

CHAPTER 4

What are the project's principal features?

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 Southeast 8th Street (see Exhibit 1-1). We will generally use the inside or “median” side of I-405 for construction. The project also includes new stormwater management facilities and drainage structures and systems.

Other project activities include developing off-site wetland mitigation as well as on-site stream mitigation areas. We expect project construction to begin in spring 2007 and the improved roadway to be open to traffic by fall 2009. This project will be constructed under a design build contract. A design-build contract provides the contractors flexibility to offer innovative and cost-effective alternatives to deliver the project while complying with all WSDOT design standards, performance measures, and activities to avoid or minimize effects to the environment will be met. Specifics to the project like construction phasing, how the construction will occur, and staging areas will be determined by the design/builder.



Traffic moving along I-405

Improvements to Southbound I-405

In the southbound direction, we plan to add one new travel lane from approximately Southeast 8th Street to I-90 (Exhibit 4-1). In addition, we will extend the existing outside southbound HOV lane at I-90 northward so that it begins at the on-ramp from Southeast 8th Street.

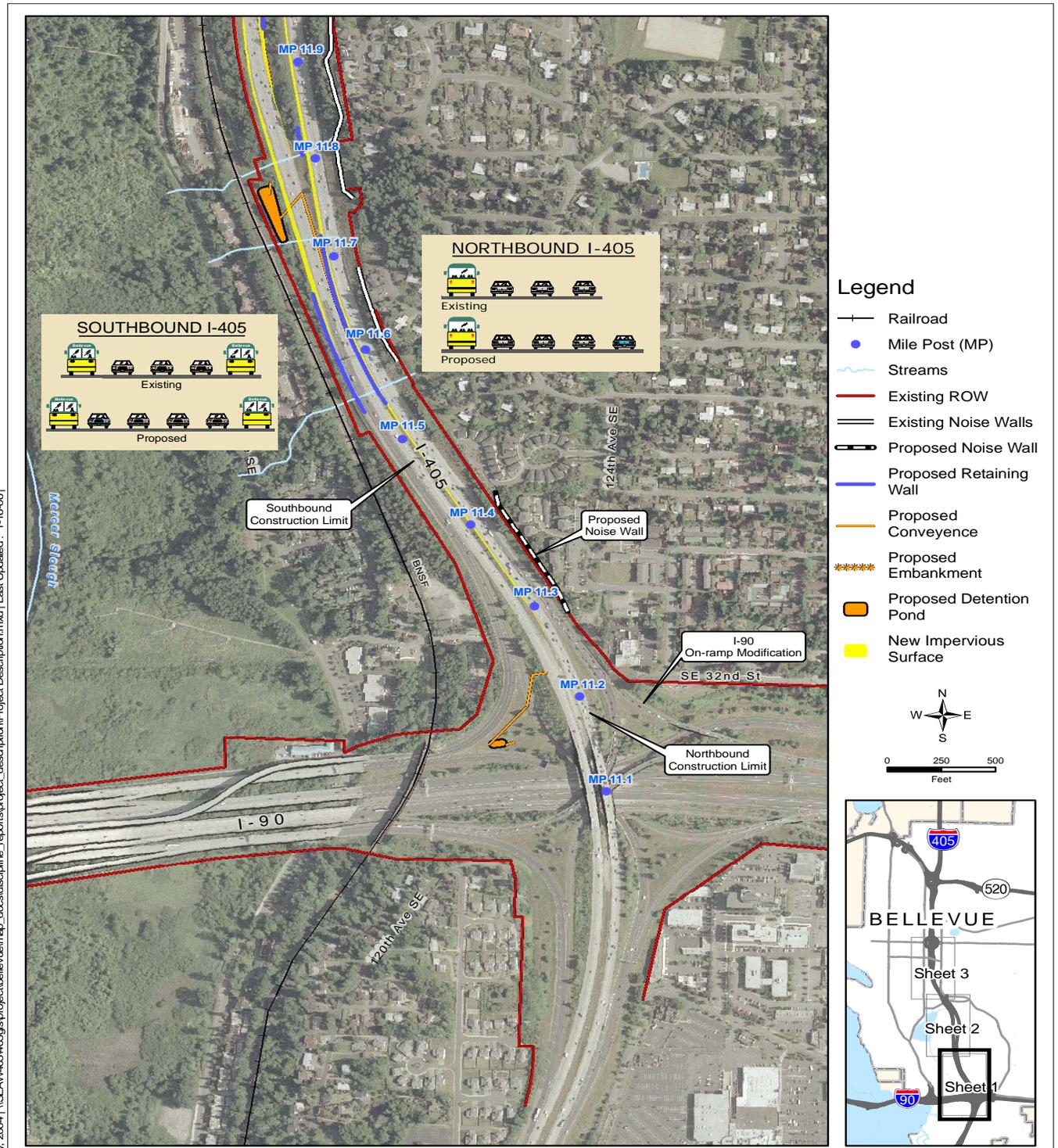
To add these lanes and maintain traffic flow during construction, we will shift approximately 3,000 feet of the southbound roadway as much as 200 feet east into the existing median.

The relocated southbound roadway will connect to the existing southbound travel lanes just north of the I-90 interchange, and south of the existing bridge over Southeast 8th Street.

- We will build a new tunnel underneath the BNSF railroad, just east of the existing Wilburton Tunnel, to accommodate the relocated and widened southbound roadway. The existing tunnel does not have the capacity to accommodate additional lanes of southbound traffic.

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

Exhibit 4-1. Proposed Bellevue Nickel Project Improvements (Sheet 1 of 3)



Source: WSDOT, 2004. \\SEA\405\05\gis\project\bellevue\map_docs\discipline_reports\project_description\Project Description.mxd | Last Updated: 1-16-06

Southbound Improvements

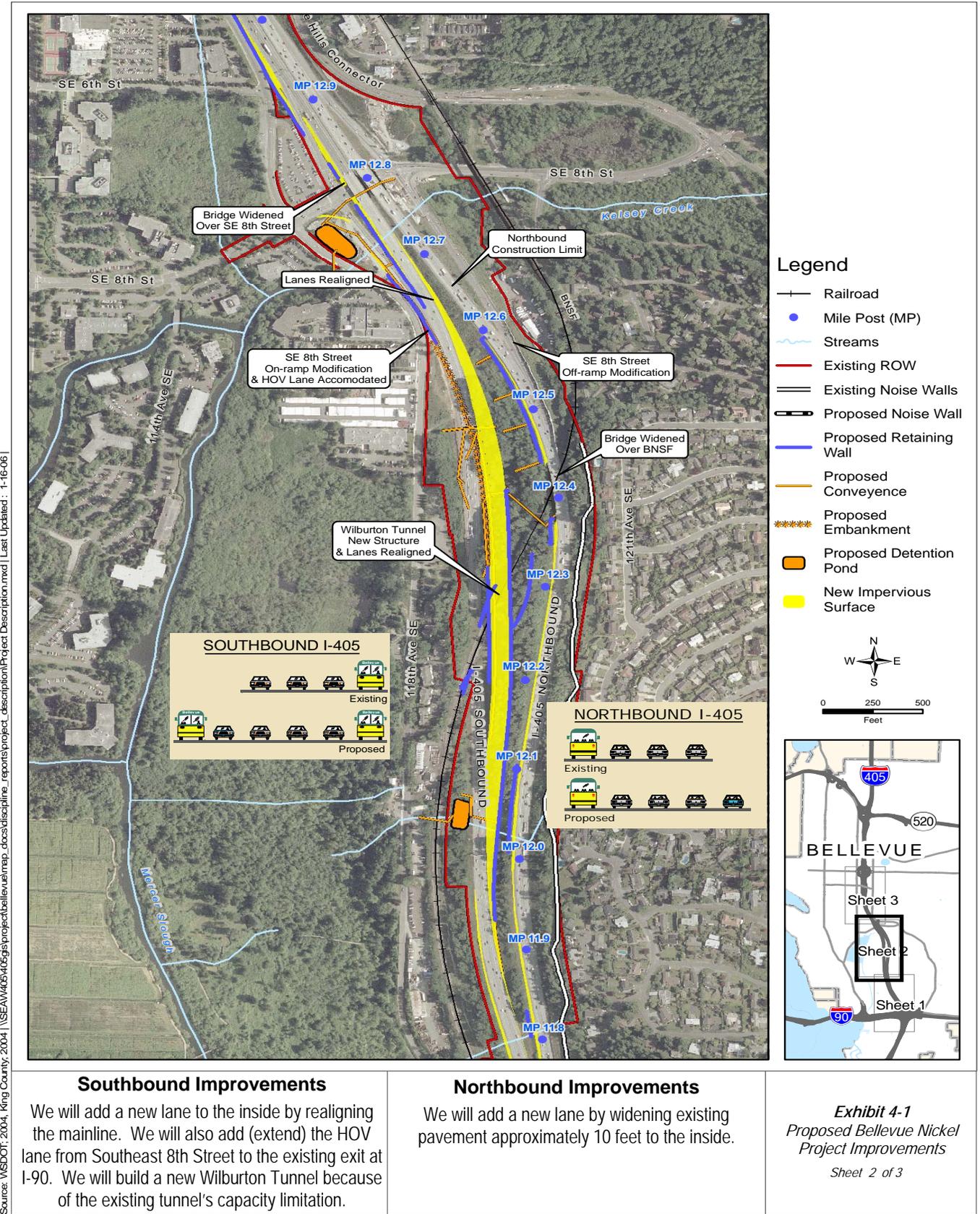
We will add a new lane to the outside by widening existing pavement approximately 20 feet. We will also extend the HOV lane that exits to I-90 northward to Southeast 8th Street.

Northbound Improvements

We will add a new lane by widening existing pavement approximately 10 feet to the inside and by re-striping the I-90 to I-405 connection.

*Exhibit 4-1
Proposed Bellevue Nickel
Project Improvements
Sheet 1 of 3*

Exhibit 4-1. Proposed Bellevue Nickel Project Improvements (Sheet 2 of 3)



Source: WSDOT, 2004; King County, 2004 | \\SEA\W405\405gis\project\bellevue\map_docs\discipline_reports\project_description\Project_Description.mxd | Last Updated: 1-16-06 |

Exhibit 4-1. Proposed Bellevue Nickel Project Improvements (Sheet 3 of 3)



Southbound Improvements

We will reconfigure the ramp to Southeast 8th Street to improve access.

Northbound Improvements

We propose no changes for this section of the interstate.

*Exhibit 4-1
Proposed Bellevue Nickel
Project Improvements
Sheet 3 of 3*

Source: WSDOT, 2004, King County, 2004 | \\SEAW405\405gis\project\bellevue\map_docs\discipline_reports\project_description\Project_Description.mxd | Last Updated: 1-16-06 |

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

The project will also include the following improvements:

- Modify the existing off-ramp at Southeast 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 southbound travel lanes and the off-ramp at Southeast 8th Street.
- Widen the existing bridge over Southeast 8th Street to the west to accommodate the new southbound lane.
- Modify the existing on-ramp at Southeast 8th Street to tie into the relocated southbound general-purpose travel lanes.
- Reconfigure the on-ramp at Southeast 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 southbound travel lanes.
- Use context sensitive solutions (CSS) to unify the new structural elements added by the project with the existing visual environment. Use surface treatments to add texture and interest to retaining walls, widened bridges, freeway lighting, and signage.

Context Sensitive Solutions is a term used to describe a collaborative, approach whereby a transportation facility is designed with extensive input from the public to fit its physical setting.

Improvements to Northbound I-405

In the northbound direction, we plan to add one new travel lane from approximately I-90 to Southeast 8th Street (Exhibit 4-1). We will add one new lane to the northbound ramp from I-90. We will shift the northbound lanes to allow all of the widening to occur on the inside, or median side of the existing roadway.

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

Additional improvements include:

- Re-stripe the westbound/eastbound I-90 on-ramp to northbound I-405 so that one lane becomes two lanes in the northbound direction.
- Widen, shift, and re-stripe northbound I-405 travel lanes north of I-90 to allow the westbound I-90 to northbound I-405 on-ramp and the eastbound I-90 to northbound 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.
- Widen the existing bridge over the BNSF railroad to the west to accommodate the new northbound lane.
- Modify the northbound off-ramp to Southeast 8th Street to make it a single-lane “exit-only” off-ramp.
- Transition the northbound travel lanes back into the existing lane configuration before crossing over Southeast 8th Street.

Improvements to the Stormwater Management System

Managing stormwater for the 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 study area before discharging it. We will improve this condition by treating 17 percent more area than the new paved surface area we create. Treating a larger area enables us to remove pollutants from a portion of the existing roadway as well as from newly constructed areas. We achieve the added benefit of improved flow control.

Reconfiguration and new construction associated with the southbound 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 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 right of way.

We will construct three new stormwater ponds (detention ponds combined with stormwater treatment wetlands) as part of the project and enlarge an existing stormwater pond at Southeast 8th Street. Two of the new ponds will be located south of the Wilburton Tunnel between the southbound lanes and the BNSF railroad right of way. 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.

Avoidance and Minimization Measures

We will use best management practices (BMPs), WSDOT Standard Specifications, and design elements to avoid or minimize potential effects to the environment from the Bellevue Nickel Improvement Project. We refer to measures that avoid or minimize potential effects to the environment as “avoidance measures.” We describe these measures in more detail in Appendix B. If the Bellevue Nickel Improvement Project has additional effects not addressed in the avoidance measures, we will address these effects 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 at a mitigation site located within the boundaries of Kelsey Creek Park (Exhibit 4-2). Our general concept will be to create a new wetland area that naturally transitions from forested land next to the Lake Hills Connector to wetlands within Kelsey Creek Park. We will remove soil from within this area to create wet conditions favorable for wetland vegetation. This approach will create a wetland of higher functional value and greater area at Kelsey Creek Park than the wetland area affected by the Bellevue Nickel Improvement Project.

Our preliminary stream mitigation plan includes both on-site stream creation and streamside vegetation enhancement. Specifically, proposed elements include:

- Approximately 500 linear feet of new stream channel between southbound I-405 and 118th Avenue Southeast.

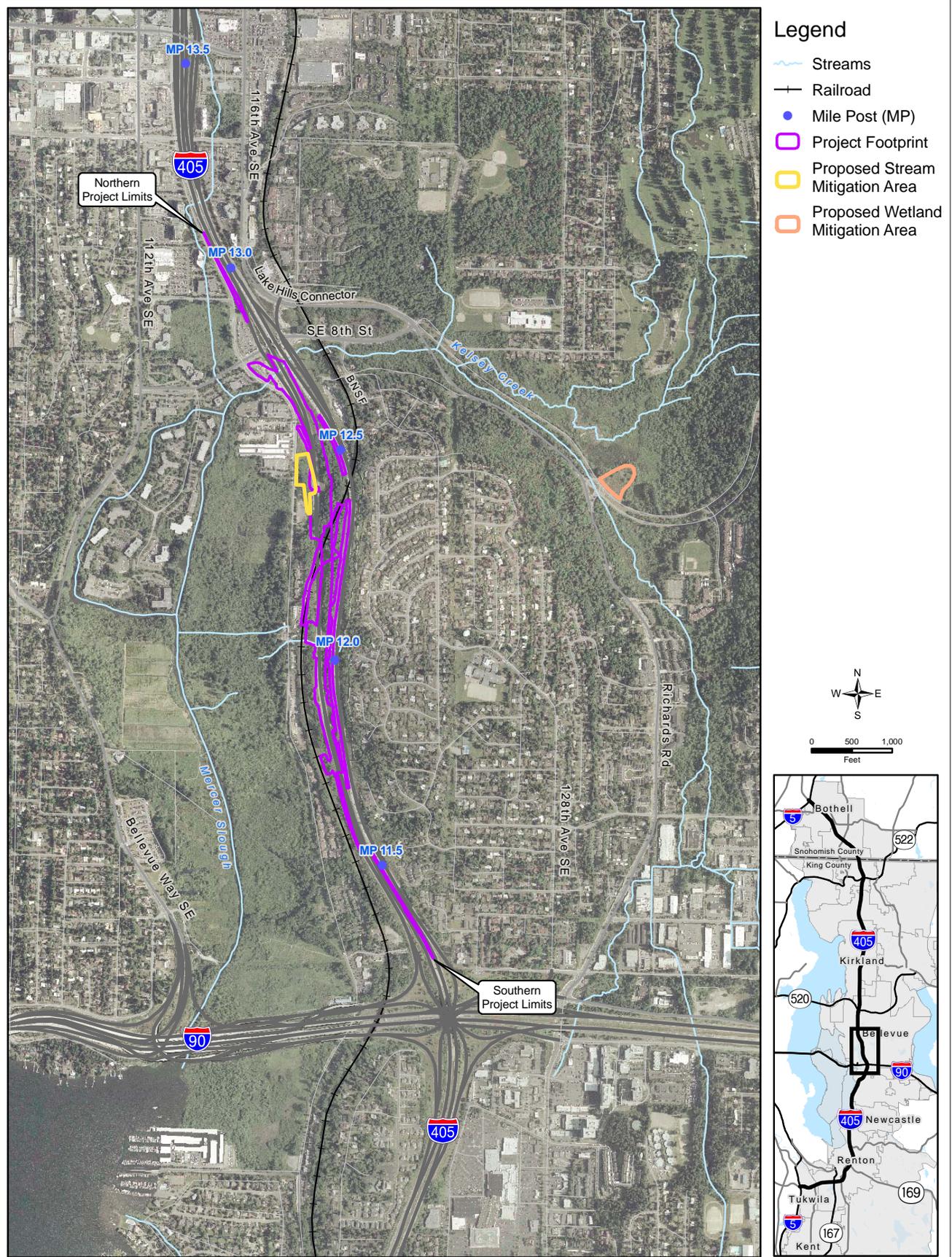
Best Management Practices (BMPs)

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 B for a complete list of BMPs.

WSDOT Standard Specifications

Guidelines and procedures established by WSDOT for roadway design and construction.

Exhibit 4-2. Proposed Wetland and Stream Mitigation Areas



- Just over an acre of new streamside vegetation along the newly created stream channel.
- Just under an acre of enhanced stream buffer created by removing non-native plant species and replanting with native streamside vegetation.

Sections 5.4, “Surface Water, Water Quality, and Floodplains,” and 5.6, “Wetlands” provide further details on the mitigation efforts associated with the Bellevue Nickel Improvement Project. We also include the full text of these discipline reports as Appendices N and R to this report.