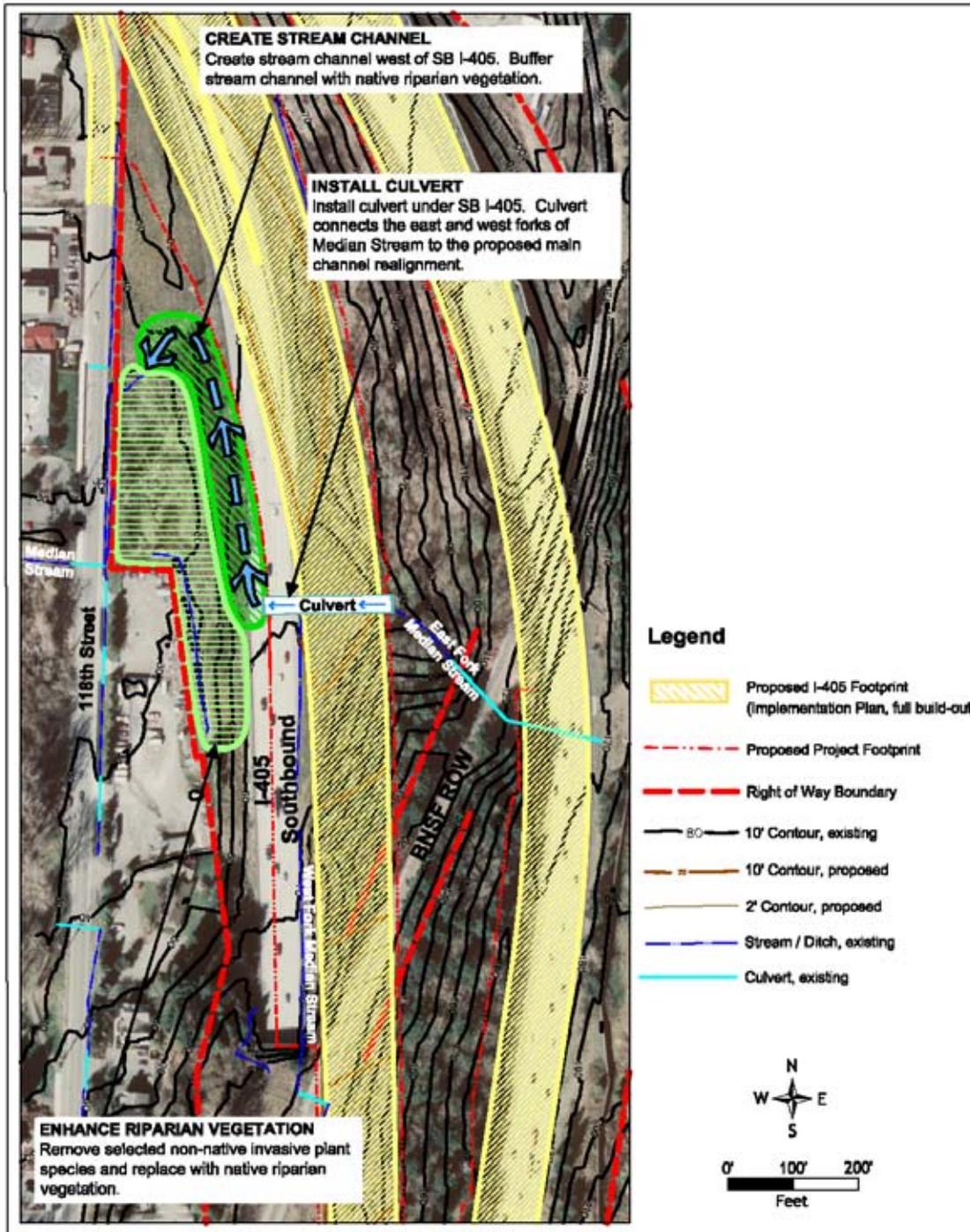


Exhibit 6. Conceptual Stream Mitigation Plan



## Why do we consider hazardous materials as we plan this project?

We can decrease the possibility of exposing the public and the environment to contaminated materials (known or unknown) by identifying hazardous material sites prior to construction. We can substantially minimize liability to WSDOT with respect to cleanup costs and environmental effects by considering hazardous materials.

If we determine and evaluate possible effects during the planning of this project, we can identify avoidance and minimization measures. Possible measures include: changes in alignment (avoidance); identifying areas requiring additional investigation before right of way (ROW) acquisition; identifying protective measures; and, determining measures that reduce environmental liability and associated costs.

By reviewing information regarding sites of potential contamination, we can ensure that any hazardous materials are handled in compliance with the following federal and state laws:

### **Federal Laws:**

- Clean Air Act (CAA), 42 USC 7401 et seq.
- Clean Water Act (CWA), 33 USC 1251 et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601 et seq.
- Endangered Species Act (ESA), 7 USC 134, 16 USC 460 et seq.
- Federal Highway Administration, Technical Advisory T6640.8A (1987), Supplementary Hazardous Waste Guidance (1997), and Hazardous Wastes in Highway Rights-of-Way (1994).
- Occupational Safety and Health Act (OSHA), 29 USC 651 et seq.
- Resource Conservation and Recovery Act (RCRA), 42 USC 321 et seq.
- Safe Drinking Water Act, 42 USC 300(f) et seq.
- Small Business Liability Relief and Brownfields Revitalization Act
- Toxic Substances Control Act (TSCA), 15 USC 2601 et seq.

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### **Hazardous Materials**

Hazardous materials include any material that, because of its quantity, concentration or physical or chemical characteristics, may pose a threat to human health or the environment.

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I-405 plays a critical role in the regional movement of people and freight.

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### State Laws/WSDOT Procedures:

- Asbestos Hazard Emergency Response Act (AHERA)
- Clean Air Act (CAA), Chapter 70.94 RCW
- Hazardous Waste Management Act, Chapter 70.105 RCW
- Model Toxics Control Act (MTCA), Chapter 70.105D RCW
- Occupational Health Standards, WAC 296-62
- Solid Waste Management Act, Chapter 70.95 RCW
- Underground Storage Tanks (UST), Chapter 90.76 RCW
- Washington State Department of Transportation (WSDOT), Environmental Procedures Manual, Section 447, September 2003.
- Water Pollution Control Act, Chapter 90.48 RCW

### What are the key points of this report?

We did not identify any substantial construction effects during this study. The probability is low that the Bellevue Nickel Improvement Project will result in a release of contaminants as a result of disturbed soils, groundwater, or sediments in construction areas where contamination is present. Effects are similar for the Build and No Build Alternatives.

We considered a total of four sites for detailed analysis, which is discussed in the Existing Conditions section of this report.

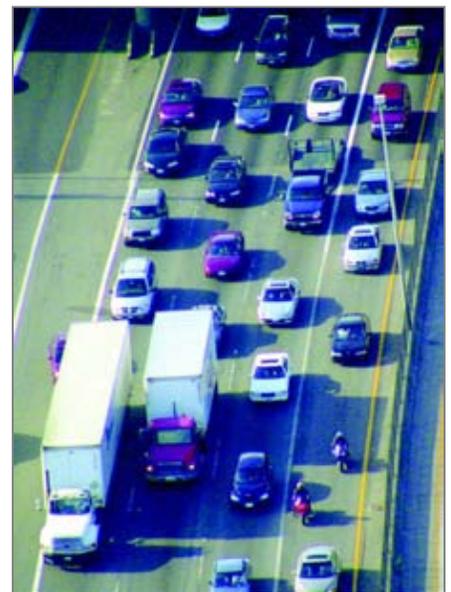
# Existing Conditions

## How did we collect information on hazardous materials for this report?

We collected information on this discipline by:

- Reviewing and summarizing publicly available records and databases to obtain information indicating the location of hazardous materials;
- Identifying historic land use of the study area;
- Communicating/coordinating with the authors of the Geology, Soils, and Groundwater Discipline Report and the Surface Water, Floodplains, and Water Quality Discipline Report;
- Reviewing available geologic literature and topographic maps to evaluate soil types, surface drainage pathways, groundwater depths, and overall groundwater flow direction; and,
- Visiting sites to observe features and possible sources of hazardous materials.

We reviewed as many sources as possible to enhance the completeness and accuracy of the collected information. Regulatory requirements for hazardous materials (as listed in the Introduction) will apply to the project. We completed the above tasks by collecting information from the following sources:



Congestion building along the I-405 corridor

## Regulatory Database Review

We reviewed local, state, and federal databases to identify potential sources of hazardous materials that could affect the study area. The study area for the Bellevue Nickel Improvement Project runs along I-405 from I-90 northward to approximately SE 8th Street in Bellevue.

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### EDR Report

The EDR report includes a list of databases searched; a statistical profile, indicating the number of properties within the study area; and, selected detailed information from federal and state lists and maps, illustrating the identifiable sites within the indicated search radius. Sites are located on the focus maps provided by EDR. The EDR report is attached as Appendix B.

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In addition, we contracted Environmental Data Resources, Inc. (EDR 2005) to conduct a regulatory data search consistent with WSDOT, American Society for Testing and Materials (ASTM), and Federal Highway Administration (FHWA) standards and guidelines. EDR provided a comprehensive search of existing environmental regulatory agency databases for known or suspected contaminant-related concerns within the study area. Appendix B contains the full database list and results of EDR's database research.

## Historic Research

We reviewed publicly available records to identify study area sites where hazardous materials may exist. Historic research efforts characterized past land use activities. From these records, WSDOT:

- Compiled a land use inventory using aerial photographs from 1961, 1970, 1982, 1992, and 2003
- Requested Sanborn fire insurance maps from the Sanborn Library, Inc. consisting of large-scale detailed drawings from 1867 to 1969, showing the commercial, industrial, and residential sections of cities
- Reviewed topographic, geologic and groundwater occurrence maps to determine soil types, depths to groundwater, and overall groundwater flow direction. This included coordination with the Geology, Soils, and Groundwater Discipline Report and the Surface Water, Floodplains, and Water Quality Discipline Report authors. We used this information to evaluate the possible flow direction of hazardous materials in the environment.

## Data Validation

We requested and reviewed publicly available files from the US Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) for specific properties where hazardous materials were likely to exist based on the EDR report and historical background research. This review focused

on identifying the nature and extent of known contamination and cleanup activities on properties within the study area.

## Site Visit

We visited the study area, focusing on properties where hazardous materials were known or suspected to be present. WSDOT looked for evidence of poor housekeeping, contamination, or cleanup activities, and limited the site visit to features in plain view from public access corridors, not entering any properties or viewing conditions within buildings. We noted the following information during the site visit:

- Presence of improvements on site;
- Usage and physical setting, including slope, drainage features, and soils;
- Indications suggesting the presence of underground storage tanks (USTs), above ground storage tanks (ASTs), buried pipelines, drums, hazardous or solid waste disposal, and soil staining and distressed vegetation;
- General housekeeping observations; and,
- Adjacent and nearby properties with a potential to contribute hazardous materials.

## What is the study area for this hazardous materials analysis?

The study area (Exhibit 7) for this analysis is approximately 1 mile wide and centered on the existing I-405 ROW. At this time, WSDOT does not anticipate having to acquire any additional parcels for ROW. The initial screening process included a total of 72 sites. Detailed analysis occurred if the site:

- Was located in the ROW and potentially contained hazardous materials
- Contained hazardous materials and was located hydraulically upgradient from the ROW

WSDOT eliminated 68 sites from further consideration because:

- They were located downgradient or crossgradient or too far away from the potential ROW (determined on a case-by-case basis) and/or
- They did not contain hazardous materials and would therefore not affect the ROW

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### General Housekeeping

General housekeeping observations include noting how well the site is maintained. For example, the project team notes if soil is stained or garbage, junk cars or discarded chemical containers are scattered about the property.

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### Hydraulic Gradient

Sites are located at a higher/lower/adjacent elevation relative to the study area in relationship to groundwater.

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Exhibit 7. Bellevue Nickel Study Area Buffer



## What was the historic land use in the study area?

In the late 1800s, logging industries occupied much of the Bellevue area. Logging operators concentrated their timber harvesting efforts generally within a mile of Lake Washington to facilitate the floating of logs to the nearby sawmills.

Prior to the construction of bridges spanning Lake Washington, area residents relied on a steamer ferry system. Construction of the ship canal between Lake Union and Lake Washington lowered the level of Lake Washington by approximately 10 to 21 feet. The resulting exposure of land afforded area farmers expanded opportunity for agricultural enterprises.

In the 1920s and 1930s, the area experienced steady population growth. At that time, the primary industries included sawmills, canneries, boat building, chicken ranching, orchards, and berry farming. The residential population in the Bellevue area expanded in the 1940s and 1950s with the completion of the Lake Washington (Mercer Island, I-90) Floating Bridge in 1938.

Refer to the Land Use Patterns, Plans, and Policies Discipline Report for more information about historic land use in the study area.

## What is the physical setting of the study area?

The physical environment influences the potential transport of contamination released to the environment. In general, the transport and fate of contaminants are controlled by the:

- mobility of chemicals
- rate of breakdown or degradation of chemicals in the environment
- preferred pathways the chemicals can take to travel from their point of release

For example, highly permeable soils provide an easier means for a contaminant to travel (via groundwater) beyond the point of release. An environment where groundwater occurs close to the surface provides a mechanism for contaminants to be readily transported away from the point of release.

The topography and geology of the Puget Sound region are largely the result of glacial, fluvial (riverine), and volcanic processes. However, during the last century, human activities

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### Permeability

A measure of the relative ease with which groundwater moves through subsurface material.

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### **Bedrock**

The rock underlying gravel or soil that is sometimes visible on the surface as outcrops.

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### **Aquifer**

A body of rock that sufficiently allows groundwater to move through it and yields significant quantities of water to wells and springs.

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have caused large-scale modifications to the landscape. These activities included the lowering of Lake Washington in the early 1900s and the widespread changes associated with development. Subsurface material in the study area consists primarily of sand, silt, and gravel. Bedrock is not commonly encountered in the Puget Sound lowland area; however, the study area contains several outcrops. Elevations along the project corridor vary from approximately 100 feet above mean sea level (MSL) near I-90, first increasing northward to approximately 200 feet above MSL east of the Mercer Slough, and then decreasing northward to approximately 100 feet above MSL at SE 8th Street.

The Geology, Soils, and Groundwater Discipline Report provides additional information and maps of the study area's geology.

Groundwater is relatively shallow in the Kelsey Creek aquifer, often at depths less than 10 feet below ground surface. However, the depth to groundwater may vary with surface topography and season. In many places, the water table is at or near the surface as wetlands (Mercer Slough wetlands). Groundwater flow in the Kelsey Creek aquifer is primarily toward the west to southwest. The primary discharge of groundwater is to Kelsey Creek, the Mercer Slough wetlands, and the wetlands between the northbound and southbound I-405 corridor lanes.

King County designates certain areas of aquifers as "critical aquifer recharge areas," or areas that are more susceptible to groundwater contamination. This is because the depth to groundwater is shallow and the aquifers are critical for supply and use.

Although the Kelsey Creek aquifers are not within a designated critical aquifer recharge area, groundwater is shallow and is therefore susceptible to contamination.

See the Geology, Soils, and Groundwater Discipline Report for more information about groundwater in the study area.

## **What did we learn from our records search and site visits?**

### **EDR report**

The EDR search identified a total of 72 sites as having a potential to be affected by the project. We screened each site to

determine if it should be evaluated in more detail. Appendix C lists the sites screening analysis for all 72 sites. We eliminated 62 of these sites from further consideration because:

- They were either located downgradient, crossgradient, or too far away from the ROW
- Soil and groundwater were not suspected to be contaminated with hazardous materials. These are sites that were only generators of waste or sites where no further action (NFA) was granted by Ecology.
- They were UST sites with no known leaks.

We eliminated five additional sites because soil and groundwater were not suspected to be contaminated with hazardous materials. These are sites that were only generators of waste or sites where no further action (NFA) was granted by the Washington State Department of Ecology (Ecology). We also eliminated one UST site from further review. We eliminated UST sites unless they were known to be located upgradient and leaking underground storage tanks (LUST). Appendix D lists UST sites within 0.25 mile of the study area that we determined did not merit further analysis. We identify offsite properties of concern in Appendix E.

## Ecology records

We reviewed Ecology file information for sites identified during the regulatory agency database search to obtain supplemental information regarding past and present conditions.

We reviewed site files at Ecology's Northwest Regional Office for:

- Enforcement action in the last 5 years
- Confirmed or suspected contaminated materials
- Depth to groundwater and flow direction
- Cleanup status

We focused on identifying the nature and extent of known contamination and the status of cleanup activities on properties within the study area. Site-specific information can be found under the heading, "What hazardous materials and contaminated sites did we find in the study area?"

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### No Further Action (NFA)

Ecology can grant an NFA letter for contaminated sites that have undergone cleanup or no longer pose a threat to human health or the environment.

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### Sanborn Maps

Sanborn fire insurance maps consist of large-scale detailed drawings from 1867 to 1969 showing the commercial, industrial, and residential sections of cities.

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### Windshield Survey

The process of driving by an area to look at properties for general housekeeping and to verify property addresses.

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### Reasonably Predictable Sites

Reasonably predictable sites are sites where recognized environmental conditions are known based on 1) existing data, 2) site observations, 3) previous experience in similar situations, or 4) best professional judgment.

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## Historic record

We reviewed aerial photographs from 1961, 1970, 1982, 1992, and 2003 to characterize land use activities within the study area. The study area changed from generally undeveloped farmland with occasional residences to high-density commercial areas with some light industrial and residential sites. This change in the study area is important because usually commercial and industrial areas have a greater association with hazardous materials than undeveloped farmland. Sanborn maps were not available for the study area.

## Windshield surveys

We conducted a windshield survey of the study area neighborhoods, with a particular focus on potentially contaminated sites near the study area and areas adjacent to the on- and off-ramps along I-405 at the upper and lower ends of the study area. Our observations from the windshield survey are consistent with the information we reviewed from the Ecology and historic records. We looked for information described in the Existing Conditions section of this report during our site visits. We were also able to verify consistency between the EDR report and physical site locations.

## What hazardous materials and contaminated sites did we find in the study area?

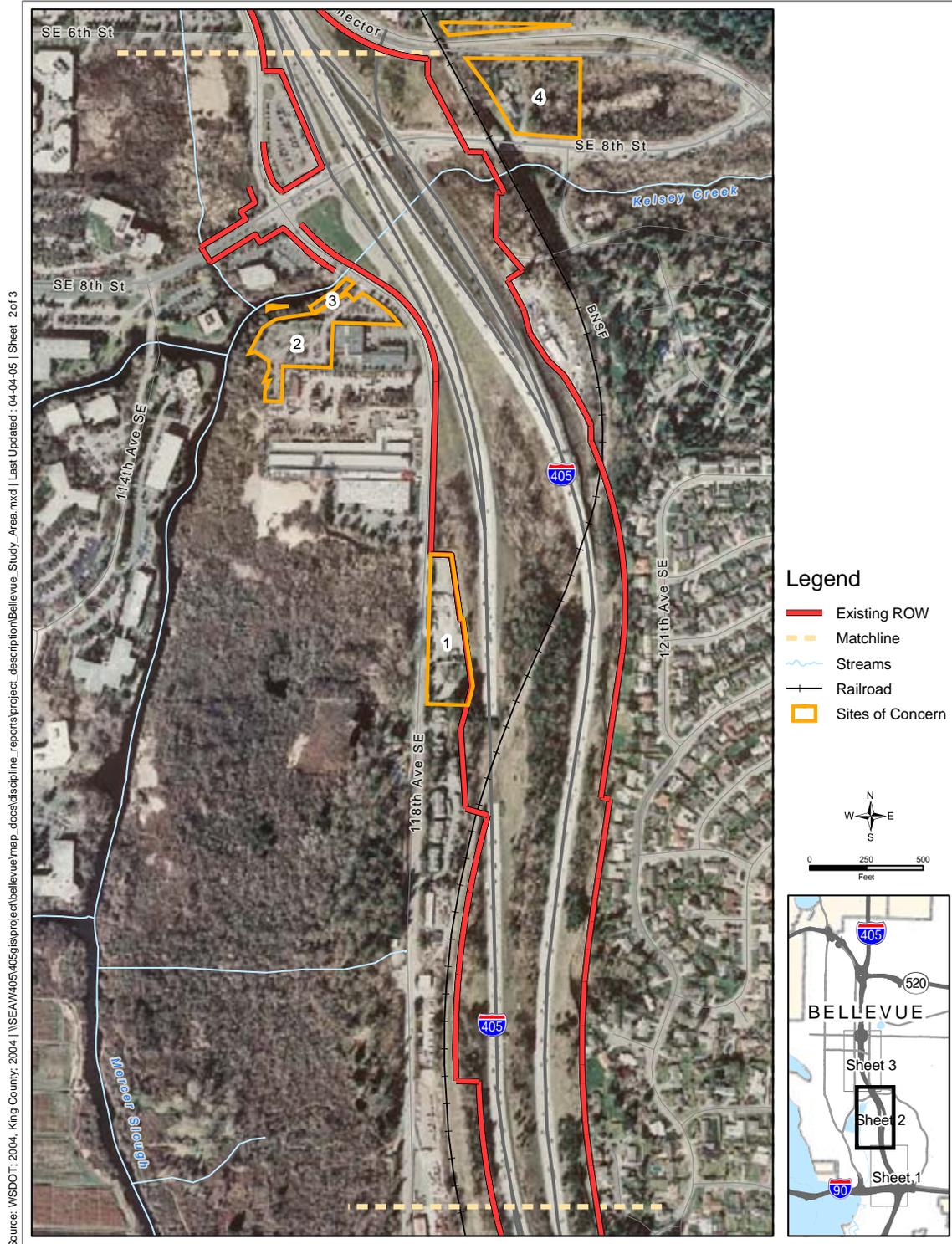
The study area contains hazardous material sites of concern. The following sections provide more information about our analysis and discuss the identified sites of concern. The sites are divided into two broad categories: reasonably predictable sites and substantially contaminated sites.

In addition, structures built before 1989 may contain hazardous construction materials, asbestos-containing material, and lead-based paint, as well as possible polychlorinated biphenyl (PCB)-containing oils associated with electrical equipment. We did not confirm the presence or absence of these materials.

Reasonably predictable sites are typically small. The contaminants are localized and relatively non-toxic, and activities to remedy the site are routine, e.g., asbestos abatement or petroleum hydrocarbon-contaminated soil remediation.

Exhibit 8 shows those sites determined to be reasonably predictable sites, followed by a brief description of each site.

Exhibit 8. Project Overview with Reasonably Predictable Sites



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**Model Toxics Control Act (MTCA)**

Washington Administrative Code describing a process to identify, investigate, and clean up properties that may threaten human health or the environment.

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### Richard S. Evans/Evan's Property, Site 1

This site is listed as having a LUST. Three diesel tanks were removed in June 1994. Petroleum products from the LUST contaminated soil at the site. Additionally, no groundwater contamination was reported. Discrete soil samples were collected from the bottom of the excavation under each former tank location. Two composite samples were also collected from the west sides of the excavations. According to the reviewed Ecology files, petroleum hydrocarbon were detected at a concentration less than the Model Toxics Control Act (MTCA) Method A cleanup levels in the remaining soils.

This site was retained because it is still listed as a LUST, and because of its location adjacent to the existing ROW.

### Eastside Disposal/Estate of James Busse, Site 2

This site is listed as having a LUST.

Two gasoline UST were removed in October 1989. One diesel UST was removed in November 1989. Petroleum products from a LUST contaminated soil at the site. No groundwater contamination was reported.

Soil was excavated until field screening methods indicated no presence of petroleum hydrocarbons. Confirmation soil samples were collected. Results indicate that ethylbenzene, diesel, and possibly heavier oil concentrations exceeding MTCA Method A cleanup levels still exist in soils on site. Soil contaminated with ethylbenzene and diesel exists adjacent to the welding shop footprint. Soil was not remediated near the footprint due to engineering constraints.

No further action is planned as of June 1990. An Ecology letter on September 19, 1990 indicated that cleanup standards were met or bettered.

This site was retained because it is still listed as a LUST and because of its location adjacent to the existing ROW.

### Sound Oil Company/Davey Tree Service, Site 3

This site is listed as having a LUST. Sound Oil Company was a heat oil distributor. Davey Tree Service is an alternate name for Sound Oil Company, according to the EDR report. Three tanks containing diesel and stove oil were removed in August 1990. Petroleum products from a LUST contaminated soil at the site.

According to the Ecology file, the owner tried to treat some of the contaminated soil by turning the soil stockpiles and adding

nutrients and straw. The final soil sample resulted in concentrations above MTCA Method A cleanup levels at the time. However this information was compared to the new amendments to the MTCA and Ecology assessed that the contamination was now below cleanup levels and that the status of this site could be changed. Ecology has upgraded this site's status to "Reported Cleaned Up" without a detailed Ecology review. We retained this site due to its location adjacent to the existing ROW.

#### **Bellevue Fire Station No. 7, Site 4**

This site is listed as having a LUST. Three tanks containing diesel, unleaded gasoline, and waste oil were removed in April 1995. Petroleum from a LUST contaminated soil at the site.

All petroleum contaminated soil above MTCA Method A cleanup levels that could be removed (approximately 294 tons) was excavated and transported to an appropriate offsite disposal facility. A small volume of soil above MTCA Method A cleanup levels, approximately 10 cubic yards, was left in place due to access restrictions.

No additional work has been done to the site as of January 16, 2002 because it is still impractical to attempt any further cleanup of contaminated soil onsite until the operational status of the station changes. Groundwater has not been affected. We retained this site due to its location upgradient to the existing ROW.

### **What properties are most likely to be substantially contaminated?**

We did not identify any substantially contaminated sites in the study area. Substantially contaminated sites are typically large or contain large volumes of contaminated materials; have a long history of industrial or commercial land use; and consist of persistent, difficult, or expensive-to-manage contaminants. Considerable environmental data may be available for substantially contaminated sites; however, the cost liability associated with these sites can be prohibitive.

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#### **Substantially Contaminated Sites**

These are sites that possess a potential for substantial contamination of soil, groundwater, surface water or sediment; contain contaminants that are persistent or expensive to manage; and lack information on predicted remedial costs.

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# Potential Effects

## How will the project affect hazardous materials?

### Build Alternative

Effects from hazardous materials will be few, if any. WSDOT will comply with all applicable environmental rules and regulations as described in the “I-405 Programmatic Commitments” during construction of the project.

### No Build Alternative

The effect of hazardous materials associated with the No Build Alternative would be operational in nature. Despite measures to manage risks associated with hazardous materials, accidents could occur. These accidents could result in short-term contamination effects before actions can be taken to comply with all applicable environmental rules and regulations. Responsibility for any such incident, however, will remain with the person or organization where it begins.

## How could project construction affect hazardous materials?

Construction effects include releases of contaminants to the environment by ground-disturbing or dewatering activities. Potential types of hazardous substance contamination that could



Typical highway construction scene

be encountered during project construction include primarily petroleum-contaminated soil and groundwater. Other contaminants, such as volatile and semivolatile organic compounds, are associated with petroleum. Contamination not managed properly in accordance with existing regulations could potentially affect human health and the environment.

Construction of the project requires excavation and dewatering, particularly during the location of underground utilities. USTs or LUSTs and their associated piping have been identified in the study area; these tanks or associated piping may be encountered during excavation. Further information regarding containments associated with USTs or LUSTs is described in the Existing Conditions section of this report. Unidentified or abandoned tanks may also exist in the study area. If the tanks or piping are disturbed during excavation, hazardous materials or substances could be released, which would have an effect on human health and the environment. Above-ground electrical utilities that may be relocated include PCB-containing transformers. Release of PCBs during the removal of transformers would have an effect on human health and the environment.

During construction, an uncontrolled hazardous substance could be encountered 1) in areas with known contamination, 2) in areas where recorded activities such as hazardous waste generation or fuel storage in USTs have the potential to affect soils or groundwater, or 3) in other areas not identified in the environmental database search. In such cases, the possible environmental effects could include the following:

- Potential release of contaminant air emissions (dust and volatile organic compounds), soil, sediment, surface water, and groundwater during construction.
- Potential alteration of contaminated groundwater plume(s) and generation of contaminated water during dewatering activities.
- Potential alteration of contaminated migration pathways due to excavation and other construction activities.

Another effect common to the construction of the Build Alternative would be the accidental release of a hazardous substance during construction. For example, fuels and oils needed for heavy equipment operation and maintenance could be spilled in the study area. This is a hazard common to all construction projects but particularly acute for construction over water or with stormwater runoff to nearby lakes and rivers. Cleaning up material and disposing of it could add more time

and costs to construction operations. Large spills of hazardous materials during construction could also require emergency response agency intervention.

## Does the project have other effects that are delayed or distant from the project?

Effects from hazardous materials will be few, if any. All of the identified contaminated sites are downgradient, crossgradient, or too far away from the ROW to be a major concern. However, accidental spills of hazardous material can occur during construction or during use of the facility by the public after construction is complete. Accidental spills can contaminate soil, groundwater, and nearby wetlands and streams thereby posing a serious threat to water quality, wildlife, and potentially public health and safety. We will reduce these risks to a minimum by preparing and implementing a Spill Prevention, Control, and Countermeasure (SPCC) Plan to avoid or minimize effects hazardous materials will have on soil, surface water, and groundwater. The Bellevue Fire Department is well equipped and trained to respond to accidental spills of hazardous materials from vehicle accidents on roadways within the study area, including I-405.

## Did we consider potential cumulative effects for the Build and No Build Alternatives?

Per FHWA guidance, cumulative effects analysis is resource-area-specific and generally performed for the resource areas directly affected by the action (such as a transportation project) under study. However, not all of the resource areas directly affected by a project will require a cumulative effects analysis. The resource areas subject to cumulative effects analysis should be determined on a case-by-case basis early in the NEPA process, generally as part of early coordination or scoping. Consistent with the I-405 Corridor Program Final EIS and the results of scoping for the Bellevue Nickel Improvement Project, cumulative effects were not analyzed for this resource area.





# Measures to Avoid or Minimize Project Effects

## What will we do to avoid or minimize negative effects from hazardous materials?

WSDOT will follow the “I-405 Programmatic Commitments” ROD and comply with all applicable environmental procedures, rules, and regulations discussed in the Build Alternative.

## How will we minimize construction effects?

WSDOT will implement the various avoidance measures described in Appendix A to avoid or minimize effects to human health or the environment. No additional mitigation measures are needed or proposed.

## How will the project mitigate unavoidable negative effects?

WSDOT does not anticipate any unavoidable negative effects from this project; therefore, we have not included any specific mitigation measures for these.



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Additional travel lanes will immediately benefit local residents, commuters, transit riders, and freight haulers.

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## Appendix A

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### Avoidance and Minimization Measures



# Avoidance and Minimization Measures

The following sections describe the established design and construction practices that WSDOT will include to avoid or minimize effects to the various environmental resources during both the construction and operation phases of the project.

## Project Measures to Avoid or Minimize Effects During Construction

Design elements, such as modifications to boundaries of areas that can be affected, have been incorporated into the project specifications, construction plans, and procedures, to help avoid or minimize most potential construction impacts. When appropriate, monitoring will be conducted to ensure that these design and construction measures are effective.

### Measures for Geology, Soils, and Groundwater

- WSDOT will prepare and implement a Temporary Erosion and Sedimentation Control (TESC) plan consisting of operational and structural measures to control the transport of sediment. Operational measures include removing mud and dirt from trucks before they leave the site, covering fill stockpiles or disturbed areas, and avoiding unnecessary vegetation clearing. Structural measures are temporary features used to reduce the transport of sediment, such as silt fences and sediment traps.
- WSDOT will reduce degradation of moisture-sensitive soils by limiting major earthwork to the drier, late spring through early fall construction season; by maintaining proper surface drainage to avoid ponding of surface water or groundwater; by minimizing ground disturbance through limiting the use of heavy equipment, limiting turns, and/or not tracking directly on the subgrade; and by covering the final subgrade elevation with a working mat of crushed rock and/or geotextile for protection. Mixing a soil admix such as cement into the subgrade may also add strength and stabilize the ground.
- WSDOT will determine acceptable limits for off-site construction-related ground vibration before construction begins and demonstrate that off-site ground vibrations are within the limits set for the project through the use of vibration-monitoring equipment.
- WSDOT will identify areas subject to shaking from a large earthquake and will mitigate risks using ground modifications or other procedures identified in the WSDOT Geotechnical Design Manual.
- WSDOT will implement construction procedures identified in the geotechnical investigation to maintain or enhance slope stability in areas potentially underlain by landslide-prone soils.
- WSDOT will protect the Kelsey Creek aquifer from contamination by construction-related spills by development and implementation of BMPs and a Spill Prevention Control and

Countermeasures plan (SPCCP). The SPCC will specifically address fuel spills from vehicles and from spills of other chemicals commonly transported over I-405. Spill response equipment will be located at regular and specified intervals within the project area for minimizing countermeasure response times.

- WSDOT will ensure only clean fill is imported and placed for the project and will require documentation for fill brought onto the site from the supplier certifying that the fill does not exceed Washington State soil cleanup standards. If documentation is not available, testing of imported fill soils will be required prior to placement. Suspect soils encountered during project construction will be tested and, where necessary, removed from the site and disposed of in accordance with Washington State regulations.
- WSDOT will identify and develop staging areas for equipment repair and maintenance away from all drainage courses. Washout from concrete trucks will not be dumped into storm drains or onto soil or pavement that carries stormwater runoff. A wash down area for equipment and concrete trucks will be designated and the use of thinners and solvents to wash oil, grease, or similar substances from heavy machinery or machine parts will be prohibited.
- WSDOT will obtain a NPDES (National Pollutant Discharge Elimination System) permit and will conduct a regular program of testing and lab work to ensure that water encountered during construction meets the water quality standards specified in the NPDES permit.
- WSDOT will to meet the NPDES water quality standards prior to the discharge of the encountered water to a surface water body, such as Kelsey Creek. If necessary, water quality will be improved, such as by using sediment ponds to allow sediment to settle out prior to discharge.
- If it is necessary to install seepage drains to control seepage for retaining walls and fill embankments, WSDOT will include special provisions in the design to discharge drain flow back into affected areas, including wetlands.

## Measures for Water Quality

In addition to measures for geology, soils, groundwater, and for hazardous materials that are protective of water quality, the following measures would be implemented for water quality.

- WSDOT will identify and develop staging areas for equipment repair and maintenance away from all drainage courses.
- Washout from concrete trucks will not be dumped into storm drains or onto soil or pavement that carries stormwater runoff.
- Thinners and solvents will not be used to wash oil, grease, or similar substances from heavy machinery or machine parts.
- WSDOT will designate a wash down area for equipment and concrete trucks.

## Measures for Wetlands

- WSDOT will protect, preserve, and enhance wetlands in the project area during the planning, construction, and operation of transportation facilities and projects consistent with USDOT Order 5660.1A, Executive Order 11990, and Governor's Executive Orders EO 89-10 and EO 90-04.
- WSDOT's project-level design and environmental review has included avoidance, minimization, restoration, and compensation of wetlands. WSDOT will implement these measures prior to or concurrent with adverse effects on wetlands, to reduce temporal losses of wetland functions.
- WSDOT will follow guidance contained in the wetlands section of the WSDOT Environmental Procedures Manual (WSDOT 2004a), which outlines the issues and actions to be addressed prior to authorizing work that could affect wetlands.
- WSDOT will use high-visibility fencing to clearly mark wetlands to be avoided in the construction area.

## Measures for Upland Vegetation and Wildlife

- WSDOT will ensure mitigation measures established in the I-405 Corridor EIS will be implemented on the Bellevue Nickel Improvement Project.
- WSDOT will prepare and implement a revegetation plan. In addition, areas with mixed forest will not be removed for temporary use (i.e., construction staging). If an area of mixed forest must be removed for roadway construction, it will be replaced with plantings of native tree and shrub species within the affected area.
- WSDOT will adhere to project conditions identified in the Biological Assessment and agency concurrence letters.
- WSDOT will limit construction activity to a relatively small area immediately adjacent to the existing roadway to minimize vegetation clearing and leave as many trees as possible.

## Measures for Fisheries and Aquatic Resources

- WSDOT will implement construction BMPs (such as silt fencing or sedimentation ponds) to avoid disturbing sensitive areas during the development and use of any staging areas, access roads, and turnouts associated with resurfacing activities.
- WSDOT will not allow in-water work to occur except during seasonal work windows established to protect fish.
- WSDOT will require that all stormwater treatment wetland/detention facilities are sited and constructed at a sufficient distance from named and unnamed streams so no grading or filling in the streams or the streamside zones will be required.

## Measures for Air Quality

- WSDOT will require preparation and implementation of a Fugitive Dust Control Plan in accordance with the Memorandum of Agreement between WSDOT and PSCAA Regarding Control of Fugitive Dust from Construction Projects (October 1999).
- During dry weather, exposed soil will be sprayed with water to reduce emissions of and deposition of particulate matter (PM<sub>10</sub>).
- WSDOT will provide adequate freeboard (space from the top of the material to the top of the truck), cover truckloads, and, in dry weather, wet materials in trucks to reduce emission of and deposition of particulate matter during transport.
- WSDOT use wheel washers to remove particulate matter that would otherwise be carried offsite by vehicles to decrease deposition of particulate matter on area roadways.
- WSDOT will remove particulate matter deposited on public roads to reduce mud on area roadways.
- WSDOT will cover or spray with water any dirt, gravel, and debris piles during periods of high wind when the stockpiles are not in use to control dust and transmissions of particulate matter.
- WSDOT will route and schedule construction trucks to reduce travel delays and unnecessary fuel consumption during peak travel times, and therefore reduce secondary air quality impacts (i.e. emissions of carbon monoxide and nitrogen oxides) that result when vehicles slow down to wait for construction trucks.

## Measures for Noise

- Noise berms and barriers will be erected prior to other construction activities to provide noise shielding.
- The noisiest construction activities, such as pile driving, will be limited to between 7 AM and 10 PM to reduce construction noise levels during sensitive nighttime hours.
- Construction equipment engines will be equipped with adequate mufflers, intake silencers, and engine enclosures.
- Construction equipment will be turned off during prolonged periods of nonuse to eliminate noise.
- All equipment will be maintained appropriately and equipment operators will be trained in good practices to reduce noise levels.
- Stationary equipment will be stored away from receiving properties to decrease noise.
- Temporary noise barriers or curtains will be constructed around stationary equipment that must be located close to residences.
- Resilient bed liners will be required in dump trucks to be loaded on site during nighttime hours.

- WSDOT use Occupational Safety and Health Administration (OSHA)-approved ambient sound-sensing backup alarms that would reduce disturbances during quieter periods.

## Measures for Hazardous Materials

### Known or Suspected Contamination within the Build Alternative Right of Way

- WSDOT will prepare an SPCCP that provides specific guidance for managing contaminated media that may be encountered within the right of way (ROW).
- WSDOT may be responsible for remediation and monitoring of any contaminated properties acquired for this project. WSDOT will further evaluate the identified properties before acquisition or construction occurs. Contamination in soils will be evaluated relative to the Model Toxics Control Act (MTCA).
- If WSDOT encounters an underground storage tank (UST) within the ROW, WSDOT will assume cleanup liability for the appropriate decommissioning and removal of USTs. If this occurs, WSDOT will follow all applicable rules and regulations associated with UST removal activities.
- WSDOT will conduct thorough asbestos-containing material/lead paint building surveys by an Asbestos Hazard Emergency Response Act (AHERA)-certified inspector on all property structures acquired or demolished. WSDOT will properly remove and dispose of all asbestos-containing material/lead-based paint in accordance with applicable rules and regulations.
- Construction waste material such as concrete or other harmful materials will be disposed of at approved sites in accordance with Sections 2-01, 2-02, and 2-03 of the WSDOT Standard Specifications.
- WSDOT may acquire the responsibility for cleanup of any soil or groundwater contamination encountered during construction (that must be removed from the project limits) within WSDOT ROW. Contamination will be evaluated relative to Model Toxics Control Act (MTCA) cleanup levels.
- WSDOT will consider entering into pre-purchaser agreements for purpose of indemnifying itself against acquiring the responsibility for any long-term cleanup and monitoring costs.
- All regulatory conditions imposed at contaminated properties (e.g., Consent Decree) associated with construction will be met. These conditions could include ensuring that the surrounding properties and population are not exposed to the contaminants on the site: i.e., WSDOT will ensure that the site is properly contained during construction so that contaminants do not migrate offsite, thereby protecting the health and safety of all on-site personnel during work at the site.

### Known or Suspected Contamination Outside of the Right of Way

- Contaminated groundwater originating from properties located up-gradient of the ROW could migrate to the project area. WSDOT generally will not incur liability for groundwater contamination that has migrated into the project footprint as long as the agency does not

acquire the source of the contamination. However, WSDOT will manage the contaminated media in accordance with all applicable rules and regulations.

### Unknown Contamination

- If unknown contamination is discovered during construction, WSDOT will follow the SPCCP as well as all appropriate regulations.

### Worker and Public Health and Safety and other Regulatory Requirements

The WSDOT will comply with the following regulations and agreements:

- State Dangerous Waste Regulations (Chapter 173-303 WAC);
- Safety Standards for Construction Work (Chapter 296-155 WAC);
- National Emission Standards for Hazardous Air Pollutants (CFR, Title 40, Volume 5, Parts 61 to 71);
- General Occupational Health Standards (Chapter 296-62 WAC); and
- Implementing Agreement between Ecology and WSDOT Concerning Hazardous Waste Management (April 1993).

### Hazardous Materials Spills During Construction

- WSDOT will prepare and implement a SPCCP to minimize or avoid effects on human health, soil, surface water and groundwater.

### Measures for Traffic and Transportation

- WSDOT will coordinate with local agencies and other projects to prepare and implement a Traffic Management Plan (TMP) prior to making any changes to the traffic flow or lane closures. WSDOT will inform the public, school districts, emergency service providers, and transit agencies of the changes ahead of time through a public information process. Pedestrian and bicycle circulation will be maintained as much as possible during construction.
- Prior to and during construction, WSDOT will implement strategies to manage the demand on transportation infrastructure. These transportation demand management strategies will form an important part of the construction management program and will be aimed at increasing public awareness and participation in HOV travel. The major focus will be on expanding vanpooling and van-share opportunities. Other elements of the transportation demand management plan may include:
  - increased HOV awareness and public information, and
  - work-based support and incentives.

## Measures for Visual Quality

- WSDOT will follow the I-405 Urban Design Criteria. Where the local terrain and placement of light poles allow, the WSDOT will reduce light and glare effects by shielding roadway lighting and using downcast lighting so light sources will not be directly visible from residential areas and local streets.
- WSDOT will restore (revegetate) construction areas in phases rather than waiting for the entire project to be completed.

## Measures for Neighborhoods, Businesses, Public Services and Utilities

- WSDOT will prepare and implement a transportation management plan (TMP). If local streets must be temporarily closed during construction, WSDOT will provide detour routes clearly marked with signs.
- WSDOT will coordinate with school districts before construction.
- WSDOT will implement and coordinate the TMP with all emergency services prior to any construction activity.
- WSDOT will coordinate with utility providers prior to construction to identify conflicts and resolve the conflicts prior to or during construction. Potential utility conflicts within WSDOT ROW will be relocated at the utility's expense prior to contract award.
- WSDOT will prepare a consolidated utility plan consisting of key elements such as existing locations, potential temporary locations and potential new locations for utilities; sequence and coordinated schedules for utility work; and detailed descriptions of any service disruptions. This plan will be reviewed by and discussed with affected utility providers prior to the start of construction.
- WSDOT will field verify the exact locations and depths of underground utilities prior to construction.
- WSDOT will notify neighborhoods of utility interruptions by providing a scheduled of construction activities in those areas.
- WSDOT will coordinate with utility franchise holders and provide them with project schedules to minimize the effects of utility relocations (for example, equipment procurement times, relocation ahead of construction, etc.)
- WSDOT will notify and coordinate with fire departments for water line relocations that may affect water supply for fire suppression, and establish alternative supply lines prior to any breaks in service; and to ensure that fire departments can handle all calls during construction periods and to alleviate the potential for increased response times.
- WSDOT will notify and coordinate with police departments to implement crime prevention principles and to ensure that they have adequate staffing to provide traffic and pedestrian control.

- WSDOT will maintain access to businesses throughout the construction period through careful planning of construction activities and an awareness of the needs to provide adjacent properties with reasonable access during business hours. As part of construction management, WSDOT will prepare access measures. WSDOT will make provisions for posting appropriate signs to communicate the necessary information to potential customers.
- WSDOT will keep daytime street closures to a minimum to provide access for businesses during regular business hours.

## Measures for Cultural Resources

- WSDOT will prepare an Unanticipated Discovery Plan for the project that WSDOT will follow. This will avoid or minimize unanticipated effects to historic, cultural, and archaeological resources.

## Project Measures to Avoid or Minimize Effects During Project Operation

The following sections describe the measures that WSDOT will implement during project operation.

### Measures for Surface Waters and Water Quality

- WSDOT will follow the Highway Runoff Manual for both the design and implementation of stormwater facilities. WSDOT is not required to manage flow where drainage is directly to Mercer Slough. Where drainage is to a tributary to Mercer Slough, WSDOT will construct a stormwater management system that does provide flow control.

### Measures for Fisheries and Aquatic Resources

- WSDOT will compensate for adverse effects to fish habitat and aquatic resources by providing in-kind mitigation. This in-kind mitigation will take the form of on-site, off-site, or a combination of on- and off-site mitigation.
- Off-site mitigation could include planting native riparian vegetation outside of the study area in areas where restoring native riparian buffers may have a greater benefit to fish and aquatic species. Mitigation could be concentrated along streams with high fish use where important stream processes and functions related to riparian buffers (for example, large woody debris [LWD] recruitment levels, litter fall, and bank stabilization) are impaired.
- On-site/off-site mitigation could include installing in-stream habitat features (for example, boulders or LWD) in the streambed downstream of the project footprint to increase the habitat complexity of the affected waterbody.

- Ongoing maintenance (during and post-construction) of stormwater treatment and detention facilities by WSDOT will not include the application of any chemical weed control agents (e.g., herbicides).

## Measures for Upland Vegetation and Wildlife

- WSDOT will replace areas of mixed forest that will be permanently removed for roadway construction with plantings of native tree and shrub species within the affected area.



## Appendix B

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EDR Report and EDR Site Plan

(Enclosed is a CD, containing the full 266-page EDR Report.)



## Appendix C

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I-405 Hazardous Materials – Site-Screening Summary



## I-405 Hazardous Materials – Site Screening Summary

EDR #	Detailed Analysis?	Rationale	Site Name	Site Address	Geo ID	Site Information	Parcel #
69	No	>1/4 mile from ROW					
72	No	>1/4 mile from ROW					
71	No	>1/4 mile from ROW					
70	No	>1/4 mile from ROW					
68	No	>1/4 mile from ROW					
67	No	>1/4 mile from ROW					
66	No	>1/4 mile from ROW					
65	No	>1/4 mile from ROW					
64	No	>1/4 mile from ROW					
63	No	>1/4 mile from ROW					
62	No	>1/4 mile from ROW					
61	No	>1/4 mile from ROW					
60	No	>1/4 mile from ROW					
59	No	SQG no violations					
58	No	>1/4 mile from ROW					

EDR #	Detailed Analysis?	Rationale	Site Name	Site Address	Geo ID	Site Information	Parcel #
57	No	>1/4 mile from ROW					
56	No	>1/4 mile from ROW					
55	No	>1/4 mile from ROW					
54	No	>1/4 mile from ROW					
53	No	>1/4 mile from ROW					
52	No	>1/4 mile from ROW					
51	No	>1/4 mile from ROW					
50	No	>1/4 mile from ROW					
49	No	>1/4 mile from ROW					
48	No	SOG no violations/SPILLS					
47	No	>1/4 mile from ROW					
46	No	Downgradient/UST					
45	No	>1/4 mile from ROW					
44	No	>1/4 mile from ROW					
43	No	>1/4 mile from ROW					
42	No	>1/4 mile from ROW					
41	No	>1/4 mile from ROW				Not adjacent to ROW	

EDR #	Detailed Analysis?	Rationale	Site Name	Site Address	Geo ID	Site Information	Parcel #
40	No	>1/4 mile from ROW					
39	No	>1/4 mile from ROW					
38	No	>1/4 mile from ROW					
37	No	Downgradient/Spill					
36	No	>1/4 mile from ROW					
35	No	>1/4 mile from ROW					
34	No	>1/4 mile from ROW					
33	No	SOG no violations					
32	No	Downgradient/UST				Not adjacent to ROW	
31	No	>1/4 mile from ROW					
30	No	Downgradient/CSCSL-NFA					
29	No	Downgradient/UST				Not adjacent to ROW	
28	No	>1/4 mile from ROW					
27	No	>1/4 mile from ROW					
26	No	>1/4 mile from ROW					
25	Yes	Downgradient/LUST	Richard Evan's Property	1614 118th Ave SE	1	Reported cleaned up June 1995. Soil contamination from LUST. Reported in 1994. Adjacent to ROW.	424059010

EDR #	Detailed Analysis?	Rationale	Site Name	Site Address	Geo ID	Site Information	Parcel #
24	No	Downgradient/Spill-FERNS				In 1991 a caller reported a oily sheen originating at Davey Tree Service and discharging into the street and empty lot. Heavy rain at the time of sighting. Not adjacent to ROW.	
23	No	>1/4 mile from ROW					
22	Yes	Downgradient/LUST	Sound Oil/Davey Tree Service	1021 118th Ave SE	3	Soil contamination from LUST reported cleaned up in May 2004. Release notification in August 1990. Adjacent to ROW.	424050050
21	No	Downgradient/FINDS					
20	No	Upgradient/UST					
19	Yes	Downgradient/LUST	Eastside Disposal	969 118th Ave SE/ 915 118th Ave SE	2	Soil contamination from LUST reported cleaned up in June 1990. Release notification in 1989. Adjacent to ROW. Not adjacent to ROW.	662870040
18	Yes	Upgradient/LUST	Bellevue Fire Station #7	11900 SE 8th St	4	Majority of soil contamination cleaned up. Remaining soil contamination left on site because it is impractical to remove at this point.	9399700960

EDR #	Detailed Analysis?	Rationale	Site Name	Site Address	Geo ID	Site Information	Parcel #
17	No	Downgradient/FINDS					
16	No	Upgradient/Spills				Exhaust in the air reported on June 2003. Not adjacent to ROW.	
15	No	>1/4 mile from ROW					
14	No	Downgradient/LUST					
13	Yes	Cross-gradient/Upgradient/LUST					
12	No	>1/4 mile from ROW					
11	No	>1/4 mile from ROW					
10	No	>1/4 mile from ROW					
9	No	>1/4 mile from ROW					
8	No	>1/4 mile from ROW					
7	No	>1/4 mile from ROW					
6	No	>1/4 mile from ROW					
5	No	>1/4 mile from ROW					
4	No	>1/4 mile from ROW					
3	No	>1/4 mile from ROW					

EDR #	Detailed Analysis?	Rationale	Site Name	Site Address	Geo ID	Site Information	Parcel #
2	No	>1/4 mile from ROW					
1	No	>1/4 mile from ROW					

## Appendix D

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UST Property List of Sites within 0.25 Mile of the  
Study Area that Did Not Merit Further Analysis



## UST Property List of Sites within 0.25 Mile of the Study Area that Did Not Merit Further Analysis

Map ID No.	Site Name	Address	Agency List(s)
1	Brooks Chevrolet, Inc.	430 116th Avenue NE Bellevue, WA 98004	LUST UST
1	Everett Motors, Inc.	420 116th Avenue NE Bellevue, WA 98004	LUST UST
1	Eastside Jeep Eagle Dealership (Former)	400 116th Avenue NE Bellevue, WA 98005	UST
1	Performance Dodge	316 116th Avenue NE Bellevue, WA 98004	LUST FINDS VCP UST, RCRA- SQG
4	Bellevue Chrysler Plymouth	126 116th Avenue NE Bellevue, WA 98004	UST CSCSL NFA
4	Michael's Toyota, Inc.	120 116th Avenue NE Bellevue, WA 98004	UST
7	Chevron 92581	10812 Main Street Bellevue, WA 98004	LUST UST
10	City Hall	11511 Main Street Bellevue, WA 98009	LUST UST
14	Bellevue Red Lion Motor Inn	300 112th Avenue SE Bellevue, WA 98004	LUST WA ICR UST
20	United Communications Systems, Inc.	936 121st Avenue SE Bellevue, WA 98005	UST
29	Doolittle Construction Co., Inc.	1900 118th Avenue SE Bellevue, WA 98005	UST
32	Madden Construction, Inc.	2200 118th Avenue SE Bellevue, WA 98005	UST
45	Bernard L. Perkins	c/o Econo-Mini- Warehouse of America Bellevue, WA 98005	UST
46	Evergreen Services Corporation	12010 SE 32nd Street Bellevue, WA 98005	UST
49	Chevron 92360	3204 129th Place SE Bellevue, WA 98005	LUST UST
56	Indy Lube	3625 128th Avenue SE Bellevue, WA 98006	UST
58	Circle K Store 5479 BP Oil	3724 128th Avenue SE	LUST UST

Map ID No.	Site Name	Address	Agency List(s)
	RCRA-SQG	Bellevue, WA 98006	SPILLS, FINDS
58	Factoria 76	3727 128th Avenue SE Bellevue, WA 98006	LUST UST
61	N/A - Miller Enterprises/ Miller Boys Texaco	12606 SE 38 Place Bellevue, WA 98006	UST
64	Mercer Marine & John Radovich	3911 Lake WA Boulevard SE Bellevue, WA 98006	UST
70	Factoria Automotive Service Center	4000 128th Avenue SE Bellevue, WA 98006	UST
70	Precision Tune	4000 128th Avenue SE Bellevue, WA 98006	UST
70	6690	4000 128th Avenue SE Bellevue, WA 98006	LUST UST N/A
72	Bellevue Fire Station #4	4216 128th Avenue SE Bellevue, WA 98006	UST

## Appendix E

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Offsite Properties of Concern and Recommended Actions



## Offsite Properties of Concern and Recommended Actions

Site No (See Figure 1-3).	Description	Potential for Contaminant Migration into ROW	Recommended Actions
Richard S. Evans/Evans Property, Site 1	<p>This site is listed as having a LUST. Three diesel tanks were removed in June 1994. Petroleum products from a LUST contaminated soil at the site. No groundwater contamination was reported.</p> <p>Cleanup was started in July 1994 and reportedly completed in June 1995. This site was retained because of its location adjacent to the existing ROW.</p>	<p>This site is adjacent and hydraulically crossgradient of the ROW.</p> <p>Based on the sites location adjacent to the ROW there appears to be a minor risk of impacts due to hazardous materials.</p>	No additional action is recommended.
Eastside Disposal/Estate of James Busse, Site 2	<p>This site is listed as having a LUST. Three tanks containing gasoline and diesel were removed in 1989. Petroleum products from a LUST contaminated soil at the site. No groundwater contamination was reported.</p> <p>Excess or potentially contaminated soil was sampled and disposed of off site. No further action is planned as of June 1990. An Ecology letter on September 19, 1990 indicated that cleanup standards were met or bettered.</p>	<p>This site is adjacent and hydraulically crossgradient of the ROW.</p> <p>Based on information indicating the site has been cleaned up there appears to be little risk of impacts due to hazardous materials.</p>	No additional action is recommended.
Sound Oil Company/Davey Tree Service, Site 3	<p>This site is listed as having a LUST. Sound Oil Company was a heat oil distributor (Davey Tree Service is an alternate name for this company). Three tanks containing diesel and stove oil were removed in August 1990. Petroleum products from a LUST contaminated soil at the site. No groundwater contamination was reported</p> <p>According to the Ecology file, the owner tried to treat some of the contaminated soil by turning the soil stockpiles and adding nutrients and straw. The final soil sample resulted in concentrations above the Model Toxics Control Act (MTCA) Method A cleanup levels at the time. However, this information was compared to the new amendments to the MTCA, and Ecology made the assessment that the contamination (including the stockpile) is now below cleanup levels and the status of this site could be changed. Ecology has upgraded this site's status to "Reported Cleaned Up" without a detailed Ecology review. This site was retained because of its location adjacent to the existing ROW.</p>	<p>This site is adjacent and hydraulically crossgradient of the ROW.</p> <p>Based on information indicating the site has been cleaned up there appears to be little risk of impacts due to hazardous materials.</p>	No additional action is recommended.
Bellevue Fire Station No. 7, Site 4	<p>This site is listed as having a LUST. Three tanks containing diesel, unleaded gasoline and waste oil were removed in April 1995. Petroleum products from a LUST contaminated soil at the site.</p>	<p>This site is uphill and hydraulically upgradient of the ROW.</p> <p>Based on the sites</p>	No additional action is recommended.

Site No (See Figure 1-3).	Description	Potential for Contaminant Migration into ROW	Recommended Actions
	<p>All petroleum-contaminated soil above MTCA Method A cleanup levels that could be removed (approximately 294 tons) was excavated and transported to an appropriate off-site disposal facility. A small volume of soil above MTCA Method A cleanup levels, approximately 10 cubic yards, was left in place due to access restrictions.</p> <p>No additional work has been done to the site as of January 16, 2002, because it is still impractical to attempt any further cleanup of contaminated soil onsite until the operational status of the station changes. Groundwater has not been affected.</p>	<p>distance from the ROW there appears to be little risk of impacts due to hazardous materials.</p>	