WSDOT

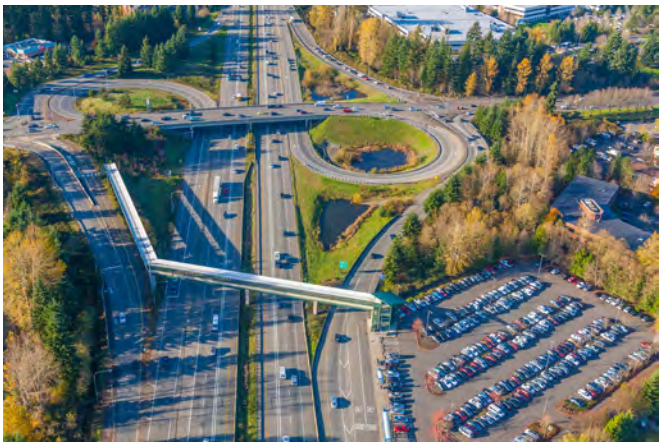
U. S. Department of Transportation
Federal Highway Administration

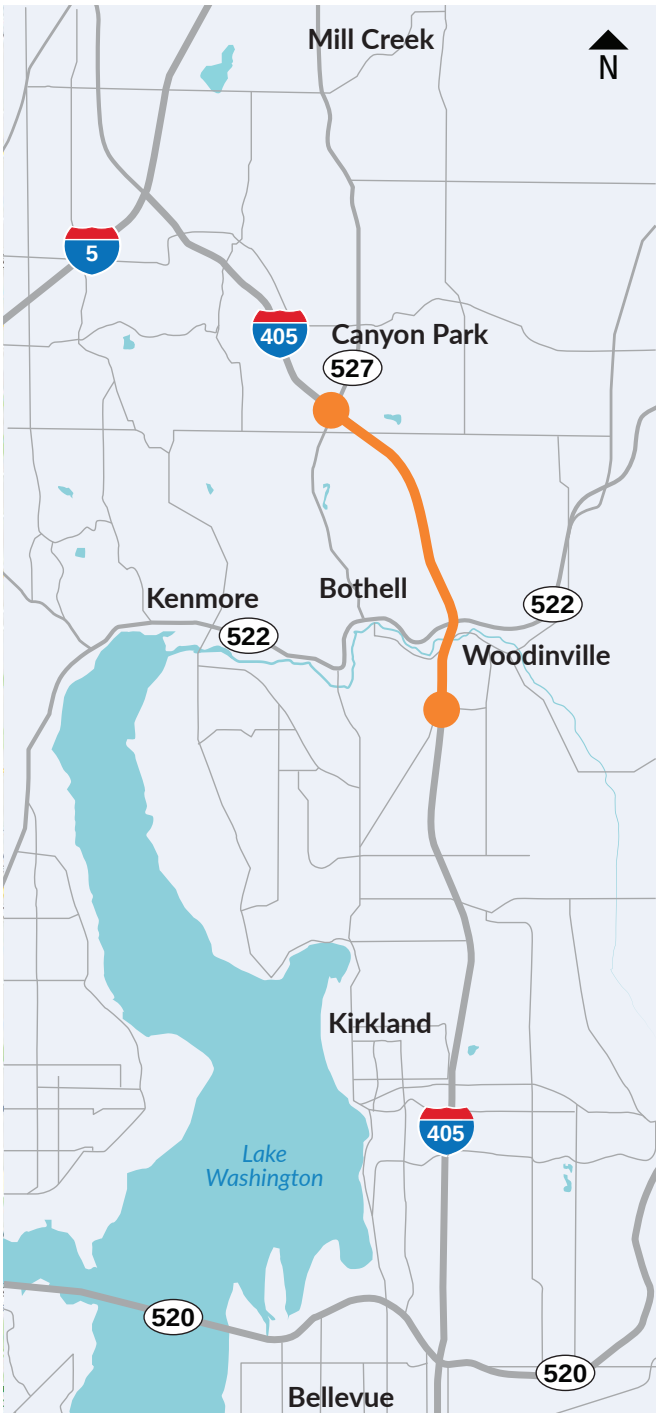
OCTOBER 2019

ENVIRONMENTAL ASSESSMENT

Appendix G: Hazardous Materials Analysis Technical Memorandum

I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project (MP 21.79 to 27.06)





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EXECUTIVE SUMMARY

The Washington State Department of Transportation (WSDOT) Hazardous Materials Program has performed a desktop project-level hazardous materials analysis, located within the hazardous materials study area (study area) extending from milepost (MP) 21.79 to MP 27.06 of Interstate 405 (I-405) for the proposed I-405, State Route (SR) 522 Vicinity to SR 527 Express Toll Lanes Improvement Project (Project). The Project is located in King and Snohomish Counties, within Township 26N, Range 5E, Sections 4, 5, 8, 9, 16, 17, and 20; and Township 27N, Range 5E, Sections 29, 30, 31, and 32. WSDOT conducted the analysis in general accordance with Chapter 447 of WSDOT's *Environmental Manual*, and specific sections of the American Society for Testing and Materials Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process, Designation: E1527-13 (ASTM E1527-13) (WSDOT 2018). This analysis is considered a right-sized, standard-level report, and for National Environmental Policy Act (NEPA)/State Environmental Policy Act (SEPA) environmental documentation, this assessment provides the appropriate level of investigation necessary to identify potential contaminated sites that may pose a significant impact to the study area.

The purpose of this analysis was to evaluate the existence of Recognized Environmental Conditions (RECs) or Historical RECs (HRECs) resulting from past or present land use within the project limits, or potential RECs within the project limits that could potentially affect project design, construction, and the environment. For the purposes of this report, Project limits refers to the areas where construction would occur; the study area refers to areas up to 0.5 mile from the Project limits. Identifying hazardous material sites prior to construction decreases the possibility of exposing the public and the environment to hazardous substances that may be a threat to human health or the environment. The information from this survey may minimize cleanup costs and/or reduce unanticipated project delays. In addition, this analysis provides information needed to determine whether any supplementary hazardous material investigations should be conducted to evaluate potential risk and liability to the Project.

The study area can primarily be characterized as a state highway with numerous intersecting and arterial roadways surrounded by residential and commercial properties in all four cardinal directions. Historically, the study area was primarily rural farm and forest lands with some industries and residential homes. With the construction of I-405, the study area became suburban and more developed with increased numbers of residential homes, commercial industries, local roads, business parks, and shopping centers.

Based on the results of the Washington State Department of Ecology (Ecology) online investigation, Project description, and database review, a total of 18 sites were identified as potential sites of concern. These 18 sites have RECs or HRECs because of historical land use, confirmed or suspected past releases that have the potential of being encountered during construction, and/or are properties proposed for acquisitions that are suspected of having contamination.

Based on the risk analyses performed for the 18 sites, 10 sites have a low anticipated level of impact to the Project (Chevron 93299, Texaco Star Mart/Jacksons 616, Securite Gun Club/Dirt Lorde Property, Juno Therapeutics [former Sonus Pharmaceuticals], Ferndale Grain Woodinville, Bang Property, Autosmith/Bothell North/One Hour Electric, Siemens Transmission, Snohomish County Fire Station 45, and Tan & Yang Property). Of these 10 low impact sites, three of the sites have the potential to become a moderate impact risk to the Project (Chevron 93299, Texaco Star Mart/Jacksons 616, and Juno Therapeutics [former Sonus Pharmaceuticals]).

Eight sites have a moderate anticipated level of impact to the Project (AT&T Wireless NR5, Dry Clean US, former Excell Cleaners, Canyon Park Cleaners, Jacksons 615/Shell 120935, WSDOT NE Woodinville Drive UST, Bothell City Shop/Public Works UST/King County parcel 0926059013, and King County Parks/Former BNSF rail line). Of these eight moderate impact sites, two of the sites have the potential to become a high impact risk to the Project (AT&T Wireless NR5 and Dry Clean US).

Soil and/or groundwater contamination may be encountered based on current and historic land uses in the study area. Total petroleum hydrocarbons (TPH) and halogenated volatile organic compounds (HVOCs) have been identified at sites within the study area and adjoining the project limits. However, WSDOT expects no significant, unavoidable adverse effects to result from the proposed Project because the potential of encountering contaminated soil and/or groundwater could be avoided by design decisions or mitigated through proper remediation during construction.

The following recommendations are provided as a result of the findings and conclusions of this assessment.

- WSDOT recommends that the construction contract include requirements advising contractors of the appropriate handling and disposal of identified or suspected contamination that may be encountered during excavations or soil disturbances near or on the study area. WSDOT routinely uses General Special Provisions (GSPs) or Special Provisions (SPs) to account for uncertainties of hazardous materials, such as the removal and disposal of unanticipated hazardous materials. (An example of a provision would be to stockpile suspected contaminated soils for laboratory analysis prior to reuse or disposal.) WSDOT can assist in creating these contract provisions, if necessary.

- Prior to demolition of the I-405 off-ramp bridges at the SR 522 interchange, the building on the Hallett property, and the building on the Bothell City Shop/Public Works UST property, WSDOT recommends that an Asbestos Hazard Emergency Response Act (AHERA) Building Inspector conduct a Good Faith Asbestos and Hazardous Materials Survey (GFS) with the intent of complying with and providing an AHERA-level assessment in accordance with U.S. Environmental Protection Agency (EPA), 40 Code of Federal Regulations (CFR) 763, and Washington State Department of Labor and Industries standards, Washington Administrative Code (WAC) 296-62-07721(2)(b)(ii).

- For proposed partial acquisitions and temporary construction easements (TCEs) of properties with HRECs and RECs, WSDOT recommends that a Phase II Environmental

Site Assessment (ESA) be considered prior to any purchase agreement, based on proposed Project activities on these properties. WSDOT recommends a Phase II ESA be conducted where excavations are proposed near adjoining sites of concern with potential groundwater contamination. Sites to be considered for a Phase II ESA include the Former Excell Cleaners, Juno Therapeutics, and Bothell City Shop/Public Works UST/King County parcel 0926059013. For the King County Parks/Former Burlington Northern Santa Fe (BNSF) rail line site, WSDOT recommends sampling and pre-characterizing soil to determine baseline conditions.

- WSDOT recommends that an environmental reevaluation be conducted if subsequent changes are made to the Project, such as project realignment, planned excavation depths, or changes to the proposed site acquisitions, which could alter the conclusions made in this investigation.

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Acronyms and Abbreviations

ACM	asbestos containing material
AHERA	Asbestos Hazard Emergency Response Act
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
bgs	below ground surface
BNSF	Burlington Northern Santa Fe Railroad
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CORRACTS	Corrective Action Sites
CSCSL	Confirmed and Suspected Contaminated Sites List
CUL	Cleanup levels
Ecology	Washington State Department of Ecology
EDR	Environmental Data Resources, LLC
EPA	United States Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
ETL	express toll lane
FINDS	Facility Index System/Facility Registry System
FOIA	Freedom of Information Act
GFS	Good Faith Asbestos and Hazardous Materials Survey
GSP	General Special Provision
HASP	Health and Safety Plan
HBM	Hazardous building materials
HREC	Historical Recognized Environmental Condition
HVOCs	halogenated volatile organic compounds
I-405	Interstate 405
ICR	independent cleanup report
LBP	lead based paint
LQG	large quantity generator
LUST	leaking underground storage tank
MTCA	Model Toxics Control Act
NEPA	National Environmental Policy Act
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List
NPRR	Northern Pacific Railroad
OHWM	ordinary high water mark
PCE	tetrachloroethene
Project	I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project
Project limits	The area surrounding the Project where construction will occur

RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RFP/AD	Request for Proposal/Advertisement
ROW	Right of way
SEPA	State Environmental Policy Act
SHWS	State Hazardous Waste Site
SP	Special Provision
SPCC	Spill Prevention, Control, and Countermeasure
SPILLS	Spill Prevention, Preparedness, and Response [Program]
SQG	small quantity generator
SR	State Route
study area	The area extending up to 0.5 mile from the Project limits
SVE	soil vapor extraction
SWPPP	Stormwater Pollution Prevention Plan
TCE	Temporary construction easement
TPH-D	total petroleum hydrocarbons as diesel
TPH-G	total petroleum hydrocarbons as gasoline
TPH-O	total petroleum hydrocarbons as heavy oil
TSD	treatment, storage, and disposal
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	underground storage tank
VCP	Voluntary Cleanup Program
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1.0 INTRODUCTION

1.1 ANALYSIS OVERVIEW

This report presents the results of a project-level hazardous materials analysis prepared by the Washington State Department of Transportation (WSDOT) Hazardous Materials Program. This analysis is in support of the Interstate 405 (I-405), SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project (Milepost [MP] 21.79 to MP 27.06) (Project). For the purposes of this report, the term Project limits refers to the areas where construction will occur; the study area refers to areas extending up to 0.5 mile from the project limits. The study area is located in King and Snohomish Counties, within Township 26N, Range 5E, Sections 4, 5, 8, 9, 16, 17, and 20; and Township 27N, Range 5E, Sections 29, 30, 31, and 32. Refer to Figure 1 (Sheets 1 through 5 at the end of this report) for a vicinity map of the project limits.

The Project proposes to make several roadway, structural, drainage, and transit improvements to the I-405 corridor. I-405 is one of the most congested corridors in the state. The previous I-405, Bellevue to Lynnwood Widening and Express Toll Lanes Project added express toll lanes (ETLs) and reconfigured lanes and interchanges to help increase the number of people traveling on I-405. However, the section where the ETLs reduce to a single lane between SR 522 and I-5 has continued to see growing traffic congestion. In 2016, the Legislature asked WSDOT to begin evaluating improvements to add capacity on I-405 between SR 522 and I-5. The Project is proposed to provide needed capacity and improve ETL performance on I-405 between SR 522 and SR 527.

The purpose of this analysis is to evaluate the existence of Recognized Environmental Conditions[1] (RECs) and Historical RECs (HRECs) resulting from past or present land use of the study area, or potential RECs in the study area that could potentially affect project design, construction, and the environment. The report also includes a comparison of identified RECs with respect to planned property acquisitions including construction easements. Identifying hazardous material sites prior to construction decreases the possibility of exposing the public and the environment to hazardous substances that may be a threat to human health or the environment. The information from this analysis and pre-construction planning may minimize cleanup costs and

[1] The term Recognized Environmental Condition is defined in ASTM E1527-13 as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions." Hazardous or dangerous wastes or substances and release reporting requirements are defined by the Washington State Model Toxics Control Act (MTCA), Washington Administrative Code (WAC) 173-340, and the Washington Dangerous Waste Regulations, WAC 173-303.
The term Historical REC is defined in ASTM E1527-13 as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls."

reduce unanticipated Project delays. In addition, this analysis provides information needed to determine whether any supplementary hazardous material investigations should be conducted to evaluate potential risk and liability to the Project.

The WSDOT Hazardous Materials Program conducted the analysis in general accordance with Chapter 447 of WSDOT's *Environmental Manual* (WSDOT 2018) and specific sections of the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Assessment Process, Designation: E1527-13 (ASTM E1527-13). This analysis is considered a right-sized, standard report, and for National Environmental Policy Act (NEPA)/State Environmental Policy Act (SEPA) environmental documentation. The report provides the appropriate level of documentation and analysis necessary to identify potential contaminated sites that might pose a significant risk to the Project.

The following is the general agreed-upon scope of work for this analysis, which consisted of the following tasks:

- Reviewing the results of a federal, state, and tribal environmental database search accessed using Environmental Data Resources, LLC (EDR) and the Washington State Department of Ecology (Ecology) online databases for listings of sites with known or suspected environmental conditions within the study area within the recommended search distances specified by ASTM E1527-13.
- Reviewing, if available, online regulatory agency files regarding listed sites of potential environmental concern related to the study area.
- Reviewing, if available, historical imagery, Sanborn fire insurance maps, historical topographic maps, and county tax assessor records, to identify past development history on and adjacent to the project limits related to the possible use, generation, storage, release, or disposal of hazardous substances.
- Reviewing previous environmental investigation reports in the study area.
- Conducting a windshield survey of the study area.
- Summarizing the results of the environmental analysis and identified RECs, including an opinion regarding the potential for encountering hazardous materials within the Project limits, and a recommendation regarding further investigations.

1.2 PROJECT DESCRIPTION

The Project is located primarily within the City of Bothell on I-405 between MP 21.79 and MP 27.06. The Project begins south of the I-405/SR 522 interchange and continues to just north of the I-405/SR 527 interchange. Construction is expected to begin in 2021 and be completed by 2024. In general, the Project proposes the following improvements:

- Adding one ETL in each direction from south of the I-405/SR 522 interchange to the I-405/SR 527 interchange to create a dual ETL system.
- Building direct access ramps at the SR 522 interchange and just south of the SR 527 interchange at 17th Avenue SE.
- Constructing new inline transit stations at the I-405/SR 522 and I-405/SR 527 interchanges.

- Removing two bridges over the Sammamish River and building three new bridges.
- Reconfiguring 17th Avenue SE and portions of 220th Street SE and SR 527 to include a roundabout at the Canyon Park Park and Ride and non-motorized improvements.
- Replacing existing fish barriers with restored stream connections.

Detailed Project descriptions and site-specific changes are presented on Figure 1 (Sheets 1 through 5 at the end of this report), which show the proposed improvements on a series of maps, and in Table 1 (at the end of this report), which describes in detail the improvements proposed within the Project limits.

1.2.1 Anticipated Depth of Excavations

The anticipated depth of excavations varies depending on the proposed improvement. The proposed improvements include constructing:

- New ETLs
- Tolling gantries and installing new signage
- Direct access ramps
- Inline transit stations
- Bridges
- Bus turnaround loop and pick-up and drop-off facilities
- A roundabout
- Fish barrier corrections
- Retaining walls
- Noise walls
- Stormwater outfalls

Depending on the proposed improvement and the location of the improvement, anticipated excavation depths will likely range from a few feet below ground surface (bgs) to 15 to 60 feet bgs. Bridge foundations near SR 522 will be 50 to 150 feet deep.

1.2.2 Proposed Property Acquisitions

The Project proposes partial or full acquisitions of 15 properties, and temporary construction easements (TCEs) on 20 properties, as presented in Table 2 (below) and shown on Figure 3 (at the end of this report). The Project also proposes limited access acquisitions on six properties. As no real property is being acquired at these locations, these properties are not included in Table 2. Two additional properties (WSDOT Canyon Park Park and Ride and WSDOT/King County Parks Sammamish River Trail) included as a right of way acquisition are already owned by WSDOT, and not included in Table 2.

Table 2. Properties Proposed for Acquisition

Parcel Number	Property Name	Property Address	Acquisition Type	Site ID
King County				
0926059013	City of Bothell	E Riverside Drive, Bothell	Full	13
0926059156	Hallett, John D & Colleen	11715 Woodinville Drive, Bothell	Full	
0926059170	King County Parks	NA – Abandoned railroad	Partial (Air Space only), TCE	6
0926059001	City of Bothell (Bothell City Shop)	17555 120th Ave NE, Bothell	Partial	13
1726059002	Willina LLC	15515 Juanita-Woodinville Way NE, Bothell	TCE	
7859970000	Sonoma Villero Condominium (common area)	16125 Juanita-Woodinville Way NE, Bothell	TCE	
0961100030	Newman, Michael L. & Sara D.	11321 E Riverside Drive, Bothell	TCE	
951120TR-C	Woodcrest Estate Owners Association	NA – Vacant (common area)	TCE	
697920TRCT-G	Quadrant Business Park – Bothell Owners Association (wetland)	NA – Vacant	TCE	
0926059141	King County Parks	NA -Sammamish River/Trail	TCE	
0926059139	HD Development of Maryland	18333 120th Avenue NE, Bothell	TCE	
0926059198	Tristar Land Group, LLC	NA – Vacant	TCE	
Snohomish County				
00700600007500	Village Square Homeowners Assoc.	NA – Vacant	Partial	
27052900202300	Canyon Park Business Center Owners Association	NA – 17th Ave SE & 220th Street SE, Bothell	Partial	
27053000402400	JM2T Properties LLC	22232 17th Ave SE, Bothell	Partial	
27053000401800	BRE/ESA 2005 Portfolio, LLC (Extended Stay America)	22122 17th Ave SE, Bothell	Partial	
27053000403900	Canyon Park Owner LLC (Siemens Transmission)	22121 17th Ave SE, Bothell	Partial	16
27053000403800 27053000403801	Canyon Hills Community Church	22027 17th Ave SE, Bothell	Partial	
27053000402100	Plaza at the Park R, LLC (Starbucks)	22020 17th Ave SE. Buildings A & B, Bothell	Partial	
27053000105500	Canyon Park Owner LLC (Cepheid, LA Fitness, Halosource)	1631 220th St SE, Bothell	Partial	
27053000102900	Jump Holdings LLC (Juno	1522 217th Place SE, Bothell	Partial	9

Parcel Number	Property Name	Property Address	Acquisition Type	Site ID
	Therapeutics [former Sonus Pharmaceuticals])			
27053000402200	Plaza at the Park O, LLC	22102 17th Avenue SE, Bothell	Partial	
27053000102800 27053000400500 27053000400600	Advanced Technology Lab, Inc. (Philips Ultrasound)	22000/22100 Bothell-Everett Highway, Bothell	Partial	
00411100004200	Schaumberger, John A.	22231 9th Avenue SE, Bothell	TCE	
27053000401100	ROIC Washington, LLC	22703 Bothell-Everett Hwy, Bothell	TCE	
27053000401600	Shurgard/Canyon Park, Self-Storage Limited Partnership (former Excell Cleaners)	1715 228th Street SE, Bothell	TCE	4
27053200401500	City of Bothell (North Creek Forest)	NA – Vacant	TCE	
00813300001301	Monte Villa Farms, LLC	3303 Monte Villa Parkway, Bothell	TCE	
00813300001800	Northshore School District #417	3330 Monte Villa Parkway, Bothell	TCE	
27053200300200	Northshore School District #417 (Canyon Park Jr. High School)	23723 23rd Avenue SE, Bothell	TCE	
01163500010000	Tall Cedars Estates Homeowners Association	NA – Vacant common area	TCE	
00724000001300	McMurtrey, Kathi	22924 19th Drive SE, Bothell	TCE	
00724000001200	Young, Jeremy N.	22921 19th Drive SE, Bothell	TCE	
27052900300800	Mark, Eric & Rasmussen, Elise G.	22740 20th Avenue SE, Bothell	TCE	

NA = Not Applicable; TCE= Temporary Construction Easement; Site ID refers to sites of concern as referenced in Table 7 and shown on Figure 2.

1.3 TOPOGRAPHY AND SITE SETTING

General site information, including topography, site use, and environmental setting of the study area, is summarized in Table 3.

Table 3. Study Area General Information

Topographic Maps	U.S. Geological Survey, 7.5-minute Bothell Quadrangle, Kirkland Quadrangle, Washington topographic quadrangle map, dated 1950, 1953, 1968, 1973, 1981, 2017
Township, Range and Section	Township (T) 26N, Range (R) 5E, Sections (S) 4, 5, 8, 9, 16, 17, and 20, and T27N, R 5E, S 29, 30, 31, and 32.
General Project Location	I-405, SR 522 vicinity to SR 527
Project Existing Use	State highway / right of way / residential, commercial, and vacant lands
Geologic Setting	Bellevue North (Kirkland) Quadrangle. Bothell Quadrangle. See Section 1.4 for more detailed information of the geologic and hydrologic settings for the study area.
Nearest Major Water Bodies	Lake Washington is located to the west. Sammamish River crosses the Project.
Approximate Surface Elevation	Surface elevation ranges up to 260 feet above mean sea level, depending on location.
Soil and Geologic Conditions	Subsurface conditions are described in Section 1.4.
Depth to Groundwater	Depth to groundwater in the vicinity generally ranges from approximately 3 to 55 feet bgs depending upon the location.
Inferred Direction of Shallow Ground Water Flow	Based on topography and site location, groundwater is inferred to flow either in a west, south, or southwest direction towards Lake Washington, and towards the major streams based upon topography.

WSDOT's knowledge of the general physiographic setting, geology, and groundwater occurrence in the study area is based on their review of maps, reports, and our general experience in the area. The reference to "upgradient," "downgradient," and "cross-gradient," with respect to the direction of groundwater flow, is inferred based on the information in Section 1.5, Surface Water Features and Hydrology, and assumptions of the relative proximity of significant water bodies in the vicinity.

1.4 GEOLOGY AND SOILS

This section summarizes the general geologic setting and subsurface conditions in the study area. WSDOT used this information to determine the potential for contamination to migrate through the soils and groundwater and impact the Project. Additional information about geology and soils is contained in Appendix K, *Geology, Soils, and Groundwater Technical Memorandum* of the I-405, SR 522 Vicinity to SR 527 Express Toll Lames Improvement Project Environmental Assessment (WSDOT 2019c).

As described in Appendix O, *Soils and Geology Technical Memorandum* of the I-405, Bellevue to Lynnwood Improvement Project Environmental Assessment (WSDOT 2011c), the study area is located within the central Puget lowland bordered by the Cascade Mountain Range to the east and the Olympic Mountains to the west. The Puget lowland is a north-south trending trough whose near surface geology is dominated by deposits from a series of glaciations over the past two million years. In the Project vicinity, deposits associated with the Vashon Stade of the Fraser Glaciation dominate the landscape. The advance and retreat of the Vashon age Puget lobe of the Cordilleran ice sheet, between roughly 13,000 to 18,000 years ago, deposited most of the near surface materials and sculpted most of the present landforms within the Puget lowland. The deposits of this glacial episode reflect a wide range of glacial depositional environments that overlie earlier glacial and non-glacial deposits, and Tertiary age bedrock. The Vashon Stade deposits include proglacial lacustrine deposits, advance outwash, till, and recessional outwash.

As the glacier advanced southward, streams deposited sediment that formed a broad plain in front of the advancing glacier. The advance deposits grade from coarse to fine with increasing depth, with silts and clays (lake deposits) at the base, and coarse-grained sand and gravel nearer the top. Till, consisting of heterogeneous, non-stratified deposits with particle sizes ranging from clay to large boulders, was deposited directly from the glacier itself. The maximum ice thickness in the project vicinity was roughly 3,000 feet. As the glacier retreated, the depositional sequence was repeated in the reverse order. Depositional sequences generally consist of coarse-grained gravel and sand overlain by fine-grained silts and clays. The retreat was rapid relative to the advance of the glacier, and the recessional deposits are generally not as thick as the advance deposits. As the glacier retreated to the north, a series of elongated valleys, including the Lake Washington and Lake Sammamish troughs, remained.

Following the Fraser Glaciation, Holocene sediments were deposited over the glacial materials in the Project vicinity. These deposits typically consist of alluvial soils in river and stream valleys, and colluvial deposits (landslide materials) along slopes.

1.5 SURFACE WATER FEATURES AND HYDROLOGY

For additional information about surface and ground water, please see Appendix J, *Water Resources Discipline Report* of the I-405, SR 522 Vicinity to SR 527 Express Toll Lames Improvement Project Environmental Assessment (WSDOT 2019b). The study area includes water resources from Water Resource Inventory Area (WRIA) 8 – Lake Washington/Cedar/Sammamish Watershed. Surface waterbodies in the study area that are affected by this Project include Stream KL14, Stream 42, Sammamish River, Par Creek, unnamed tributary to Par Creek, Stream 25.0L, Stream 66, Stream 70, North Fork of Perry Creek, Queensborough Creek, and North Creek.

Groundwater resources in the study area exist within recent and Holocene age alluvial deposits within the North Creek and Sammamish River drainage systems and within Vashon-age and older glacial and non-glacial deposits. Alluvial sediments in the study area consist primarily of clay, silt, sand, and gravel. The underlying glacial and non-glacial deposits include more permeable sand and gravel as well as lower permeability clay and silt. Consolidation from the weight of glacial ice reduces permeability of some glacial and non-glacial deposits.

There are no named aquifers in the study area. Groundwater in the study area is part of the Puget Sound Lowland Aquifer System, a system of Quaternary age alluvial, glacial, and interglacial deposits. Unnamed aquifers in the study area are:

- Alluvial deposits - existing as an unconfined aquifer with interbedded clay, silt, organic soil, sand, and gravel of varying composition. Within the Sammamish River valley, the alluvial deposits vary from a few feet thick to an estimated 100 feet thick.
- Glacial deposits - existing as unconfined, semi-confined, and confined aquifers, including higher permeability sand and gravel outwash deposits and lower permeability glacial till. The combined thickness of these deposits is estimated at 100 to 300 feet in the study area. The outwash is a common aquifer; glacial till is not usually an aquifer but can produce groundwater in localized areas.
- Limited interglacial deposits - observed in deep study area borings as relatively fine-grained deposits with low potential for groundwater production.

Groundwater is shallow in the alluvial deposits, often at less than 10 feet bgs, and varying considerably with surface topography and season. Groundwater levels in the glacial and non-glacial deposits are variable, estimated to range from 15 feet depth or less to greater than 50 feet depth.

Groundwater flow from the study area aquifers is towards the wetlands and drainages of North Creek and the Sammamish River. In many places, the water table is at or near land surface and is hydrologically connected to wetlands and streams. Direct infiltration from precipitation recharges alluvial and glacial deposits; recharge to glacial and non-glacial deposits also occurs from overlying soils. There are no identified Critical Aquifer Recharge Areas in the study area.

1.5.1 Sensitive Receptors

Sensitive receptors including wetlands have been identified in the study area. Please refer to Appendix I, *Ecosystems Discipline Report* of the I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project Environmental Assessment for information regarding wetlands in the study area (WSDOT 2019a).

2.0 METHODOLOGY AND RESEARCH

2.1 HISTORICAL RESEARCH SOURCES

The objective of reviewing historical documentation is to develop a history of previous land uses in the study area and to assess these uses for potential hazardous materials impacts that may constitute a REC. Our understanding of the history of the study area is based on a review of the information from the historical resources listed in Table 4.

Table 4. Historical Resources Reviewed[1]

Description	Source	Dates of Coverage or Dates of Site Knowledge	Comment (See Section 3.2 for findings)
Sanborn Fire Insurance Maps	King County Library System Online Review (KCLS 2019)	1912, 1926, 1932	Sanborn maps were limited to portions within the city of Bothell.
Historic Topographic Maps	United States Geological Survey (USGS 2019)	1950, 1953, 1968, 1973, 1981 and 2017	See Section 3.2 for additional details regarding the topographic map review.
Historic Real Estate Maps / Plan Sheets	King County Road Services Map Vault (King County 2019b)	1953	See Section 3.2 for additional details regarding the plan sheet review/real estate maps.
Historical Aerial Photographs1	King County iMAP Online review (King County 2019a) EDR (EDR 2019b)	1937, 1941, 1944, 1952, 1965, 1968, 1973, 1980, 1985, 1990, 2006, 2009, 2013 and 2017	See Section 3.2 for additional details regarding the historical aerial photograph review.
Snohomish County Tax Assessor Records	Online Review (SCOPI 2019)	Recent	See Section 3.2 for additional details regarding the study area.
King County Tax Assessor Records	Online Review (King County 2019a)	Recent	See Section 3.2 for additional details regarding the study area.

EDR = Environmental Data Resources, LLC; iMAP = interactive mapping tool

[1]The scale of the imagery reviewed allowed for an interpretation of general site development/configuration, such as identifying most structures, roadways, and clearings. However, the scale of the photographs and pictures did not always allow for identification of specific site features, such as fuel pumps, wells, or chemical storage areas on the sites, if any.

2.2 REGULATORY DATABASE REVIEW SOURCES

WSDOT reviewed local, state, and federal databases provided by EDR to identify potential sources of hazardous materials that could affect the study area (EDR 2019a). EDR is a firm that acquires data from government agencies and maintains and reviews proprietary database lists derived from

business directories for historical automobile service stations and dry cleaners. WSDOT also conducted an online review of Ecology's Facility/Site Database website[1] and the United States Environmental Protection Agency (USEPA) National Priority List (NPL) website to identify sites with possible RECs and independently verify a subset of EDR results (Ecology 2019a; EPA 2019). The federal, state, and tribal environmental databases that were searched, and their associated American Society for Testing and Materials (ASTM) E1527-13 minimum search distances, are set forth in Section 8.2.1 of ASTM E1527-13 (ASTM 2013) and described in Table 5 (at the end of this report).

Additional databases were searched to supplement the standard regulatory information, as necessary. The additional databases include propriety databases from EDR (historical cleaners, historical automobile services, etc.) and state-specific databases, such as the Spills, Prevention, Preparedness, and Response Division (SPILLS) database. These databases were searched, along with those described above, to gain as much information as possible regarding the potential for identified sites to have impacts within the Project boundary.

2.3 REGULATORY FILE REVIEW SOURCES

WSDOT will conduct an Ecology file review on sites of concern as listed in Table 7, where site locations were either not listed on Ecology's databases, additional information was already researched online, or the initial investigation determined there was further information available to review. A Freedom of Information Act (FOIA) request was made to Ecology, and a file review is pending. Information from the file review will be included in an addendum.

2.4 SITE RECONNAISSANCE DESCRIPTION/WINDSHIELD SURVEY

A windshield survey of the study area was performed on April 15, 2019. The survey focused on sites where hazardous materials were known or suspected to be present. WSDOT conducted the windshield survey by driving the public access roads within 0.25 mile of the Project limits to a) verify the addresses of identified hazardous materials sites, and b) look for previously unidentified hazardous materials sites that might affect Project construction or operation. In conducting the windshield survey, WSDOT looked only at features in plain sight from public access corridors. The consultant did not enter any sites or view conditions within buildings. Photographs taken during the windshield survey are presented in Attachment A.

2.5 SITE SCREENING RATIONALE

The sites identified within the regulatory database review were screened to identify potential sites of concern. Several listings were eliminated from further consideration because they were deemed unlikely to have an effect within the study area based on the following screening criteria:

- Sites listed only on the Resource Conservation Recovery Act (RCRA), Facility Index System/Facility Registry System (FINDS), Facility Site Identification System

[1]The Facility/Site Database identifies Ecology-regulated facilities such as Washington State cleanup sites, federal Superfund sites, hazardous waste generators, solid waste facilities, and underground storage tanks.

(ALLSITES), and National Pollutant Discharge Elimination System (NPDES) databases. Inclusion on these databases indicates that a site uses or generates regulated materials as part of their business practice but gives no indication of a hazardous materials release.

- Sites listed only on the SPILLS database. Sites listed on this database have a documented one-time spill that was either remediated or was *de minimis* in nature.
- Sites listed only on the Underground Storage Tank (UST) database and are not anticipated to be acquired and/or are not located immediately adjacent to the Project limits. Inclusion on this database indicates that a site maintains or has maintained USTs but does not indicate that a release has occurred.
- Sites located greater than 0.5-mile away due to the low likelihood of contamination migrating within the Project limits, because of their relative distance and concentrations below Washington State Model Toxics Control Act (MTCA) cleanup levels (CULs). This distance is consistent with Federal and ASTM guidance used in determining or evaluating risk for Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) liability purposes. At this distance, contamination, if present, has a relatively low likelihood to be encountered during construction.
- Sites that have been remediated below MTCA CULs and issued a No Further Action (NFA) determination, or sites that were listed with only contaminated soil not immediately adjacent to the Project limits.
- Sites that did not appear to pose a significant potential for hazardous material-related risks (i.e., UST closure/removal, or RCRA-hazardous materials generators with no documented spills or leaks).

2.6 RANKING CRITERIA

The sites of concern were ranked as having a low, moderate, or high impact risk to the Project, in general accordance with the Guidance and Standard Methodology for WSDOT Hazardous Materials Discipline Reports (WSDOT 2016). The rankings are listed below:

Low Impact Risk
This risk level identifies sites of concern where the likelihood for the REC to impact the Project is low because there was no evidence to suggest that groundwater from the site of concern is impacted, or the contamination from off-site migration is not expected to impact the Project limits during construction. Low impact risk sites may also include potentially contaminated sites where remediation has previously occurred, but limited excavation is anticipated near the site and/or disposal of excavated soils or groundwater is considered relatively straightforward.

Moderate Impact Risk
This risk level identifies sites of concern where the likelihood for the REC to impact the Project is moderate because of the type or extent of contaminant, and groundwater from the site of concem is impacted and has a reasonable potential to impact the Project from off-site migration, but there is no conclusive evidence. Moderate impact risk sites may also include sites that have the potential to be contaminated and would be acquired by WSDOT, but remediation of contamination, if present, is considered relatively straightforward.

High Impact Risk

This risk level identifies sites of concern where the likelihood for the REC to affect the Project is high, contamination is known to be extensive, and conclusive evidence has indicated that the REC has directly impacted the Project. Sites may also have a high impact risk if WSDOT anticipates acquiring all of the site or the specific portion where the source of contamination is or was located.

3.0 RECOGNIZED ENVIRONMENTAL CONDITIONS/EXISTING CONDITIONS

3.1 PREVIOUS INVESTIGATIONS SUMMARY

WSDOT reviewed the *I-405, Bellevue to Lynnwood Improvement Project EA* and selected appendices and incorporated information from *Appendix S: Water Resources Discipline Report* and *Appendix O: Soils and Geology Technical Memorandum* applicable to the study area in this report (WSDOT 2011a; WSDOT 2011b; WSDOT 2011d). Four sites of concern with the potential for hazardous material effects were identified during review of *Appendix J: Hazardous Materials Technical Memorandum* (WSDOT 2011c). One of these sites is located in the study area, the Bothell City Shop/Public Works UST at 17555 120th Avenue NE, Bothell. This site is mapped on Figure 2 (at the end of this report); discussed in Sections 3.5 and3.7; and summarized in Table 7 (at the end of this report).

3.2 HISTORICAL LAND USE AND RECORDS SUMMARY

Based upon a review of historical imagery, the study area was primarily rural with some industries and residential homes. With the construction of I-405, the study area became more developed, and land use density continues to increase. There have been increased numbers of residential homes, commercial industries, local roads, business parks, and shopping centers in the study area.

3.2.1 Historical Maps

Sanborn Maps provide large scaled lithographed street plans with businesses, schools, utility lines, and public buildings along specific roadways. The Hazardous Materials Program reviewed digitized online maps from 1912, 1926, and 1932 for the city of Bothell within the study area (KCLS 2019). No Sanborn map coverage was found for the Project limits.

3.2.2 Historical Topographic Maps

Historical topographic maps provide an overview of the study area relative to previous land uses. WSDOT reviewed historical topographic maps dated 1953, 1968, 1973, and 2017. These maps were viewed from the United States Geological Survey's (USGS) Historical Topographic Map Explorer website (USGS 2019). WSDOT also reviewed historical aerial topographic survey maps dated 1953 from the King County Road Services Map Vault (King County 2019b). All obtainable maps may be referenced in Attachment C.

Kirkland 1950 (photo revised in 1968 and 1973)
This series of topographic maps shows the study area within King County, including the southem portion of the study area. The 1950 map shows the intersection of Juanita-Woodinville Way NE and powerlines along the Tolt Pipeline prior to the construction of I-405, populated with several residential structures. The 1968 topographic map shows I-405 as built through the area, with an overpass at the intersection, and housing developments on both sides of I-405 to the south. The 1973 topographic map shows the additional construction of NE 160th Street to the east of I-405, and modifications to the I-405 ramps. Fewer residential structures are observed around the

intersection compared to the earlier topographic maps. An additional housing development was observed to the east of the intersection.

Kirkland 2017
The details of the previous topographic maps are not present. The Tolt Pipeline Trail is listed where the powerlines were previously shown. There are more local roads in the vicinity of the study area.

1953 Aerial Topographic Survey (map number 318-40.1)
The topographic survey map covers Township 26N, Range 5E, Sections 4, 5, 6, 7, 8, and 9. The map shows the city of Bothell and the Sammamish River prior to the construction of I-405 and SR 522. The Northern Pacific Railroad (NPRR) track is shown passing through the Study Area at the future SR 522 interchange. Several small dwellings are located in the southeast corner of the I-405/SR 522 interchange on the south side of the Sammamish River within the study area (KCLS 2019b).

Bothell 1953 (photo revised in 1968, 1973, and 1981)
This series of topographic maps show the study area within the north end of King County and within Snohomish County, including the interchanges of I-405 with SR 522, NE 195th Street, and SR 527. The 1953 map shows the study area prior to the construction of I-405. Where the future SR 522 intersection will be located over the Sammamish River, the NPRR rail line follows the south boundary of the Sammamish River floodplain, until it crosses the river at Woodinville. North Creek flows from north to south into the Sammamish River, with several unlabeled tributaries through the study area. The NE Woodinville Drive follows the north side of the Sammamish River floodplain from Bothell, crossing the Sammamish River and the NPRR rail line west of the future SR 522 interchange. The NE Woodinville Drive continues east to Woodinville, crossing the Sammamish River to the east of the future SR 522 interchange. Several residences are found along the south side of the Sammamish River, which has several large bends. NE 195th Street, Bloomberg Hill Road, Canyon Park Road, and the Bothell-Everett Highway are present. Scattered residences are seen along the roadways.

The 1968 map shows I-405 as under construction north of the Sammamish River. SR 522 has been built. The Sammamish River has been straightened at the location of the I-405/SR 522 interchange. The NPRR track is still present, but the bridge for NE Woodinville Road over the Sammamish River to the west of the study area has been removed, and the road dead ends at the Sammamish River. I-405 connects to the NE Woodinville Road on the south side of the Sammamish River, continuing into Woodinville. Two mobile home communities are shown east and west of the I-405/SR 522 interchange south of the Sammamish River. Three larger buildings were constructed southeast of the interchange. The map shows where the NE 195th Street and the SR 527 interchanges are under construction. At the SR 527 interchange, several additional buildings can be observed.

The 1973 map shows that I-405 has been completed. Additional local roads and houses have been constructed, with several small houses constructed along SR 527 north of the I-405 interchange. The NPRR track is now labeled Burlington Northern (BN).

The 1981 map is similar to the 1973 map. The railroad tracks are no longer present to the west of the study area, close to Bothell. A large building was constructed in the southeast corner of the I-405/SR 522 interchange.

Bothell 2017
The details of the previous topographic maps are not present. There are more local roads in the vicinity of the study area. The railroad track at the SR 522 interchange is no longer present, and portions of it are labeled the Sammamish River Trail.

3.2.3 Historical Aerial Photographs

Historical aerial photographs are valuable to review features on sites and areas over a period of time. WSDOT reviewed historical photos dated 1936, 1941, 1944, 1952, 1965, 1968, 1973, 1980, 1985, 1990, 1998, 2002, 2006, 2009, 2013, and 2017 (EDR 2019b and King County 2019a).

At the south end of the study area, aerial photographs from 1936 to 1952 show the area as primarily farmland and forests. I-405 appears on the 1965 aerial photograph, and between 1965 and 2017 the study area was built up with primarily residential housing developments and commercial structures near the I-405/160th Street interchange. The majority of the farmland was redeveloped by the early 1980s.

At the I-405/SR 522 interchange, aerial photographs from 1936 to 1952 show the study area as primarily farmland in the floodplain of North Creek and the Sammamish River. The 1965 aerial photograph shows SR 522 constructed, the Sammamish River straightened, and I-405 constructed up to the Sammamish River. The 1968 aerial photograph shows the I-405/SR 522 interchange and the I-405/195th Street interchange under construction. Farmland is present in the North Creek floodplain, while the City of Bothell shows significant expansion northwards. The 1973 aerial photograph shows I-405 completed through the study area, and commercial structures were being built in Woodinville along SR 522. The 1985 aerial photograph shows the farmland being developed into business parks, with commercial buildings constructed by 1990. By 2006, residential developments are observed on the hills within and surrounding the study area, and the University of Washington Bothell campus had been built. By 2017, the majority of land was developed with limited vegetation around hillsides and waterways.

At the north end of the study area, aerial photographs from 1936 to 1965 show the area as primarily farmland and forested areas to the east of the study area. I-405 is under construction on the 1968 aerial photograph and is completed on the 1973 aerial photograph. Housing developments expand on the west side of I-405 at the north end of the City of Bothell from the early 1960s through 2017. Farmlands started disappearing on the east side of I-405 with the construction of business parks and residential developments in the early 1990s. By 2009, the study area was highly developed, with vegetation observed primarily on steep hillsides or along waterways.

3.3 Regulatory Agency Database Search Findings

A database search conducted by EDR identified 334 mapped hazardous materials site listings: 21 within the Project limits, 287 within the study area, and 26 outside the study area. These sites were

identified on one or more of the regulatory databases reviewed, and several sites were listed multiple times (EDR 2019a).

The EDR report is provided in Attachment B. It includes a list of databases searched, a statistical profile indicating the number of sites within the study area, selected detailed information from federal and state lists, and an overview map illustrating the identifiable and mappable sites within the study area. The EDR report contains more detailed information and describes additional local database lists reviewed.

Information associated with this large number of hazardous materials sites was evaluated to develop a list of sites with the highest potential for impact to the Project limits. Based on the site screening rationale (described in Section 2.5), 284 of the 334 site listings were deemed unlikely to affect the Project limits and were immediately eliminated from further consideration. The remaining 50 site listings were reviewed and were attributed to 17 sites (several sites were listed multiple times). These 17 locations qualified as sites of concern with potential RECs or HRECs and are listed in Table 6 and shown on Figure 2 (at the end of this report).

The EDR report also contains a list of orphan properties. Orphan properties are unmapped sites due to insufficient address information in the regulatory databases. EDR reported 83 sites as orphan properties. WSDOT screened the sites following the site screening rationale (Section 2.5), reviewed the information EDR provided for the sites, and researched the remaining unmapped sites online to assess whether there were potential RECs within the Project limits. Based on the review, one site was identified, Ferndale Grain Woodinville, which is also listed in Table 6 and shown on Figure 2.

Table 6. Sites with Recognized Environmental Conditions from Database Search

Sites	
Site ID 1 AT&T Wireless NR5/AT&T Mobility (2 listings)	Site ID 11 Autosmith/Bothell North/One Hour Electric (3 listings)
Site ID 2 Dry Clean US	Site ID 12 Bang Property
Site ID 3 Canyon Park Cleaners (2 listings)	Site ID 13 Bothell City Shop/Public Works UST (2 listings)
Site ID 4 Former Excel Cleaners	Site ID 14 Ferndale Grain Woodinville
Site ID 5 Jacksons 615/Shell 120935 (2 listings)	Site ID 15 Securite Gun Club/Dirt Lorde Property
Site ID 7 WA DOT NE Woodinville Drive	Site ID 16 Siemens Transmission/Cepheid Bothell/Terminix (5 listings)
Site ID 8 Chevron 93299 (2 listings)	Site ID 17 Snohomish County Fire Station 45
Site ID 9 Juno Therapeutics (former Sonus Pharmaceuticals)	Site ID 18 Tan & Yang Property
Site ID 10 Texaco Star Mart/Jacksons 616/Texaco #632321469/Shell 120531 (23 listings)	

Note: DOT = Department of Transportation; UST = underground storage tank

Site ID 6 is the King County Parks/Former BNSF site that was identified through another source.

These 17 sites with RECs and HRECs were further evaluated using risk analysis (see Section 2.6) to determine the level of potential impact within the Project limits and potential for cleanup liability during construction. WSDOT assigned each site as a Low, Moderate, or High impact risk ranking. These sites, which WSDOT reviewed on Ecology's Toxics Cleanup Program Web Reporting website and mapped on Figure 2, are discussed in Section 3.7, and summarized in Table 7 at the end of this report (Ecology 2019b).

3.4 SITE RECONNAISSANCE/WINDSHIELD SURVEY SUMMARY

As shown on Figure 2, the study area is developed with primarily residential and commercial properties; undeveloped land was observed around the I-405/SR 522 interchange and on the west side of I-405 between the 195th Street interchange and the SR 527 interchange (North Creek Forest). Photographs taken during the windshield survey are presented in Attachment A. WSDOT noted the following observations during the windshield survey.

I-405/160th Street Interchange

Residential sites to the west and gasoline service stations to the east of the interchange were observed. The residential sites are developed with apartment buildings and associated parking. The Tolt Pipeline Trail crosses the Project at this interchange. No obvious indications of hazardous materials were observed. The Chevron 93299 and Texaco Star Mart/Jacksons 616/Texaco #632321469/Shell 120531 service stations and cleanup sites were observed on the east side of the interchange (Photographs 1 and 2). Monitoring well monuments were present at both service station locations.

I-405/SR 522 Interchange

The interchange was viewed from NE Woodinville Drive/E Riverside Drive, which passes beneath I-405 south of the Sammamish River. Tracks from the former Burlington Northern Santa Fe (BNSF) railroad were observed to the east of the Project limits but had been removed beneath the interchange (Photographs 3 and 4). Some illegal dumping was observed along the former railroad right of way (Photograph 5). The Securite Gun Club/Dirt Lorde former cleanup site had a posting for permits associated with redeveloping the site through demolition of houses and construction of a gun club/warehouse.

Signs for a petroleum pipeline were observed beneath the powerlines at the east end of the Project limits (Photograph 6). Active bridge construction was occurring at the NE 175th Street bridge over the Sammamish River in Woodinville. The Ferndale Grain Woodinville cleanup site adjacent to the bridge construction work was used for staging construction equipment.

I-405/195th Street Interchange

On the west side of the interchange outside the Project limits, two areas were under construction (a new subdivision along 112th Avenue NE and the Beardslee South Townhouses; Photograph 7). No obvious indications of hazardous materials were observed. On the east side of I-405, north of the interchange, the AT&T Wireless NR5 Bothell cleanup site was observed. Monitoring well monuments and the location of the remediation system were observed from the parking lot.

I-405/SR 527 Interchange
This area was observed through both a windshield survey and from the pedestrian bridge accessed from the Canyon Park Park and Ride lot (Photograph 8). Some minor debris was observed in the area. No other obvious indications of hazardous materials were observed.

3.5 PROPERTY ACQUISITIONS

The Project proposes full acquisitions of two properties, partial acquisitions of 13 properties, and TCEs of 20 properties as presented in Table 2 and shown on Figure 3 (at the end of this report).

Full Acquisitions
The Project proposes full acquisitions of two properties listed in Table 2. One of these properties qualifies as a site of concern with potential RECs, as shown on Figure 2 (at the end of this report), discussed in Section 3.7, and summarized in Table 7 (at the end of this report).

- Hallett property, at 11715 Woodinville Drive in Bothell (King County parcel 0926059156), is located at the southeast corner of the I-405/SR 522 interchange and is occupied by a house constructed in 1979 (King County 2019a).
- Site ID 13: City of Bothell, King County parcel 0926059013. The property is located at the southeast corner of the I-405/SR 522 interchange and is vacant land (King County 2019a). This property is adjacent to the Bothell City Shop/Public Works UST property proposed for partial acquisition, and is therefore included under Site ID 13.

Partial Acquisitions
The Project proposes partial acquisitions of 13 properties listed in Table 2. Four of these 13 properties qualify as sites of concern with potential RECs, as shown on Figure 2 (at the end of this report), discussed in Section 3.7, and summarized in Table 7 (at the end of this report) (King County 2019a; SCOPI 2019).

- Site ID 6: King County Parks/Former BNSF Rail Line, King County Parcel Number 0926059170. The Project proposes an aerial easement of this property, as well as a TCE.
- Site ID 9: Jump Holdings LLC (Juno Therapeutics [former Sonus Pharmaceuticals]), 1522 217th Place SE, Bothell, Snohomish County Parcel Number 27053000102900.
- Site ID 13: Bothell City Shop/Public Works UST, 17555 120th Avenue NE, Bothell, King County Parcel Number 0926059001.
- Site ID 16: Canyon Park Owner LLC (Siemens Transmission/Cepheid Bothell/Terminix Branch 2141), 22121 17th Avenue SE, Bothell, Snohomish County Parcel Number 27053000403900.

Temporary Construction Easements
In addition the partial acquisitions listed above, the Project proposes TCEs of 20 properties listed in Table 2 (note, some of the properties above with partial acquisitions may also have TCEs are not included in the 20 properties). One of these 20 properties qualify as sites of concern with potential RECs, as shown on Figure 2 (at the end of this report), discussed in Section 3.7, and summarized in Table 7 (at the end of this report).

- Site ID 4: Shurgard/Canyon Park, Self-Storage Limited Partnership (former Excell Cleaners), 1715 228th Street SE, Bothell, Snohomish County Parcel Number 27053000401600

3.6 SITE SCREENING

Based on the database review and historical research, a total of 18 sites of concern were identified adjacent to or near the Project limits that may have the potential to impact construction. These sites include the 17 sites identified in the database review, and one additional site identified during the historical review of the proposed property acquisitions. The sites were screened based on the rationale in Section 2.5 and the current Project description in Table 1 (at the end of this report). A risk analysis was performed on the sites of concern and discussed in Section 3.7. Information regarding the sites of concern are summarized in Table 7 (at the end of this report), and locations of the sites are shown on Figure 2 (at the end of this report).

It should be noted that Ecology's NFA determinations may be issued for a property or for a site, where site is defined as the area where contamination is present (which may include more than one property). When issued for a property, the NFA may not encompass the full extent of contamination and contamination may be present in areas outside of the property boundary.

3.7 REC AND HREC ANALYSIS

WSDOT performed a risk analysis on the 18 sites of concern.

Based on the risk analysis, 10 sites were assigned a Low impact risk ranking, as described in Table 7 (at the end of this report) and shown on Figure 2. Of these 10 sites, three of the sites were assigned a Low impact risk ranking with the potential to become a Moderate impact risk, as discussed in this section. The remaining seven Low impact risk sites are described in detail in Table 7 and not discussed below.

The remaining eight sites were assigned a Moderate impact risk ranking, and are summarized in Table 7, shown on Figure 2, and discussed in this section. Two of these eight sites were assigned a Moderate impact risk ranking with the potential to become a High impact risk.

This section describes 11 sites: three that were assigned a Low impact risk ranking with the potential to become a Moderate impact risk, as well as eight that were assigned a Moderate impact risk rating. The numbers for each site in this list correspond to the site identification numbers in Figure 2 and Table 7 at the end of this report.

1 AT&T Wireless NR5 Bothell 920307, 20307 North Creek Parkway, Bothell, Facility Site Identification Number (FSID#) 3706871 (CSCSL, VCP, and ALLSITES lists) and AT&T Mobility Phase 1 Main Building, 20307 North Creek Parkway, Bothell, FSID# 98437662 (UST and ALLSITES lists).

This site is located adjacent to the Project limits, on the east side of the Project limits, and hydrologically cross-gradient to upgradient. In 2008, approximately 10,000 gallons of diesel fuel

were released from an aboveground storage tank (AST) into a storm drain and the soil at this facility due to a sensor failure. Emergency response actions and remedial actions included removing diesel fuel and water from storm drains, sealing down-gradient stormwater lines, excavation and removal of impacted soil, monitoring a retention pond for sheen, and installing a stormwater bypass system upstream from the spill to divert stormwater around the impacted area. The actions appeared to contain the spill to within the property boundary. The site was listed on Ecology's Confirmed and Suspected Contaminated Sites List (CSCSL) and entered Ecology's Voluntary Cleanup Program (VCP) in 2008. Groundwater monitoring wells, extraction wells, observation wells, and piezometer wells were subsequently installed. In 2013, a groundwater remediation system that removed light non-aqueous phase liquid (LNAPL) from the groundwater was installed. Groundwater monitoring in 2017 indicated impacted groundwater was still present on the site but was not migrating offsite (Apex 2019). Chemicals of concern (COCs) in groundwater found above CULs in 2017 included total petroleum hydrocarbons as diesel and heavy oil (TPH-D and TPH-O). The site also has two 40,000-gallon diesel USTs for emergency power generation.

Groundwater at the site is found at depths ranging from 3.5 to 7 feet below ground surface (bgs), and the groundwater flow is generally to the south and southwest, cross-gradient and upgradient to the Project limits (Apex 2019). The presence of shallow impacted groundwater that could potentially migrate off site and impact the Project is a REC. Proposed Project activities on the right of way adjoining this site include excavation and installation of a retaining wall along the east side of I-405. The site is considered to be a **Moderate** impact risk to the Project because while contamination is present in the shallow groundwater, groundwater monitoring in 2017 indicated the plume had not extended off site. If environmental conditions change, and the plume migrates off- site, this site could become a **High** impact risk to the Project.

2 Dry Clean US, 22833 Bothell Everett Highway, Bothell, FSID# 5125580 (ALLSITES, CSCSL, ECHO, FINDS, HSL, and VCP lists)

This site is located approximately 900 feet to the south of the Project limits and hydrologically upgradient. A dry cleaner operated on the site since at least 1992. Starting in 2005, environmental assessments were conducted and identified tetrachloroethene (PCE), trichloroethene, and related halogenated volatile organic compounds (HVOCs) in soil, groundwater, and air. Approximately 60 cubic yards of contaminated soil was removed in 2007 and 2009. Subsequent sampling of groundwater, soil gas, and indoor air found PCE and HVOCs remained above applicable Model Toxics Cleanup Act (MTCA) cleanup levels (CULs). In 2016, soil vapor extraction (SVE) system pilot studies and an air sparge study were conducted. No additional cleanup work on the site has been performed since 2016, and the site status is cleanup started. Groundwater was found between 3 to 8 feet bgs, but two down-gradient monitoring wells did not contain HVOCs above the applicable MTCA CULs in the most recent sampling event in 2017 (Moore Twining 2017). The site status is cleanup started.

The presence of shallow impacted groundwater that could potentially migrate off site and impact the Project is a REC. Proposed Project activities closest to the site are stormwater treatment and stream realignment; those construction activities are located about 900 feet away from the site. The site is considered to be a **Moderate** impact risk to the Project because while contamination is

present in the shallow groundwater, groundwater monitoring in 2017 indicated the plume had not extended off site, and the site is approximately 900 feet away. If environmental conditions change, and the plume migrates off-site, this site could become a **High** impact risk to the Project.

3 Canyon Park Cleaners, 22615 Bothell Everett Highway, Bothell, FSID# 77714595 (ALLSITES, ECHO, FINDS, Inactive drycleaner, and RCRA-NonGen lists)

This site is located adjacent to the Project limits, on the south side of the Project limits, and hydrologically down-gradient. The site has been a dry cleaner from 1987 to 2001. There is no evidence of releases to soil or groundwater, but no site investigations have been conducted.

The presence of historical dry cleaning activity for over 10 years on an adjoining site is a REC for the Project. Proposed Project activities include excavation for a detention pond, pavement resurfacing, addition of new pavement, construction of a retaining wall, and correcting a fish barrier; those construction activities are located about 500 feet away from the site. The site is considered to be a **Moderate** impact risk to the Project because, though not confirmed, dry-cleaning-related HVOC-contaminated groundwater could be present.

4 Former Excell Cleaners/ Shurgard/Canyon Park, Self-Storage Limited Partnership, 1715 228th Street SE, Bothell (Inactive drycleaner list)

This site is located adjacent to the Project limits, on the south side of the Project limits, and hydrologically cross-gradient. A dry cleaner operated on the site from 1994 to 1996. It is currently used as a storage facility. There is no evidence of releases to soil or groundwater, but no site investigations have been conducted.

The presence of historical dry cleaning activity on an adjoining site is a REC for the Project. Proposed Project activities on the site include use of the site as a TCE. The following activities would occur in the WSDOT right of way adjacent to the site: excavation for a detention pond and stormwater treatment, construction of a stormwater outfall, a stream realignment, pavement resurfacing, addition of new pavement, construction of a retaining wall, and correcting a fish barrier. The site is considered to be a **Moderate** impact risk to the Project because, though not confirmed, dry-cleaning-related HVOC-contaminated groundwater could be present.

5 Jacksons 615/Shell 120935, 22802 Bothell Everett Highway, Bothell, FSID# 53947398 (ALLSITES, CSCSL, ECHO, FINDS, ICR, LUST, Manifest, RCRA-NonGen, UST, and VCP lists)

The site is located approximately 650 feet to the southwest of the Project limits, and hydrologically upgradient. The site is an operating gasoline service station since at least 1968. A leaking underground storage tank (LUST) with releases to soil and groundwater was reported to Ecology in 1990. Approximately 1,100 cubic yards of petroleum-impacted soil was excavated and disposed of off-site in 1991. Approximately 15,000 gallons of groundwater was removed, treated, and disposed of. An SVE and groundwater treatment system were installed and operated from 1993 through 2001 (CRA 2011a). Quarterly groundwater monitoring is continuing, and monitoring results from 2016 show total petroleum hydrocarbons as gasoline (TPH-G) still present above the

MTCA CUL in down-gradient monitoring wells (AECOM 2017). The site entered the VCP in 2009, and Ecology has reviewed multiple independent cleanup reports (ICR). The site status is cleanup started.

This site is a REC due to the presence of shallow impacted groundwater that could potentially migrate off site and impact the Project. Proposed Project activities include constructing stormwater treatment facilities; those construction activities are located about 650 feet away from the site. The site is considered to be a **Moderate** impact risk because while contamination is present in shallow groundwater, the site is approximately 650 feet away; if encountered, remediation is considered relatively straightforward.

6 King County Parks/Former BNSF Rail Line, King County Parcel Number 0926059170

This site is located within the Project limits, at the southeast corner of the I-405/SR 522 interchange. This parcel is the former BNSF railroad right of way, at the location of a proposed new bridge for the northbound off-ramp. The Project proposes to obtain an airspace easement for the new bridges and off-ramp, which is considered a partial property acquisition. The Project also proposes a TCE for the site. Rail lines have historically been known to have petroleum, creosote, and heavy metals contamination. Although the rail tracks have been removed, there may still be residual contamination present. This site is considered a **Moderate** impact risk to the Project.

7 WSDOT NE Woodinville Drive UST, NE Woodinville Drive and NB I-405, SE Corner, Bothell, FSID# 23108 (ALLSITES and CSCSL NFA lists)

This site is located within the Project limits at the southeast corner of the I-405/SR 522 interchange. A heating oil UST was discovered during the I-405, Bellevue to Lynnwood Improvement Project, when a drainage system was installed in 2015. The UST had leaked into the soil, and the TPH-D-contaminated soil was excavated and removed off-site. Groundwater was apparently not impacted (PBS 2015). Following cleanup activities, the site received an NFA determination from Ecology in 2017 (Ecology 2017).

The presence of a historical LUST that has been addressed to Ecology's satisfaction is an HREC. The site is considered to be a **Moderate** impact risk to the Project because of its location, and residual TPH-D-impacted soil might be present and potentially impact the Project; if encountered, remediation would be straightforward.

8 Chevron 93299, 15900 116th Ave NE, Bothell, FSID# 94213842 (RCRA-LQG, HSL, CSCSL, LUST, UST, ICR, ALLSITES, FINDS, ECHO, Manifest, and Financial Assurance lists).

This site is located adjacent to the Project right of way, and east of the Project limits, within 500 feet of the I-405 pavement, and hydrologically upgradient. A gasoline service station has operated on the site since at least 1972. In 1993, a LUST was reported to Ecology following trenching operations. TPH-G and xylenes were detected in one soil sample exceeding the applicable MTCA CULs. In 1995, the UST pit was enlarged to add a fourth UST. Soil samples were collected from the excavation to characterize the soil conditions. TPH-G and benzene, toluene, ethylbenzene, and

total xylenes (BTEX) were found in one soil sample above the MTCA CULs along the eastern trench. Groundwater was pumped from the excavation and analyzed, with MTCA CUL exceedances for TPH-G and Benzene. During a site hazard assessment conducted by Ecology in 2013, it was noted that no additional site characterization or monitoring activities were taking place. Groundwater was identified at 12 feet bgs and assumed to flow to the west (Ecology 2013). The site status is awaiting cleanup.

The presence of shallow impacted groundwater that could potentially migrate off site and impact the Project is a REC. Proposed Project activities closest to the site are pavement resurfacing and restriping, and groundwater is unlikely to be encountered. Therefore, the site is considered to be a **Low** impact risk to the Project. However, if Project activities change and excavation to groundwater level is proposed, this site could become a **Moderate** impact risk to the Project.

9 Juno Therapeutics (former Sonus Pharmaceuticals), 1522 217th Place SE, Bothell, FSID# 28356548 (ALLSITES, CSCSL NFA, Manifest, RCRA-NonGen, and VCP lists)

This site is located within the Project limits, on the northwest side of SR 527. The Project proposes a partial acquisition of this site along SR 527, where proposed improvements include additional pavement and pavement resurfacing. In 2005, an interim action report was submitted to Ecology regarding cleanup of priority pollutant metals in groundwater at the Sonus Pharmaceuticals site. Ecology reviewed the document and provided a NFA determination in 2006. The presence of historical impacted groundwater that has been addressed to Ecology's satisfaction is an HREC. Based on the information provided, the site is considered to be a **Low** impact risk to the Project. If impacted groundwater is still present, this site could become a **Moderate** impact risk to the Project.

10 Texaco Star Mart/ Jacksons 616/Texaco #632321469/Shell 120531, 11700 NE 160th Street, Bothell, FSID# 63265631 (ALLSITES, CSCSL, ECHO, FINDS, ICR, LUST, Manifest, RCRA-NonGen, UST, and VCP lists)

The site is located adjacent to the Project right of way, and east of the Project limits, within 400 feet of the I-405 pavement. The site has been a gasoline service station since 1972. Leaks and spills from the USTs and pipes were reported to Ecology in 1991. In 1991, 1,749 cubic yards of contaminated soil was excavated and removed. Additional contaminated soil remained, and groundwater was impacted. Shallow groundwater has been observed in monitoring wells from approximately 10 to 40 feet bgs, but groundwater flow direction has not been established due to variable water level elevations. Additional investigations have been conducted between 1992 and 2014 (CRA 2014). High concentrations of TPH-G and benzene were observed in monitoring wells in the drainage swale, which connects with a storm drain culvert leading to a storm drain outfall within the Project limits (CRA 2011b). The site status is cleanup started.

The presence of shallow impacted groundwater that could potentially migrate off site and impact the Project is a REC. Proposed Project activities in the area are pavement resurfacing, and groundwater is unlikely to be encountered. Therefore, the site is considered to be a **Low** impact risk to the Project. However, if Project activities change and excavation to groundwater level is proposed, this site could become a **Moderate** impact risk to the Project.

13 Bothell City Shop/Public Works UST 2391 and City of Bothell King County parcel 0926059013, 17555 120th Avenue NE/17555 Brickyard Road NE, Bothell, FSID# 21681545 (ALLSITES, CSCSL NFA, ECHO, FINDS, ICR, LUST, RCRA-NonGen, and UST lists)

The site is located within the Project limits, on the southeast corner of the I-405/SR 522 interchange. The Project proposes a partial acquisition of the Bothell City Shop parcel (King County parcel 0926059001) and a full acquisition of the City of Bothell parcel 0926059013. The Bothell City Shop parcel contains a prefabricated steel building constructed in 1983, and is used as a maintenance facility for the City of Bothell. The adjoining City of Bothell parcel is undeveloped.

The Bothell City Shop parcel had one diesel UST and one gasoline UST that were removed from the site in July 1993. Leaking petroleum products from the USTs were reported to Ecology in 1993. Approximately 130 cubic yards of petroleum contaminated soil was removed in August 1993. Groundwater was reported as not affected. The site received an NFA determination in 2012.

According to the 2012 City of Bothell's Storm Water Pollution Prevention Plan, activities on the site have included equipment and vehicle storage, maintenance, and hazardous waste handling and transfer (City of Bothell 2012). The SWPPP noted that materials stored on the premises in 2011 and 2012 included approximately 8,500 gallons of GeoMelt (a road de-icer liquid product), 55-gallon drums (both labeled and unlabeled), cleaning solvents, bleach, creosote-treated railroad ties, petroleum products, and derelict vehicles. The adjoining undeveloped City of Bothell parcel may have been used for overflow storage of materials. According to the EDR report, as of 2001, the site no longer generated hazardous wastes, and no violations were found (EDR 2019a).

The presence of a historical LUST that has been addressed to Ecology's satisfaction is an HREC. The historical usage of the site for maintenance and the storage of hazardous materials is a REC. Proposed Project activities on the site include constructing a new bridge for the northbound I-405 off ramps, excavation for a retaining wall, additional pavement, and demolishing the existing building. The site is considered to be a **Moderate** impact risk to the Project because of the property acquisition; historical activities leading to possible releases of petroleum products, metals, and solvents; and residual TPH-G and TPH-D-impacted soil that might potentially impact the Project.

4.0 POTENTIAL IMPACTS

The hazardous materials sites identified in this report have a low or moderate impact risk to the Project and are relatively straightforward in complexity. WSDOT has identified a number of standard impacts and associated mitigation measures that could be applied to these low to moderate impact risk sites, as discussed in Section 5, Mitigation Measures.

Environmental impacts during construction may include potential impacts on sensitive receptors such as wetlands, groundwater, public drinking water systems, well-head protection zones, and surface waters, all requiring special protection against spills and releases and alteration of contaminant migration. Sensitive receptors may also include the elderly, people with chronic illnesses, and children. Although the location of all sensitive receptors for this Project cannot be determined, several schools are located within the study area.

Soil and groundwater contamination have been documented on adjacent sites at specific locations throughout the study area. With the exception of bridge foundations that may range from 50 to 150 feet bgs, the majority of excavations associated with project construction are expected to be no deeper than 60 feet bgs. These types of excavations would not be expected to affect migration of contaminants, and may remove potentially contaminated soils, based on the location of the excavations.

Direct construction impacts may include those related to site-specific hazardous materials such as unknown USTs, contaminated soil and/or groundwater, asbestos-containing material (ACM), lead-based paint (LBP), and liabilities associated with property acquisition. Areas around natural gas lines, soft soils and sediment (spoils) under structures like bridge piers, and utility lines may contain unknown or unreported contamination. Natural gas lines present the potential for releasing or emitting radioactive (radium and radon) gases and heavy metals in the soil. Petroleum pipelines present the potential for releasing petroleum products to the soil. Spoils and sediment can contain contamination depending on structure type, materials used, and location of the structure. Former rail lines present the potential for soil impacted with heavy metals, petroleum, and creosote in surface soil.

Demolition of structures and facilities may require special handling and disposal if hazardous building materials (HBM) are present, which can increase costs and delay construction. ACM is likely to exist in buildings constructed prior to 1985. LBP is likely to exist in structures built before 1978 and is typically found on steel bridge structures. Creosote-treated wood can be found in railroad ties and telephone poles.

Soil and groundwater contamination have been documented on adjacent sites, and other sites have been identified that have the potential for soil and groundwater impacts. Potential contaminants that may be found in the soil or groundwater include, but are not limited to, petroleum hydrocarbons, heavy metals, creosote, and halogenated volatile organic compounds (HVOCs). The potential effects of these sites on the construction activities are unknown but would likely be minor, based on the amount of planned excavation.

5.0 MITIGATION MEASURES

5.1 OPERATIONAL MITIGATION MEASURES

The Project will not generate hazardous materials and is not expected to result hazardous material releases, so no operational mitigation is proposed.

5.2 STANDARD CONSTRUCTION MITIGATION MEASURES

Mitigation measures will be implemented during different stages of Project development and construction to help avoid or reduce effects to the Project associated with environmental concerns, construction issues, and/or potential property acquisitions. WSDOT has compiled a standard impacts and mitigation measures table that addresses typical impacts that may be encountered during construction projects and their associated mitigation measures. These mitigation measures typically apply to sites of concern with low or moderate impact risk that are straightforward to manage. Based on the review of available information, the majority of the identified sites of concern associated with the Project can be mitigated using measures described in the WSDOT Standard Hazardous Materials Impacts and Mitigation Measures document (WSDOT 2017). The Project may need a special provision for those sites that may be complex. The following standard mitigation measures apply to typical impacts that may be encountered during construction.

- To reduce the potential for hazardous materials being released to the environment during construction, construction plans should be prepared that include procedures to help mitigate, avoid, control, and manage hazardous materials. These plans include:
    - Spill Prevention, Control, and Countermeasure (SPCC) Plan to provide specific guidance for managing potentially hazardous materials brought on to and/or generated on site.
    - Stormwater Pollution Prevention Plan (SWPPP) to prevent the release of contamination and hazardous substances to the environment.
    - Health and Safety Plans (HASP) to reduce potential risks to human health and the environment.
    - Hazardous substance contingency management plan for handling, transportation, and disposal of known and unanticipated contamination.

- Prior to demolition, a Good Faith Asbestos and Hazardous Materials Survey (GFS) should be completed by an Asbestos Hazard Emergency Response Act (AHERA) certified building inspector. The GFS should be conducted on all structures and/or facilities that will be renovated or demolished within the Project limits.

- If a known or unanticipated UST is discovered within the Project limits, the procedures and regulations for decommissioning USTs should be followed.

- WSDOT's contractor will dispose of all waste material at approved disposal facilities in accordance with federal, state, and local regulations.

- If unanticipated contamination is discovered within the Project limits, it should be addressed by contract language, General Special Provisions, and/or Special Provisions. WSDOT Standard Specifications requires the contractor to comply with environmental regulations and current federal and state laws and regulations.

- Contaminated groundwater originating from properties located up-gradient of the right of way could migrate to the Project limits. WSDOT generally will not incur liability for groundwater contamination that has migrated into the Project limits as long as the agency does not acquire the source of the contamination. However, the contaminated media will be managed in accordance with all applicable rules and regulations.

Additional site-specific mitigation measures may be required, particularly with respect to the moderate impact risk sites and are described below.

5.3 SITE SPECIFIC CONSTRUCTION MITIGATION MEASURES

I-405/SR 522 Interchange

The Project proposes full and partial acquisition of properties with HRECs and RECs near the I-405/SR 522 interchange. Sites of concern include the Bothell City Shop/Public Works UST (Site ID 13), WSDOT NE Woodinville Drive UST (Site ID 7), and the King County Parks/Former BNSF rail line (Site ID 6). The full acquisition of the Hallett property (King County parcel number 0926059156) will include the demolition of the existing building, constructed in 1979. Additionally, the partial acquisition of the Bothell City Shop/Public Works UST would include the demolition of the existing structure on the site. Proposed construction activities include excavation for pier structures for the new I-405 ramp bridge to SR 522 over the Sammamish River, excavation for retaining walls, and demolition of existing bridges. Dewatering activities will likely be necessary as work may potentially be conducted within the ordinary high water mark (OHWM).

If unknown USTs are encountered during Project construction in the right of way, a site assessment and/or site characterization will be necessary. The USTs will need to be decommissioned and removed, and any associated impacted soil will need to be cleaned up following all applicable rules and regulations.

The King County Parks/Former BNSF rail line parcel (Site ID 6), is proposed for an aerial easement (partial acquisition) as well as a TCE. If ground is disturbed, there is a risk of encountering impacted soils associated with historic rail uses. WSDOT recommends sampling and pre-characterizing the soil to determine baseline conditions.

WSDOT also recommends a Phase II Environmental Site Assessment (ESA) on the Bothell City Shop/Public Works UST (Site ID 13) and the adjoining undeveloped King County Parcel 0926059013. Operational activities at the Bothell City Shop site may have occurred on the adjoining parcel.

Prior to demolition, a certified AHERA Building Inspector is required to conduct a GFS on the existing bridges/structures/buildings associated with the I-405/SR 522 interchange location. This includes the Hallett property and the Bothell City Shop structures.

I-405/SR 527 Interchange

The Project proposes partial acquisitions and TCEs of properties with HRECs and RECs near the I-405/SR 527 interchange. These sites of concern include Juno Therapeutics (former Sonus Pharmaceuticals; Site ID 9), the former Excell Cleaners (Site ID 4), and Siemens Transmission (Site ID 16) sites. Other nearby sites of concern with known soil and groundwater contamination include the Dry Clean US (Site ID 2) and Jacksons 615/Shell 120935 (Site ID 5) sites. There are two former dry cleaning sites adjacent to the Project limits (former Excell Cleaners, Site ID 4, and Canyon Park Cleaners, Site ID 3), although there are no known releases to soil or groundwater at those sites. Proposed construction activities near this interchange include additional pavement, excavation for detention ponds, retaining walls, new bridges, new stormwater outfalls, stream realignments, stormwater treatment, fish passable crossings, a roundabout, and pavement resurfacing.

Because partial acquisitions and TCEs of properties with HRECs or RECs are proposed, WSDOT recommends considering a Phase II ESA along the proposed right of way acquisition for sites with HRECs or RECs, specifically the Juno Therapeutics site. Because excavation for detention ponds and the North Fork Perry Creek stream realignment are proposed adjoining to former dry cleaner locations, WSDOT recommends conducting a Phase II ESA at the locations of the proposed excavations to characterize the soil and groundwater quality, specifically adjoining the former Excell Cleaners site.

I-405 Corridor North of the NE 195th Street Interchange

The AT&T Wireless NR5 site with known groundwater contamination is located hydrologically upgradient and adjacent to the Project. Proposed construction activities at this location include excavation for a retaining wall. If excavation for the retaining wall extends into the shallow groundwater, WSDOT recommends sampling and pre-characterizing the groundwater for disposal purposes.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the search results provided by Environmental Data Resources, Inc. (EDR) and the Washington State Department of Ecology (Ecology)'s online database, and the current proposed Project description, 334 mapped hazardous materials site listings were identified: 21 within the Project limits, 287 within the study area, and 26 outside the study area. Out of these 334 site listings, 284 listings were eliminated from further consideration as presented in Section 3, as they are unlikely to have a negative impact on the study area during construction. The remaining 50 listings were reviewed and were attributed to 17 sites (several sites were listed multiple times). These 17 sites and the King County Parks/Former Burlington Northern Santa Fe (BNSF) Rail Line property qualify as Recognized Environmental Conditions (RECs) or Historical RECs (HRECs) because of historical land use, confirmed or suspected past releases that have the potential of being encountered during construction, and/or properties proposed to be acquired that are known or suspected of having contamination.

Based on the risk analyses performed for the 18 total sites, 10 sites were designated as having a low impact risk to the Project. Of these 10 low impact risk sites, three of the sites have the potential to become a moderate impact risk to the Project. Eight of the 18 total sites were designated as having a moderate impact risk to the Project. Of these eight moderate impact risk sites, two of the sites have the potential to become a high impact risk to the Project.

The two sites designated as moderate impact risk with the potential to become a high impact risk (AT&T Wireless, Site ID 1 and Dry Clean US, Site ID 2) are adjoining or near the Project limits and have known groundwater contamination. These sites may have the potential to negatively impact the Project if contaminated groundwater is encountered during construction activities near these sites. However, at the time of this report, there was no evidence to indicate that the impacted groundwater plumes had traveled outside either site's boundaries. Planned Project activities include excavation for a retaining wall near the AT&T Wireless NR5 site, and stormwater treatment and stream realignment near the Dry Clean US site.

Six sites proposed for partial or temporary construction easement (TCE) acquisition were designated as low or moderate impact risks to the Project. These sites may have the potential to negatively impact the Project if contaminated soil or groundwater is encountered during construction activities. Four of these sites (former Excell Cleaners, Site ID 4; Juno Therapeutics [former Sonus Pharmaceuticals], Site ID 9; Siemens Transmission, Site ID16; and the WSDOT NE Woodinville Drive UST site, Site ID 7) were either HRECs, or there was no indication of hazardous materials releases to soil or groundwater. The King County Parks/Former BNSF Rail Line site (Site ID 6), was designated as a moderate impact risk to the Project based on historical uses associated with rail lines. The Bothell City Shop/Public Works UST site (Site ID 13) was designated as a moderate impact risk to the Project based on current and historical uses of the site as a maintenance facility.

The following conclusions are based on the summary findings of the investigation, opinions provided in previous sections, and the proposed Project description. WSDOT concludes that no adverse cumulative effects from hazardous materials are anticipated to negatively impact the Project. No significant, unavoidable adverse effects are anticipated during construction, due to the

limited potential of encountering contaminated soil and/or groundwater that could be otherwise avoided by design decisions or mitigated through proper remediation.

The following recommendations are provided as a result of the findings and conclusions of this assessment.

- WSDOT recommends that the construction contract include specifications advising contractors of the appropriate handling and disposal of identified or suspected contamination that may be encountered during excavations or soil disturbances near or on the study area. WSDOT routinely uses General Special Provisions (GSPs) or Special Provisions (SPs) to account for uncertainties of hazardous materials, such as the removal and disposal of unanticipated hazardous materials. (An example of a provision would be to stockpile suspected contaminated soils for laboratory analysis prior to reuse or disposal.) WSDOT can assist in creating these contract provisions, if necessary.

- Prior to demolition of the I-405 off-ramp bridges at the SR 522 interchange, the building on the Hallett property, and the building on the Bothell City Shop/Public Works UST property, WSDOT recommends that a certified Asbestos Hazard Emergency Response Act (AHERA) Building Inspector is required to conduct a Good Faith Asbestos and Hazardous Materials Survey (GFS) on the existing bridges/structures/buildings associated with the I-405/SR 522 interchange Project, complying with and providing an AHERA-level assessment in accordance with U.S. Environmental Protection Agency, 40 CFR 763, and Washington State Department of Labor and Industries standards, Washington Administrative Code (WAC) 296-62-07721(2)(b)(ii).

- For proposed partial acquisitions and TCEs of properties with HRECs and RECs, WSDOT recommends that a Phase II Environmental Site Assessment (ESA) be considered prior to any purchase agreement, based on proposed Project activities on these properties. WSDOT recommends a Phase II ESA be conducted where excavations are proposed near adjoining sites of concern with potential groundwater contamination. Sites to be considered for a Phase II ESA include the Former Excell Cleaners, Juno Therapeutics, and Bothell City Shop/Public Works UST/King County parcel 0926059013. For the King County Parks/Former BNSF rail line site, WSDOT recommends sampling and pre-characterizing soil to determine baseline conditions.

- WSDOT recommends that an environmental re-evaluation be conducted if subsequent changes are made to the Project, such as project realignment, planned excavation depths, or changes to the proposed property acquisitions, which could alter the conclusions made in this investigation.

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FIGURES

Figure 1. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project Site Vicinity Map, Sheet 1 of 5

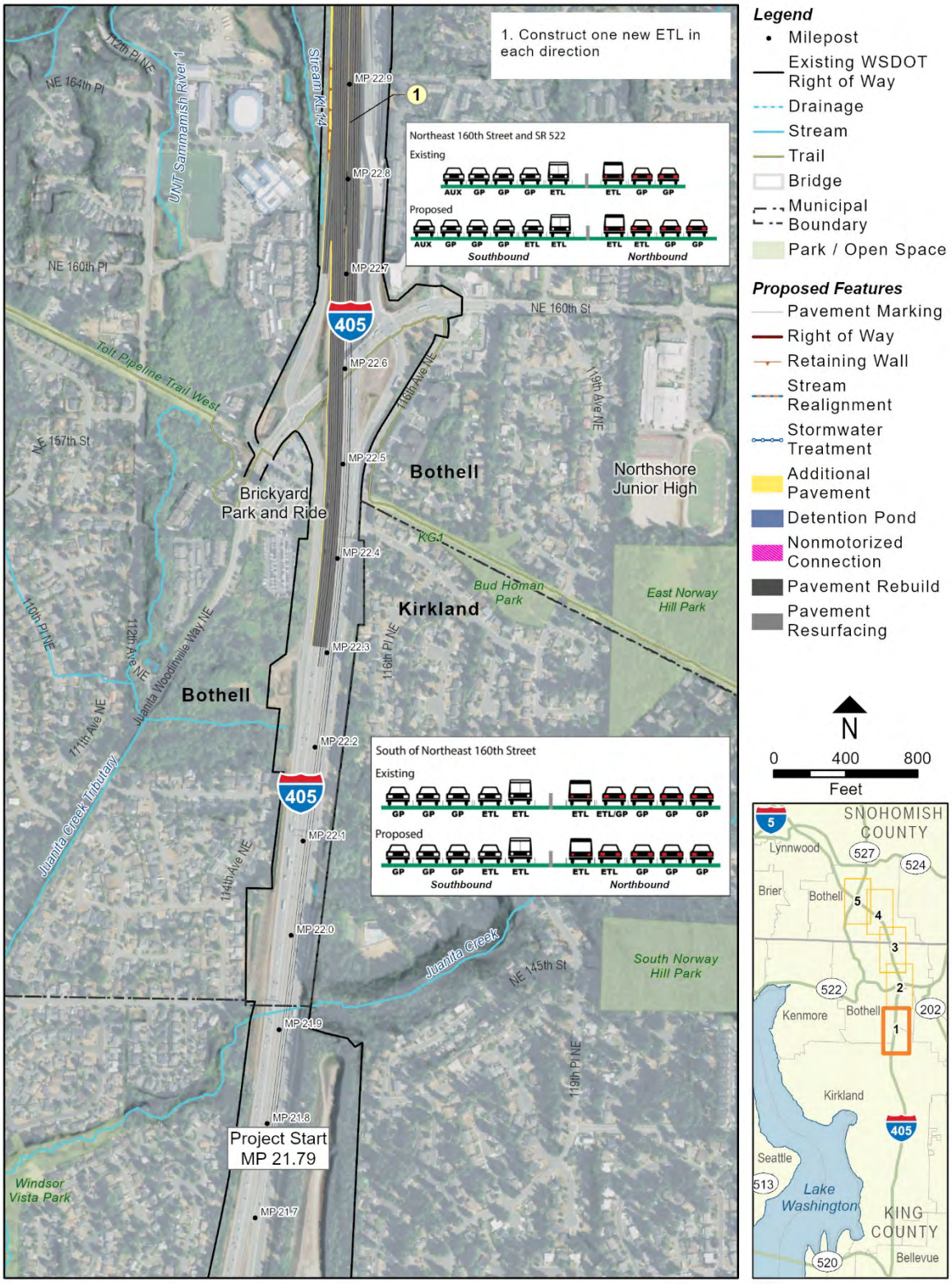


Figure 1. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project Site Vicinity Map, Sheet 2 of 5

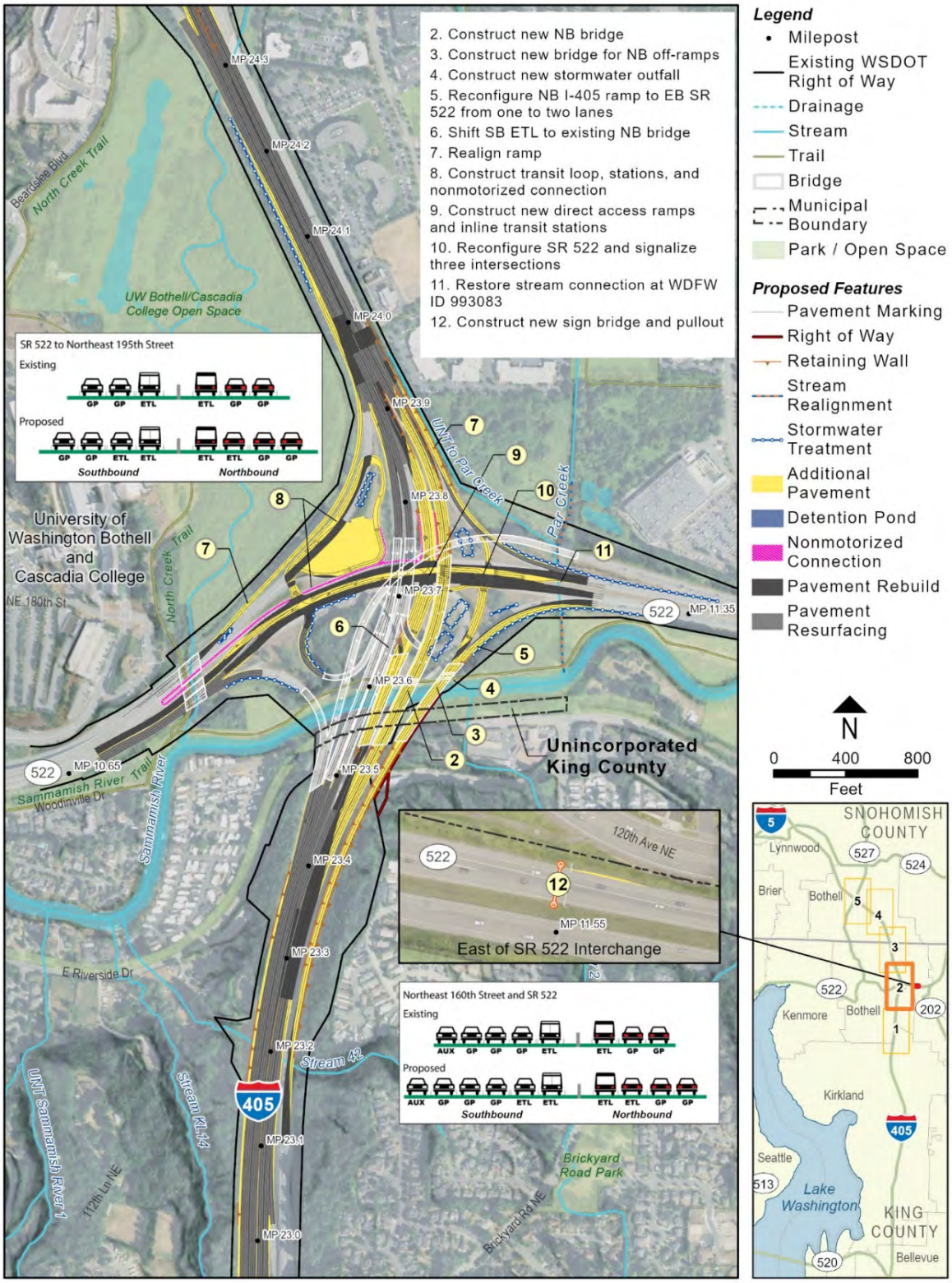


Figure 1. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project Site Vicinity Map, Sheet 3 of 5

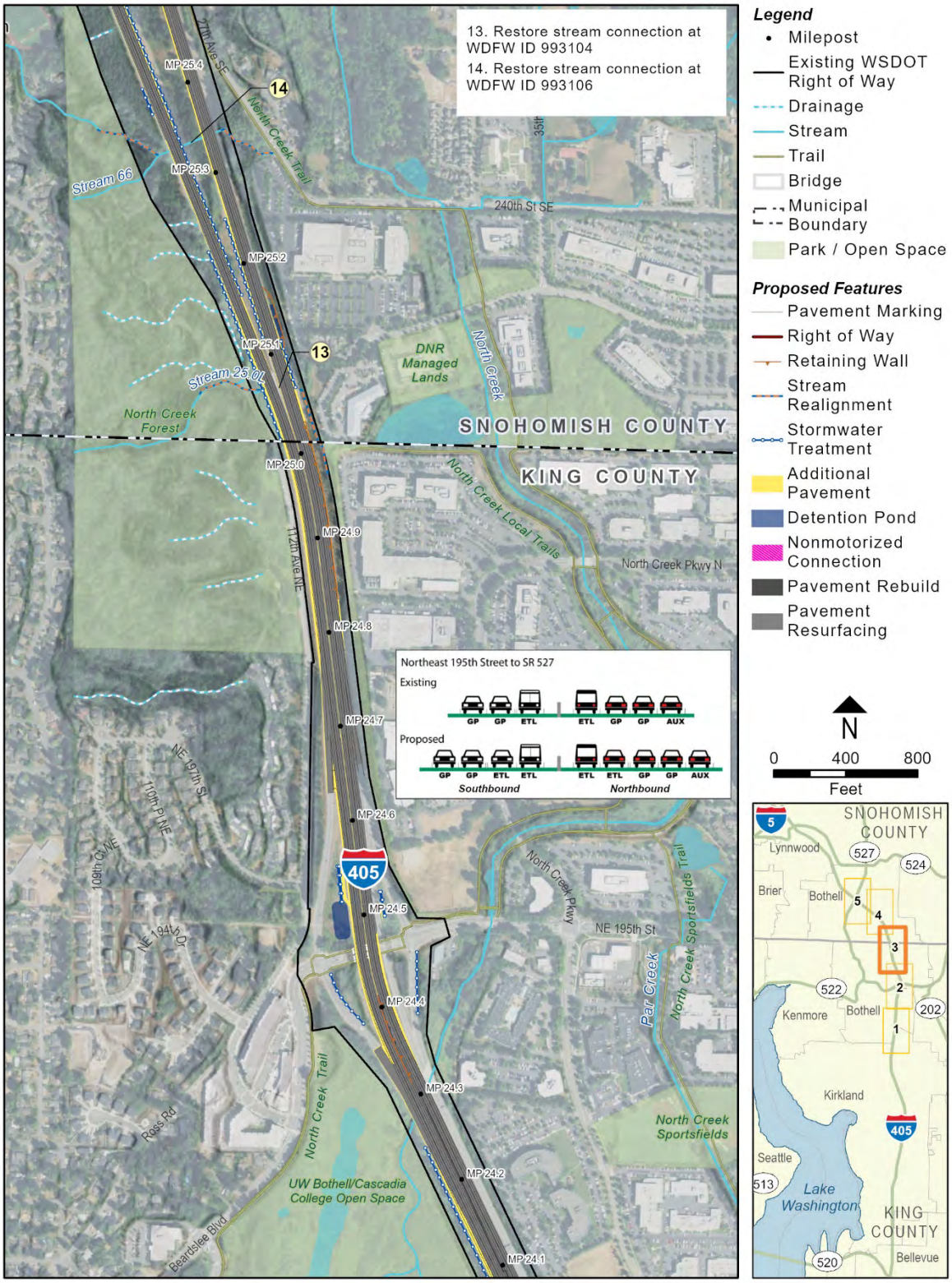


Figure 1. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project Site Vicinity Map, Sheet 4 of 5

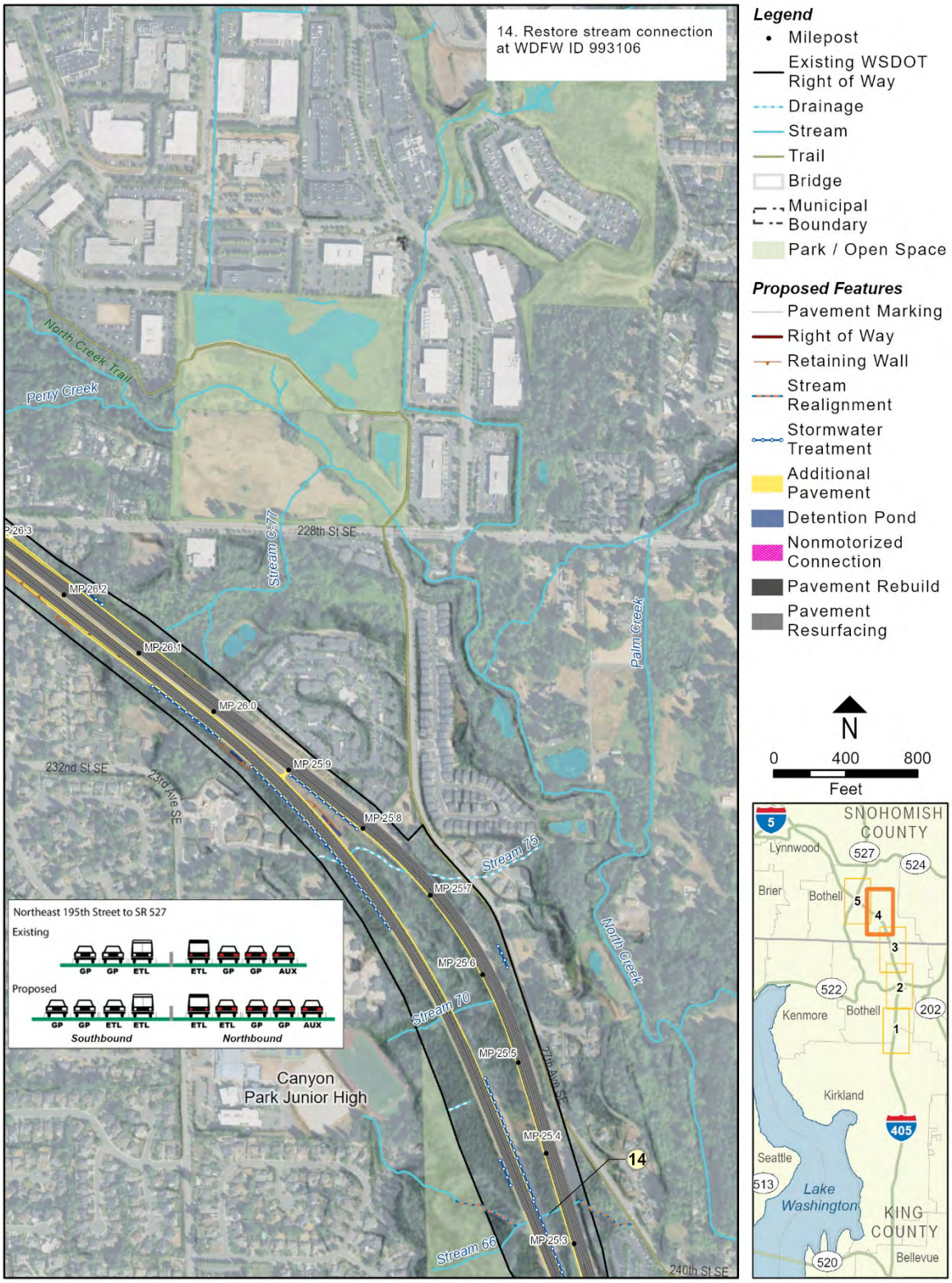


Figure 1. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project Site Vicinity Map, Sheet 5 of 5

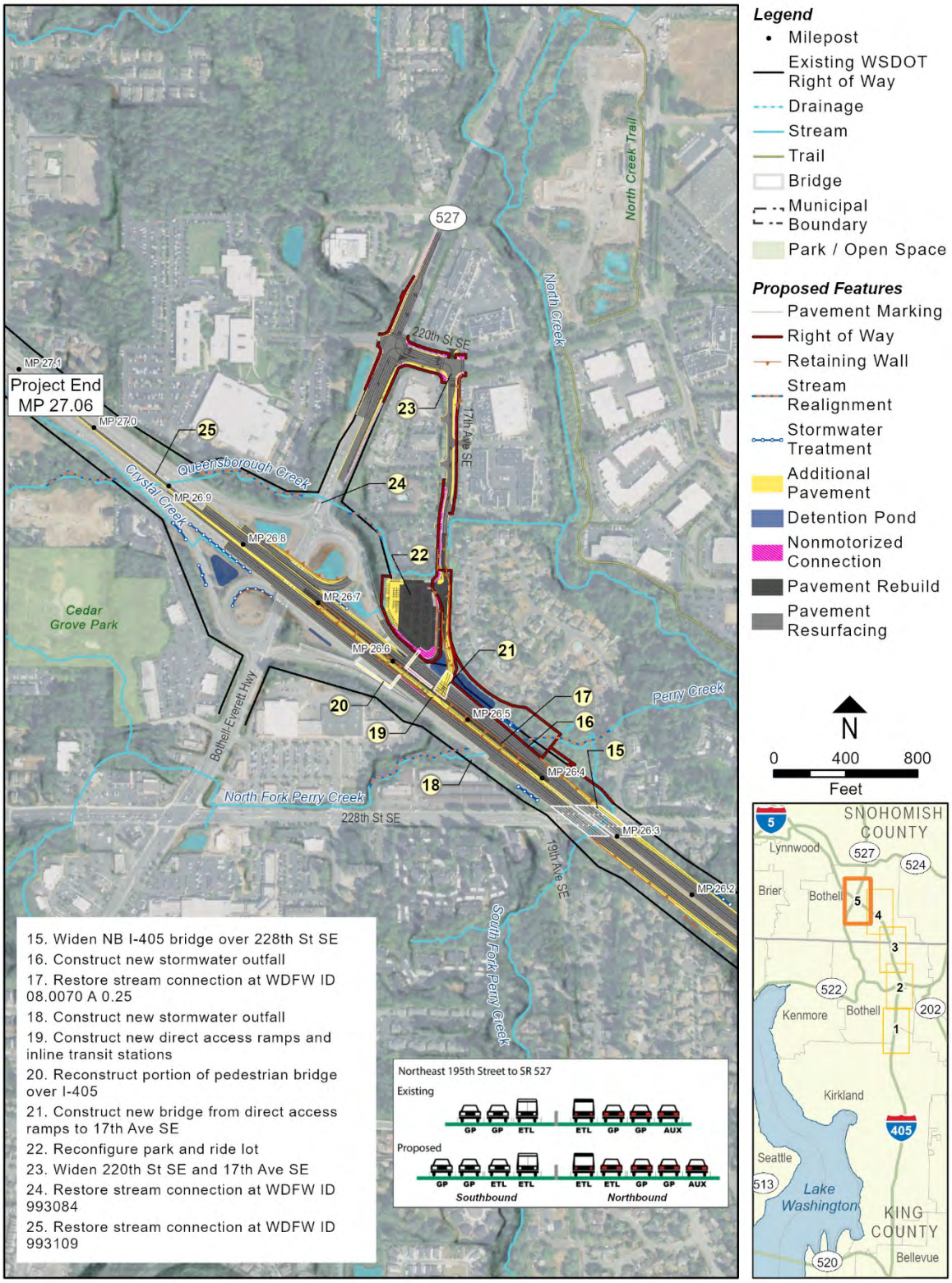


Figure 2. Mapped Recognized Environmental Condition, Sheet 1 of 2

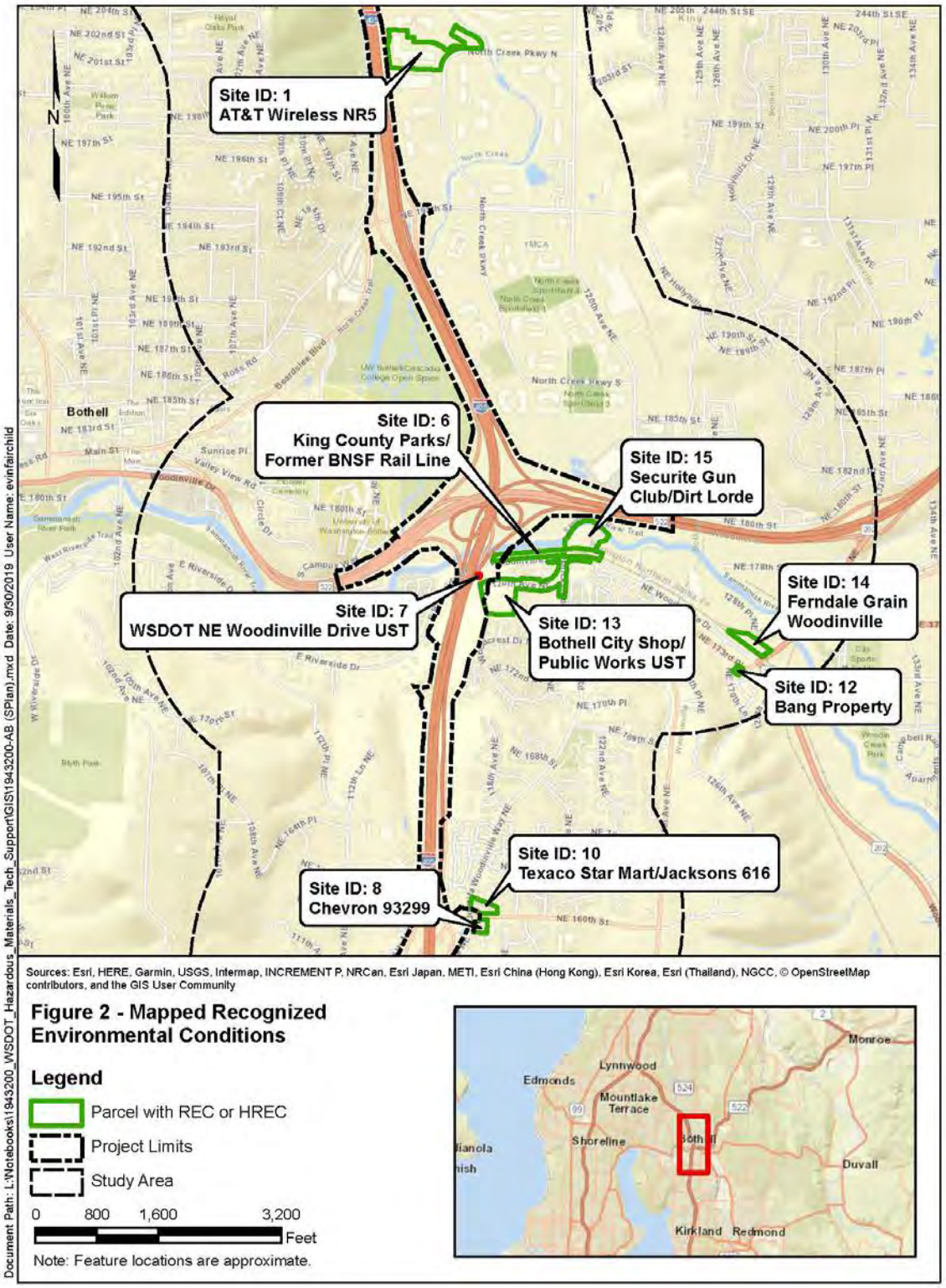


Figure 2. Mapped Recognized Environmental Condition, Sheet 2 of 2

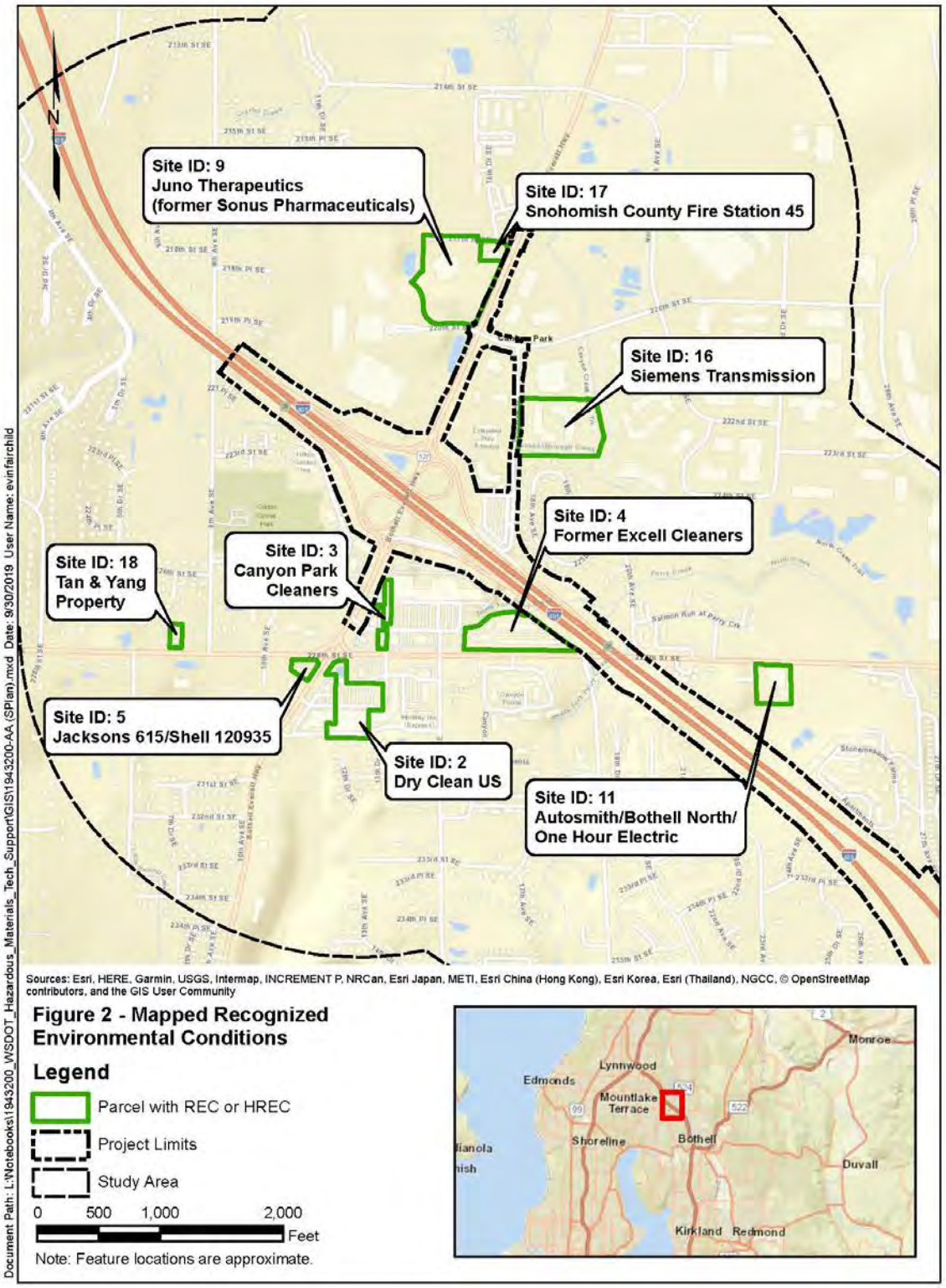


Figure 3. Right of Way Property Acquisitions, Sheet 1 of 2

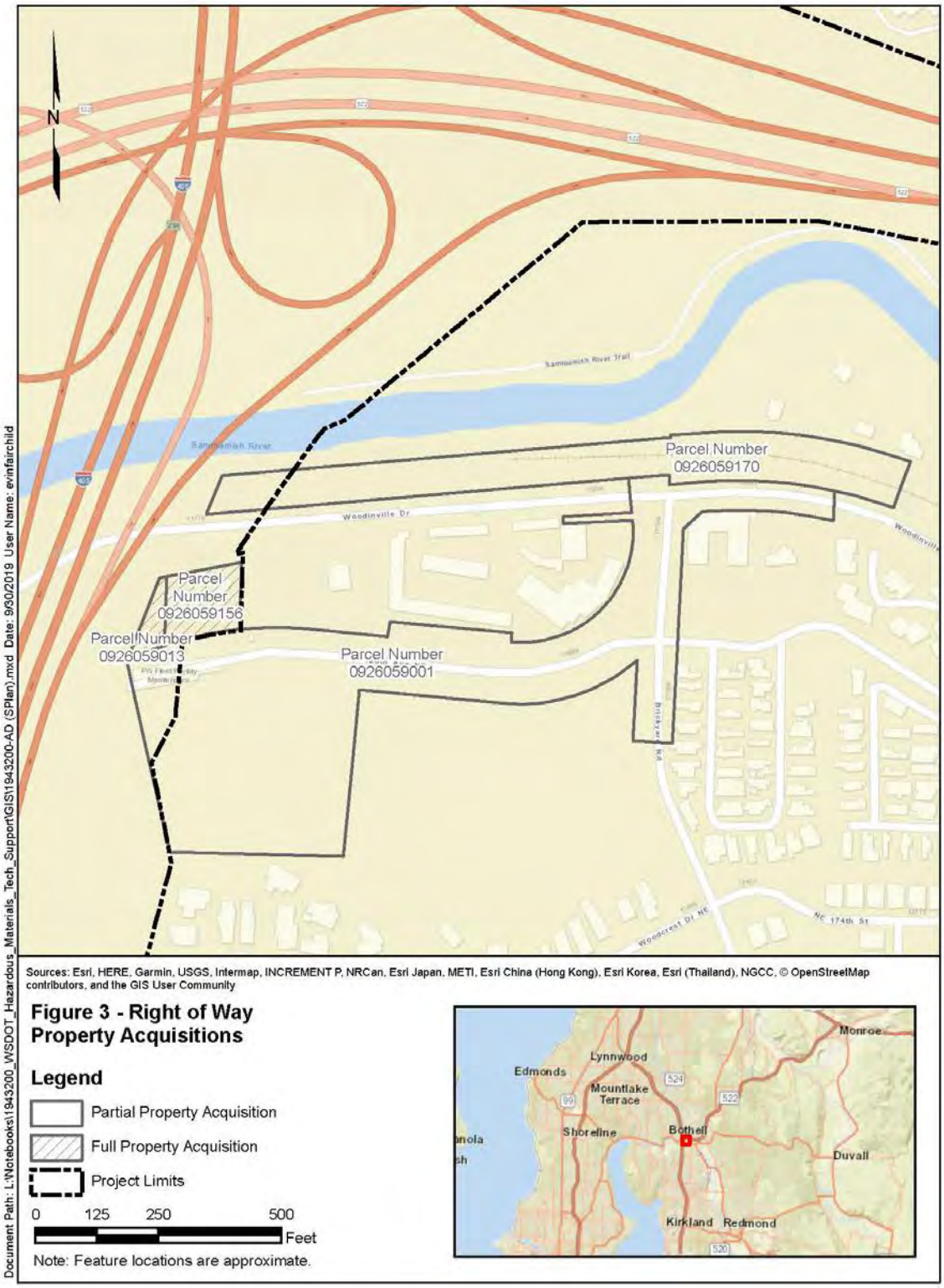
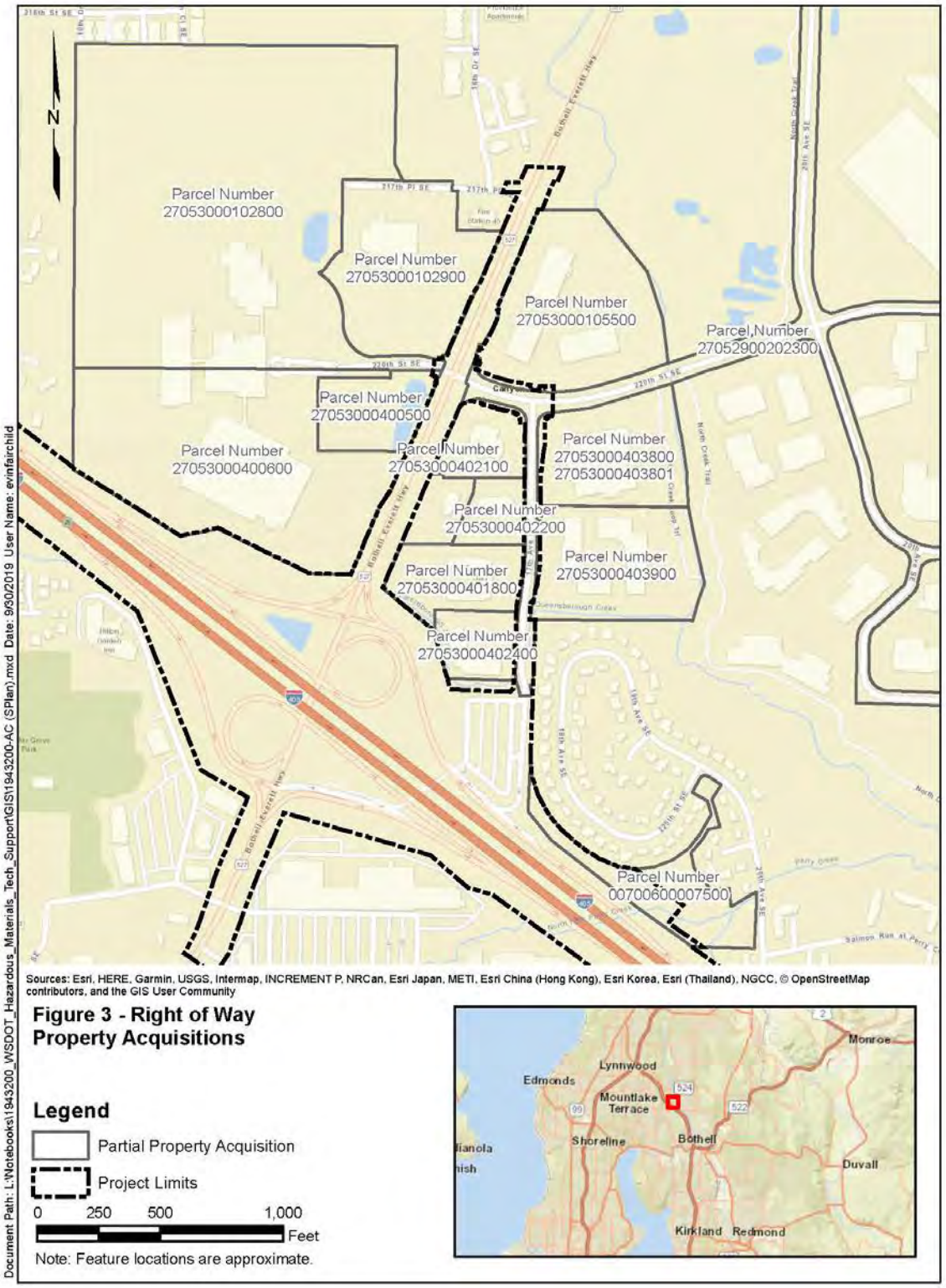


Figure 3. Right of Way Property Acquisitions, Sheet 2 of 2



TABLES

Table 1. Proposed Project Improvements

Project Element	I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project
I-405 lanes and shoulders from SR 522 to SR 527	- Create a dual ETL system from MP 21.79 (south of the I-405/SR 522 interchange) to MP 27.06 (just north of the I-405/SR 527 interchange). • From MP 21.79 to MP 22.30: Restripe existing lanes, including the single existing ETL in this area, to create a dual ETL system. • From MP 22.30 to MP 26.30: Resurface and widen I-405 to add one ETL in each direction to create a dual ETL system that ends at the SR 527 interchange. • From MP 26.30 to MP 27.06: Widen I-405 to construct direct access ramps and maintain a single ETL starting near MP 26.30.
I-405 tolling from SR 522 to SR 527	- Construct new tolling gantries to collect tolls for the ETLs and direct access ramps.
SR 522 interchange	- Construct new direct access ramps and two inline transit stations (one in each direction) in the I-405 median. Transit stations would include station platforms, signage, artwork, lighting, fare machines, and site furnishing such as shelters, lean rails, benches, bollards, bicycle parking, and trash receptacles. Transit station locations to be determined in coordination with Sound Transit. - Construct a bus stop and turnaround loop, pick-up and drop-off facilities, and new non-motorized connection to the North Creek Trail near the SR 522 interchange. Funding and construction timeline to be coordinated with local transit agencies. - Construct new northbound bridge through the SR 522 interchange. • Reconfigure northbound I-405 ramp to eastbound SR 522 from one lane to two lanes. - Reconfigure I-405 on- and off-ramps. • Realign southbound I-405 ramp to westbound SR 522. • Realign eastbound and westbound SR 522 ramps to northbound I-405. - Add three signalized intersections on SR 522.
228th Street SE	- Widen northbound I-405 bridge over 228th Street SE.
SR 527 interchange area	- Construct new direct access ramps to the north, south and east, and two inline transit stations (one in each direction) in the I-405 median just south of SR 527 at 17th Avenue SE. Transit stations would include station platforms, signage, artwork, lighting, fare machines, and site furnishing such as shelters, lean rails, benches, bollards, bicycle parking, and trash receptacles. - Reconstruct pedestrian bridge over I-405.
17th Avenue SE, 220th Street SE, SR 527	- Reconfigure 17th Avenue SE and portions of 220th Street SE and SR 527 to include a roundabout at the Canyon Park Park and Ride and bicycle and pedestrian improvements.
Fish barrier corrections	- Replace six fish barriers with restored stream connections at the following streams: • Par Creek • Stream 25.0L • Stream 66 • North Fork of Perry Creek • Two fish barriers at Queensborough Creek

Table 1. Proposed Project Improvements

Project Element	I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project
Sammamish River bridges	- Remove the existing northbound I-405 to eastbound SR 522 bridge over the Sammamish River, including two bridge piers within the OHWM. - Remove the existing northbound I-405 to westbound SR 522 bridge over the Sammamish River, including two bridge piers within the OHWM. - Build a new bridge for northbound I-405 traffic over the Sammamish River. - Build a new bridge over the Sammamish River for the new direct access ramp at SR 522. - Build a new bridge over the Sammamish River for the northbound I-405 to SR 522 ramp.
Noise and retaining walls	- Construct new noise walls. - Construct new retaining walls.
Stormwater management	- Provide enhanced treatment for 100 percent of new PGIS (approximately 24 acres). - Retrofit about 20 acres of existing untreated PGIS and continue to treat stormwater from the approximately 44 acres of PGIS that currently receives treatment. - Construct three new stormwater outfalls, one on the Sammamish River and two on the North Fork of Perry Creek.
Construction duration	- Construction is expected to last three to four years, from 2021 through 2024.

SR = State Route; ETL = express toll lane; MP = milepost; I = Interstate; OHWM = ordinary high water mark; PGIS = pollution-generating impervious surfaces

Table 5. ASTM E1527-13 Standard Environmental Record Sources

Record Source (Abbreviation)	Agency	Search Distances	Description
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)	USEPA	1/2 mile	The CERCLIS database contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies, and private persons and lists sites that are either proposed for or on the NPL.
National Priorities List (NPL)	USEPA	1 mile	The NPL is a subset of CERCLIS and identifies sites for priority cleanup under the Superfund program.
CERCLIS No Further Remedial Action Planned (NFRAP)	USEPA	1/2 mile	The CERCLIS-NFRAP database contains data on CERCLIS sites that have been listed for no further remedial action is planned.
Resource Conservation and Recovery Act (RCRA)	USEPA	Property and adjoining sites	The RCRA database includes selective information on large and small quantity (RCRA LQG and RCRA SQG) generators of hazardous waste as well as treatment, storage, and disposal (TSD) facilities. If a site is identified as a RCRA generator, it does not mean that a release of hazardous materials has occurred at the site; however, the presence of these materials at a site increases the potential that a release could occur.
RCRA non-Corrective Action Report (CORRACTS) TSD (Treatment, Storage and Disposal)/RCRA-TSDF (RCRA- TSD Facility)	USEPA	1/2 mile	RCRA non-CORRACTS TSD database identifies sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by RCRA.
RCRA CORRACTS	USEPA	1 mile	The CORRACTS database identifies hazardous waste handlers with RCRA corrective action activity.
US Institutional/Engineering Controls (US INST/ENG CONTROL	USEPA	Property only	The US INST CONTROL or US ENG CONTROLS is listing of sites with institutional or engineering controls in place.
Emergency Response Notification System (ERNS)	USEPA	Property only	The ERNS records and stores information on reported releases of oil and hazardous substances.
Confirmed and Suspected Contaminated Sites List (CSCSL)/State Hazardous Waste Site (SHWS)	Ecology	1 mile	The CSCSL/SHWS is a listing of the State Hazardous Waste Sites, which is Washington's equivalent to the federal CERCLIS list. The sites have known or suspected contamination. The type of media affected, and type of contaminant are typically listed in the database.
Landfill & Solid Waste Facilities (State Landfill)	Ecology	1/2 mile	The state landfill records contain an inventory of solid waste disposal facilities or landfills in Washington. These may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.
Underground Storage Tank (UST) Database	Ecology	Property and adjoining	USTs are regulated by Subtitle I of RCRA and most must be registered with Ecology. The UST database contains information on the site location, number of

Record Source (Abbreviation)	Agency	Search Distances	Description
		sites	tanks present, materials stored, dates of installation and removal, and other pertinent information for registered USTs. Sites identified in this database include only those registered with Ecology as containing regulated substances. This database does not include underground residential heating fuel tanks or tanks used for farm applications.
Leaking Underground Storage Tank (LUST) Site List	Ecology	1/2 mile	The LUST list contains an inventory of reported leaking UST incidents. The LUST list may also identify the type of material released and the affected media (e.g., air, soil, or water).
Washington Independent Cleanup Report (WA ICR) Voluntary Cleanup Program Sites (VCP)	Ecology	1/2 mile	The WA ICR lists sites that have submitted independent remedial action reports to Ecology. The VCP database includes sites that have entered into the state VCP or its predecessor Independent Remedial Action Program.
Brownfield sites	Ecology	1/2 mile	A listing of Brownfield sites included in the CSCSL/SHWS. Brownfield sites are abandoned, idle, or underused commercial or industrial properties whose expansion or redevelopment is hindered by real or perceived contamination.

USEPA = United States Environmental Protection Agency; Ecology = Washington State Department of Ecology

Table 7. Recognized Environmental Conditions Summary Table

Site ID	Site (Facility Site ID)	Acquisition (A) or TCE	Site Address and Distance from Project	Groundwater Flow Direction	Planned/ Proposed Construction Activities	Databases	Contaminants of Concern	Impacted Media	Description	Likely Risk to Construction or WSDOT's Liability	Recommendations
1	AT&T Wireless NR5 Bothell 920307 (3706871)/AT&T Mobility Phase I Main Building (98437662)	No	20307 North Creek Parkway Bothell Adjoining to east	Southeast and southwest	Excavation for retaining wall along NB I-405	ALLSITES, CSCSL, UST, VCP	TPH-D, TPH-O	Soil Groundwater	In 2008, ~10,000 gallons of diesel fuel were released from an AST into a storm drain and soil. Emergency response actions contained the spill within the property boundaries. In 2013 a remediation system to recover oil from groundwater was installed. Groundwater monitoring in 2017 indicated impacted groundwater is not leaving site. Status is cleanup started.	Moderate. High impact risk if contaminated groundwater plume migrates off-site to Project limits.	Conduct additional due diligence to determine current site status. If excavation for the retaining wall extends into the shallow groundwater, sampling and pre-characterizing the groundwater for disposal purposes is recommended.
2	Dry Clean US (5125580)	No	22833 Bothell Everett Highway Bothell 900 feet to south	North-northeast	Stream alignment, stormwater treatment	ALLSITES, CSCSL, ECHO, FINDS, HSL, VCP	PCE, HVOCs	Soil Groundwater Air	A dry cleaner operated on site beginning in 1992. Environmental assessments were conducted beginning in 2005. PCE present in soil and groundwater. Impacted soil removed in 2007 and 2009. Subsequent sampling of groundwater, soil gas, and indoor air found PCE and HVOCs above CULs. Soil vapor extraction system (SVE) pilot studies and air sparge study conducted in 2016. No additional work was completed, and current status is cleanup started. Groundwater was found between 3 to 8 feet bgs, but down-gradient monitoring well did not contain PCE above CULs in 2017. Status is cleanup started.	Moderate. High impact risk if contaminated groundwater plume migrates off-site to Project limits. .	No action. The site is 900 feet away from planned construction activities.
3	Canyon Park Cleaners (77714595)	No	22615 Bothell Everett Highway Bothell Adjoining to south	Estimated to south	Excavation for detention pond, pavement resurfacing, additional pavement, retaining wall, fish barrier correction	ALLSITES, ECHO, FINDS, Historic cleaner, Inactive drycleaner, RCRA NonGen	Potential HVOCs	Unknown	Dry cleaners from 1987 to 2001. No known environmental releases; no investigations conducted.	Moderate .	No action. The site is more than 500 feet away from planned intrusive work. Large scale dewatering not expected.

Table 7. Recognized Environmental Conditions Summary Table

Site ID	Site (Facility Site ID)	Acquisition (A) or TCE	Site Address and Distance from Project	Groundwater Flow Direction	Planned/ Proposed Construction Activities	Databases	Contaminants of Concern	Impacted Media	Description	Likely Risk to Construction or WSDOT's Liability	Recommendations
4	Former Excell Cleaners/Shurgard /Canyon Park, Self-Storage Limited Partnership	TCE	1715 228th Street SE Bothell Adjoining to west	Estimated to north towards North Fork Perry Creek	TCE, Excavation for detention pond, stormwater treatment, stormwater outfall, stream alignment, pavement resurfacing, additional pavement, retaining wall, fish barrier correction	Historic cleaner	Potential HVOCs	Unknown	Dry cleaners from 1994 to 1996. No known environmental releases; no investigations conducted. (Snohomish County parcel 270530000401600)	Moderate	WSDOT would develop language as part of TCE acquisition to limit liability. Conduct a Limited Phase II ESA.
5	Jacksons 615/Shell 120935 (53947398)	No	22802 Bothell Everett Highway Bothell 650 feet to southwest	Northeast	Stormwater treatment	ALLSITES, CSCSL, ECHO, FINDS, ICR, LUST, Manifest, RCRA-NonGen, UST, VCP	TPH-G, Benzene	Soil Groundwater	A LUST with releases to soil and groundwater was reported to Ecology in 1990. Petroleum-impacted soil was excavated and disposed of off-site in 1991. Approximately 15,000 gallons of groundwater was removed, treated, and disposed of. A soil vapor extraction (SVE) and groundwater treatment system was installed and operated from 1993 through 2001. The site entered the VCP in 2009. Status is cleanup started.	Moderate	No action. The site is 650 feet away from planned construction activities.
6	King County Parks/Former BNSF Rail Line	Air Space TCE	King County Parcel # 0926059170 Project	Estimated north to Sammamish River	Partial Acquisition (Air Space only), TCE, construct new bridge for NB off-ramp		TPH, Creosote, Metals	Suspected in soil	Based on history of rail lines, any work in and around rail lines can encounter contamination.	Moderate	As part of obtaining the air space lease and TCE, WSDOT would develop language to limit liability. Develop GSPs and SPs to address risk of encountering contamination in work area. Sample and pre-characterize soil to determine baseline conditions.

Table 7. Recognized Environmental Conditions Summary Table

Site ID	Site (Facility Site ID)	Acquisition (A) or TCE	Site Address and Distance from Project	Groundwater Flow Direction	Planned/ Proposed Construction Activities	Databases	Contaminants of Concern	Impacted Media	Description	Likely Risk to Construction or WSDOT's Liability	Recommendations
7	WSDOT NE Woodinville Dr UST (23108)	Existing WSDOT ROW	NE Woodinville Drive and NB I-405, SE Corner Bothell Project	Estimated north to Sammamish River	Retaining wall, additional pavement, construct new bridge for NB off ramps	ALLSITES, CSCSL NFA	TPH-D	Soil	A heating oil UST was discovered during the I-405 Express Lanes Project when a drainage system was installed in 2015. The UST had leaked into the soil, and the petroleum contaminated soil was excavated and removed off-site. The site received an NFA in 2017.	Moderate	Develop GSPs and SPs to address risk of encountering contamination in work area during construction.
8	Chevron 93299 (94213842)	No	15900 116th Ave NE Bothell Adjoining to east of ROW, about 150 feet away from a proposed noise wall	West	Pavement resurfacing, noise wall	ALLSITES, CSCSL, ECHO, Financial Assurance, FINDS, HSL, ICR, LUST, Manifest, RCRA-LQG, UST	TPH-G, Benzene	Soil Groundwater	Gasoline service station in operation since 1987. In 1993, an LUST was reported. TPH-G and benzene found in soil and groundwater above CULs in 1995. Status is awaiting cleanup.	Low. Moderate risk if Project activities include excavation to groundwater level.	Conduct additional due diligence to determine current site status. Develop GSPs and SPs to limit dewatering and require assessment of any generated fluids prior to disposal.
9	Juno Therapeutics (former Sonus Pharmaceuticals Bothell) (28356548)	A	1522 217th Place SE Bothell Project	Estimated to south	Partial acquisition, pavement resurfacing, signage	ALLSITES, CSCSL NFA, Manifest, RCRA NonGen, VCP	Metals	Groundwater	Metals in groundwater confirmed above MTCA CULs. The site received an NFA in 2006. (Snohomish County parcel 27053000104100)	Low. Moderate impact risk if impacted groundwater still present on site.	Conduct additional due diligence to obtain information about contamination and cleanup to understand the magnitude and location of contamination. Based on additional information, a limited Phase II ESA may be recommended. Develop language as part of the property acquisition to limit liability. Develop GSPs and SPs to limit intrusive work.

Table 7. Recognized Environmental Conditions Summary Table

Site ID	Site (Facility Site ID)	Acquisition (A) or TCE	Site Address and Distance from Project	Groundwater Flow Direction	Planned/ Proposed Construction Activities	Databases	Contaminants of Concern	Impacted Media	Description	Likely Risk to Construction or WSDOT's Liability	Recommendations
10	Texaco Star Mart/Jacksons 616/Texaco #632321469/Shell 120531 (63265631)	No	11700 NE 160th Street Bothell Adjoining to east of ROW, 400 feet from I-405	Variable, but likely to southwest	Pavement resurfacing	ALLSITES, CSCSL, ECHO, FINDS, Historic Auto, ICR, LUST, Manifest, RCRA-NonGen, UST, VCP	TPH-G, TPH-D, BTEXN	Soil Groundwater	Site has been a gas service station since 1972. Leaks and spills from the USTs and pipes were reported to Ecology in 1991. In 1991, 1,740 cy of contaminated soil was excavated and removed. Contaminated soil remained, and groundwater was impacted. Additional investigations were conducted between 1992 and 2014. Groundwater depth varied between 9.95 to 39.8 feet bgs, with variable flow direction. Groundwater may migrate to storm water drainage swale, which is connected to a culvert which flows to the I-405 ROW to a bioswale. Site status is cleanup started.	Low. Moderate risk if Project activities include excavation to groundwater level.	Conduct additional due diligence to determine current site status. Develop GSPs and SPs to limit dewatering and require assessment of any generated fluids prior to disposal.
11	Autosmith/Bothell North/One Hour Electric (91249646)	No	2326 228th Street SE Bothell ~400 feet to northeast	Estimated north to Perry Creek	Pavement resurfacing and additional pavement	ALLSITES, Historic auto, Historic cleaner, UST	Potential HVOCs, TPH-D	Unknown	UST removed in 1978. Transmission repair shop from 2007 to 2009. Drycleaning from 2006 to 2011. No records of releases to soil or groundwater.	Low	No action. The site is 400 feet away from planned construction activities. .
12	Bang Property (59898498)	No	12631 & 12633 NE Woodinville Drive, Woodinville 0.31 miles to south	North-easterly to Sammamish River	None	ALLSITES, CSCSL, FINDS, HSL	TPH-G, TPH-D, BTEXN	Soil Groundwater	In 2001, petroleum contaminated soil was found in the ROW of NE Woodinville Drive. Two LUSTs from a former gasoline service station were removed in 2015 to minimize migration onto the down-gradient Ferndale Grain site. Contaminated soil was excavated and removed and biological treatment slurry was placed in the excavation. Confirmation samples indicated TPH and BTEXN still present in sidewalls. Groundwater was not tested, and is suspected of contamination. Status is cleanup started.	Low	No action. The site is more than 0.25 mile from planned construction activities. .

Table 7. Recognized Environmental Conditions Summary Table

Site ID	Site (Facility Site ID)	Acquisition (A) or TCE	Site Address and Distance from Project	Groundwater Flow Direction	Planned/ Proposed Construction Activities	Databases	Contaminants of Concern	Impacted Media	Description	Likely Risk to Construction or WSDOT's Liability	Recommendations
13	Bothell City Shop/Public Works UST 2391 (21681545) and City of Bothell King County parcel 0926059013	A	17555 120th Ave NE/17555 Brickyard Road NE, Bothell Project	Estimated north to Sammamish River	Partial acquisition, retaining wall, additional pavement, construct new bridge for NB off ramps, demolish a building Full Acquisition	ALLSITES, CSCSL NFA, ECHO, FINDS, ICR, LUST, RCRA-NonGen, UST	TPH-G, TPH-D, Benzene, Metals, Solvents	Soil	One diesel UST and one gasoline UST, installed in 1977, were removed from the site in July 1993 due to failing a tightness test. Leaking petroleum products contaminated the soil, and Ecology received notification of a LUST in 1993. Approximately 130 cubic yards of petroleum contaminated soil was removed in August 1993. Groundwater was reported as not affected. The site was cleaned up and received an NFA in 2012. If residual contamination is present, cleanup will be straightforward. (King County parcel 0926059001) King County parcel 0926059013: Adjoining parcel to Bothell City Shop parcel. Operational activities from Bothell City Shop may have occurred on this parcel.	Moderate	Conduct additional due diligence to determine current site status. Conduct a Phase II ESA to determine soil and groundwater quality at the site. As part of property acquisition, WSDOT would develop language for acquisition limiting liability. Develop GSPs and SPs to address risk of encountering contamination in work area. Building assessments for asbestos and lead based paint is required as part of WSDOT's ROW acquisition process.
14	Ferndale Grain Woodinville (32147851)	No	12800 NE Woodinville Drive Woodinville 0.25 miles to southeast	Northeasterly to Sammamish River	Stormwater treatment	ALLSITES, CSCSL	TPH-O, TPH-G, TPH-D, Benzene, Xylenes	Soil Groundwater	The site was historically operated as a feed mill, until 1997. Subsurface soil and groundwater investigations in 1994 and 1995 were followed by installation of in-situ remediation system in 1996 which has been continuously operating. An upgradient off-site source from LUSTS at a former gasoline station (Bang Property, currently Twisted Cafe) has continued to impact the site. Ferndale removed the LUSTs from the off-site source in 2015 and has conducted quarterly groundwater monitoring. Status is cleanup started.	Low	No action. The site is 0.25 mile from planned construction activities.

Table 7. Recognized Environmental Conditions Summary Table

Site ID	Site (Facility Site ID)	Acquisition (A) or TCE	Site Address and Distance from Project	Groundwater Flow Direction	Planned/ Proposed Construction Activities	Databases	Contaminants of Concern	Impacted Media	Description	Likely Risk to Construction or WSDOT's Liability	Recommendations
15	Securite Gun Club/Dirt Lorde Property (11796)	No	12024 Woodinville Drive Bothell 150 feet to south	North and west to Sammamish River	Stormwater treatment, stream alignment north of Sammamish River	ALLSITES, CSCSL NFA, NPDES	TPH-D, TPH-O	Soil Groundwater	Releases of heating oil to soil and groundwater were found in 2016. Remediation conducted in 2017 removed impacted soil and groundwater. Three monitoring wells were installed in 2017 and groundwater was measured between 9.67 and 18.23 feet bgs in perched groundwater lenses. Following remediation, soil and groundwater concentrations of TPH-D and TPH-O were below applicable MTCA CULs. The site received an NFA in 2017.	Low	No action. The site is 150 feet from planned construction activities.
16	Siemens Transmission/ Cepheid Bothell (3322)/Terminix Branch 2141 (11122292)	A	22121 17th Ave SE Bothell Project	Estimated south to Queensborough Creek	Partial acquisition, additional pavement	ALLSITES, ASBESTOS, ECHO, FINDS, Historic auto, Manifest, NPDES, RCRA-NonGen	Potential TPH, solvents, pesticides	Unknown	Two buildings were constructed in 1985 with several commercial businesses in operation. Siemens transmission repair shop operated from 2001 to 2004. Terminix, a pest control company, operated from at least 2000 to 2002. Cepheid, a molecular diagnostics company, was located at the same address. There has been no indication of releases of hazardous materials to soil or groundwater. ACM removed during remodeling of one of the buildings in 2017. (Snohomish County parcel 27053000403900)	Low	Conduct additional due diligence to determine current site status. As part of property acquisition, WSDOT would develop language for acquisition limiting liability.
17	Snohomish County Fire Station 45 (97654)	No	1608 217th Place SE Bothell Adjacent	Estimated west towards North Creek	Additional pavement/ sidewalk	ALLSITES, UST	Potential TPH	Unknown	Two USTs removed in 1996. No releases reported.	Low	No action. The site is 150 feet from planned construction activities.
18	Tan & Yang Property (8389076)	No	727 228th Street SE Bothell 0.28 mile to west	Estimated to east and northeast to Perry Creek	None	ALLSITES, CSCSL	TPH	Soil Groundwater	Private residence. TPH was confirmed in soil and suspected in groundwater in 2006. Status is awaiting cleanup.	Low	No action. The site is located more than 0.25 mile from planned construction activities.

ACM = asbestos containing material; AST = aboveground storage tank; bgs = below ground surface; BTEXN = benzene, toluene, ethylbenzene, and total xylenes; CUL = cleanup levels; GSP= General Special Provision; HVOCs = halogenated volatile organic compounds; LUST = leaking underground storage tank; MTCA = Model Toxics Control Act; NFA = no further action; PCE = tetrachloroethene; ROW = right of way; SP=Special Provision; SVE = soil vapor extraction; TPH-D = total petroleum hydrocarbons as diesel; TPH-G = total petroleum hydrocarbons as gasoline; TPH-O = total petroleum hydrocarbons as heavy oil; UST = underground storage tank; VCP = voluntary cleanup program

ATTACHMENTS

Attachment A – Site Reconnaissance Photographs
Attachment B – Site Assessment Report, EDR (CD only)
Attachment C – Historical Aerial Photographs, EDR and Topographic Maps, USGS
Attachment D – Applicable Laws, Regulations and Required Permits

ATTACHMENT A – SITE RECONNAISSANCE PHOTOGRAPHS

Photograph 1 – View of Chevron 93299 cleanup site at 15900 116th Avenue NE, Bothell, looking west. Note monitoring well monument.

Photograph 2 – View of Jackson's Shell 120531 cleanup site at 11700 NE 160th Street, Bothell, looking north.

Photograph 3 – Abandoned Burlington Northern Santa Fe (BNSF) railroad tracks in Woodinville, looking west.

Photograph 4 – BNSF right-of-way, looking west toward I-405/SR 522 interchange in background.

Photograph 5 – Trash along Sammamish River bank, with SR 522 ramp in background. Note the Sammamish River bike trail and stormwater outfall in background.

Photograph 6 – View of powerlines and petroleum pipeline crossing of Sammamish River, looking north. SR 522 is in background.

Photograph 7 – View of new construction of Beardslee South Townhouses, looking north.

Photograph 8 – View of I-405/SR 527 interchange from pedestrian bridge, looking north. Stormwater detention pond and minor debris can be observed.

ATTACHMENT B – SITE ASSESSMENT REPORT, EDR (CD ONLY)

Available upon request

ATTACHMENT C – HISTORICAL AERIAL PHOTOGRAPHS, EDR, AND TOPOGRAPHIC MAPS, USGS

Available upon request

ATTACHMENT D – APPLICABLE LAWS, REGULATIONS AND REQUIRED PERMITS

Numerous federal, state, and local regulations and policies govern decisions concerning hazardous materials issues. A standard list of federal and state regulations that apply to the majority of WSDOT projects is provided below.

Federal Regulations

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Superfund Amendments and Reauthorization Act
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act (TSCA)
- Occupational Safety and Health Act (OSHA)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- National Environmental Policy Act (NEPA)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Endangered Species Act (ESA)
- Federal Highway Administration, Technical Advisory

Washington State Regulations

- Model Toxics Control Act (MTCA)
- Dangerous Waste Regulations
- Solid Waste Regulations
- Underground Storage Tank (UST) Regulations
- Washington State Environmental Policy Act (SEPA)
- Water Pollution Control Act
- Washington Industrial Safety and Health Act (WISHA)
- WSDOT Environmental Procedures Manual M 31-11