I-405, Bellevue to Lynnwood Improvement Project

INTERSTATE 405 **Corridor Program**

Congestion Relief & Bus Rapid Transit Projects

ENVIRONMENTAL ASSESSMENT

May 2011

Washington State Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

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I-405, BELLEVUE TO LYNNWOOD IMPROVEMENT PROJECT

King County, Washington

Environmental Assessment

Submitted pursuant to Section 42 U.S.C. 4332 (2)(c) and 23 C.F.R. Part 771

By the U.S. Department of Transportation, Federal Highway Administration, Washington Division, and the Washington State Department of Transportation

5/9/2011
(Date of Approval)

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In compliance with the National Environmental Policy Act (NEPA), this Environmental Assessment (EA) describes the environmental effects of the I-405, Bellevue to Lynnwood Improvement Project as part of the overall I-405 Corridor master plan designed to increase vehicle capacity and person throughput; improve the performance of the High-Occupancy Vehicle (HOV) facility and increase use of the existing HOV lane capacity under a variety of potential future conditions; and accommodate planned regional growth. Copies of this document may be purchased for $50.47, which does not exceed the cost of reproduction. Comments must be received or postmarked by **June 10, 2011**, and should be returned to:

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A public hearing on this Environmental Assessment will be held from 4:00 p.m. to 7:00 p.m. on May 24, 2011 at the Kirkland City Hall, 123 5th Avenue, Kirkland, WA in the Peter Kirk Room.

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Appendix F Cultural, Historic, and Archaeological Technical Memorandum

Appendix G Cumulative Effects Analysis Technical Memorandum

Appendix H Economics Technical Memorandum

Appendix I Ecosystems Discipline Report

Appendix J Hazardous Materials Technical Memorandum

Appendix K Land Use Patterns, Plans and Policies Discipline Report

Appendix L Noise Discipline Report

Appendix M Draft Section 4(f) Technical Memorandum

Appendix N Social, Public Services, and Environmental Justice Discipline Report

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CHAPTER 1 EXECUTIVE SUMMARY

Where is the Bellevue to Lynnwood Improvement Project located?

The I-405, Bellevue to Lynnwood Improvement Project (Bellevue to Lynnwood Improvement Project) begins on I-405 at NE 6th Street in Bellevue (milepost [MP] 13.5) at the southern limit, and extends approximately 17 miles to I-5 in Lynnwood (MP 30.0) at the northern limit (see Exhibit 1-1).

Exhibit 1-1: Project vicinity

What is the Bellevue to Lynnwood Improvement Project?

The Build Alternatives complement the I-405, SR 520 to SR 522 – Kirkland Nickel Project (Kirkland Nickel Project)[1], the NE 195th Street to SR 527 Auxiliary Lane Project (opened in 2010); and the NE 8th Street to SR 520 Braided Ramps Project (scheduled to open in 2012). The Bellevue to Lynnwood Improvement Project description assumes full completion of the Kirkland Nickel Project, the first stage of which was opened to traffic in late 2007[2]. The Bellevue to Lynnwood Improvement Project will provide:

- One additional northbound lane between NE 124th Street and SR 522;
- Braided ramps between the I-405 northbound on-ramp from NE 160th Street and the northbound I-405 off-ramp to SR 522;
- Southbound transit shoulders between SR 522 and NE 160th Street and between SR 527 and NE 195th Street;
- New northbound and southbound structures over NE 132nd Street and a new northbound structure over the

[1] *When complete, the Kirkland Nickel Project will add one northbound general-purpose lane from the NE 70th Street interchange to the NE 124th Street interchange; add one southbound general-purpose lane from just south of the SR 522 interchange to just north of the SR 520 interchange; and reconfigure the interchange at NE 116th Street to improve traffic operations.*

[2] *The transportation analyses for the Bellevue to Lynnwood Improvement Project evaluate a baseline condition without the Kirkland Nickel Project Stage 2 which is not built.*

railroad for the I-405 northbound off-ramp to NE 124th Street;

- Small amounts of additional widening, between four and eight feet, at several locations for buffers, wider shoulders, tolling equipment, Washington State Patrol enforcement areas, and WSDOT maintenance pull-outs; and
- Minor upgrades to pedestrian facilities in some interchange areas.

Build Alternative 1, the preferred alternative, will implement an express toll lane system. The system will provide two express toll lanes in each direction between NE 6th Street and SR 522 and one express toll lane in each direction between SR 522 and I-5 (see Exhibit 4-3, sheet 1).

Build Alternative 2 will operate the new lanes as general-purpose lanes and will retain a single high-occupancy vehicle (HOV) lane in each direction (see Exhibit 4-3, sheet 2).

What are express toll lanes?

Express toll lanes are express travel lanes that are managed through a variable user fee to regulate their use and thereby maintain reliable express travel speeds. Express toll lanes preserve trip reliability for transit users, while providing a new option to other motorists who choose to pay a toll when lane capacity is available. If implemented, the express lane system will take the place of the existing HOV lanes.

Who can use the HOV or express toll lanes?

Both HOV lanes and express toll lanes have restrictions on who can use them as well as when they can be used. The I-405 HOV lanes are nearing the point where high levels of congestion in the lanes will require the HOV occupancy requirement to be increased from 2+ (two or more occupants) to 3+ (three or more occupants) to meet current Federal Highway Administration (FHWA) and WSDOT policy for speed and reliabilty. The decision on the express toll lanes fee structure and who can access the lanes without payment of a toll has not yet been determined. State Legislative approval is required to implement the express toll lanes. Our studies of the Bellevue to Lynnwood Project assume the HOV occupancy requirement will be HOV 3+ when the project opens.

What is the purpose of the project?

The purpose of the Bellevue to Lynnwood Improvement Project is to improve personal and freight mobility and reduce traffic congestion along the northern half of the I-405 corridor from Bellevue in the south to Lynnwood in the north. Specific benefits of the project are improved safety, reduced congestion, increased travel speeds during peak commute periods, improved freight movement, and environmental improvements. Examples of environmental improvements include improved stormwater treatment facilities for existing and new pavement which will improve the quality of water being discharged into streams and wetlands. Other improvements include wetland mitigation at a greater area and better quality than the impacted wetlands. This will result in a net increase of wetland area and function.

How does the project address the purpose?

The two Build Alternatives will increase corridor vehicle capacity and the movement of people through the corridor during peak traffic periods. The preferred alternative, Build Alternative 1, will serve the most people and vehicles by allowing single occupant vehicles (SOVs) and double-occupant vehicles (HOV 2s) to pay a toll to use available capacity in the express toll lanes, while allowing vehicles with three or more persons (HOV 3+) and transit free access. The express toll lanes will be actively managed through a variable toll system to regulate their use and maintain express travel speeds and reliability[3].

In comparison, Build Alternative 2 — general-purpose lanes — does not serve as many motorists at 45 mph or greater as Build Alternative 1, but still serves substantially more than the No Build Alternative. The difference is that most of the traffic is restricted to using the expanded capacity in the general-purpose lanes, with these travelers having no opportunity to access an express trip.

The difference between the two Build Alternatives is operational. WSDOT will implement these operational

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[3] *WSDOT's current performance standard for HOV lanes is an average speed of 45 mph or greater at least 90 percent of the time during the morning and afternoon rush hours (http://www.wsdot.wa.gov/HOV/Policy.htm#speed_&_reliability_standards).*

differences through different lane striping and signage. For Build Alternative 1, WSDOT will add electronic equipment and signage to implement express toll lanes. With both Build Alternatives, lanes that are not managed as express toll lanes or HOV lanes will operate as general-purpose lanes.

When will construction begin and how long will it take?

WSDOT expects to begin construction in late 2011 and to complete construction in late 2014.

What will WSDOT do to reduce any adverse effects?

WSDOT will comply with all applicable local, regional, and federal standards and regulations to avoid or minimize adverse effects to local communities and the environment. For specific details about measures to reduce adverse effects, please see Chapter 6, Measures to Avoid or Minimize Project Effects, in this document.

How will the project affect the environment?

For the Bellevue to Lynnwood Improvement Project, the I-405 Project Team prepared discipline reports or technical memoranda for the following disciplines: Air Quality; Cultural, Historic, and Archaeological Resources; Cumulative Effects Analysis; Economics; Ecosystems; Soils and Geology; Hazardous Materials; Land Use Patterns, Plans, and Policies; Noise; Section 4(f) Resources; Social, Public Services, and Environmental Justice; Transportation; Utilities; Visual Quality; and Water Resources.

For many aspects of the environment, our findings showed that there will be few, if any, effects, and that these effects will not be significant. The two Build Alternatives share the same design features, so many environmental effects, not related to traffic operation, are the same for both alternatives.

Because the level of potential effects was so minimal for Air Quality, Hazardous Materials, Land Use Patterns and Policies, Soils and Geology, and Utilities, WSDOT and FHWA determined that it was not necessary to include further discussion about these topics in this Environmental Assessment (EA). Topics included as EA chapters are referenced in our preliminary conclusions.

Preliminary Conclusions

Cumulative Effects (Chapter 5.8). Cumulative effects from construction of the project are expected to be localized, temporary, and of low magnitude. This conclusion is based on our cumulative effects analysis of air quality, surface water, and wetlands. With the additional capacity and roadway changes, the project will improve air quality. Also, more efficient driving conditions will minimize stop-and-go traffic and promote moderate-speed driving. This proposed project will increase travel speeds and improve the movement of vehicles in 2035, thereby reducing traffic congestion. Treatment of stormwater runoff from both new and existing pavement may result in a positive effect on downstream wetlands.

Economics (included in Chapter 5.4). The Bellevue to Lynnwood Improvement Project will have no adverse effects on communities, businesses, or employment. No residences or businesses will be displaced. During operation, economic effects should be positive. Improved mobility on I-405, and through the project interchanges, will decrease the overall costs of doing business in the corridor, and will increase access to commercial businesses.

Ecosystems (Chapter 5.7). The Bellevue to Lynnwood Improvement Project will not affect wetlands, aquatic resources, and wildlife habitat because all permanent unavoidable effects will be mitigated and temporarily disturbed areas will be restored. Ecosystem effects will be the same for both Build Alternatives 1 and 2. For the No-Build Alternative, none of the ecosystem effects will occur.

Approximately 13.6 acres of wetland were identified in the project area; only 0.38 of an acre of wetland and 1.21 acres of buffer will be permanently affected. Wetlands that will be disturbed during project construction will be partially or wholly filled. WSDOT will restore the temporarily impacted wetlands and wetland buffers after construction is complete. Restoration will include replanting with appropriate vegetation. Some effects to aquatic resources will result from construction activities occurring below the ordinary high water mark of the water body; however, WSDOT will comply with local, state, and federal regulations to protect these resources.

Approximately 17 acres of vegetation, or less than two percent of the vegetation in the project study area, will be removed for roadway widening. Another 55 acres of vegetation will be temporarily impacted. When the roadway construction is complete, temporarily impacted areas will be restored with plants appropriate to the site conditions.

The permanent and temporary loss of vegetation may affect wildlife species in the project area; however effects to wildlife habitat will be minimal and temporary in the locations that will be re-vegetated.

The project will permanently affect 0.03 of an acre of stream channel and 0.84 of an acre of stream buffer. A total of 0.01 acre of stream channel and 0.18 of an acre of stream buffer will be temporarily affected. When construction is complete, temporarily impacted stream buffers will be restored with appropriate vegetation.

Historical and Cultural Resources (Chapter 5.3). The project will have no adverse effects on historical and cultural resources in the project area. Prior to construction, an Unanticipated Discovery Plan will be developed to guide procedures should archaeological materials or human remains be discovered.

Noise (Chapter 5.2). The Bellevue to Lynnwood Improvement Project will have negligible effects on noise levels, except for a few locations. At different locations throughout the project, noise levels will either remain the same, decrease by as much as 2 dBA, or increase by up to 7 dBA by the analysis year 2030 without noise barriers.

Noise levels were evaluated at 160 noise receptor locations, representing noise exposure at 2,036 residences, one hotel, two schools, one church and one park within the study area. Exhibit 5.2-4 shows the location evaluated for new barriers and upgrades t existing barriers.

The analysis recommended two new noise barriers, described in Exhibit 6-1, to mitigate for roadway noise that will exceed FHWA noise criteria. The installation of these two barriers is recommended for either Build Alternative. **Noise Barrier NK1** will be built next to the Rose Hill neighborhood along northbound I-405, approximately one-half-mile south of NE 116th Street, near Slater Avenue NE. **Noise Barrier NB3** will be located along the roadway right of way that runs between

the I-405 southbound to NE 195th Street off-ramp and 112th Avenue NE.

Section 4(f) Resources (included in Chapter 5.4). Neither of the Build Alternatives acquires land from protected Section 4(f) resources and permanently incorporates it into the transportation facility; there will be no temporary occupancy or constructive uses at any of the protected 4(f) resources.

Social, Public Services, and Environmental Justice (included in Chapter 5.4). The project will have no significant adverse effects on social and public services in the project area. Emergency response services, police, and school buses, could experience slight delays due to project construction activities. However, these delays will be minimal and temporary. The project will not have disproportionately high or adverse effects on minority and/or low-income populations.

Traffic and Transportation (Chapter 5.1). Both Build Alternatives will improve vehicle throughput on I-405 and increase the number of persons served at speeds 45 mph or greater and improve the efficiency of the system. The redesigned northbound I-405 ramps from NE 160th Street to SR 522 will improve traffic flow by separating the heavy weaving volumes between these two interchanges. The project will improve safety in the project area by reducing congestion and vehicle conflicts that can cause collisions.

Water Resources (Chapter 5.6). The stormwater treatment system proposed as part of the Bellevue to Lynnwood Improvement Project will treat all the new impervious area, as well as some of the existing impervious area that currently is untreated (see Exhibit 5.6-4). As a result, overall, water quality with the Build Alternatives will be similar to, or better than, the No Build Alternative in the water bodies downstream of the project area. The project will have a negligible effect on groundwater resources.

The increase in impervious area as a result of the project, and the resulting loss of infiltration, is very small compared with the size of the basins. The proposed stormwater facilities (media filter drain treatment facilities and an infiltration facility) will help to mitigate the relatively small loss of groundwater recharge and reduced stream baseflows downstream of the project.

Both of the Build Alternatives will each increase impervious area by about 18.2 acres which is about an eight percent increase from the No Build Alternative. Although the Build Alternatives will have more impervious area than the No Build Alternative, the Build Alternatives will have lower pollutant loads for the project corridor than the No Build Alternative because they will treat stormwater from both new and existing impervious surfaces. Total and dissolved copper and zinc pollutant loads will be about two to four percent lower with the Build Alternatives.

How is this document organized?

Chapters 2 and 3 of this EA explain why this project is needed and provides a background into the Alternatives developed as part of the I-405 Corridor Program. Chapter 4 describes the project. The affected environment and potential effects are discussed together for individual topics in Chapter 5. Baseline conditions, described in Chapter 5, assume that all the elements of the permitted Kirkland Nickel Project have been completed. Chapter 6 provides a description of measures that will be taken to avoid or minimize effects. Chapter 7 lists Environmental Assessment (EA) contributors and preparers and Chapter 8 lists references used in preparation of this document.

What is the preferred alternative for the Bellevue to Lynnwood Improvement Project?

Our analyses show that the two Build Alternatives will move greater numbers of motorists at higher speeds through the project area than the No Build Alternative. The preferred alternative, Build Alternative 1, will allow the greatest number of motorists to be served at 45 mph or faster during the morning and afternoon rush hours. This will be accomplished by allowing single occupant vehicles (SOVs) and double-occupant vehicles (HOV 2s) to pay tolls to use the express toll lanes along with the three or more person vehicles (HOV 3+) and transit that will have free access.

CHAPTER 2 NEED FOR THE PROJECT

The Washington State Department of Transportation (WSDOT) prepared an environmental impact statement (EIS) in 2002 (WSDOT, 2002a) to evaluate a wide range of transportation improvement alternatives along the 30-mile I-405 corridor. This document served as a master plan for the I-405 Corridor Program focusing on broad issues such as corridor selection; general location of improvements; mode choice; transportation system performance; area-wide air quality; and landuse implications of the major alternatives.

With this two tiered National Environmental Policy Act (NEPA) approach, this Environmental Assessment (EA) analyzes site-specific project-level details such as alignments, project impacts, and mitigation measures.

Why do we need the Bellevue to Lynnwood Improvement Project?

WSDOT has joined with the Federal Highway Administration (FHWA) to implement strategies consistent with the I-405 Corridor Program Record of Decision (WSDOT 2002b). The identified need of the Program is to improve personal and freight mobility and reduce traffic congestion in the I-405 corridor from Tukwila in the south to Lynnwood in the north in a safe, reliable manner.

As part of the I-405 Corridor Program, the I-405, Bellevue to Lynnwood Improvement Project proposes improvements to the 17-mile section of the I-405 corridor between NE 6th Street in Bellevue to I-5 to Lynnwood (see Exhibit 1-1 in Chapter 1).

WSDOT has identified that the primary need for constructing the Bellevue to Lynnwood Improvement Project stems from congested conditions at peak travel times, which have created inefficient vehicle mobility along this section of the freeway. This project, when completed, will improve personal and freight mobility and reduce traffic congestion in the I-405 corridor from Bellevue to Lynnwood.

Congestion and reduced rates of speed are the worst in the southern end of the project area. Conditions generally improve between SR 522 and I-5 in the northern end. At the

southern end, the section of I-405 in south Kirkland between SR 520 and NE 70th Street carries 198,000 vehicles per day. The section in Kirkland between NE 85th Street and NE 116th Street carries 192,000 vehicles per day. The northern section between SR 527 and I-5 carries 117,000 vehicles per day.

During the morning commute, southbound I-405 is the peak travel direction. In the peak three hours of the commute, southbound I-405 from SR 522 to SR 520 carries an average of 16,930 vehicles in the general-purpose lanes and 3,860 vehicles in the HOV lane. I-405 southbound from I-5 in Lynnwood to SR 522 carries an average of 9,540 vehicles in the general-purpose lanes and 2,880 vehicles in the HOV lane.

In the afternoon, northbound I-405 is the peak travel direction. In the peak three hours, I-405 northbound from SR 520 to SR 522 carries 16,880 vehicles in the general-purpose lanes and 4,070 vehicles in the HOV lane. From SR 522 to I-5, northbound I-405 carries 12,320 vehicles in the general-purpose lanes and 2,710 vehicles in the HOV lane.

Congestion currently occurs during the morning and afternoon peak travel periods, with average speeds in the general-purpose lanes dropping below 40 miles per hour between SR 520 and SR 522 southbound in the morning and northbound in the afternoon. The general-purpose lanes also operate below 40 miles per hour southbound in the morning from I-5 to SR 522.

Similar to the general-purpose lanes, the HOV lanes experience congestion in the peak travel directions, and regularly do not meet WSDOT's goal of maintaining a 45 miles per-hour speed in the HOV lane. The HOV lane congestion occurs predominately on the section of I-405 between NE 6th Street and SR 522. During the afternoon peak three hour period, northbound I-405 from SR 520 to SR 522 has an average travel speed of 42 miles-per-hour in the HOV lane. During the morning peak three-hour period, southbound I-405 from SR 522 to SR 520 has an average travel speed of 47 miles per hour in the HOV lane, with some locations in this section regularly dropping below the 45 miles-per-hour performance standard for HOV lanes.

The I-405 Project Team's analyses have determined that future regional population and employment growth will increase freeway demand compared to 2009 existing conditions. We

project this growth in travel demand will worsen travel speeds and times in the general-purpose lanes compared to 2009 existing conditions.

What is the purpose of the Bellevue to Lynnwood Improvement Project?

WSDOT's stated purpose for proposing the Bellevue to Lynnwood Improvement Project is to:

- Increase vehicle capacity and person throughput;
- Provide a reliable trip choice for users of the corridor; and
- Accommodate planned regional growth.

What would happen if the Bellevue to Lynnwood Improvement Project were not built?

No Build Alternative

A No Build Alternative has been evaluated as the basis for comparing effects associated with the Build Alternatives. No new improvements would be made beyond those constructed as a part of the Kirkland Nickel Project Stage 2[1], the NE 8th Street to SR 520 Braided Ramps Project, and the NE 195th Street to SR 527 Auxiliary Lane Project.

By 2015, traffic demand will increase in the study area and we expect traffic congestion in the general-purpose lanes to worsen and travel speeds to decrease compared to 2009 existing conditions. By 2035, traffic volumes will be more constrained and the duration and intensity of congestion will increase.

For local streets, we expect that future traffic volumes will increase and local traffic operations will generally worsen compared to 2009 existing conditions.

What other improvements are being implemented on I-405 and connecting highways?

The I-405 Corridor Program is a broad term for a program of more than 150 individual, coordinated projects to relieve congestion and improve mobility for motorists, transit, and

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[1] *The transportation analysis does not include the Kirkland Nickel Project Stage 2 in the No Build Alternative.*

freight users along the freeway's 30-mile length. Additional funded improvements are also planned elsewhere in the corridor. Additional information regarding the I-405 Corridor Program is available online at http://www.wsdot.wa.gov/Projects/I405/.

For information on improvements to other connecting highways, please see the 2007-2026 *Highway System Plan* (WSDOT 2007b), which forecasts transportation needs for the next 20 years. *Transportation 2040* (Puget Sound Regional Council [PSRC], 2010) is the Metropolitan Transportation Plan for the Central Puget Sound region and defines the transportation action plan for the next 30 years.

CHAPTER 3 DEVELOPING THE ALTERNATIVES

Decision-makers considered various modes of travel for making improvements within the corridor in the I-405 Corridor Program Environmental Impact Statement (EIS). The range of options evaluated included adding lanes for general-purpose travel, carpools, transit, and rail; general locations for improvements; and how combinations of the different elements could work together as a comprehensive system to improve traffic flow on the I-405 corridor.

What alternatives did WSDOT study in this environmental assessment (EA)?

For the I-405, Bellevue to Lynnwood Improvement Project (Bellevue to Lynnwood Improvement Project), the Washington State Department of Transportation (WSDOT) evaluated the three alternatives below. The proposed physical limits, or footprint, for both Build Alternatives is the same. With both Build Alternatives, lanes that are not proposed to be managed as express toll lanes or HOV lanes will continue to be operated as general-purpose lanes.

Build Alternative 1: Express toll and general-purpose lanes system

Build Alternative 1 will construct new lanes and convert certain portions of lanes built in previous I-405 Corridor Program projects to create an express toll lane system. The system will provide two express toll lanes between NE 6th Street in Bellevue and SR 522 in Bothell and one express toll lane between SR 522 and I-5 in Lynnwood.

Build Alternative 2: High occupancy vehicle (HOV) and general-purpose lanes system

Build Alternative 2 will construct new lanes to serve as general-purpose lanes and keep the existing single HOV lane in each direction.

No Build Alternative

A No Build Alternative has been evaluated as the basis for comparing effects associated with the Build Alternatives. No new improvements would be made

THE I-405 CORRIDOR PROGRAM ENVIRONMENTAL PROCESS

Discipline Reports

A set of technical reports describing the natural and built environment that evaluate alternative methods for project design, construction, and operation. Each discipline report describes the topic's affected environment, effects of the proposed actions, and how effects will be avoided, minimized, or mitigated.

NEPA/SEPA Environmental Impact Statement

Identified the preliminary environmental effects of the proposed action and alternatives proposed for the I-405 Corridor Program.

Preferred Alternative

The alternative selected from among those analyzed in the EIS. The details of the Preferred Alternative analysis, as well as that of other alternatives and responses to public and agency comments, are included in the Final EIS.

Selected Alternative

The alternative selected and approved by FHWA and FTA as documented in the Record of Decision.

Record of Decision

The final step in the EIS process. A concise document that identifies the decision (Selected Alternative), and mitigation measures adopted for the Selected Alternative.

Bellevue to Lynnwood Improvement Project

A specific set of project improvements consistent with the Selected Alternative that focuses on the section of I-405 that begins in Bellevue and extends north to its terminus in Lynnwood.

beyond those constructed as a part of the Kirkland Nickel Project Stage 2[1], which will be built concurrently with the Bellevue to Lynnwood Project, and the NE 8th Street to SR 520 Braided Ramps Project which will open in 2012.

The No Build Alternative does not include additional stormwater treatment or any roadway improvements that would increase roadway capacity, reduce congestion, or improve safety on I-405. Only routine activities such as road maintenance, repair, and minor safety improvements would occur.

As with the two build alternatives, we assume that the occupancy requirement for HOVs in this portion of the I-405 corridor will be three or more people (HOV 3+).

What environmental issues influenced project design?

What is project scoping?

A project scoping meeting is designed to:

- Inform the public and agencies of proposed actions and alternatives.
- Serve as a forum to gather comments and help identify potential environmental impacts.
- Ensure that the environmental documents consider reasonable alternatives.
- Help identify issues or concerns to promote a focus on items important to the local community and to agencies.

Throughout the development of the Bellevue to Lynnwood Improvement Project, WSDOT continues to identify design refinements to avoid or minimize effects on the environment. For example, proposed construction and stormwater treatment facilities have been modified in an attempt to limit contact with streams and wetlands. In some areas, WSDOT will install retaining walls to avoid encroachment into streams and surrounding areas, and noise barriers to reduce highway noise on adjacent residences.

How has the public been involved?

WSDOT has involved the public in the Bellevue to Lynnwood Improvement Project through a range of activities including:

- Holding a public scoping open house on September 14, 2006 to involve citizens in the development process;
- Holding a discipline report open house to present preliminary findings to the public on February 17, 2011;
- Mailing project information to citizens living along the I-405 corridor. Materials included postcard invitations to the public scoping open house and the discipline report open house, and an annual I-405 progress report update;

[1] *Transportation analyses use a baseline condition for the No Build Alternative that does not include the Kirkland Nickel Stage 2 project.*

- Conducting 19 social service provider interviews as part of the Environmental Justice outreach effort;
- Responding to citizens' questions and comments through telephone, email, and in person conversations; and
- Providing a project website with information on project public involvement opportunities, finances, benefits, timeline, etc. (http://www.wsdot.wa.gov/Projects/I405/NE6thtoI5/)

Future public involvement activities include:

- Holding a public hearing on this environmental assessment in May 2011; and
- Meeting with neighborhood associations and community groups to involve interested parties as the project advances.

How has WSDOT involved government agencies?

Government agencies have played major roles in the development of the I-405 Corridor master program including participation in the I-405 Corridor Environmental Impact Statement. Specific to the Bellevue to Lynnwood Improvement Project, WSDOT has involved numerous local, state, and federal agencies. For example, a scoping meeting was held with local, state, and federal agencies to discuss traffic, air, noise, endangered species, water, wetlands, and mitigation strategies. Also, meetings with various jurisdictions, such as the cities of Bellevue, Kirkland, Bothell, and Lynnwood, as well as King and Snohomish counties, have been conducted.

How has WSDOT involved tribal governments?

Tribal governments help WSDOT to identify social, cultural, environmental, and other issues of concern to tribal members. WSDOT is committed to respectful, effective consultation and communication with tribal governments in recognition that project activities may affect their rights and interests. WSDOT Executive Order E1025.01 on Tribal Consultation (WSDOT 2009a) reaffirms the commitment to an effective working relationship with tribal governments.

WSDOT participated in government-to-government consultation with four federally recognized tribes during preparation of the I-405 Corridor Program EIS: Muckleshoot

Indian Tribe, Snoqualmie Tribe, Tulalip Tribes, and the Confederated Tribes and Bands of the Yakama Nation. WSDOT also consulted with the Duwamish Tribe (non-federally recognized) as an interested party. The consultation continues as part of the Bellevue to Lynnwood Improvement Project as WSDOT involves tribal governments in each stage of the environmental analysis. Tribal representatives have been given opportunities to provide input. These opportunities include, attending scoping meetings at the beginning of the project, reviewing and commenting on the Areas of Potential Effects (APE) and draft survey reports for cultural resources, attending public outreach events, and participating in meetings with WSDOT to discuss concerns of tribal members, particularly cultural and natural resource elements.

CHAPTER 4 DESCRIPTION OF THE PROPOSED PROJECT

What is the intent of the Bellevue to Lynnwood project and what are the improvements?

The Bellevue to Lynnwood Improvement Project is intended to improve safety and reduce congestion along I-405 between NE 6th Street in Bellevue and I-5 in Lynnwood. To accomplish this, WSDOT proposes the following improvements:

- Northbound lane from NE 124th Street to SR 522;
- Braided ramps between the I-405 northbound on-ramp from NE 160th Street and the northbound I-405 off-ramp to SR 522;
- Southbound transit shoulders between SR 522 and NE 160th Street and between SR 527 and NE 195th Street;
- New northbound and southbound structures over NE 132nd Street and a new northbound structure over the railroad for the I-405 northbound off-ramp to NE 124th Street;
- Small amounts of additional widening, between four and eight feet, at several locations for buffers, wider shoulders, tolling equipment, enforcement areas and maintenance pull-outs; and
- Minor upgrades to pedestrian facilities in some interchange areas.

What are braided ramps?

Braided ramps vertically separate movements with bridge structures to eliminate traffic conflicts between closely-spaced on-ramps and off-ramps.

What is a transit shoulder?

A transit shoulder is a freeway shoulder that is designated for use by buses during specific hours to avoid congestion in the general purpose lanes. Transit shoulders improve the appeal of transit by helping to maintain travel time and trip reliability. They also have a positive effect on the general purpose lanes, because buses cannot accelerate as quickly as vehicles and tend to slow traffic. Speeds for buses using the transit shoulder are usually restricted to ensure safety. Transit shoulders are always available as a refuge for disabled vehicles or incidents, which would close the transit shoulder to bus travel.

Exhibit 4-1 shows the Bellevue to Lynnwood project vicinity. Exhibit 4-2, sheets 1 through 17, shows more detail of the project improvements in the 17-mile long corridor.

Are there related projects?

The Bellevue to Lynnwood Improvement Project is designed to compliment other projects along I-405 including:

- Kirkland Nickel Stage 1 Project, which added one lane in each direction between NE 85th Street and NE 124th Street and opened to traffic in November 2007;
- NE 195th to SR 527 Auxiliary Lane Project, which added one northbound lane between NE 195th Street and SR 527 and opened to traffic in June 2010; and

- NE 8th Street to SR 520 Braided Ramps Project, which creates new multi-level "braided" ramps to separate vehicles entering and exiting northbound I-405 between NE 8th Street and SR 520 and is anticipated to be open to traffic during the summer of 2012.

What are baseline conditions?

Baseline conditions for the Bellevue to Lynnwood Improvement Project represent what will exist in the future after the Kirkland Nickel Project and the NE 8th Street to SR 520 Braided Ramps Project are complete. Baseline conditions provide an important point of comparison for understanding the effects of the proposed build alternatives.

Kirkland Nickel Project Stage 2 improvements are a baseline condition for natural environmental analyses such as ecosystems, water resources, and soils and geology, but not for traffic and transportation analysis.

The Kirkland Nickel Stage 2 Project will reconfigure the NE 116th Street interchange, build northbound and southbound lanes between NE 70th Street and NE 85th Street, and a southbound lane between SR 522 and NE 124th Street, and between NE 70th Street and SR 520. The Kirkland Nickel Stage 2 project has been environmentally cleared and permitted, and, along with the other projects mentioned in this section, is considered part of the baseline conditions for most analyses (see "*What are baseline conditions?*" sidebar). The Bellevue to Lynnwood Improvement Project will be constructed at the same time.

What will the completed project provide?

The Bellevue to Lynnwood Improvement Project fills in the remaining gaps and allows WSDOT to provide an improved system on I-405 between NE 6th Street and I-5. WSDOT has designed this project to maximize the use of existing pavement and minimize the need for new pavement. In some areas, small amounts of widening of less than a lane width, together with narrower shoulders and lanes, will allow an additional lane. In other areas, narrowing the shoulders and lanes will allow an additional lane without any pavement widening.

Exhibit 4-3 shows the configuration in each of the project segments when this project and the related projects described above are complete.

What is WSDOT's HOV Policy?

WSDOT has established performance standards to ensure that the state's freeway HOV system provides reliable travel time and dependability for transit users and carpoolers. Speeds and reliability of the HOV system are monitored year-round.

It is WSDOT's current policy that vehicles in an HOV lane should be able to maintain an average speed of 45 mph or greater at least 90% of the time during the morning and afternoon rush hour.

How will this portion of I-405 be operated after the project is completed?

In this environmental document, WSDOT and FHWA are considering two operational alternatives: 1) Express Toll and General Purpose Lanes (ETL); and 2) High Occupancy Vehicle and General Purpose Lanes (HOV). Under both scenarios, the project footprint is the same. The occupancy requirement for HOVs in this portion of the I-405 corridor is the same. It is assumed the occupancy requirement, to maintain HOV performance standards under WSDOT's HOV policy, will be

three or more people (HOV 3+). The difference is in how the roadway lanes would be managed.

Alternative 1: Express Toll and General Purpose Lanes (ETL)

The preferred operational alternative will provide two express toll lanes in each direction between NE 6th Street in Bellevue and SR 522 in Bothell, and one express toll lane in each direction between SR 522 and I-5 in Lynnwood. The express toll lane system will be open toll free to all HOV traffic with three or more occupants and all transit vehicles. The express toll lane system will also be open to single occupant vehicles (SOVs) and HOVs with two occupants through tolling.

The southern end of the express toll lane system will be at the existing direct access ramps at NE 6th Street in Bellevue where one of the two northbound express toll lanes will begin and one of the two southbound express toll lanes will end. South of the NE 6th Street, the other express toll lanes will connect with the existing single northbound and southbound HOV lanes. The northern end of the system would be much like it is today with I-405 becoming SR 525. Access points will be at various locations along the mainline as shown in Exhibit 4-4. The express toll lanes will be separated from the general purpose (GP) lanes by a two- to four-foot wide buffer. At an access point, the buffer will open and a section of transition lane may be provided between the express toll and general purpose lanes to ease ingress and egress to the system.

What are express toll lanes?

Express toll lanes preserve trip reliability for transit and HOV users, while providing a new option to other motorists who choose to pay a toll when lane capacity is available. Express toll lanes on I-405 would be similar to the express toll lanes on SR 167.

Express toll lanes have been successfully implemented in several locations around the U.S: State Route 91 in Orange County; I-15 in San Diego; I-25 in Denver; and I-394 in Minneapolis to name a few. WSDOT is working with engineers from these existing facilities to capture lessons learned.

Alternative 2: High Occupancy Vehicle and General Purpose Lanes (HOV)

This operational alternative will allow HOV users with three or more occupants and transit vehicles to use the single HOV lane, similar to today's operation. Access between the HOV lane and GP lanes will be allowed throughout the project, except northbound between NE 6th Street and SR 520 where access is not allowed under today's operation. The new northbound lane between NE 124th Street and SR 522 will be operated as a GP lane.

What will conditions be like if the project is not built?

No Build Alternative

A No Build Alternative has been evaluated as the basis for comparing effects associated with the Build Alternatives. No new improvements would be made beyond those constructed

as a part of the Kirkland Nickel Project Stage 2, the NE 8th Street to SR 520 Braided Ramps Project, and the NE 195th Street to SR 527 Auxiliary Lane Project.

The No Build Alternative does not include additional stormwater treatment or any roadway improvements that would increase roadway capacity, reduce congestion, or improve safety on I-405. Only routine activities such as road maintenance, repair, and minor safety improvements would occur. As with the two build alternatives, we assume that the occupancy requirement for HOVs in this portion of the I-405 corridor will be three or more people (HOV 3+).

Exhibit 4-1: Project location and vicinity

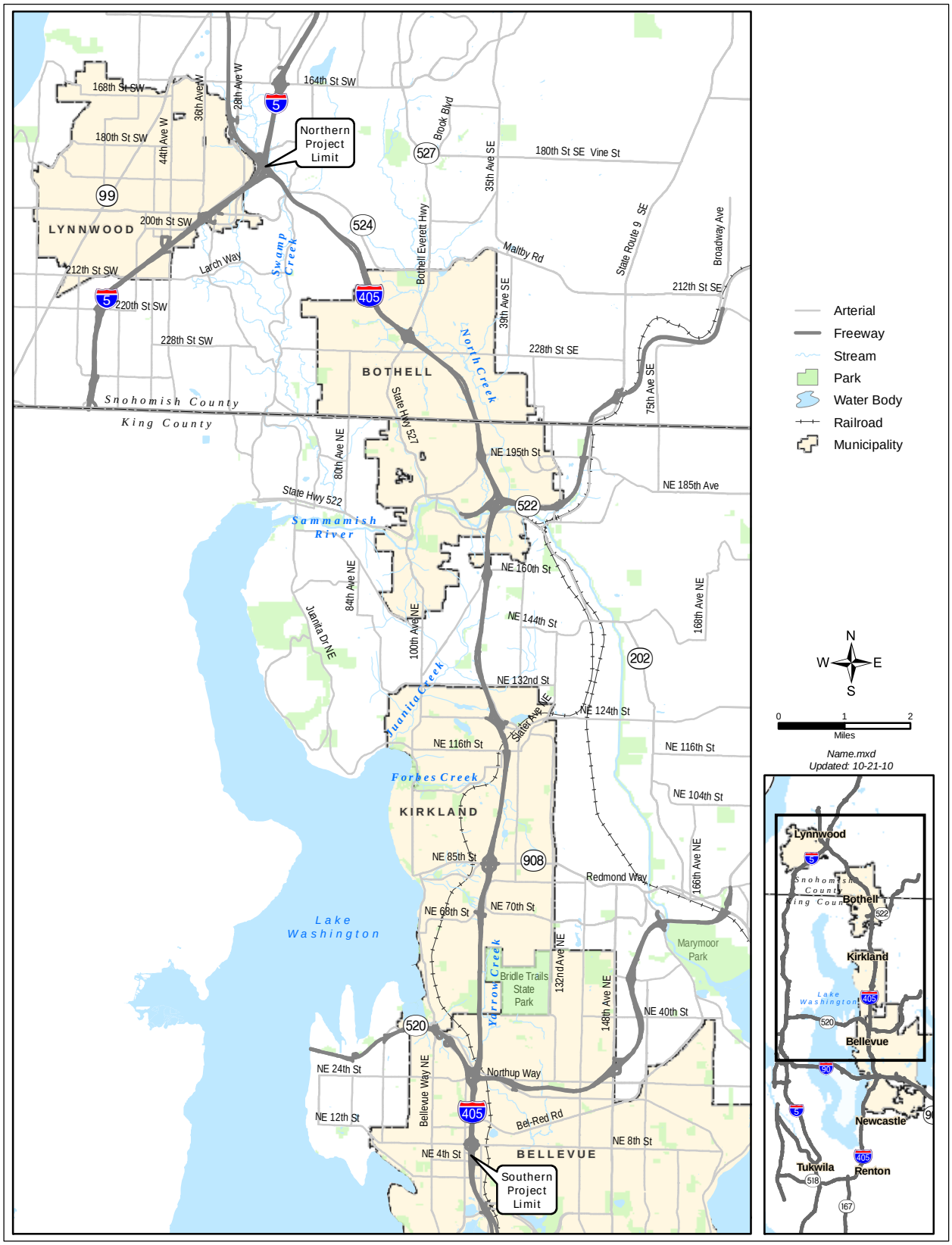
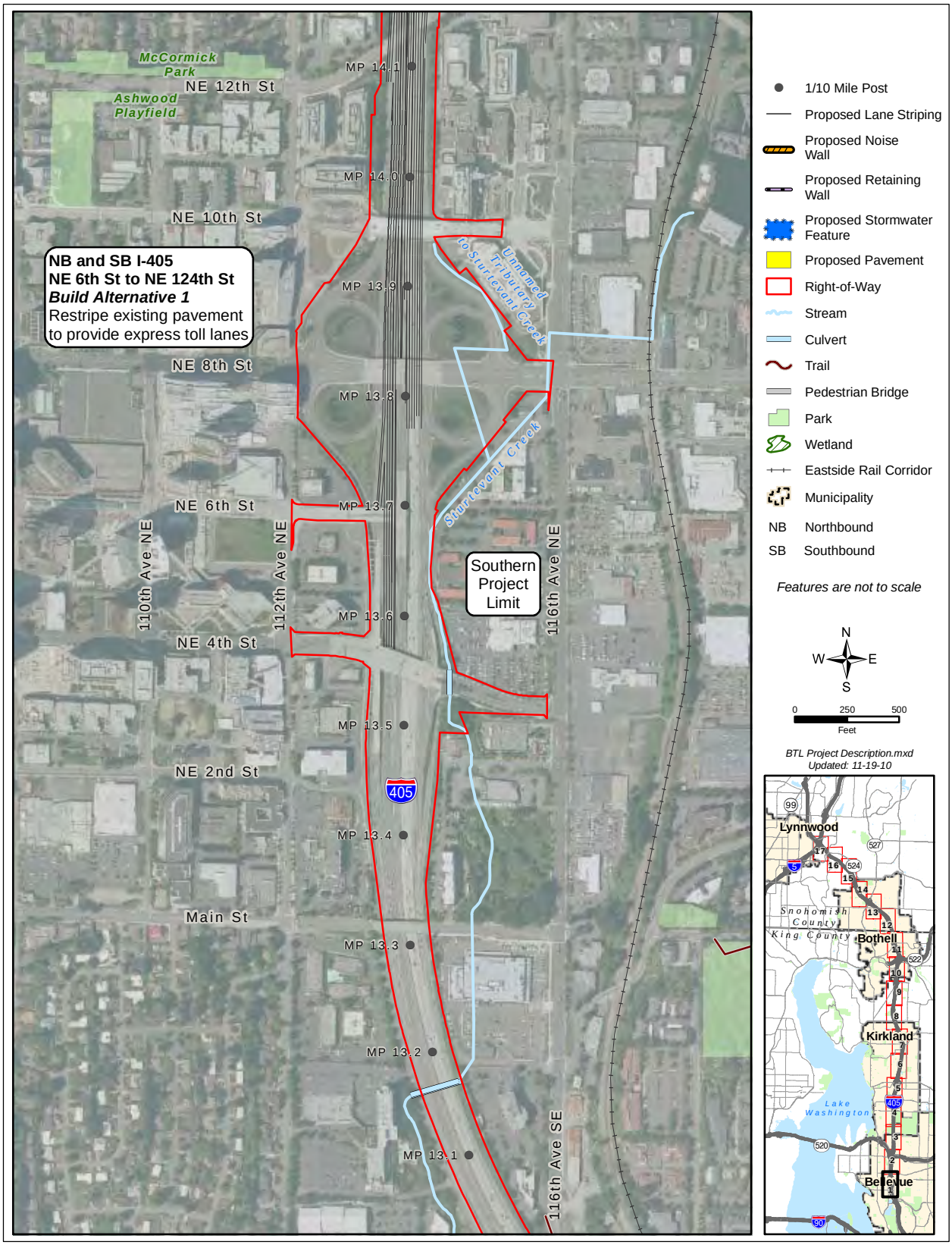


Exhibit 4-2: Project improvements – sheet 1 of 17



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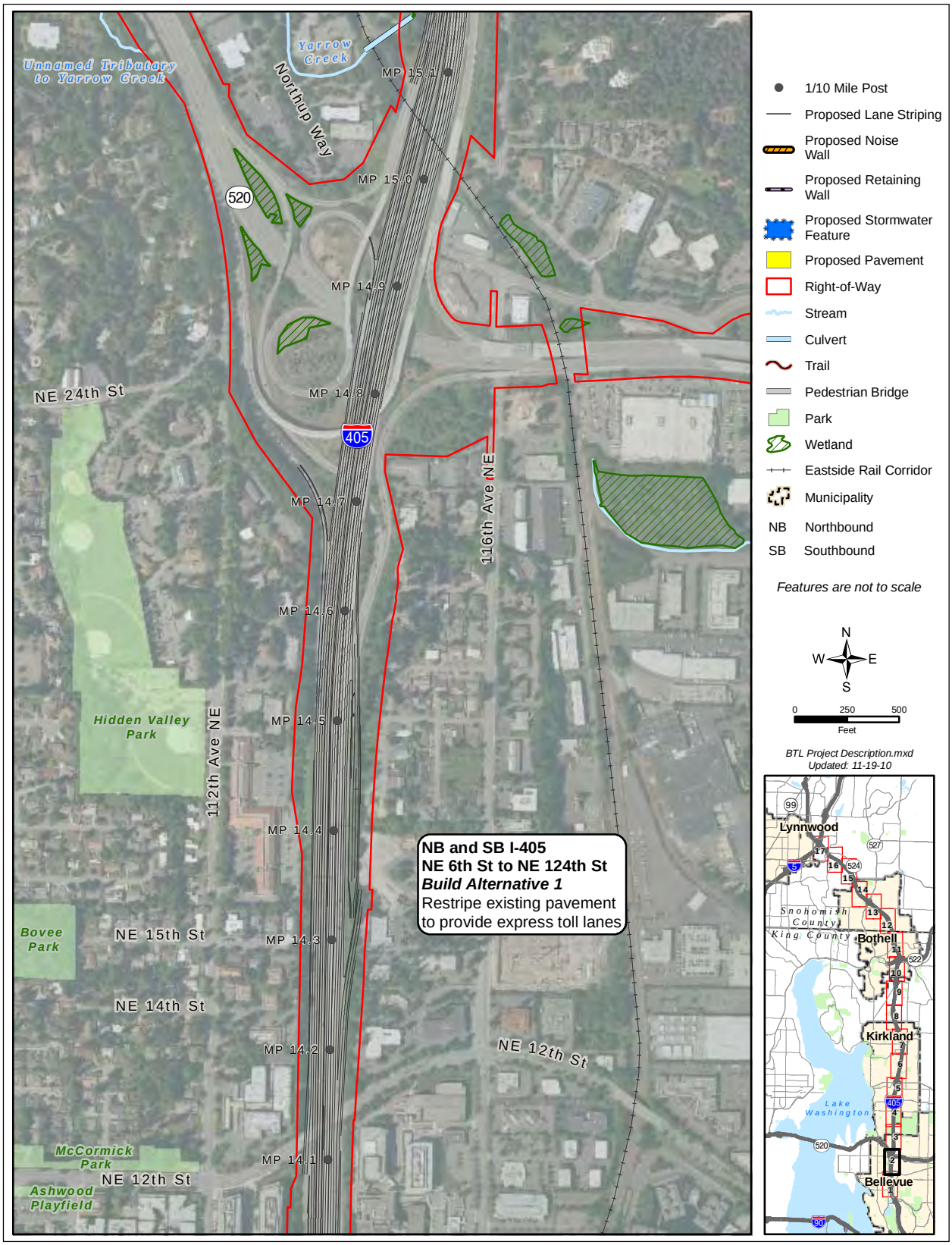

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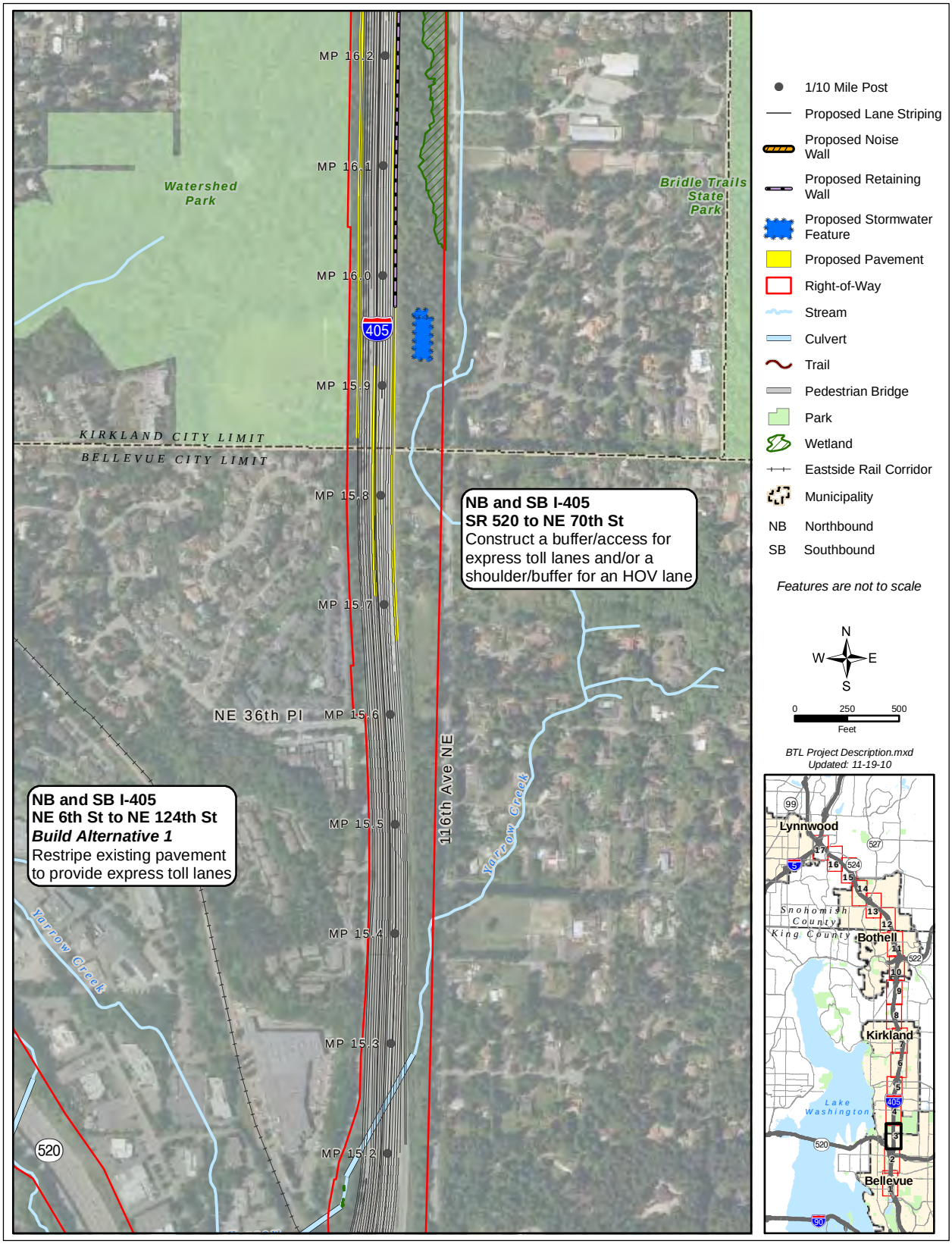

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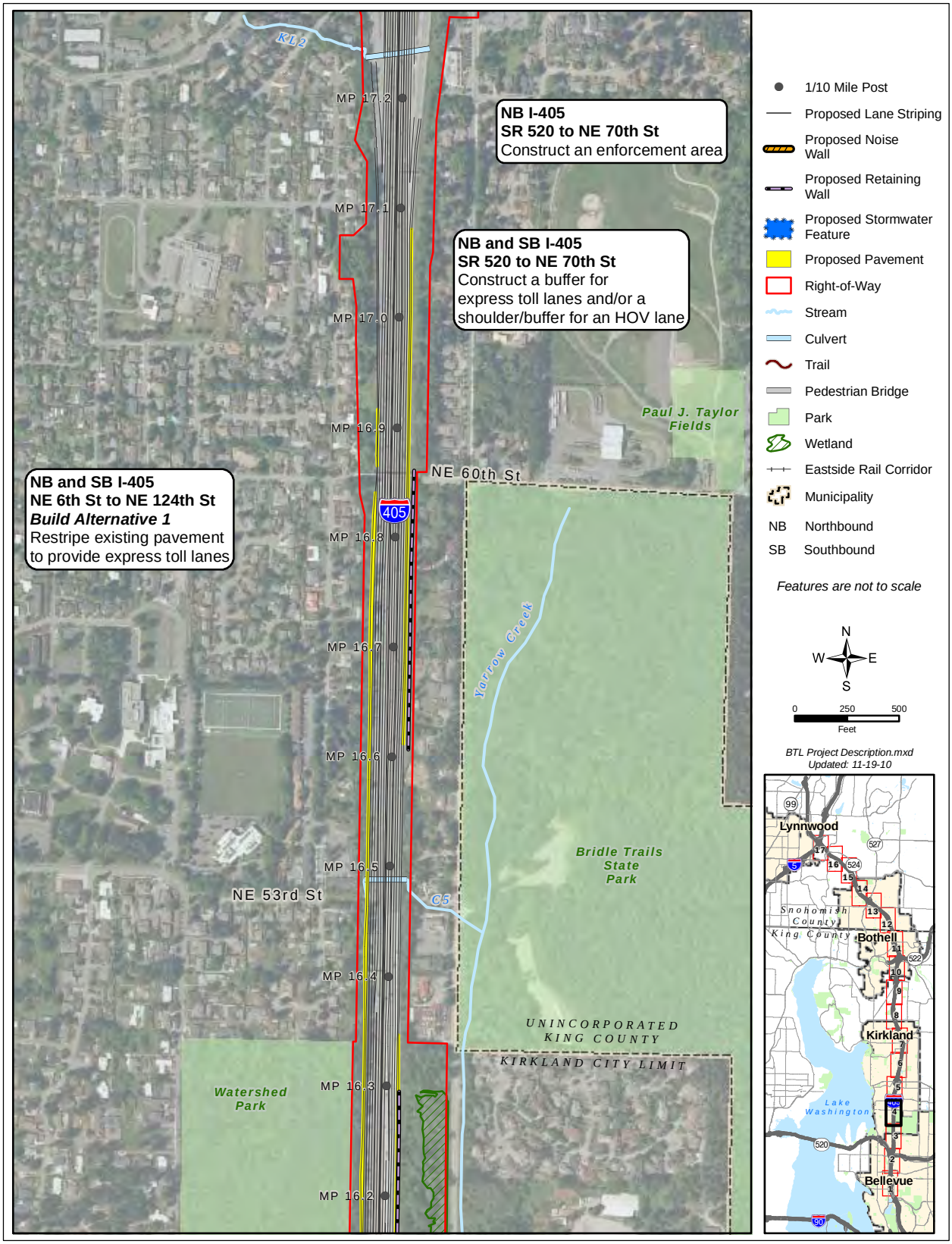

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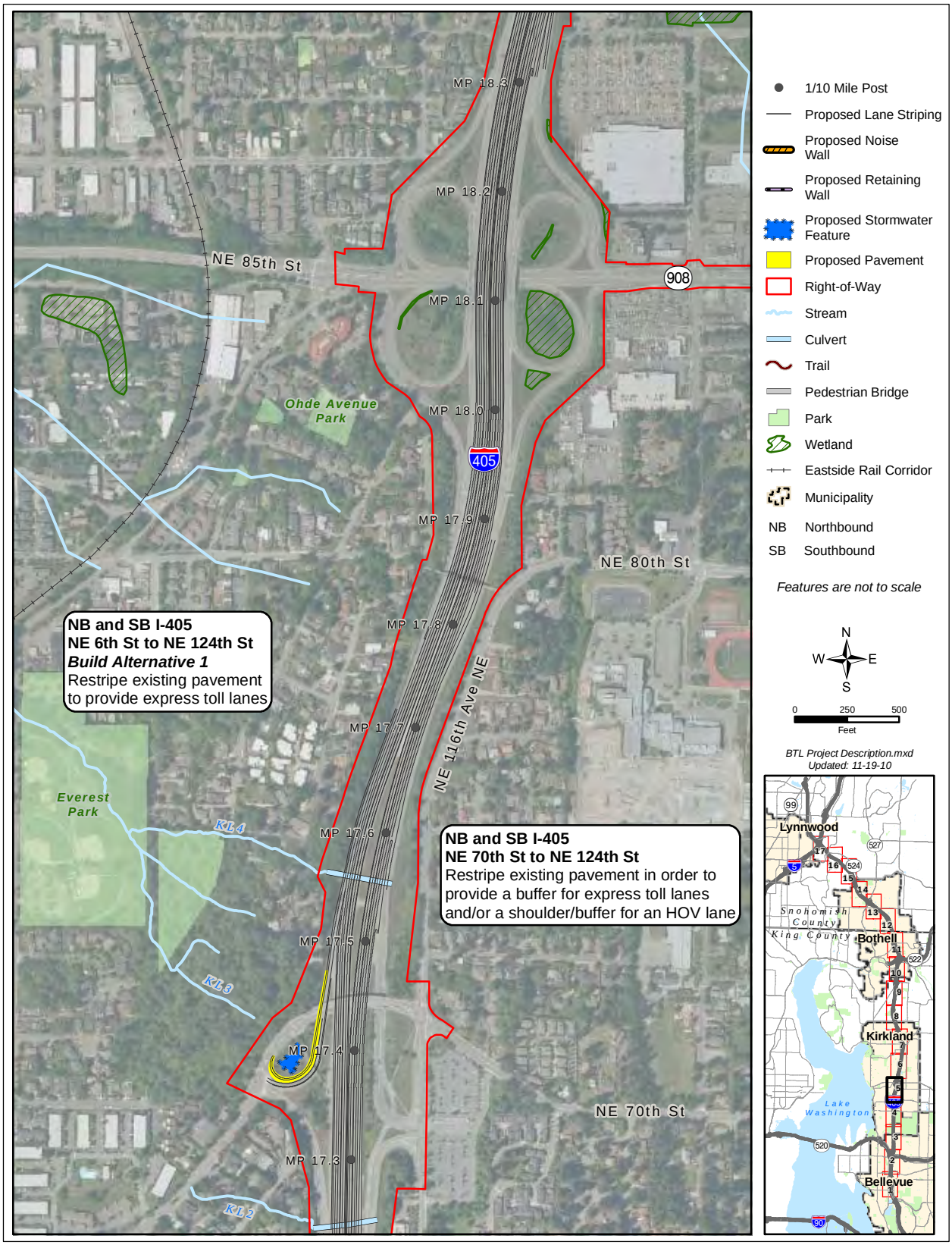

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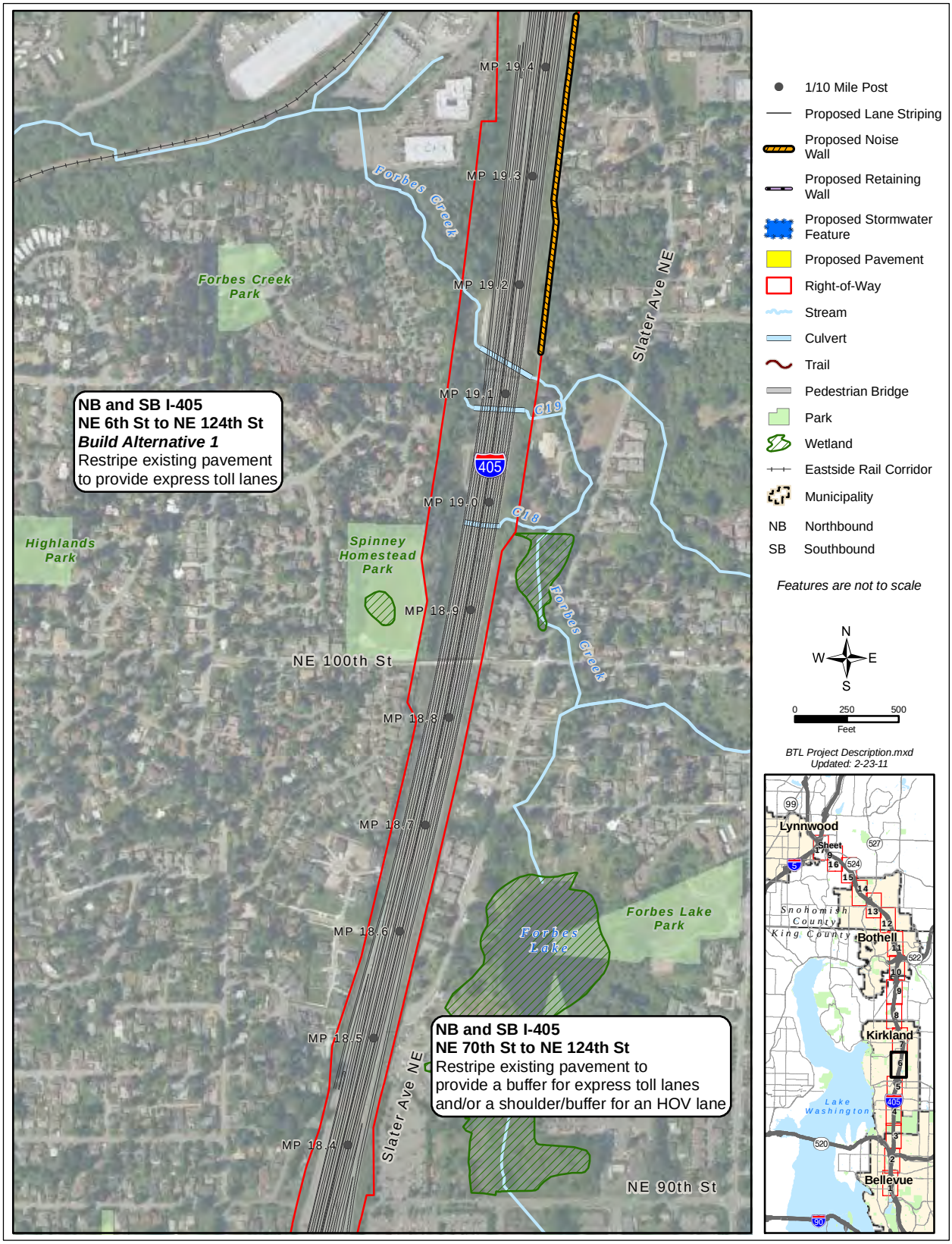

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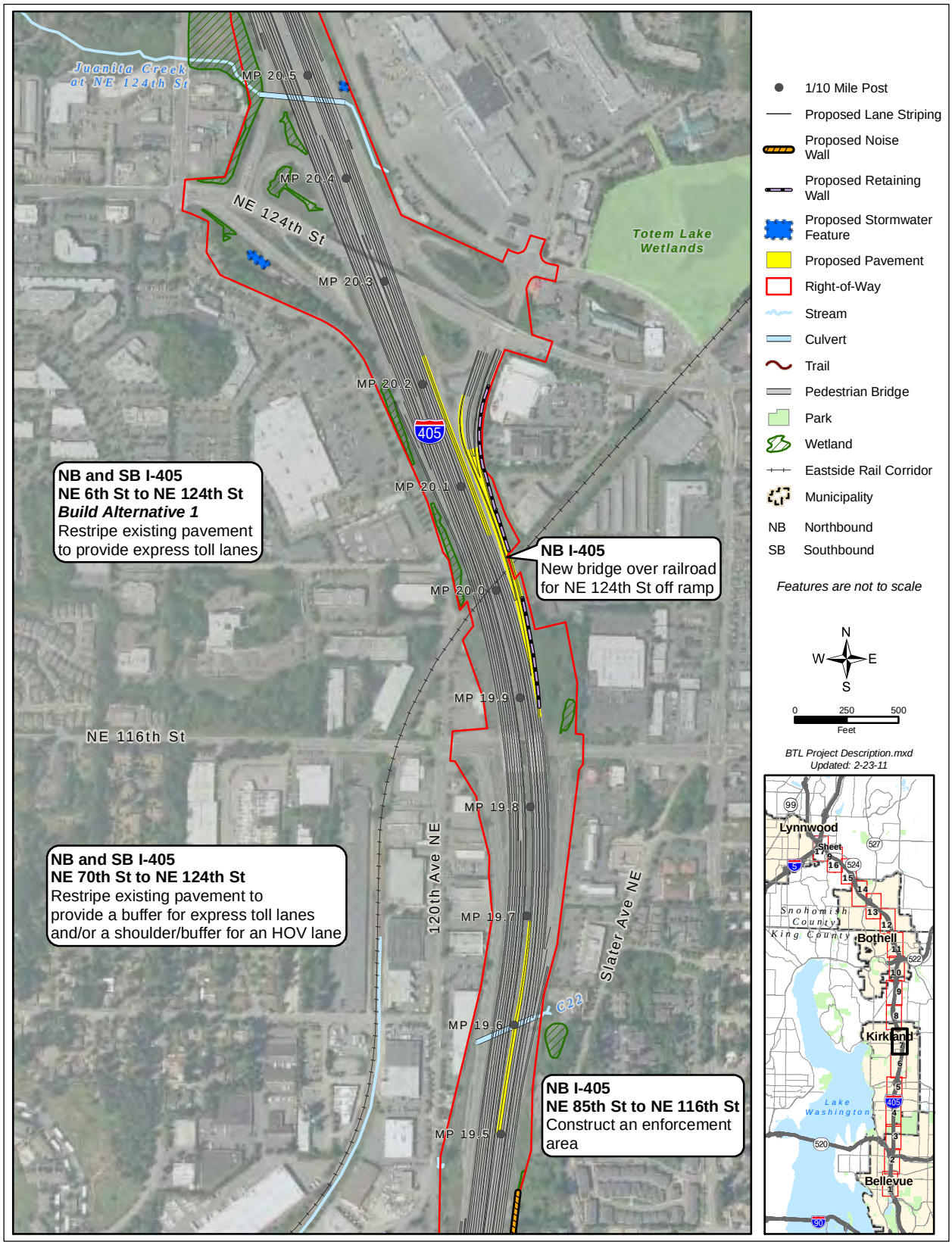

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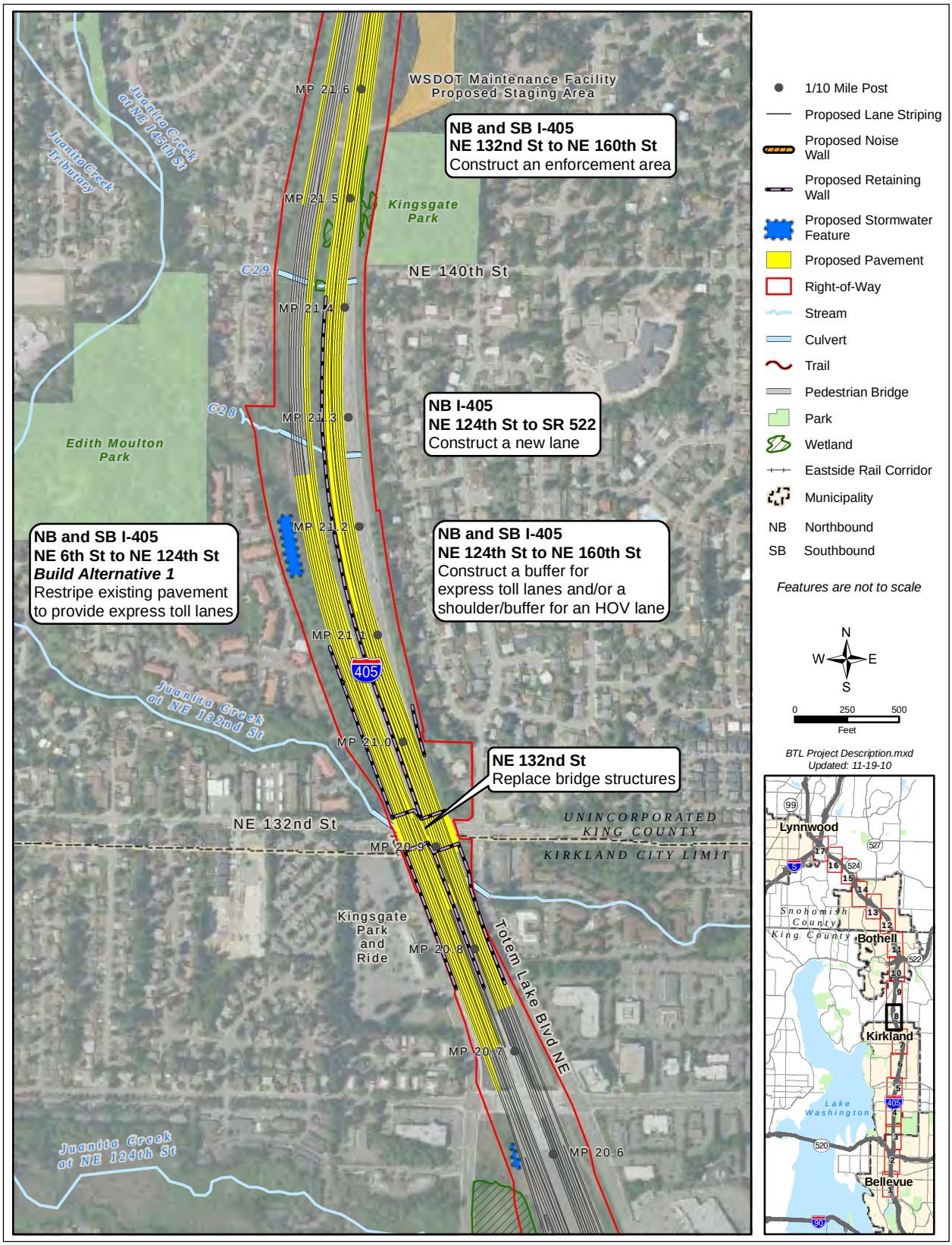

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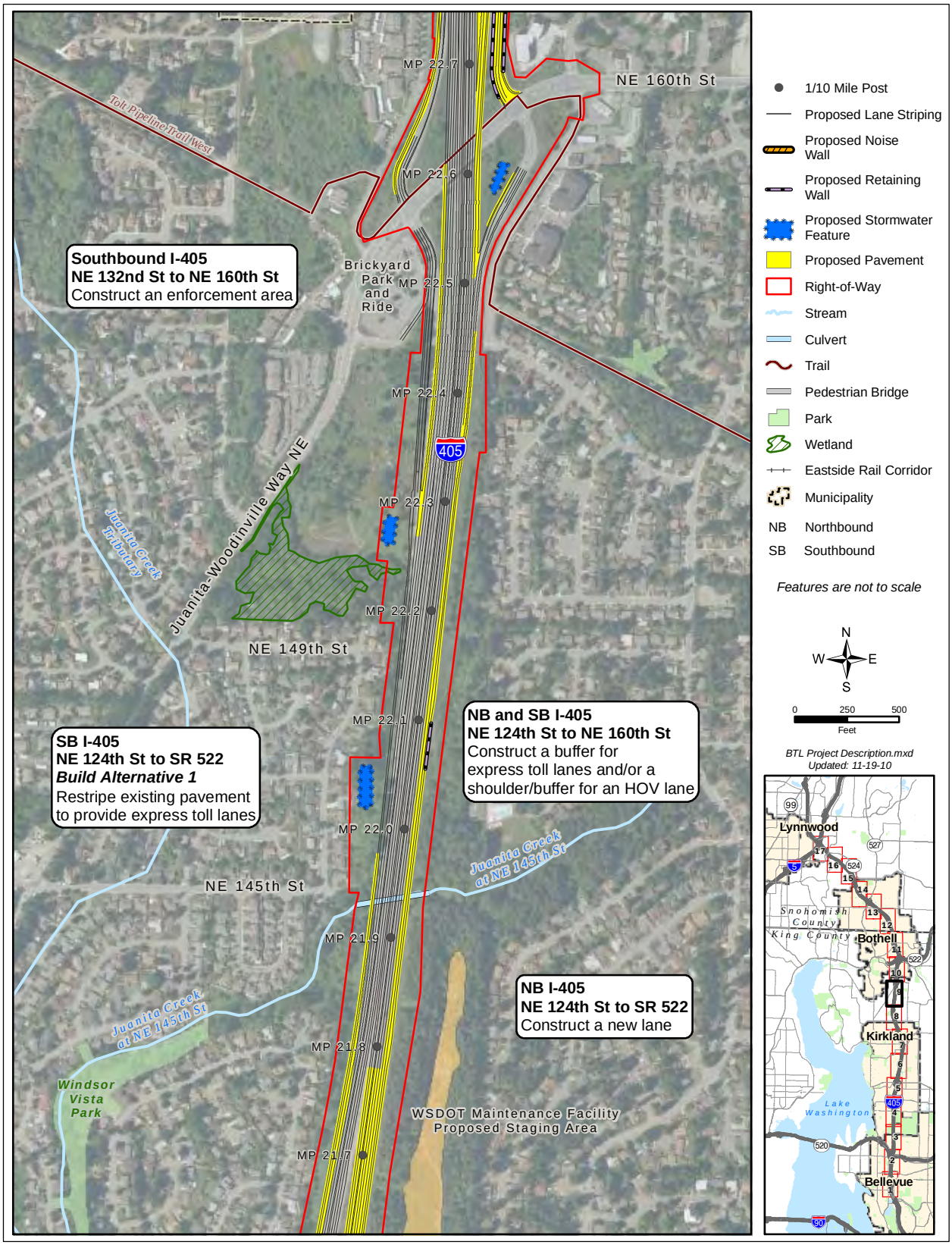

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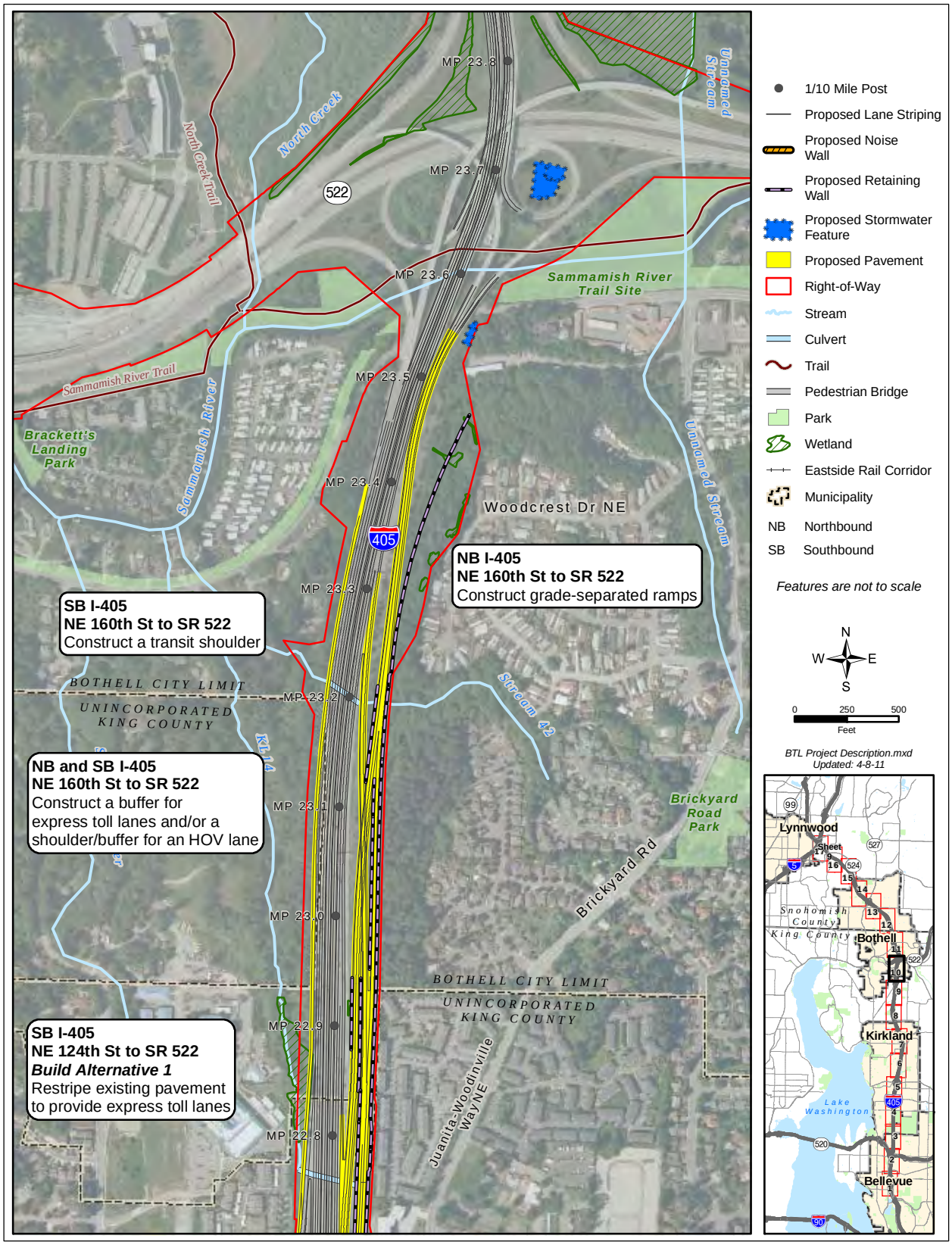
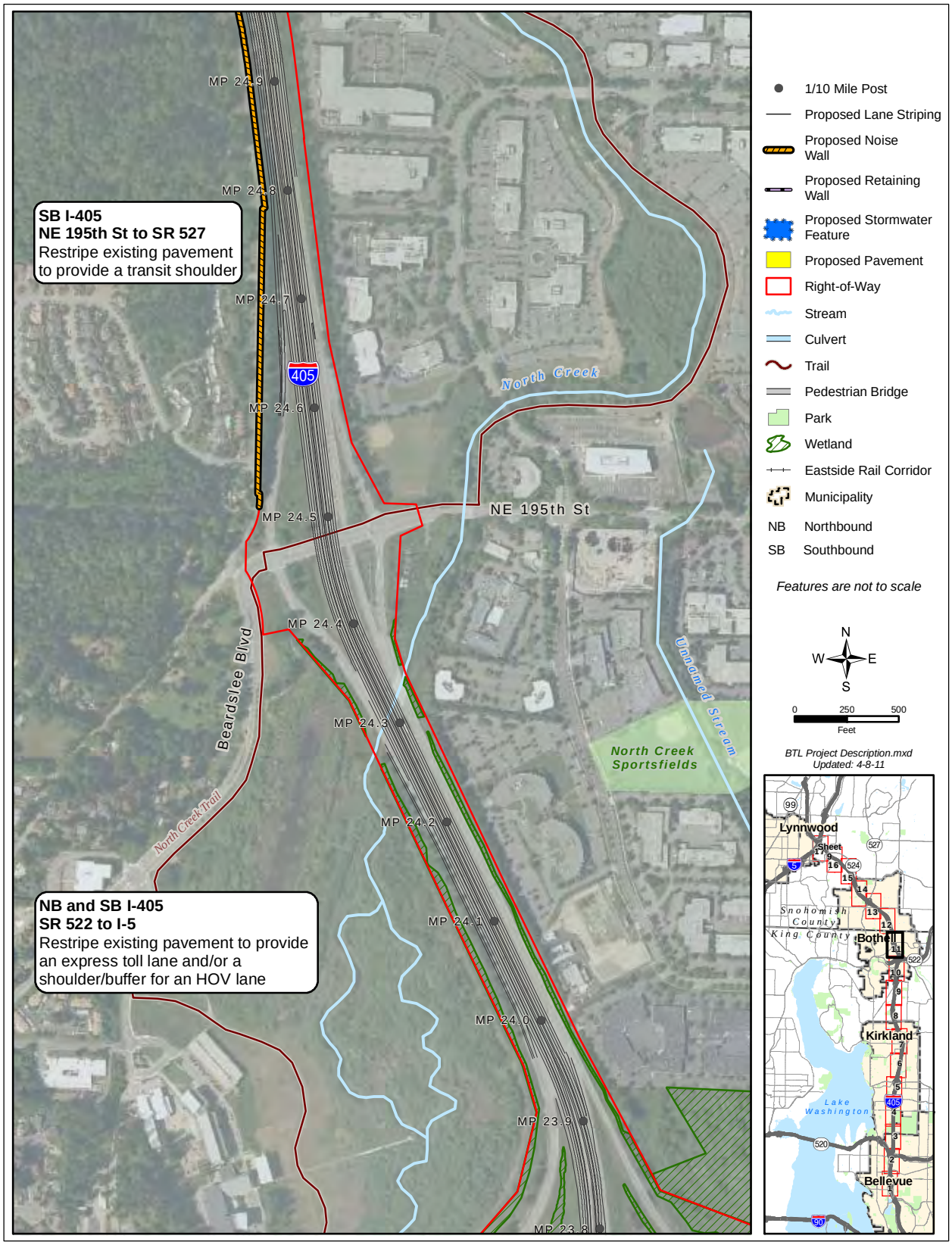


Exhibit 4-2: Project improvements – sheet 11 of 17



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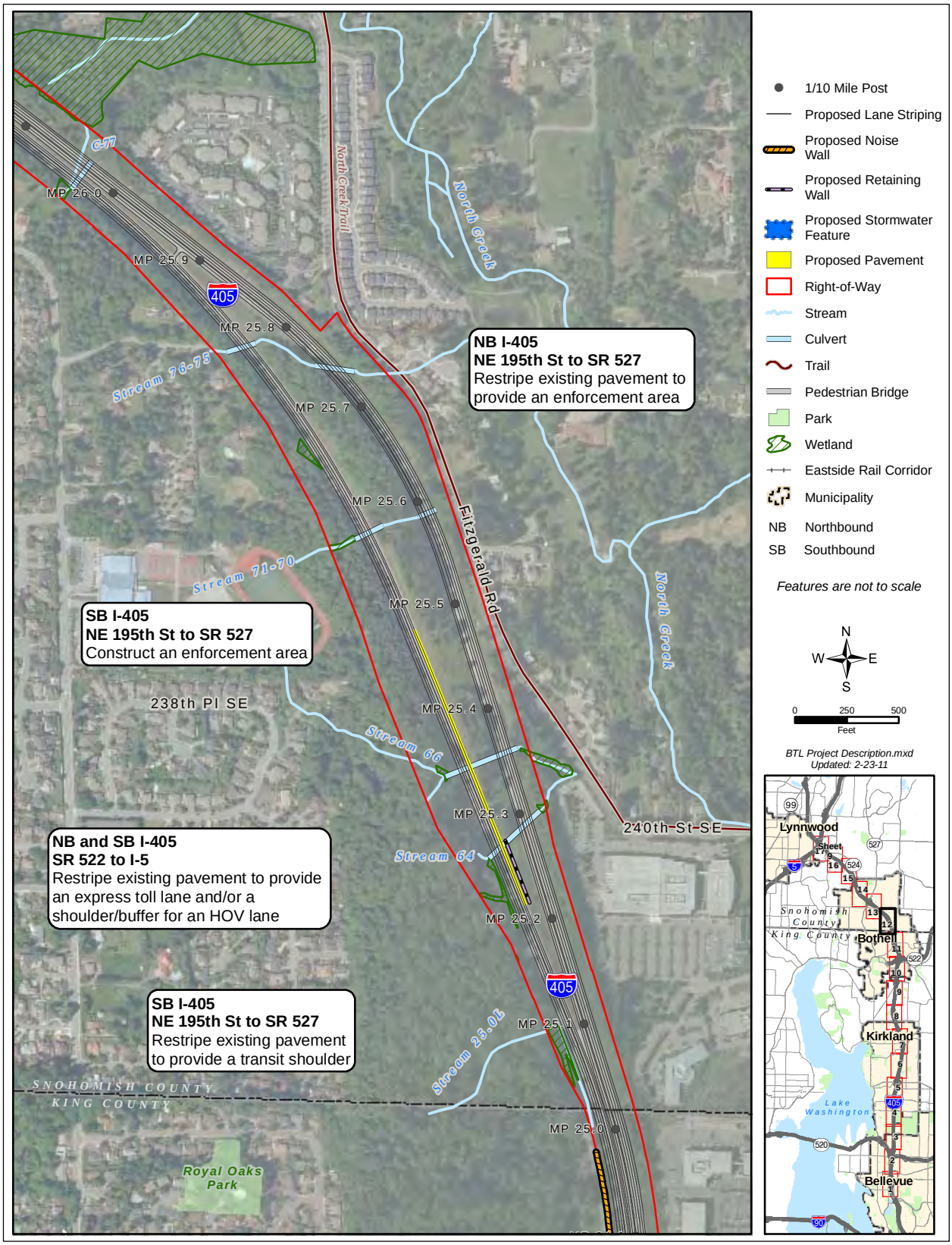

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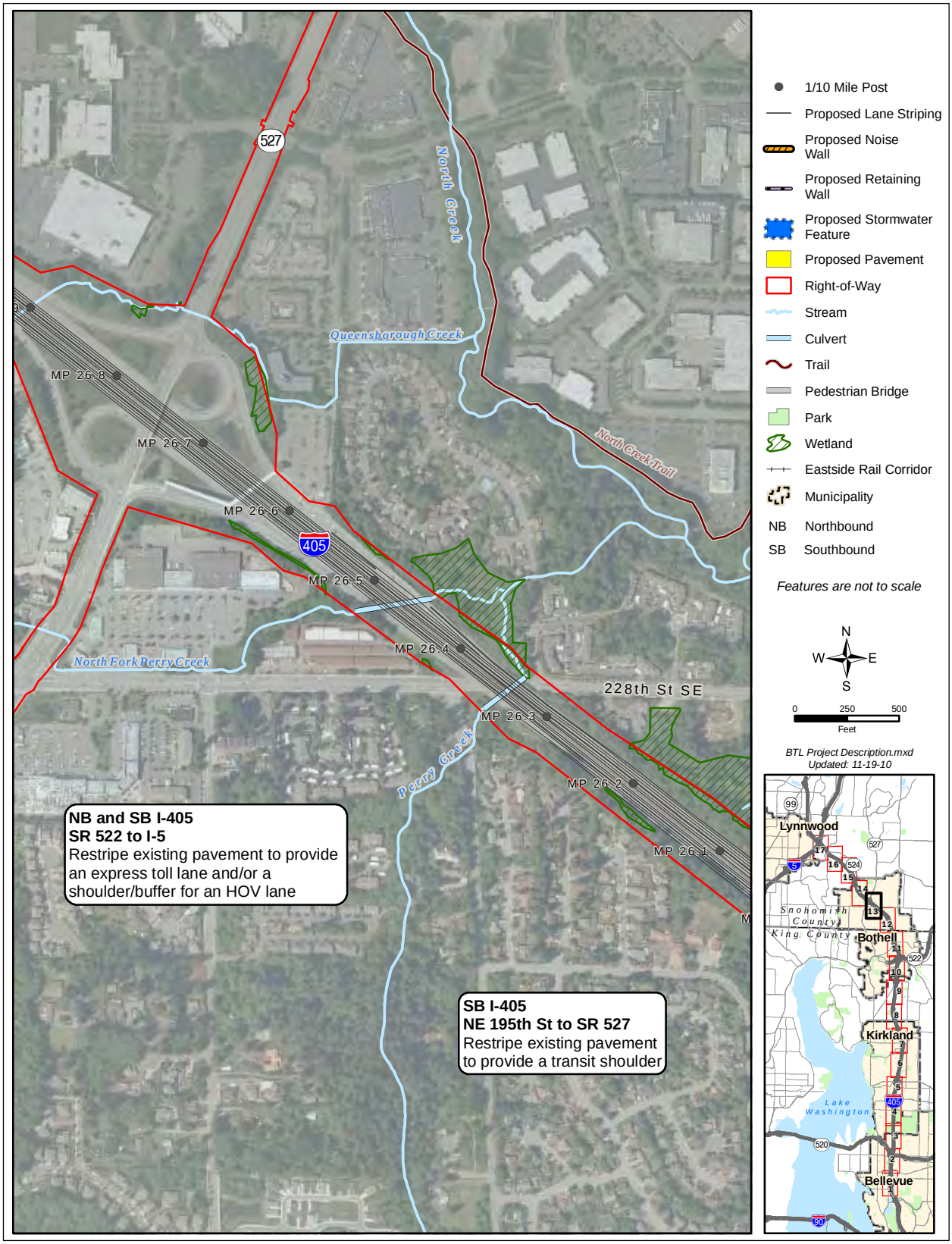

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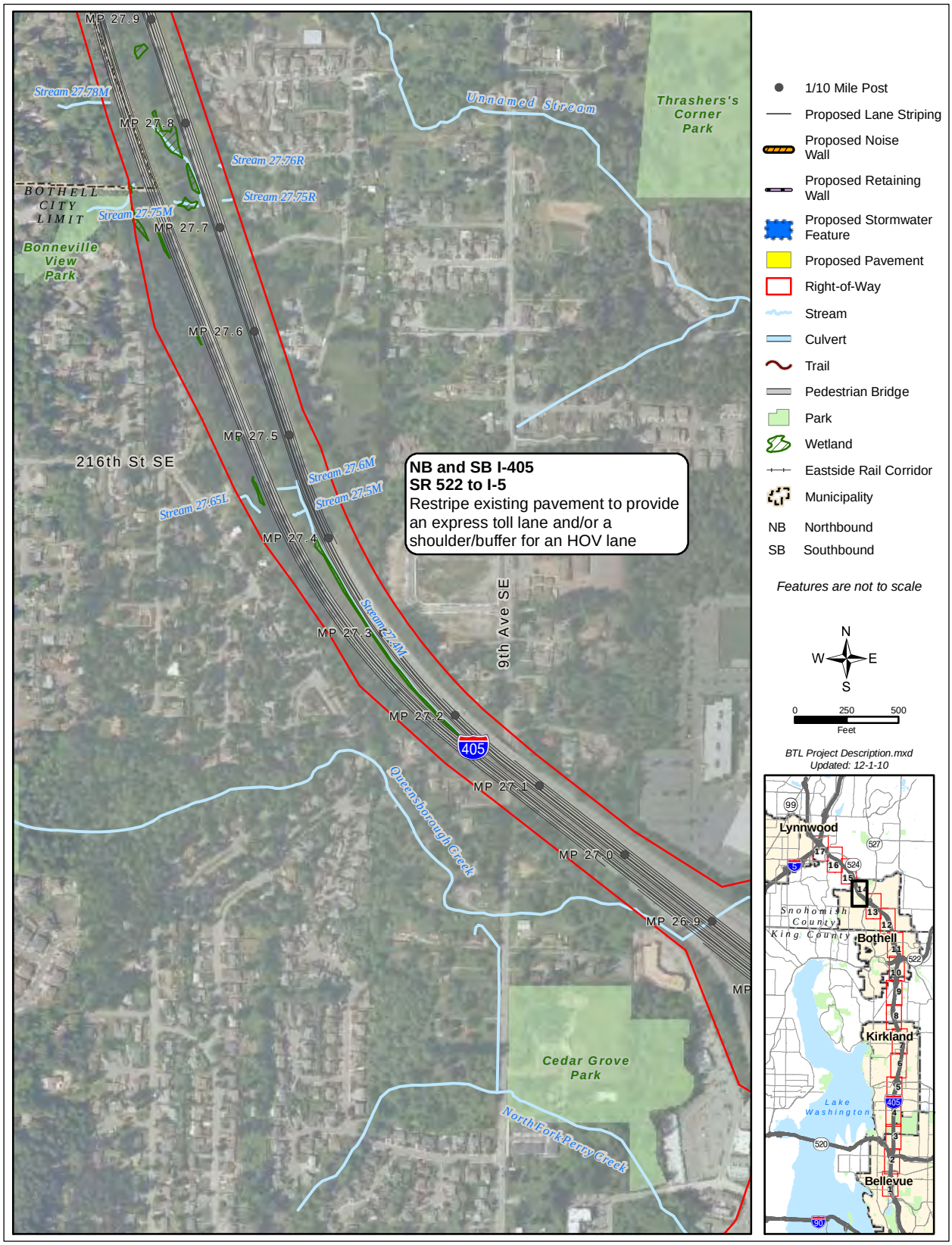

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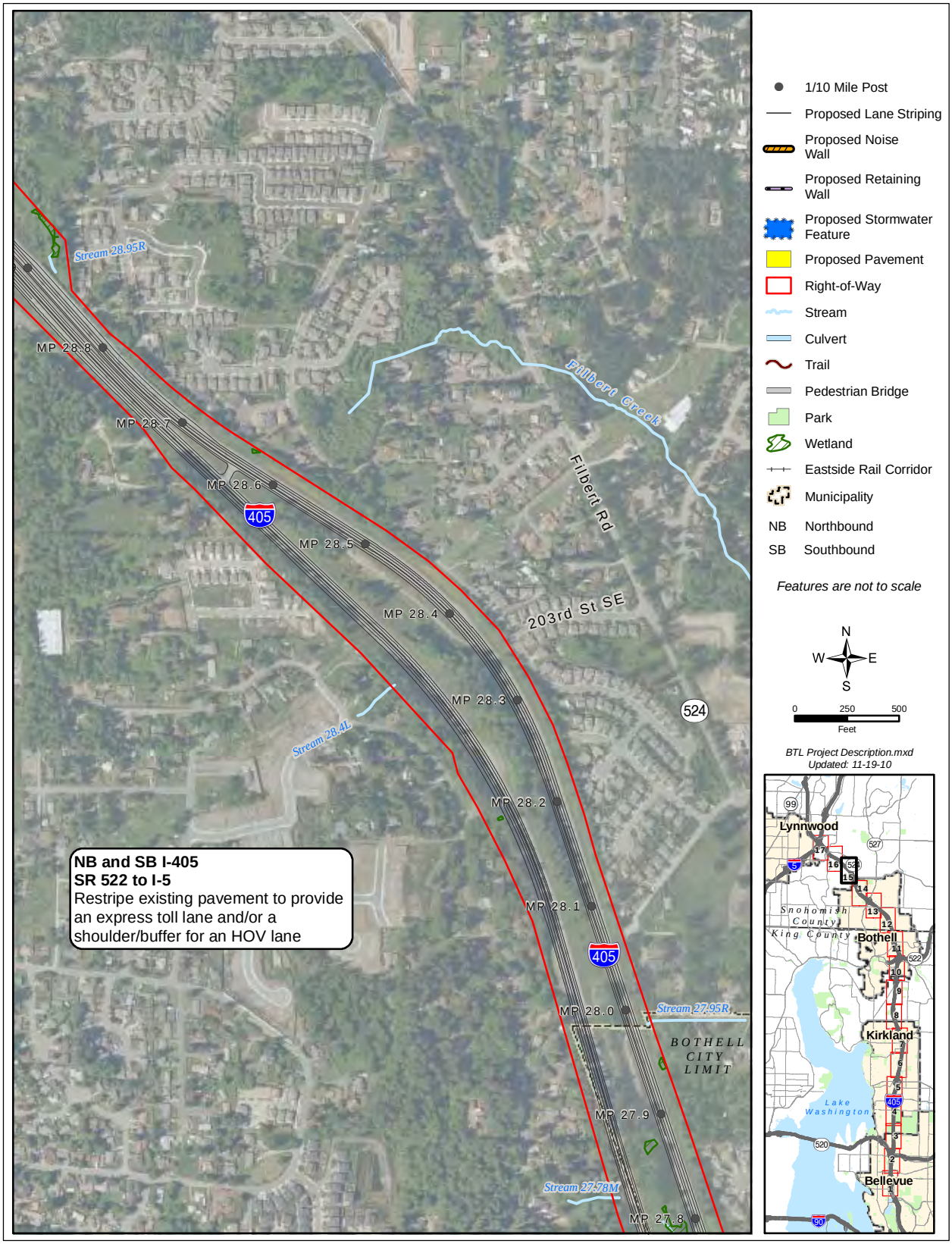

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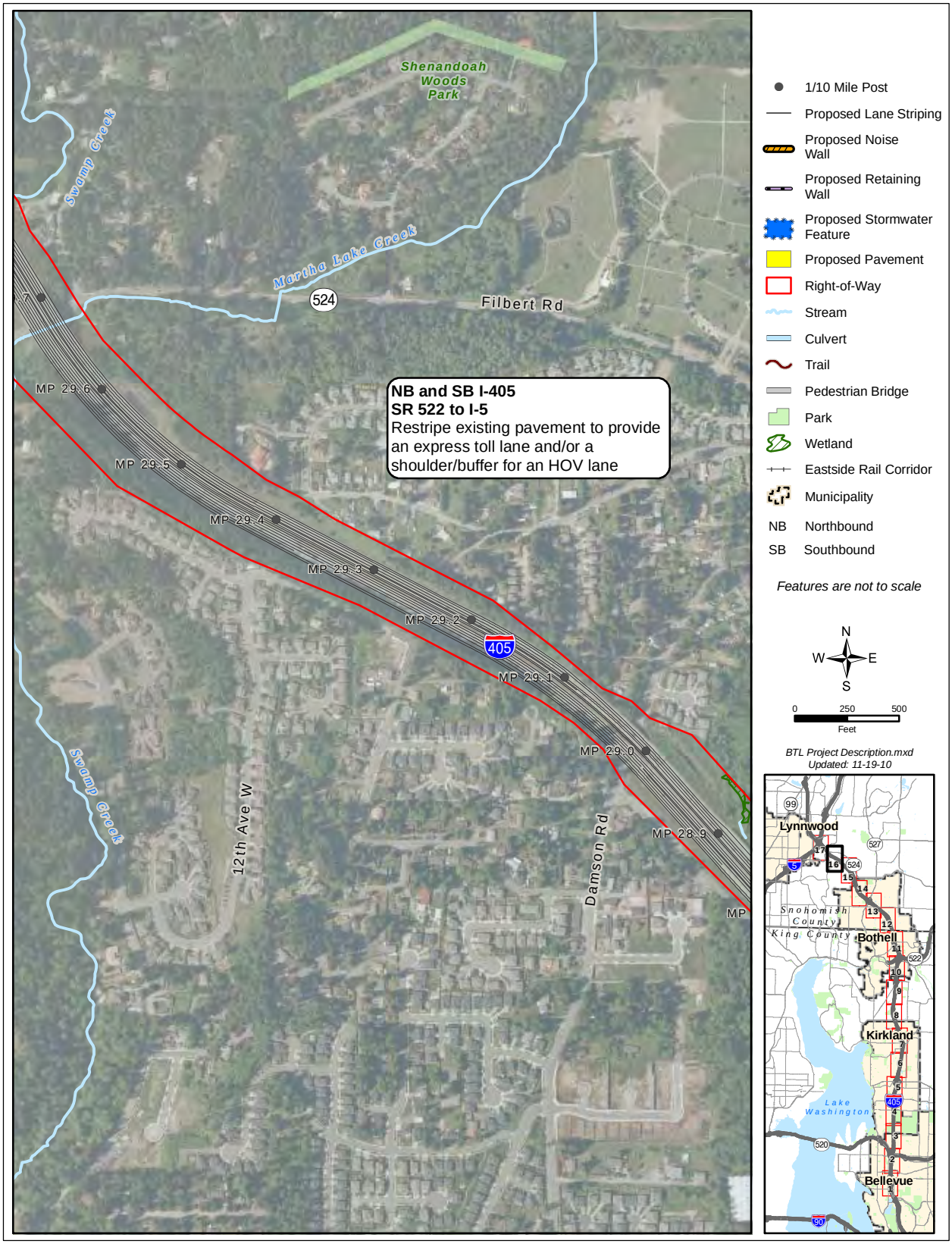

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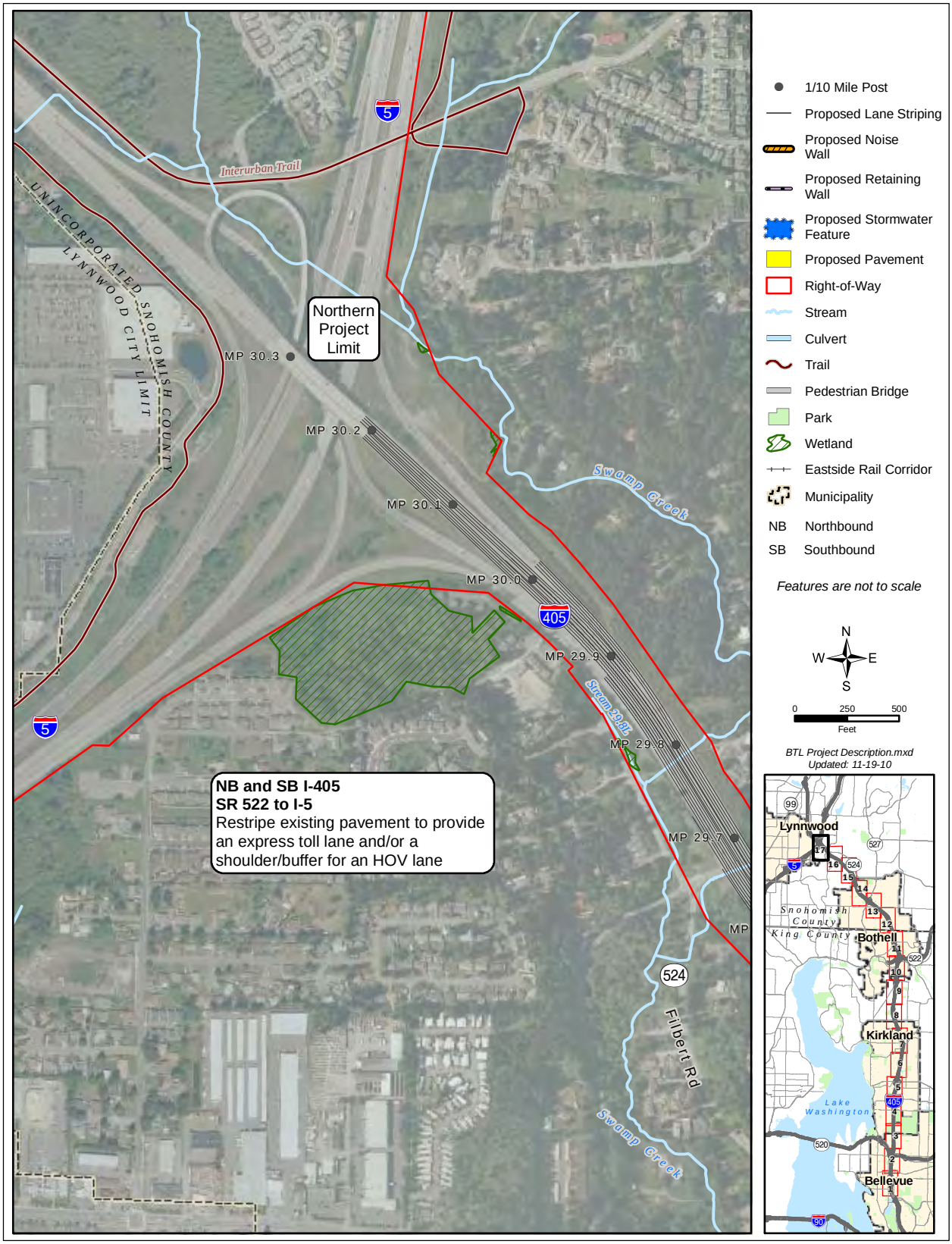


Exhibit 4-3: Alternatives – sheet 1 of 2

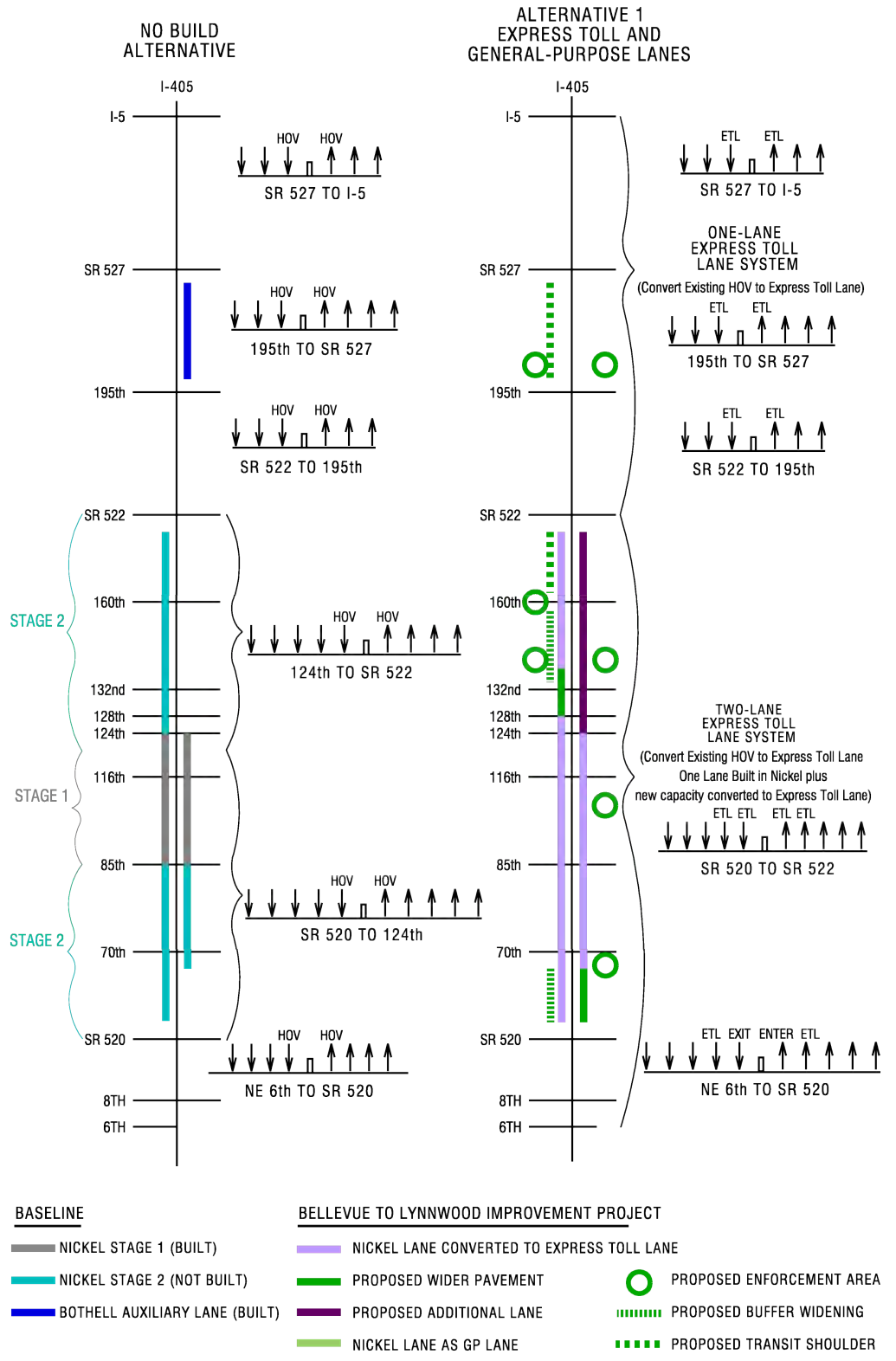


Exhibit 4-3: Project alternatives – sheet 2 of 2

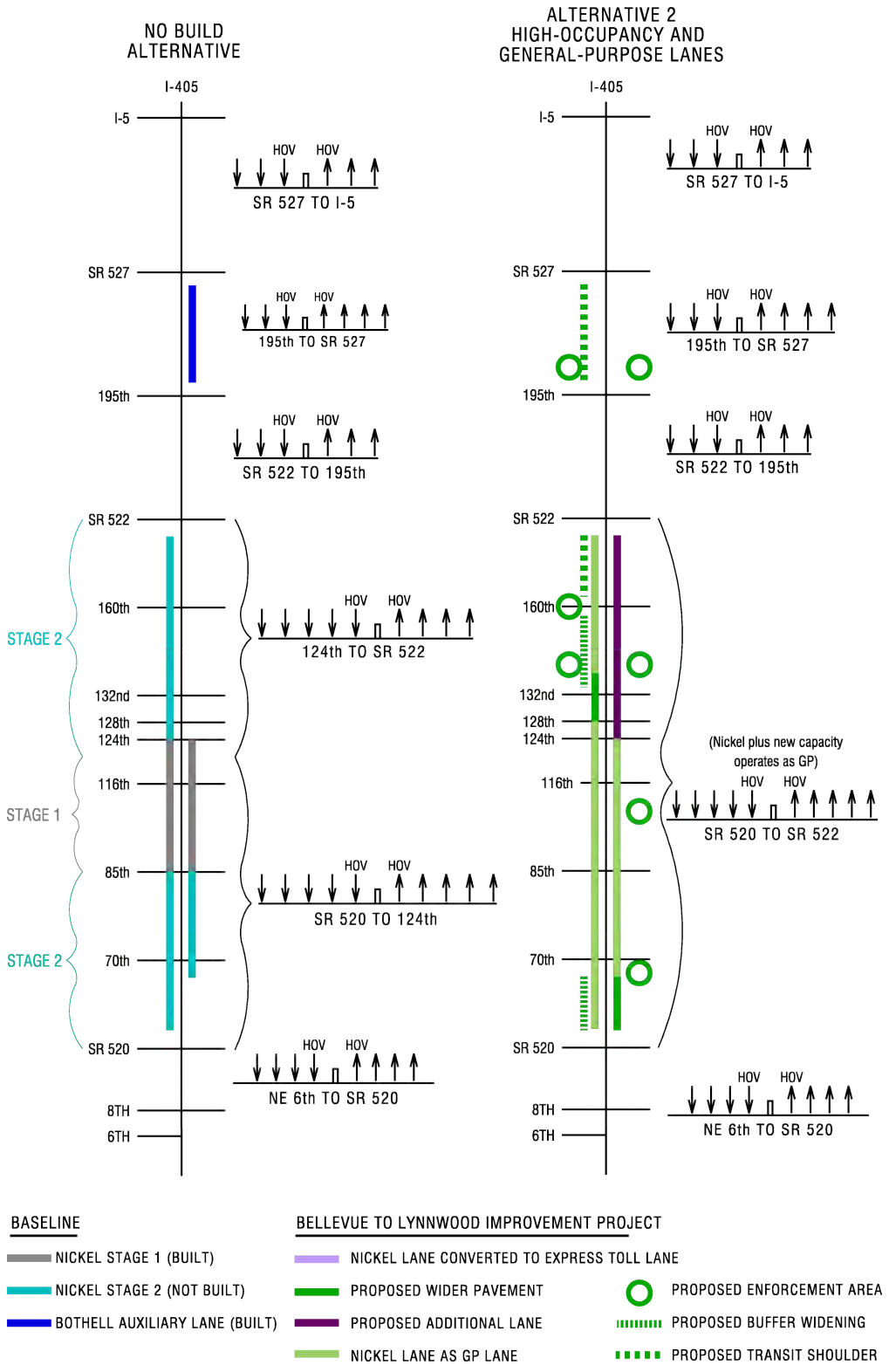
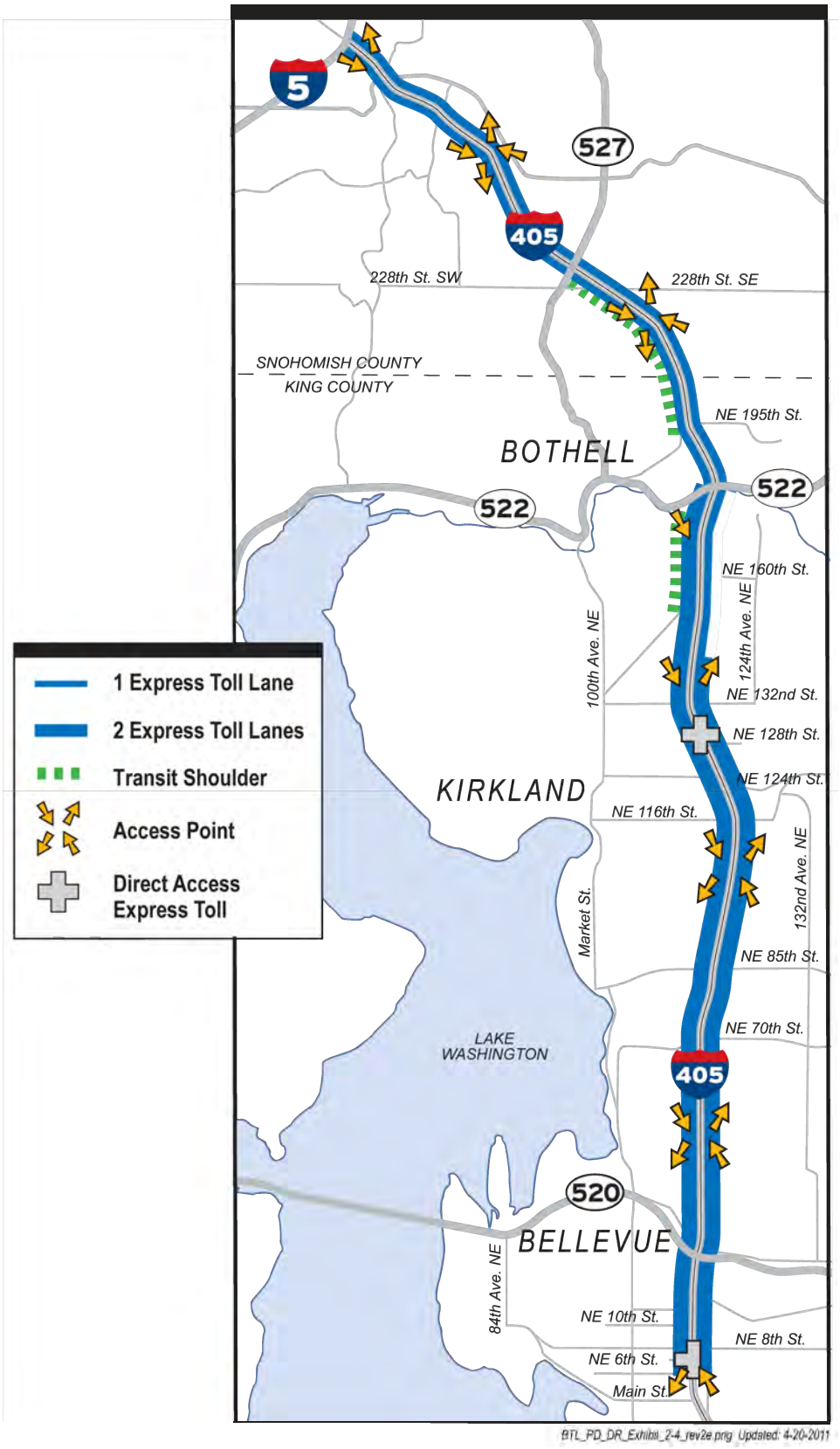


Exhibit 4-4: Express Toll Lanes access locations



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CHAPTER 5 EFFECTS OF THE PROJECT

This chapter examines the potential effects of the I-405, Bellevue to Lynnwood Improvement Project on people and the environment. The Washington State Department of Transportation (WSDOT) project team conducted fifteen separate studies and summarized these analyses in discipline reports and technical memoranda to illustrate how the project might affect the area. We used this information to evaluate changes that can occur because of construction improvements to I-405.

How did WSDOT evaluate effects on the environment?

For the Bellevue to Lynnwood Improvement Project, the I-405 Project Team prepared the following discipline reports and technical memoranda:

- Air Quality
- Cultural, Historic, and Archaeological
- Cumulative Effects Analysis
- Economics
- Ecosystems
- Soils and Geology
- Hazardous Materials
- Land Use Patterns, Plans, and Policies
- Noise
- Section 4(f)
- Social, Public Services, and Environmental Justice
- Transportation
- Utilities
- Visual Quality
- Water Resources

The area the I-405 Team studied within each discipline report or technical memorandum varied, depending on the

What are discipline reports and technical memoranda?

A *discipline report* focuses on an environmental topic (discipline) or concern, such as wildlife, noise, water quality, or other built or natural resource. It presents an analysis of the environment with respect to the discipline, describes how the project may affect the environment, and recommends how best to avoid or minimize adverse effects to the environment.

A *technical memorandum* is typically written in lieu of a discipline report when the potential environmental impacts are minimal for that particular discipline on a specific project.