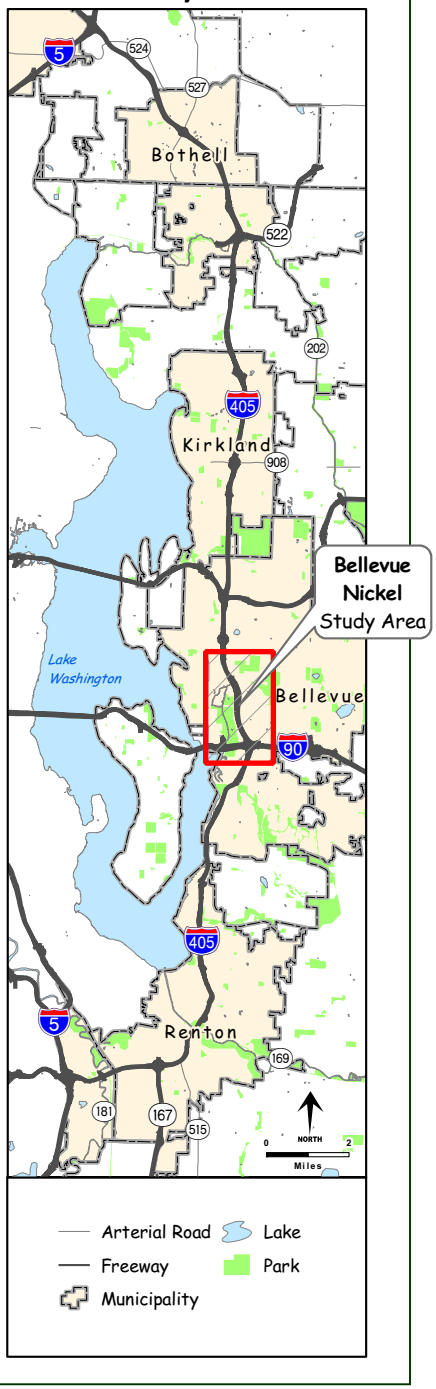
I-405 Bellevue Nickel Improvement Project
I-90 to Southeast 8th Street

INTERSTATE 405 Corridor Program
Congestion Relief & Bus Rapid Transit Projects

HISTORIC, CULTURAL, AND ARCHEOLOGICAL
DISCIPLINE REPORT

January 2006

I-405 Project Area



Washington State Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

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Glossary

A-weight	A standard frequency weighting that simulates how humans perceive sound.
adverse effect	An effect to an historic property that alters the characteristics of a property that qualifies it for the National Register of Historic Places in such a way that its eligibility for the National Register would be diminished.
anadromous fish	Fish such as salmon that are born in freshwater streams, rivers or lakes, spend their adult phase in the ocean, and return to their natal waters to spawn.
area of potential effect (APE)	This is the area in which historic properties, if they are present, could be affected by the project either directly or indirectly.
best management practice (BMP)	BMPs are generally accepted techniques that, when used alone or in combination, prevent or reduce adverse effects of a project. Examples include erosion control measures and construction management to minimize traffic disruption. Please see Appendix A for a complete list of BMPs.
channelization	Structural alteration made to a stream's channel in order to increase water flow and thus prevent it from flooding; usually involves cutting off meanders to straighten a stream.
cultural resource	Districts, sites, buildings, structures, objects, people, documents, and traditional places that may be important in American history or prehistory.
decibel	Ten times the base 10 logarithm of sound pressure divided by the reference sound pressure of 20 micro Pascals.
equivalent noise level (L_{eq})	The equivalent steady-state sound level in A-weighted decibels for a stated period of time, which contains the same acoustic energy as the actual time-varying sound level for the same period of time.
glaciation	The process of ice growth and retreat within a glacier.
historic property	A cultural resource that is on or eligible for the National Register of Historic Places.
high probability/sensitivity areas	Areas where archaeological remains are most likely to be present. These have been identified as terraces and floodplains of perennial streams and lakes with a gentle topography, well drained, and free of modern disturbances.
low probability/sensitivity areas	Areas where archaeological remains are unlikely to be present. These have been identified as areas relatively far from perennial water sources, of steep topography, poorly drained, and/or containing evidence of modern disturbances.
midden	Area of prehistoric or historic refuse characterized by organic materials such as shells.
moderate probability/sensitivity areas	Areas where archaeological remains may be present. These have been identified as areas of gentle to no slope that are relatively close to a perennial water source and free of modern disturbances.
National Register of Historic Places	A list of properties maintained by the National Park Service that are determined to be of historic, cultural, architectural, archaeological, or engineering significance.

Glossary

noise abatement criteria (NAC)	Noise regulations and guidelines are the basis for evaluating potential noise effects. For state and federally funded highway projects, traffic noise effects occur when predicted noise levels approach or exceed the NAC established by the FHWA.
sedentism	This is the act of becoming sedentary. In an archaeological context, this refers to the trend through time of Native groups moving from site to site less frequently throughout the year.
shovel probe	Used to test the APE for archaeological remains occurring below the surface at the Phase I level of survey. Shovel probes are placed at consistent intervals throughout an APE as a means to systematically sample the subsurface of an APE for archaeological remains.
shovel testing	The act of using shovel probes to sample an APE for archaeological remains.
undertaking	A project that is funded or permitted by a federal agency or on federal land that has the potential to affect historic properties.
Vashon Stade	The most recent Pleistocene glacial advance and retreat in the Puget Sound region occurring approximately 14,000 years ago.
vernacular	A local or regional manifestation of a general architectural style.
Wolman salts	A process for wood preservation developed in the early twentieth century.

Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
APE	area of potential effect
BMP	best management practice
BNSF	Burlington Northern Santa Fe
CFR	Code of Federal Regulations
DAHP	Department of Archaeology and Historic Preservation
dBA	A-weighted decibels
EA	environmental assessment
EIS	environmental impact statement
FEIS	final environmental impact statement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GLO	General Land Office
HOV	high-occupancy vehicle
I-405	Interstate 405
I-90	Interstate 90
KCC	King County Code
L_{eq}	equivalent A-weighted sound level
NAC	noise abatement criteria
NB	northbound
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
ROD	record of decision

Acronyms and Abbreviations

SEPA	State Environmental Policy Act
TCP	traditional cultural property
WHR	Washington Heritage Register
WSDOT	Washington State Department of Transportation

Introduction

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

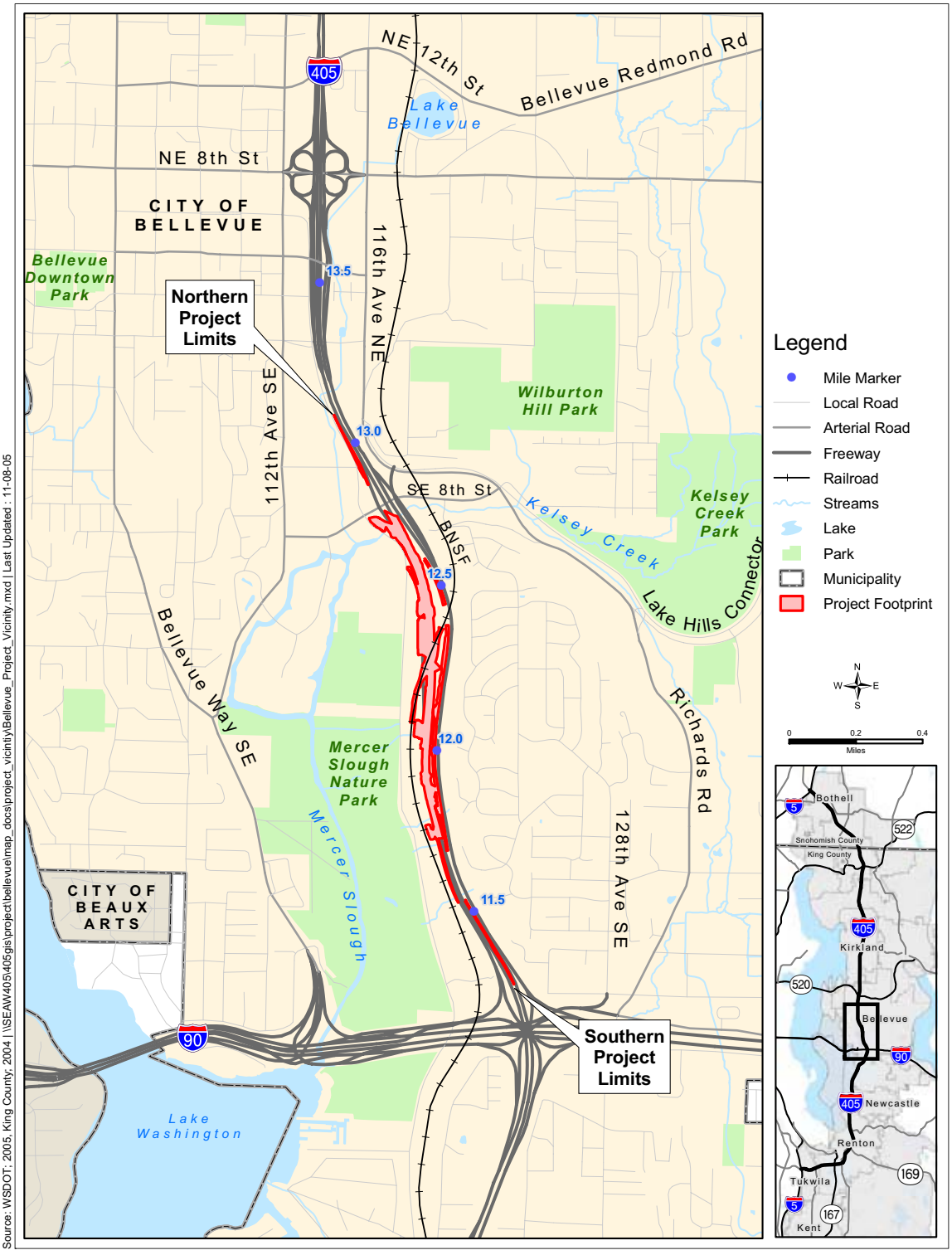
The ROD selected a project alternative that would widen I-405 by as many as two lanes in each direction throughout its 30-mile length. The ultimate configuration of the selected alternative includes buffers separating general-purpose lanes from parallel high-occupancy vehicle (HOV) lanes (potentially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

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

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

Traffic moving along I-405

Exhibit 1. Project Vicinity Map



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

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

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

What alternatives do we analyze in this discipline report?

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

What is the No Build Alternative?

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

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

What are the principal features of the Build Alternative?

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

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

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

Improvements to Southbound I-405

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

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

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

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

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

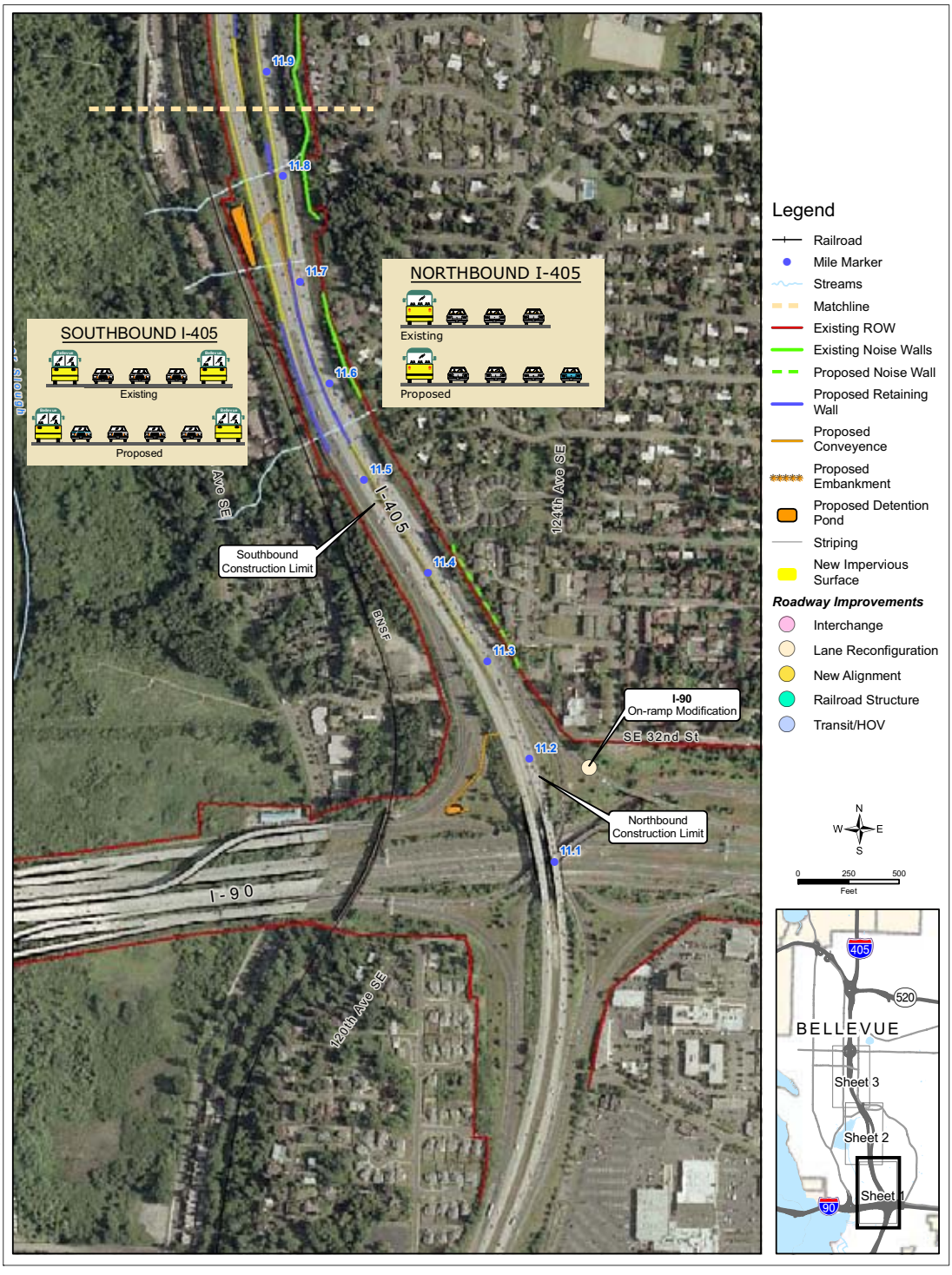


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Exhibit 3. Proposed Bellevue Nickel Project Improvements (Sheet 2 of 3)

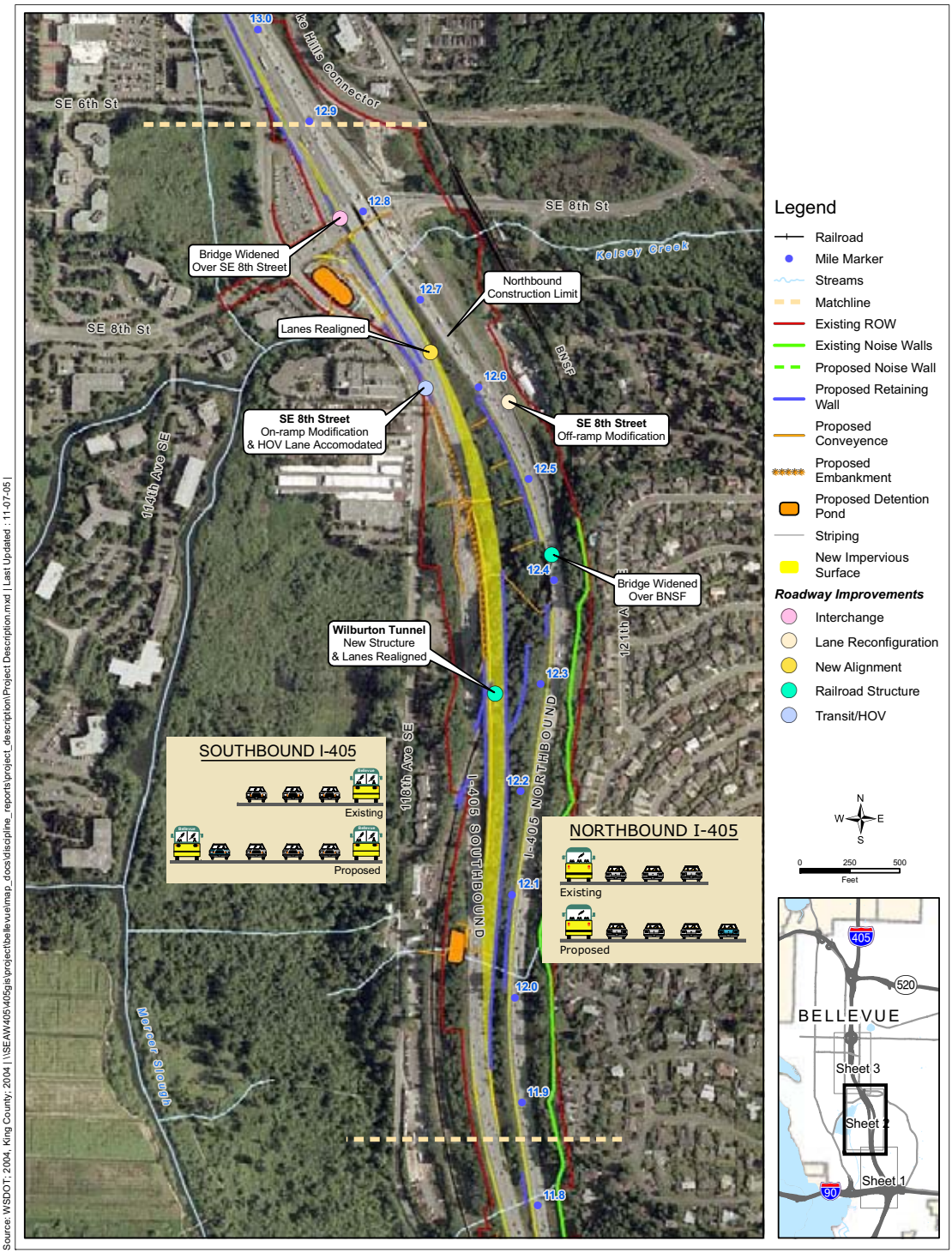

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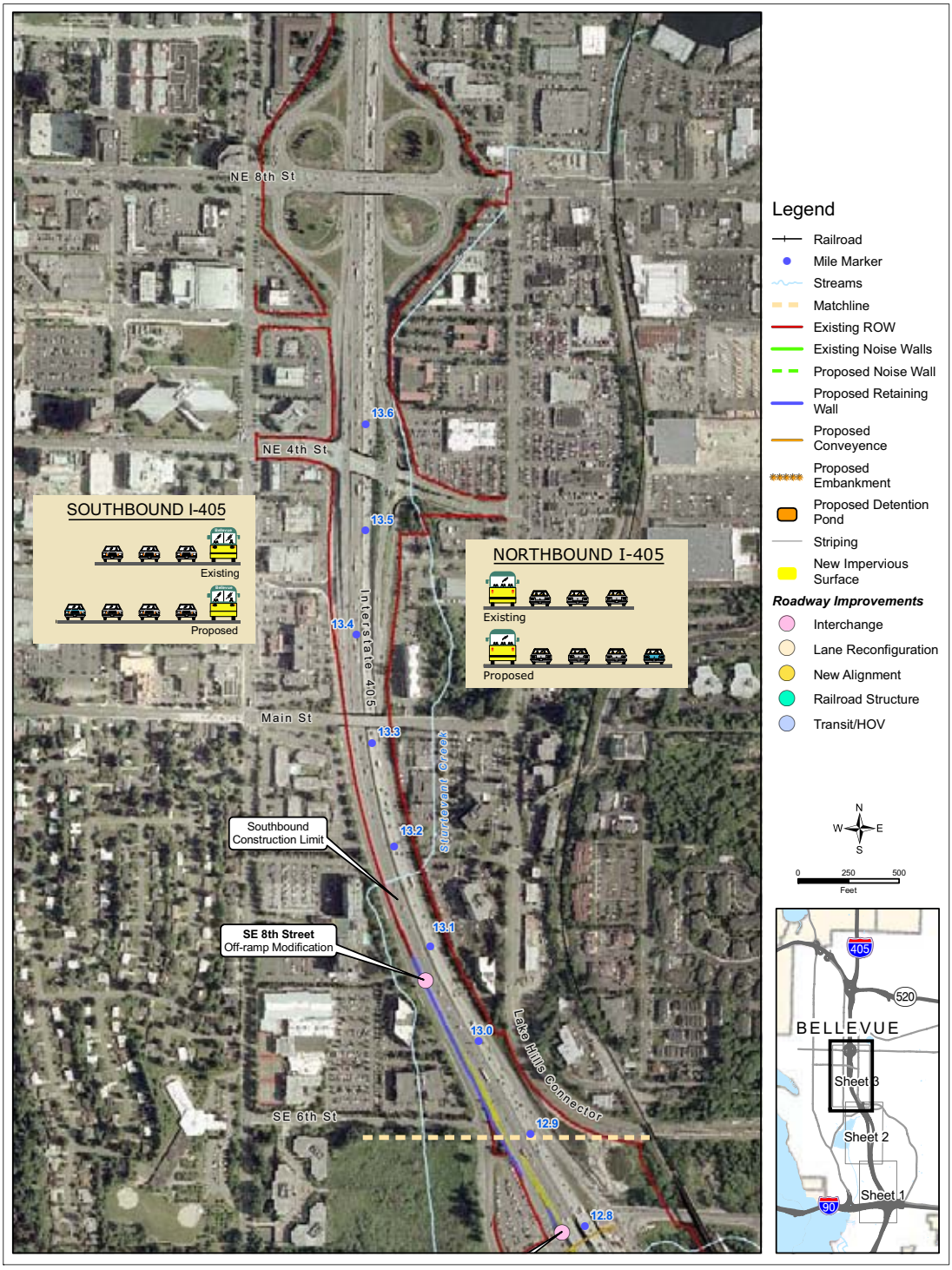
Exhibit 4. Proposed Bellevue Nickel Project Improvements (Sheet 3 of 3)



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

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

Improvements to Northbound I-405

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

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

Additional improvements include:

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

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

Improvements to the Stormwater Management System

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

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

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

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

Best Management Practices (BMPs)

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

Standard WSDOT Procedures

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

Avoidance and Minimization Measures

WSDOT will use Best Management Practices (BMPs), Standard WSDOT Procedures, and design elements to avoid or minimize potential effects to the environment for the Bellevue Nickel

Improvement Project. Collectively, these measures to avoid or minimize potential effects to the environment are known as "avoidance measures." We describe these measures in more detail in an Appendix A. If the Bellevue Nickel Improvement Project has additional effects not addressed in the avoidance measures, we will address these measures through mitigation.

Wetland and Stream Mitigation Sites

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

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

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

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

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

Exhibit 5. Proposed Wetland Mitigation Area

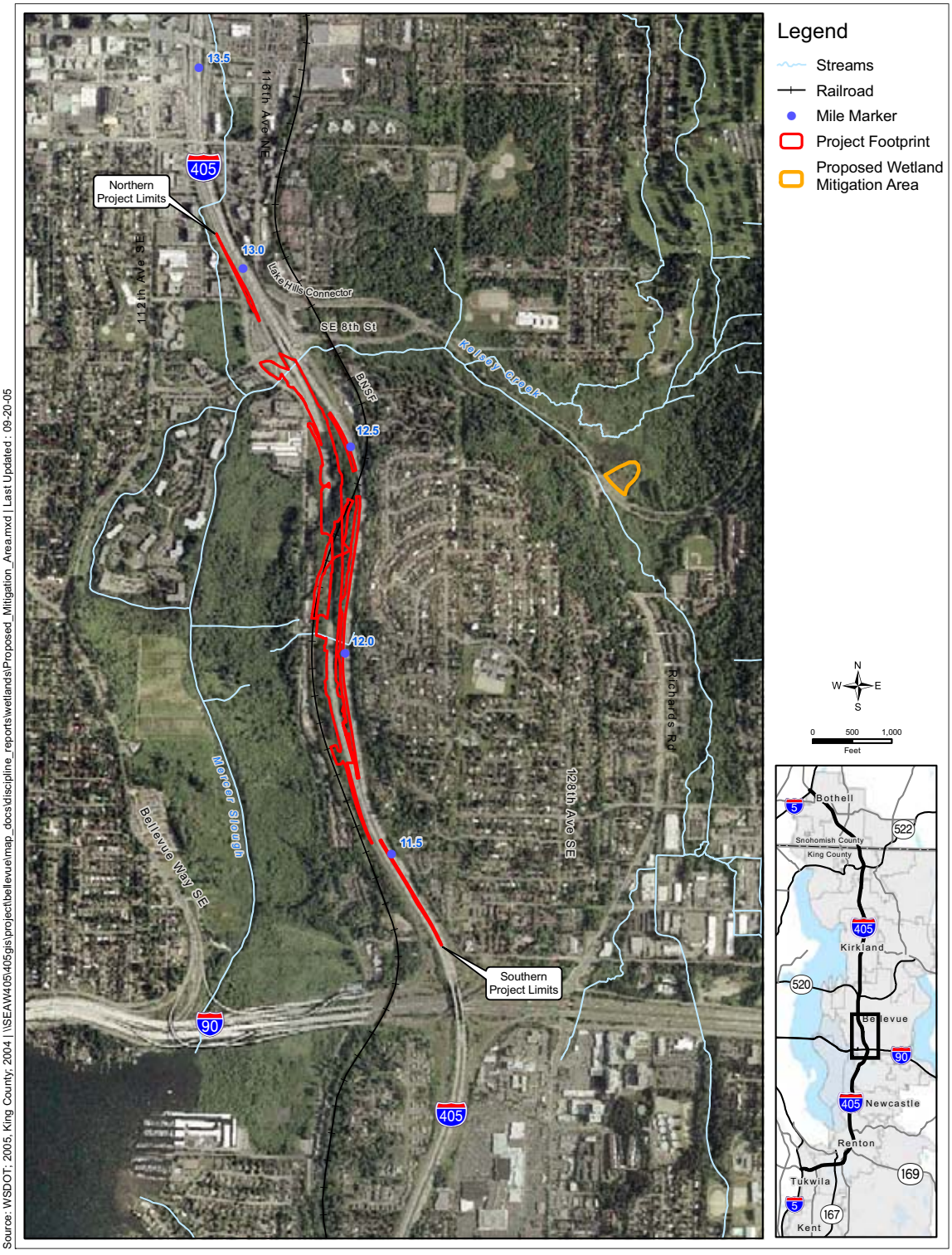

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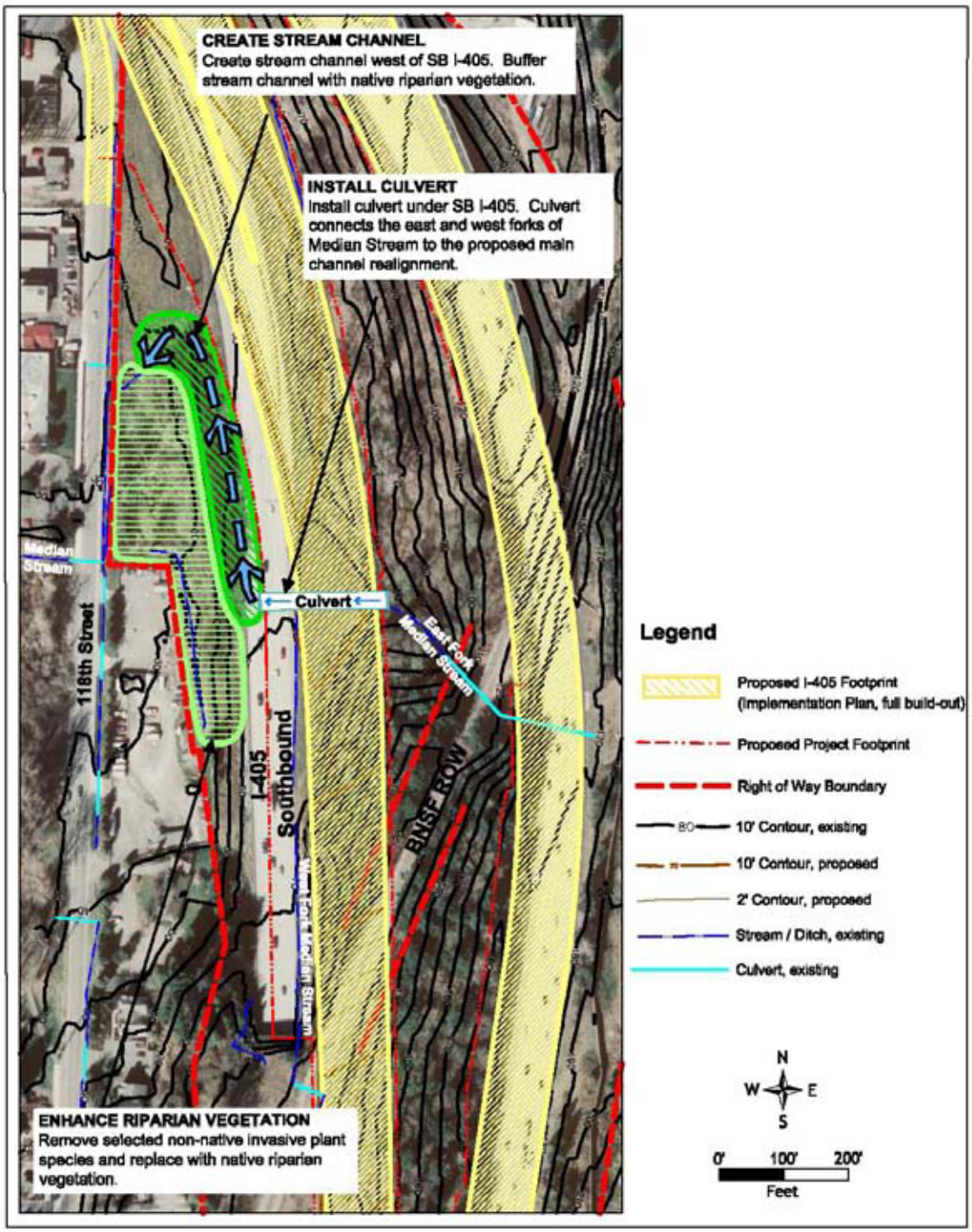
Exhibit 6. Conceptual Stream Mitigation Plan



Why do we consider cultural resources as we plan this project?

Cultural resources refer to places, things, and human institutions that provide information about people from the past, their experiences, and their cultural identities. Cultural resources can include archaeological sites, cultural landscapes, spiritual places, people, documents, districts, sites, buildings, objects, and structures. Cultural resources can indicate or provide evidence of historic events and trends. They provide tangible evidence of people's lives and significant accomplishments and reflect significant, distinctive, and vernacular architectural, landscape, and engineering designs. Cultural resources can also contain important information for future academic research. Cultural resources can convey important aspects of our history to present and future generations.

Several interrelated federal, state, and local laws and regulations require, and provide guidance for, consideration of how development projects might "adversely affect" cultural resources. WSDOT used the following federal, state, and local regulations to determine whether the project would affect cultural resources.

Federal Regulation

The National Historic Preservation Act (NHPA) of 1966, as amended, essentially linked all previous historic preservation legislation and authorized the National Park Service (NPS) to expand and maintain a "National Register of Historic Places" (NRHP), including properties of local, state, and national historic, archaeological, cultural, and architectural significance. It also established the Advisory Council on Historic Preservation (ACHP) to advise the President and Congress and to revise federal and federally assisted programs. Section 106 of the NHPA requires federal agencies to take into account how their undertaking will affect historic properties and to allow the ACHP, the appropriate State Historic Preservation Office, and all interested parties an opportunity to comment before the undertaking occurs. The Code of Federal Regulations (CFR), in particular 36 CFR 800, provides specific guidance for following the Section 106 process.

The Section 106 process encourages close cooperation with the NEPA, which also requires federal agencies to consider the effect of a project on sensitive environment resources, including

What types of cultural resources are King County Landmarks, State Heritage Register resources, or National Register of Historic Places resources?

While there are different processes for determining the significance of a resource at the county, state, or national level, King County, Washington State and the federal government (36CFR60) have similar criteria for determining the significance of a cultural resource. In general, the resource must:

- Be a building, site, structure, object, or district and;
- Be at least 40 years of age (50 for the National Register) and;
- Meet 1 of 4 criteria including:
  - Association with locally, regionally, or nationally important events or broad patterns of history or;
  - Association with locally, regionally, or nationally important people or;
  - Association with locally, regionally, or nationally important architects or architectural styles or;
  - Contain important research potential.

Possess integrity of location, design, setting, materials, workmanship, feeling, and association.

What is the Section 106 process?

The Section 106 process refers to the process by which federal agencies consider whether an undertaking will have an effect on historic properties. Guidance for this process has been codified in 36 CFR 800. There are several key components of the Section 106 process including:

- Determine participants
- Determine whether undertaking may affect historic properties
- Determine APE
- Consult with participants and interested parties
- Identify historic properties
- Assess effects
- Resolve adverse effects
- Set documentation standards
- Provide for emergency and post-review discoveries

cultural resources. Section 4(f) of the Department of Transportation Act of 1966 and its implementing regulations apply to projects requiring approval by an agency of the Department of Transportation, including FHWA. This regulation requires projects to consider prudent and feasible alternatives to "use" of an historic property. Use is broadly interpreted as an adverse effect, although some adverse effects do not constitute use.

State Regulation

Washington's State Environmental Policy Act (SEPA) requires environmental compliance at the state level and closely resembles NEPA. It requires that properties listed in or eligible for the Washington Heritage Register (WHR) be taken into account when state agency-enabled undertakings affect properties of historic, archaeological, scientific, or cultural importance (WAC 197-11-960). The WHR is the state equivalent of the NRHP and sets forth similar criteria in the evaluation of cultural resources. The WHR, which is administered by the Department of Archaeology and Historic Preservation (DAHP), identifies and records significant historic and prehistoric resources at the state level. Any National Register eligible property is automatically eligible for the WHR, and resources that are on the Washington Heritage Register should be considered NRHP-eligible for the purposes of compliance with Section 106 in Washington State.

County Regulation

Properties within the unincorporated areas of King County may be designated and protected as King County landmarks under the King County Historic Preservation Program by the King County Landmarks and Heritage Commission. The Commission was created through a landmarks ordinance, King County Code (KCC) 20.62, adopted by the King County Council in 1980, which also provides controls to preserve historic sites in unincorporated King County. The County revised the program in 1995 to include broader incentives to encourage property owners to rehabilitate historic properties and to conserve historically significant landscapes including archaeological sites and historic agricultural properties. Through the adoption of interlocal ordinances, the Commission currently acts as a municipal landmarks board for 14 cities and towns, including the City of Bellevue, that have made agreements with the county for preservation services (e.g., historic survey and inventory).

What are the key points of this report?

One neighborhood within the I-405 Bellevue Nickel Improvement Project APE, Norwood Village, is potentially eligible for listing as an historic district in the NRHP. Our research did not reveal any recorded archaeological or ethnographic sites in the APE. However, there are a few areas within the project APE where archaeological resources may be present but we considered them to be of moderate probability for containing archaeological resources. If crews encounter archaeological resources in the course of construction activities, we may need to conduct additional studies to evaluate their eligibility for the NRHP and to develop appropriate mitigation if the resource is found to be NRHP-eligible.

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